Manchester - Boston Regional Airport
City of Manchester - Department of Aviation

CARGO FACILITY SITE PREPARATION
AND
HANGAR 6 AND 7 BUILDING DEMOLITION

Bid # FY21-805-60

ISSUED FOR BIDDING
AUGUST 2021

PREPARED BY:

McFarland Johnson

53 REGIONAL DRIVE
CONCORD, NH 03301

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CARGO FACILITY SITE PREPARATION
AND
HANGAR 6 AND 7 BUILDING DEMOLITION

Bid # FY21-805-60

SEALS

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TABLE OF CONTENTS

CONTRACT DOCUMENTS

GENERAL CONTRACT PROVISIONS

REQUIRED CONTRACT PROVISIONS FOR AIP PROJECTS

DAVIS-BACON ACT WAGE RATES SCHEDULE – ROCKINGHAM BUILDING

SUPPLEMENTAL PROVISIONS

BUILLDING HAZARDOUS MATERIALS REPORT

NHDES ASBESTOS CONTAINING MATERIALS NOTIFICATION FORM & INSTRUCTIONS

HANGAR 6 TANK CLOSURE REPORTS

LEVEL II SITE INVESTIGATIONS – BOTH HANGARS

TECHNICAL SPECIFICATIONS

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INVITATION TO BID

CITY OF MANCHESTER - DEPARTMENT OF AVIATION
REQUEST FOR BIDS FOR

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

At
MANCHESTER-BOSTON REGIONAL AIRPORT

City Bid # FY21-805-60

The City of Manchester, New Hampshire, Department of Aviation is seeking bids for the future Air Cargo Facility site preparation and existing building demolition work at Manchester-Boston Regional Airport (MHT). MHT is undertaking an Air Cargo Facility Development Program using a phased approach. This project's phase of the Air Cargo Facility Development Program will be the Cargo Building Area Site Preparation and includes the following components: relocation of secure airfield perimeter fencing, reconfiguring site access fence and gates to the development area from Green Drive, removal of two (2) underground storage tanks near Hangar 6 previously "closed" and accepted by NHDES, Hangar 6 Building Demolition including any minor amounts of hazardous materials, Hangar 7 Building Demolition including any minor amounts of hazardous materials, disconnection of existing utility services to existing hangar building, removal of existing site utilities (water, sewer, drainage, & electrical within and surrounding the proposed Air Cargo Building footprint to an existing structure or new point of termination, protection of existing site utilities (overhead and underground electric supply, MHT/FAA cabling, telephone/communication, drainage, water, sewer, and natural gas) to remain in service through the duration of the demolition work and have these site utilities available for future use, restoration of demolition and utility removal areas with a stabilized material, reclaim base course a portion of the existing pavement, removal of existing access control gates areas, installation of temporary access road, relocation of dumpster/compactor pad location and associated modifications, and all other incidental items for the Air Cargo Facility site preparation.

Bids will be accepted only from contractors that have been pre-qualified with the Department of Aviation. Reference section INSTRUCTION TO BIDDERS (00100) or the Manchester-Boston Regional Airport website at https://www.flymanchester.com/doing-business-with-mht/procurement-services/ for pre-qualification requirements. Each bidder must deposit with his/her bid, security in the amount of 5% of the total bid. A 100% performance and payment bond will be required with the contract. In addition, a warranty bond will also be required for the contract.

Bid documents are available for direct download upon registration at the McFarland Johnson Bid Portal (https://bidportal.mjinc.com/bidportal/index) at no cost after 1**2:00 PM (Noon) on August 18, 2021** and providing the Contractor's email address as part of the registration. Contract documents may also be viewed and downloaded, at no cost, in Portable Document Format at the Manchester-Boston Regional Airport's website link located at https://www.flymanchester.com/doing-business-with-mht/procurement-opportunities/. It is the bidder's sole responsibility to provide an e-mail address to the Engineer, as noted above, for use in issuance of any addenda.

After 12:00 PM on Monday, **August 18, 2021** documents may also be examined, by appointment, at:

- Manchester Boston Regional Airport – Airport Administration Offices, Terminal Building 3rd Floor, 1 Airport Road, Manchester NH 03103

A pre-bid informational meeting will be a "hybrid"-type meeting with both an "in -person" meeting being held at the Airport MHT Administrative Offices boardroom, located on the third floor of the Airport terminal at One Airport Road, Manchester, NH, AND simultaneously being available with a "virtual link" to view the presentation. The meeting will be held on Thursday, **August 26, 2021 at 2:30 PM**. Prospective bidders shall RSVP, not less 24 hours prior to the meeting, through Ms. Christina Adams at the Airport Administrative Offices, who can be reached at (603) 628-6539 Ext. 307 or cadams@flymanchester.com. The virtual meeting link will be provided upon registration by the prospective bidders for attendance and shown on the download websites. A group "on-site" visit to the building demolition site will be held immediately following the pre-bid informational meeting.

Bids will be publicly opened and read aloud on Wednesday, **September 8, 2021 at 2:30 PM (local time)** at the Airport Administrative Offices boardroom located on the third floor of the Airport terminal at One Airport Road, Manchester, NH. The contract will be awarded to lowest responsive and responsible bidder.

The Owner reserves the right to waive any informality in the bidding or to reject any or all bids.

In this bid process and the resulting Contract, if executed, all Bidders and Contractors must fully comply with the Contact Provision Guidelines for Obligated Sponsors and Airport Improvement Program Projects and contained within the Contract Documents. All requirements of the Federal funding and, as well as all administrative regulations shall apply to this project, as if herein written out in full. The attention of prospective bidders is called to the fact that this project is to be bid upon and the contract executed, under the Federal Funding Rules and Regulations for carrying out the provisions of:

- Affirmative Action Requirement (Executive Order 11246, as amended, and DOL Regulation 41 CFR Part 60-4)
- Buy American Preferences (Title 49 United States Code, §50101)
- Title VI Provisions of the Civil Rights Act of 1964, as amended and supplemented (Title 49 United States Code, § 47123 & FAA Order 1400.01)
- Davis-Bacon Act (2 CFR §200, Appendix II(D) and Regulation 29 CFR Part 5)
- Government Debarment and Suspension (2 CFR Part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility)
- Disadvantaged Business Enterprise (49 CFR Part 26)
- Foreign Trade Restriction (Title 49 United States Code, §50104 and DOT Regulation 49 CFR Part 30)
- Lobbying and Influencing Federal Employees (Title 31 United States Code, §1352-Byrd Anti-Lobbying Amendment, 2 CFR part 200, Appendix II(J), and 49 CFR Part 20, Appendix A)
- Procurement of Recovered Materials (2 CFR §200.322, 40 CFR Part 247, and Solid Waste Disposal Act)

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

   Timetable

   Goals for minority participation for each trade: **4.0%** (Town of Londonderry, County of Rockingham)
   Goals for female participation in each trade: **6.9%**

   These goals are applicable to all of the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

   The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the

subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is **State of New Hampshire, County of Rockingham, Town of Londonderry.**

The, Manchester-Boston Regional Airport, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. It is the policy of the Manchester-Boston Regional Airport to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All disadvantaged business enterprise firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this section.

The requirements of CFR 49 Part 26, Regulations of the U. S. Department of Transportation, apply to this contract. It is the policy of The City of Manchester-Department of Aviation to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as a DBE. The City of Manchester-Department of Aviation encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

2021 Aviation projects sponsored by the City of Manchester – Department of Aviation, Manchester, New Hampshire utilize race-neutral DBE procedures. **There is no specific DBE goal for this project.** Bidders must comply with the requirements of 49 CFR Part 26, including Appendix A, which discusses making good-faith efforts, to ensure that all DBE's and Small Businesses are afforded the maximum opportunity to work with them on federally funded projects. The City of Manchester – Department of Aviation, Manchester, New Hampshire has an overall DBE goal of 5.3% for FAA funded projects in Federal Fiscal Year (FFY) 2021.

The Bidder/Offeror shall make good faith efforts, as defined in Appendix A, 49 CRF Part 26 (Attachment 1), to meet the FFY 2021 overall DBE goal for DBE participation in the performance of this contract. The successful Bidder or Offeror must provide written confirmation of participation from each of the DBE firms the Bidder or Offeror lists in its commitment within five days after bid opening.

All bidders will be required to execute a sworn Non-Collusion Affidavit statement, certifying that the bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such Contract.

All requests for information should be directed in writing to: Brian Bennett, PE, McFarland Johnson, located at 53 Regional Drive, Concord, NH 03301, by email @ bbennett@mjinc.com with a cc: copy to Luis Elguezabal, Assistant Airport Director for Operations and Facilities, by email @ lelguezabal@flymanchester.com.

END OF SECTION 00030

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INFORMATION FOR BIDDERS

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INFORMATION FOR BIDDERS

1.01 RECEIPT AND OPENING BIDS

The City of Manchester, Department of Aviation, Manchester, New Hampshire (herein called the Owner), invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Manchester-Boston Regional Airport Administration Office at One Airport Road Manchester, NH until Wednesday, **September 8, 2021 at 2:30 pm** and then at said office publicly opened and read aloud.

The envelopes containing the bid must be sealed, addressed and designated as:

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

The Owner may consider irregular any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. After submitting a bid, no Bidder may withdraw a bid for one-hundred eighty (180) calendar days.

1.02 DESCRIPTION OF WORK

Manchester-Boston Regional Airport (MHT) is undertaking an Air Cargo Facility Development Program that includes the development of up to an approximate 100,000 square foot Air Cargo Facility building, an apron to support up to four (4) – Boeing 767-300 freighter aircraft (or equivalent), a landside parking and cargo truck loading area, discontinuance of the existing access to Green Drive (north of the new Air Cargo Facility and Terminal) and the construction of a new Access Drive along the easterly edge of Lot C from Ammon Drive to the proposed Air Cargo Facility. The proposed Air Cargo development will also encroach onto the existing Green Drive in its current configuration and will require a change of the access to the Terminal loading dock area and the existing Quick Turnaround (QTA) rental car facility layout. The Air Cargo Facility Development Program will use a phased construction approach, including the preparation of the site for the development.

This project's phase of the Air Cargo Facility Development Program will be the Cargo Building Area Site Preparation and includes the following components as shown on the Plans:

- Relocation of secure airfield perimeter fencing to allow for construction of new Air Cargo Facility
- Reconfigure site access fence and gates to the development area from Green Drive
- Removal of two (2) underground storage tanks near Hangar 6 which were previously "closed" and accepted by NHDES as requiring "No Further Action". Existing tanks have the tops cut open and filled with sand backfill.
- Hangar 6 Building Demolition including any minor amounts of hazardous materials
- Hangar 7 Building Demolition including any minor amounts of hazardous materials
- Disconnection of existing utility services to existing hangar building
- Removal of existing site utilities (water, sewer, drainage, electrical, within and surrounding the proposed Air Cargo Building footprint to an existing structure or new point of termination
- Protection of existing site utilities (overhead and underground electric supply, MHT/FAA cabling, telephone/communication, drainage, water, sewer, and natural gas) to remain in service through the duration of the demolition work and have these site utilities available for future use
- Restoration of demolition and utility removal areas with a stabilized material
- Removal of existing access control gates and island and restoration to a paved surface
- Relocation of the concrete pad relocation for 2 trash compactors with a new electrical service
- Pavement reclamation for a portion of the existing site pavement
- All other incidental items as shown on the Plans for the Air Cargo Facility site preparation

All areas of the airport disturbed by the Contractor's operations not within the construction limits as set forth by the Owner shall be restored at least equal to original condition at no cost to the Owner.

Attention shall be directed to the Contract Documents for specific information of the work to be performed.

1.03 PREPARATION OF BID

Each bid must be prepared in strict accordance with the requirements of Section 20 of the General Provisions of these specifications.

1.04 SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the Owner and the Federal Aviation Administration.

The successful bidder will be required to submit a list of his/her subcontractors within four (4) days of the opening of Bids and before the award of a contract. The successful bidder will be required to submit all subcontracts to the Engineer for approval after the contract is awarded.

1.05 BIDDER'S QUALIFICATIONS

All Bidders for projects with an estimated cost in excess of $250,000 must be pre-qualified. Refer to Section 20-02 of the FAA General Contract Provisions for additional information.

1.06 BID MODIFICATION

Any bidder may modify his/her bid by written communication at any time prior to the schedule closing time for receipt of bids, providing such written communication is received by the Owner prior to the bid closing time. The written communication should not reveal the bid price but should provide the addition or subtraction or any other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened.

1.07 PROPOSAL GUARANTY BID SECURITY

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond included in the Contract Documents in the amount of five percent (5%) of the bid, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner. The bid bond shall be executed or countersigned for the surety by a person who has current power of attorney for the surety.

The bid security will be returned to all except the two lowest bidders within three (3) days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the Contract, or, if no award has been made prior to **One Hundred Eighty (180) calendar days after the bid opening,** upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

1.08 TIME OF COMPLETION AND LIQUIDATED DAMAGES

It is anticipated this Project will have a Notice to Proceed issued for the work to be performed during Fall 2021.

The bidder must agree to commence work on a date to be specified in the written Notice to Proceed of the Owner and to fully complete the project within **sixty (60) calendar days**. Bidder must agree to pay to the Owner as liquidated damages the sum of **six hundred dollars ($600.00)** for each and every calendar day the work remains incomplete beyond the above specified time.

1.09 SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with his/her delivery of the executed Contract, the successful bidder shall furnish Surety bonds as security for faithful performance of this Contract and for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract, as specified in the General Provisions included herein. The bonds shall be of the form provided hereinafter and shall be executed by Surety acceptable to the Owner. The bonds shall be executed by or countersigned by an agent for Surety and said agent to have current power of attorney for the Surety. Each bond shall be in the amount of one hundred percent (100%) of Contract awarded. Contractors should also submit with all bonds evidence showing the financial strength of the Surety.

Prior to the final payment for the project, the Contractor shall deliver to the Owner a Warranty Bond in the amount of five percent (5%) of the final cost of the construction.

1.10 ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation shall be in writing addressed to Brian Bennett, Project Manager with McFarland Johnson, 53 Regional Drive, Concord, NH 03301, by fax at (603) 225-0095 or email bbennett@mjinc.com and to be given consideration, must be received at five (5) working days (i.e. September 3, 2021 at 12:00 PM (Noon)) prior to the date fixed for the public opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be posted on the plan websites identified in the Invitation to Bidders with a notification emailed to all prospective bidders (at the email address furnished for such purposes), not later than two (2) working days (i.e. September 6, 2021 at 12:00 PM (Noon)) prior to the date fixed for the opening of bids. It is the Contractor's responsibility to check the plan websites for any addendum issued. Failure of any bidder to receive any such addendum, or interpretation, shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the Contract Documents.

1.11 POWER OF ATTORNEY

Attorneys-in-fact or others who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

1.12 LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though therein written out in Full. The Contractor shall be responsible for payment of all taxes, fees, and assessments as levied by Federal, State and Local authorities.

1.13 EXECUTION OF CONTRACT

The individual, firm, partnership, or corporation to whom or to which the Contract has been awarded shall sign the necessary agreements entering into a Contract with the Owner and return them to the Office of the Owner (with the required contract bonds) within fifteen (15) calendar days after the Contract is mailed.

1.14 APPROVAL OF CONTRACT

Approval of the Contract shall be in accordance with paragraph 30-07 of the General Provisions. No Contract is binding upon the Owner until it has been executed by the Owner and delivered to the Contractor.

1.15 FAILURE TO EXECUTE CONTRACT

Failure of a bidder to comply with any of the requirements of the proposal, failure to execute the Contract within fifteen (15) calendar days after mailing, as specified, or failure to furnish contract bonds as required shall be just cause for the annulment of the award. In the event of such annulment of the award, the amount of bid security shall become the property of the Owner, not as a penalty but as fixed and agreed liquidated damages. Award may then be made to the next best qualified bidder, or the work re-bid, or otherwise handled as the Owner may elect.

1.16 NOTICE OF SPECIAL CONDITIONS

Attention is particularly called to those parts of the Contract Documents which deal with the following:

a. Inspection of work.
b. Insurance requirements.
c. Scheduling the contract work.
d. Liquidated damages for failure to complete the various portions of the specified times.
e. Airport safety and security.
f. Buy American Act.
g. Disadvantage Business Enterprises
h. Wage Rates.

1.17 DISADVANTAGED BUSINESS ENTERPRISE (DBE):

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the City of Manchester – Department of Aviation, Manchester, New Hampshire to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

The Contractor must comply with the Federal DBE, Equal Employment Opportunity (EEO), and Affirmative Action Requirements contained within the Contract Documents.

2021 Aviation projects sponsored by the City of Manchester – Department of Aviation, Manchester, New Hampshire utilize race-neutral DBE procedures. **There is no specific DBE goal for this project.** Bidders must comply with the requirements of 49 CFR Part 26, including Appendix A, which discusses making good-faith efforts, to ensure that all DBE's and Small Businesses are afforded the maximum opportunity to work with them on federally funded projects. The City of Manchester – Department of Aviation, Manchester, New Hampshire has an overall DBE goal of 5.3% for FAA funded projects in Federal Fiscal Year 2021.

1.18 EMPLOYMENT OF WOMEN

Women will be afforded equal opportunity in all areas of employment. However, the employment of women shall not diminish the standards or requirements for the employment of minorities.

1.19 EQUAL EMPLOYMENT OPPORTUNITY

a. Each bidder will be required to comply with the affirmative action plan for equal employment opportunity prescribed by the OFCC, United States Department of Labor, Regulations of the Secretary of Labor (41 CFR 60), or by other designated trades used in the performance of the contract and other nonfederally involved contracts in the area geographically defined in the plan.

b. The proposed contract is under and subject to Executive Order 11246 of September 26, 1965, as amended, and to the equal opportunity clause; and

c. The successful bidder will be required to submit a Certification of Nonsegregated Facilities prior to award of the contract, and to notify prospective subcontractors of the requirement for such a

certification where the subcontract exceeds $10,000. Samples of the certification and the notice to subcontractors appear in the specifications.

d. When a determination has been made to award a contract or subcontract to a specific contractor, such contractor is required, prior to the award or after the award, or both, to furnish such other information as the FAA, the sponsor, or the Director of OFCC requests.

e. A bidder must indicate whether he has previously had a contract subject to the equal opportunity clause, whether he has filed all report forms required in such contract, and if not, compliance report Standard Form (SF) 100 must be submitted with his bid.

f. Equal Employment Opportunity (EEO) and labor provisions, when applicable, are included in the bidding documents of specifications.

g. Contractors and subcontractors may satisfy EEO requirements of paragraph 2 of the EEO contract clause by stating in all solicitations or advertisements for employees that: "All qualified applicants will receive consideration for employment without regard to race, color, sex, or national origin." or by using a single advertisement in which appears in clearly distinguished type, the phrase: "an equal opportunity employer".

h. A contractor having 50 or more employees and his subcontractors having 50 or more employees and who may be awarded a subcontract of $50,000 or more will, within 120 days from contract commencement, be required to develop a written affirmative action compliance program for each of its establishments (state and local governments are exempt).

1.20 ELECTRONICALLY PROVIDED BID DOCUMENTS

Bid Documents provided electronically are provided as a convenience to the Bidder and are not the controlling data for the contract. The original hard copy (paper) contract plans and specifications and modifications thereto reviewed and signed by the Engineer are the legal construction documents and shall be used for interpretations and determinations for the project, overriding any alterable electronic files. Bidder agrees to accept full responsibility for their use of the electronic files and the completeness, correctness, and/or readability of the electronic media file, and shall indemnify, defend and hold harmless, McFarland Johnson Inc. and the Owner from any and all claims (including third party) arising from discrepancies between the electronic media file and the sealed drawings or report.

END OF INFORMATION FOR BIDDERS

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BID PROPOSAL

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BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED,

_____

(Name of Principal)

as PRINCIPAL, and _____

(Name of Surety)

as SURETY, are held and are firmly bound unto **The City of Manchester, New Hampshire, Department of Aviation** hereinafter called the Owner, in the penal sum of

_____

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid, for:

Cargo Site Preparation and Hangars 6 & 7 Building Demolition

MHT Bid No. FY21-805-60

(Enter Title and Number of Contract/Project)

NOW, THEREFORE, if the Principal shall not withdraw said bid within 180 calendar days after the opening thereof, and shall within fifteen (15) calendar days after the prescribed forms are presented to him/her for signature, enter into a written Contract with the Owner in accordance with the bid as accepted, and give bonds with good and sufficient Surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract; or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such Contract and give such bonds within the time specified, if the Principal shall pay the Owner the difference between the amount specified in said bid and the amount for which the Owner may procure the required work or supplies or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above named Principal and Surety have executed this instrument under their several seals this _____day of _____, name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In presence of:

_____SEAL

Individual Principal

_____

_____

Business Address

_____SEAL

Individual Principal

_____

_____

Business Address

Attest:

_____ _____

Corporate Principal

_____ _____

Business Address

Affix Corporate Seal

By: _____

_____

_____

Corporate Surety

_____

Business Address

Affix Corporate Seal

By:_____

Attorney-in-Fact

** Power of attorney for person(s) signing for surety company must be attached to this bond.*

CERTIFICATE AS TO CORPORATE PRINCIPAL

BID BOND

I, _____ , certify that I am the

_____ of the Corporation named as principal in the within

bond; that _____ , who signed the said bond on

behalf of the Principal was then _____
of said Corporation; that I know his/her signature, and his/her signature thereto is genuine, and

that said bond was duly signed, sealed, and attested to for and in behalf of said Corporation by

authority of its governing body.

_____

Affix Corporate Seal

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BID PROPOSAL

for

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

at
Manchester-Boston Regional Airport

Proposal of _____* hereinafter called "Bidder") a

corporation organized under the laws of the State of _____, a partnership, or an

individual** doing business as_____, to the **City of Manchester,**

New Hampshire, Department of Aviation (hereinafter called "Owner").

The bidder in compliance with your invitation for bids for the construction of airport improvements having examined the plans and specifications with related documents and the site of the proposed work if required, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials, and labor, hereby proposes to furnish all plant, labor, materials, supplies, equipment, services, and to construct the work in accordance with the Contract Documents, within the time set forth therein, and at the amount in U.S. dollars provided herein. This price is to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Time of Completion and Liquidated Damages

Bidder hereby agrees to commence work under this Contract on the date to be specified in written "Notice to Proceed" of the Owner, and to fully complete the project within:

Cargo Site Preparation and Hangars 6 & 7 Building Demolition: Sixty (60) calendar days.

Bidder further agrees to pay to the Owner, as liquidated damages:

For the project, the sum of **six hundred dollars ($600.00)** for each and every **calendar day** that the work remains incomplete beyond the time specified for milestone dates and completion as hereinafter provided in the Contract Documents.

Bidder acknowledges receipt of the addenda shown on the attached form entitled:

ACKNOWLEDGMENT OF ADDENDA.

Bidder agrees to perform all the work described in the specifications, shown on the plans or directed, for the following unit prices:

****The name of the bidder must be exactly the same as the name under which the bidder was pre-qualified with the City of Manchester.***

***** Strike out inapplicable terms.***

ACKNOWLEDGMENT OF ADDENDA

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Manchester-Boston Regional Airport

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

BID FORM

ITEM NO.	ESTIMATED QUANTITY/ UNIT	DESCRIPTION AND UNIT PRICE (IN WORDS)	FIGURES			
			UNIT PRICE		EXTENSION	
			Dollars	Cents	Dollars	Cents
C-105-1	1 LS	MOBILIZATION (LIMIT 5%) _____Dollars and _____ Cents				
B-100-5.1	1 LS	HANGAR BUILDING #6 HAZARDOUS MATERIALS ABATEMENT AND REMEDIATION _____Dollars and _____ Cents				
B-100-5.2	1 LS	HANGAR BUILDING #7 HAZARDOUS MATERIALS ABATEMENT AND REMEDIATION _____Dollars and _____ Cents				
B-200-5.1	1 LS	HANGAR BUILDING #6 BUILDING DEMOLITION AND REMOVAL _____Dollars and _____ Cents				
B-200-5.2	1 LS	HANGAR BUILDING #7 BUILDING DEMOLITION AND REMOVAL _____Dollars and _____ Cents				
B-200-5.3	1 LS	HANGAR BUILDING #6 USTs REMOVAL _____Dollars and _____ Cents				
B-200-5.4	1 LS	DEMOLITION OF TRAFFIC CONTROL GATES AND ISLANDS (2 LOCATIONS) _____Dollars and _____ Cents				

Manchester-Boston Regional Airport
CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION
BID FORM

ITEM NO.	ESTIMATED QUANTITY/ UNIT	DESCRIPTION AND UNIT PRICE (IN WORDS)	FIGURES			
			UNIT PRICE		EXTENSION	
			Dollars	Cents	Dollars	Cents
B-200-5.5	1 LS	DUMPSTER/COMPACTOR RELOCATION CONCRETE PAD AND MODIFICATIONS _____Dollars and _____ Cents				
B-300-5.1	1 LS	PROJECT SPECIFIC SOIL MANAGEMENT PLAN _____Dollars and _____ Cents				
B-300-5.2	100 HRS	ENVIRONMENTAL CONSULTANT _____Dollars and _____ Cents				
B-300-5.3A	25 TON	SOIL RE-USE AT UNLINED LANDFILL _____Dollars and _____ Cents				
B-300-5.3B	25 TON	SOIL RE-USE AT LINED LANDFILL _____Dollars and _____ Cents				
B-300-5.3C	25 TON	SOIL RECYCLING AT ASPHALT BATCH PLANT _____Dollars and _____ Cents				
M-100-1	1 ALL	ALLOWANCE – GATE GUARDS Two Thousand Dollars and Zero Cents	$2,000	00	$2,000	00
M-200-1	1 LS	MAINTENANCE & PROTECTION OF TRAFFIC _____Dollars and _____ Cents				
M-300-5.1	1,410 LF	DRAINAGE PIPE REMOVAL (All sizes) _____Dollars and _____ Cents				

Manchester-Boston Regional Airport

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

BID FORM

ITEM NO.	ESTIMATED QUANTITY/ UNIT	DESCRIPTION AND UNIT PRICE (IN WORDS)	FIGURES			
			UNIT PRICE		EXTENSION	
			Dollars	Cents	Dollars	Cents
M-300-5.2	7 EA	DRAINAGE STRUCUTRE REMOVAL (All types & depths) _____Dollars and _____ Cents				
M-300-5.3	520 LF	SEWER PIPE REMOVAL (All sizes) _____Dollars and _____ Cents				
M-300-5.4	1 EA	SEWER STRUCUTRE REMOVAL (All types and depths) _____Dollars and _____ Cents				
M-300-5.5	430 LF	WATER PIPE REMOVAL (All Copper Services) _____Dollars and _____ Cents				
M-300-5.7	1 LS	HANGAR BUILDING #6 ELECTRICAL SERVICE AND ONSITE SHUTOFF/DECOMMISIONING _____Dollars and _____ Cents				
M-300-5.8	1 LS	HANGAR BUILDING #7 ELECTRICAL SERVICE AND ONSITE SHUTOFF/DECOMMISIONING _____Dollars and _____ Cents				
M-300-5.9	1 LS	SITE LIGHTING ELECTRICAL SERVICE AND ONSITE SHUTOFF/DECOMMISIONING _____Dollars and _____ Cents				

Manchester-Boston Regional Airport

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

BID FORM

ITEM NO.	ESTIMATED QUANTITY/ UNIT	DESCRIPTION AND UNIT PRICE (IN WORDS)	FIGURES			
			UNIT PRICE		EXTENSION	
			Dollars	Cents	Dollars	Cents
M-400-5.1	12,100 SY	RECLAIMED BASE COURSE _____Dollars and _____ Cents				
M-400-5.2	500 TON	SUPPLEMENTAL AGGREGATE MATERIAL _____Dollars and _____ Cents				
M-500-5.1	860CY	UNCLASSIFIED EXCAVATION _____Dollars and _____ Cents				
M-500-5.2	290 CY	BASE COURSE MATERIAL _____Dollars and _____ Cents				
M-500-5.3	210 TON	HOT MIX ASPHALT PAVEMENT (NHDOT 403-1/2" WEARING COURSE) _____Dollars and _____ Cents				
M-500-5.4	800 SF	PAVEMENT MARKINGS _____Dollars and _____ Cents				
M-500-5.5	45 EA	JERSEY BARRIER _____Dollars and _____ Cents				
C-102-5.1	15 EA	INSTALLATION AND REMOVAL OF INLET PROTECTION FILTER BAGS _____Dollars and _____ Cents				

Manchester-Boston Regional Airport
CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION
BID FORM

ITEM NO.	ESTIMATED QUANTITY/ UNIT	DESCRIPTION AND UNIT PRICE (IN WORDS)	FIGURES			
			UNIT PRICE		EXTENSION	
			Dollars	Cents	Dollars	Cents
C-102-5.2	100 LF	INSTALLATION AND REMOVAL OF EROSION CONTROL LOGS _____Dollars and _____ Cents				
F-162-5.1a	500 LF	10-FT CHAIN-LINK SECURITY FENCE _____Dollars and _____ Cents				
F-162-5.1b	150 LF	8-FT CHAIN-LINK SITE FENCE _____Dollars and _____ Cents				
F-162-5.2b	2 EA	VEHICLE GATES (25' Wide Opening) _____Dollars and _____ Cents				
F-162-5.3	2,600 LF	CHAIN-LINK FENCE REMOVAL _____Dollars and _____ Cents				

PROJECT SUBTOTAL (Pages BP-7 to BP-11) $_____
(Transfer the Amount to Page BP-12)

BID SUMMARY

TOTAL BID: _____dollars

(amount in words)

($_____).

(amount in figures)

The stated prices shall include-all plant, labor, materials, supplies, equipment, services, incidentals, expenses, overhead, profit, insurance, etc., perform all work required by the Contract Documents.

The Bidder agrees that the Owner may base the low bid on the Base Bid plus any, or all, of the Additive Alternates (in ascending order), if applicable.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn prior to a period of one-hundred eighty (180) calendar days after the bid opening.

The Bidder agrees that the Owner may reduce the quantities or may delete work items altogether if necessary to bring the contract awarded within funds available to finance the project. Such reduction or deletion of work shall not constitute a basis for withdrawal of this proposal.

Upon receipt of written notice of acceptance of this Bid, Bidder will execute the formal contract attached within fifteen (15) calendar days and deliver the Surety Bonds as required by the General Provisions. The bid security attached in the sum of _____ is to become the property of the Owner in the event the contract and bonds are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the Owner caused thereby.

Respectfully submitted:

Name of Bidder: _____

By: _____

Name and Title: _____

Business Address: _____

(Affix corporate seal if bid is by a corporation)

CERTIFICATE AS TO CORPORATE PRINCIPAL

BID PROPOSAL

I, _____ certify that I am the _____ of the corporation named as Bidder in the above Proposal; that _____ who signed the said Proposal on behalf of the Bidder was then _____ of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said Proposal was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

_____ (Corporate Seal)
(Signature)

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BID PROPOSAL CERTIFICATES OF COMPLIANCE
FOR AIP PROJECTS

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CERTIFICATIONS TO ACCOMPANY PROPOSAL BID FORMS

1.01 ALL CONTRACTS

a. The bidder (proposer) must supply all the information required by the proposal forms and specifications.

b. The City of Manchester Department of Aviation, New Hampshire, in accordance with Title VI of the Civil Rights Act of 1964, hereby notifies all bidders that they (bidders) must affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for award.

1.02 INSTRUCTIONS TO BIDDERS

a. Section 60-1.7(b) of the Regulations of the Secretary of Labor requires each bidder or prospective prime Contractor and proposed subcontractors, where appropriate, to state in the bid whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed with the Joint Reporting Committee, the Director, an agency, or the former President's Committee on Equal Employment Opportunity all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime Contractor or proposed subcontractor has participated in a previous contract subject to Executive Orders 10Y25, 11114, or 11246 and has not filed a report due under the applicable filing requirements, no contract nor subcontract shall be awarded unless such Contractor submits a report covering the delinquent period or such other period specified by the FAA or the Director, OFCC.

b. To achieve these requirements, the Bidder shall complete and sign the attached statement.

AFFIRMATIVE ACTION CERTIFICATION

The Bidder (has / has not)* participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11246, or Executive Order 11114.

The Bidder (has / has not)* submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the Bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder (Proposer) shall submit a compliance report on Standard Form 100, "Employee Information Report EE0-1" prior to the award of contract.

The Bidder (has / has not) been considered for sanction due to violation of Executive Order 11246, as amended.

Dated _____ , 20___ _____

Legal Name of Person, Firm or Corporation

By: _____

_____

Title

Strike out inappropriate term.

CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR MANUFACTURED PRODUCTS
(Non-building construction projects, equipment acquisition projects)

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:

a) Only installing steel and manufactured products produced in the United States, or;
b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing, or;
c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing US domestic product
3. To furnish US domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

☐ The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver - The cost of the item components and subcomponents produced in the United States is more that 60% of the cost of all components and subcomponents of the "item". The required documentation for a type 3 waiver is:

a) Listing of all product components and subcomponents that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart

25.108; products of unknown origin must be considered as non-domestic products in their entirety)

b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.

c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

a) Detailed cost information for total project using US domestic product

b) Detailed cost information for total project using non-domestic product

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date	Signature
Company Name	Title

GOALS AND ASSURANCES FOR
DISADVANTAGED BUSINESS ENTERPRISES

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex, in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

The requirements of CFR 49 Part 26, Regulations of the U. S. Department of Transportation, apply to this contract. It is the policy of The City of Manchester-Department of Aviation to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as a DBE. The City of Manchester-Department of Aviation encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

The Contractor must comply with the Federal DBE, Equal Employment Opportunity (EEO), and Affirmative Action Requirements contained within the Contract Documents.

2021 Aviation projects sponsored by the City of Manchester – Department of Aviation, Manchester, New Hampshire utilize race-neutral DBE procedures. **There is no specific DBE goal for this project.** Bidders must comply with the requirements of 49 CFR Part 26, including Appendix A, which discusses making good-faith efforts, to ensure that all DBE's and Small Businesses are afforded the maximum opportunity to work with them on federally funded projects. The City of Manchester – Department of Aviation, Manchester, New Hampshire has an overall DBE goal of 5.3% for FAA funded projects in Federal Fiscal Year (FFY) 2021.

The Bidder/Offeror shall make good faith efforts, as defined in Appendix A, 49 CRF Part 26 (Attachment 1), to meet the FFY 2021 overall DBE goal for DBE participation in the performance of this contract.

The successful Bidder or Offeror must provide written confirmation of participation from each of the DBE firms the Bidder or Offeror lists in its commitment within five days after bid opening.

The Bidder or Offeror must submit the following information on the forms provided herein:

1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
2) A description of the work that each DBE firm will perform;
3) The dollar amount of the participation of each DBE firm listed under (1)
4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal; and
5) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26.

PROPOSED DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION
RACE-NEUTRAL PROJECTS

The undersigned Bidder/Offeror has made a good faith effort to make subcontracting and supplier opportunities available to all firms including, but not limited to, DBE's as defined in 49 CFR 26. As a result of these efforts:

- The Bidder/Offeror is committed to a minimum of _____% **DBE** utilization on this Contract.

Name of Bidder/Offeror's firm:

_____

State Registration No. _____

By: _____ _____
(Signature) (Title)

DBE LETTER OF INTENT

Name of bidder'/offeror's firm:_____

Address:_____

City:_____ State:_____ Zip:_____

Name of DBE firm:_____

Address:_____

City:_____ State:_____ Zip:_____

Telephone:_____

Description of work to be performed by DBE firm:

_____

_____

_____

_____

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated dollar value of this work is $ _____.

Affirmation

The above named DBE firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above.

By: _____

(Signature) (Title)

If the bidder/offeror does not receive award of the prime contract, any and all representations in this letter of Intent and Affirmation shall be null and void.

(Submit this page for each DBE subcontractor.)

BIDDER'S PROJECT SUBCONTRACTORS & SUPPLIERS

The Bidder advises herein that the following Subcontractors are proposed for the item of work listed. Subcontractors are subject to review and approval per the requirements of the Contract Documents and the technical requirements specified. List firms that will supply labor at the site and major suppliers.

Failure to provide this information may result in the bid being considered non-responsive.

SUBCONTRACTOR NAME	DBE (Y/N)	TRADE	CONTRACT WORK ITEMS	VALUE ($)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

RESPECTFULLY SUBMITTED:

_____

(Bidder)

By:_____ Title:_____ Date: _____

NON-COLLUSION AFFIDAVIT
(Bidder or Offeror)

I, (enter full legal name), _____

representing (name of person, firm, association, or corporation) _____

of (Town or City and State) _____

being duly sworn, depose and certify that, under the penalties of perjury under the laws of this state and the United States that on behalf of, the person, firm, association, or corporation submitting this bid, that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with submitting a bid for this project.

Cargo Site Preparation and Hangars 6 & 7 Building Demolition
Manchester-Boston Regional Airport

_____
Name of Individual, Partnership, or Corporation (Please Print or Type)

_____
Signature of Official Authorized to Sign Contracts and Agreements

_____
Name of Individual Signing Affidavit

_____
Title of Individual Signing Affidavit

Sworn to before me this _____ day of _____ , 20___

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION (For Bids Exceeding $25,000)

The bidder/offeror certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

Certification - The information above is true and complete to the best of my knowledge and belief.

Name and Title of Signer (Please type)

Signature Date

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

CERTIFICATION OF PROHIBIITION OF SEGREGATED FACILITIES
INSTRUCTIONS

1. Notice to Prospective Federal Assisted Construction Contractors.

   a. A Certification of Prohibition of Segregated Facilities must be submitted prior to the award of a contract exceeding $10,000 which is not exempt from the provisions of the equal opportunity clause.

   b. Contractors receiving contract awards exceeding $10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of the notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed $10,000 and are not exempt from the provisions of the equal opportunity clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

2. Notice to Prospective Construction Subcontractors.

   a. A Certification of Prohibition of Segregated Facilities must be submitted prior to the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the equal opportunity clause.

   b. Contractors receiving subcontract awards exceeding $10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontractors exceed $10,000 and are not exempt from the provisions of the equal opportunity clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

3. Notice to Prospective Contractors of Requirement for Certification for Prohibition of Segregated Facilities.

   A Certification of Prohibition of Segregated Facilities must be submitted prior to the award of a contract or subcontract exceeding $10,000 which is not exempt from the provisions of the equal opportunity clause.

CERTIFICATION OF PROHIBITION OF SEGREGATED FACILITIES
(CONTRACTORS/ SUBCONTRACTORS)

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

Certification - The information above is true and complete to the best of my knowledge and belief.

_____

Name and Title of Signer (Please type)

_____ _____

Signature *Date*

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

1. Type of Federal Action:	**2. Status of Federal Action**	**3. Report Type**
___ a. contract _X_ b. grant ___ c. cooperative agreement ___ d. loan ___ e. loan guarantee ___ f. loan insurance	_X_ a. bid/offer/application ___ b. initial award ___ c. post-award	_X_ a. initial filing ___ b. material change For Material Change Only: Year _____Quarter _____ Date of last report _____

4. Name and Address of Reporting Entity ___ Prime ___ Subawardee	**5. If Reporting Entity in No. 4 is Subawardee, Enter Name and address of Prime:**
6. Federal Department Agency: Federal Aviation Administration	**7. Federal Program Name/Description:** Airport Improvement Program Grant
8. Federal Action Number, *if known:*	**9. Award Amount**, *if known:* **$**
10a. Name and Address of Lobbying Entity, *(if individual, last name, first name, MI)*	**10b. Individuals performing Services** *(including address if different from No. 10a.), (if individual, last name, first name, MI)*
11. Amount of Payment *(check all that apply):* $ _____ actual planned	**13. Type of Payment (**<u>*check all that apply*</u>**)** ___ a. retainer ___ b. one-time fee ___ c. commission ___ d. contingent fee ___ e. deferred ___ f. other specify _____
12. Form of Payment *(check all that apply):* ___ a. cash ___ b. In-kind; specify; nature _____ value _____	

14. Brief Description of services preformed or performed and date(s) of Service, including officer(s), employer(s), or member(s) contacted for payment indicated in Item 11.

15. Continuation Sheet(s) SF-LLL-A attached: **Yes** **No**

16. Information requested through this form is authorized by Title 31 U.S.C. Section 1362. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure	Signature: _____ Print Name: _____ Title: _____ Telephone No. _____ Date: _____

Federal Use Only	Authorized for Local Reproduction Standard Form - LLL

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Reporting Entity: _ Page _ of _____

Authorized for Local Reproduction Standard Form – LLL-A

TRADE RESTRICTION CERTIFICATION

The Contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;

c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the Contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The Contractor shall provide immediate written notice to the sponsor if the Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

Date	Signature
Company Name	Title

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The Bidder must complete the following two certification statements. The Bidder must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The Bidder agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

1) The Bidder represents that it is (✓) is not (✓) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

2) The Bidder represents that it is (✓) is not (✓) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If a Bidder responds in the affirmative to either of the above representations, the Bidder is ineligible to receive an award unless the Sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The Bidder therefore must provide information to the Owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

Date	Signature
Company Name	Title

CONTRACT DOCUMENTS
CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

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CONTRACT AGREEMENT

THIS AGREEMENT, made this _____day of _____, 2021, (execution date by Owner) by and between **City of Manchester - Department of Aviation,** hereinafter called "OWNER" and

_____

doing business as a corporation hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the project entitled:

CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION
City Bid # FY21-805-60

2. CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS on or before a date to be specified in the NOTICE TO PROCEED and will complete the work within the **sixty (60) calendar days** from the effective date of the NOTICE TO PROCEED unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

The CONTRACTOR shall pay as liquidated damages the sum of **six hundred dollars ($600.00)** for each and every calendar day that the work remains incomplete beyond the above specified time, as provided in the General Provisions of the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of_____, or as shown in the BID Schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

(A) This Contract Agreement
(B) Addenda as listed herein
(C) Advertisement for Bids
(D) Information for Bidders
(E) Signed Copy of Bid Proposal
(F) Bid Proposal Certificates of Compliance
(G) Contract Documents (Bonds, Insurance)
(H) General Contract Provisions
(I) Supplemental Provisions
(J) FAA Required Contract Provisions for AIP Projects
(K) Construction Safety and Phasing Plan (CSPP)
(L) Safety Plan Compliance Document (SPCD)
(M) Technical Specifications
(N) Contract Drawings (as listed in Schedule of Drawings)

In the event that any provision in any component part of the CONTRACT DOCUMENTS conflicts with any provision of any other component part, the provision of the component part first enumerated in this Paragraph 5 shall govern. The various provisions in Addenda shall be construed in the order of preference of the component part of the CONTRACT DOCUMENTS which each modified.

Addenda Issued:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Provisions such amounts as required by the CONTRACT DOCUMENTS.

7. This Contract Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

8. The CONTRACTOR shall indemnify, hold harmless and defend the OWNER, the United States of America, the Engineer, the Engineer's consultants, and their officers, board members, agents and employees (the "Indemnities") from and against all losses, suits, claims, liabilities, penalties, fines, judgments, costs and expenses, including without limitation attorneys' fees, consultants' fees and experts' fees arising out of, or in any manner predicated upon personal injury, death or property damage resulting from, relating to, caused by or arising out of (or which may be claimed to arise out of) the CONTRACTOR's performance of its obligations under this Contract Agreement; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, its subcontractors, anyone directly or indirectly employed by either the CONTRACTOR or its subcontractors, or anyone for whose acts any of the foregoing may be liable. The agreements contained in the preceding sentence do not extend to claims for damages caused by gross negligence or willful misconduct of the Indemnities without contributory fault on the part of any person, firm, or corporation.

In any and all claims against the Indemnitee or any one of the Indemnitees by any employee of the CONTRACTOR, its subcontractors, anyone directly or indirectly employed by an employee or subcontractor of the CONTRACTOR, or anyone for whose acts of such employees and subcontractors may be liable, the indemnification obligation shall not be limited to in any way by a limitation on the amount of damages, compensation or benefits payable by or for the CONTRACTOR or any subcontractor under workers compensation acts, disability benefit acts or other employee benefits acts.

In the event that any action or proceeding is brought against the Indemnitee or any one of the Indemnitee by reason of any matter for which the CONTRACTOR has hereby agreed to indemnify, hold harmless and defend, the CONTRACTOR, upon notice from the Indemnitee or any one of them, covenants to resist or defend such action or proceeding with counsel acceptable to the Indemnitee or any one of them as the case may be.

Notwithstanding the foregoing, nothing herein shall be deemed to constitute a waiver of the sovereign immunity of the **City of Manchester - Department of Aviation** which is hereby reserved to the **City of Manchester - Department of Aviation**.

The provision of this indemnification shall survive the expiration or termination of this Contract Agreement, and the CONTRACTOR's obligations hereunder shall apply whenever any one of the Indemnitees incurs

costs or liabilities described above.

9. This Contract Agreement is executed in a number of counterparts, each of which is an original and constitutes the entire agreement between the parties. This Contract Agreement shall be construed according to the laws of the **City of Manchester - Department of Aviation**. No portion of this Contract Agreement shall be understood to waive the sovereign immunity of the **City of Manchester - Department of Aviation**. This Contract Agreement shall not be amended, except as specified in the FAA General Contract Provisions.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in Four (4) Originals on the date first above written.

CITY OF MANCHESTER –
DEPARTMENT OF AVIATION

Witnessed:

By: _____

_____
Notary Public
My Commission Expires: _____

Name: _____
(type or print)

(SEAL)

Title: _____

CONTRACTOR

Witnessed:

By: _____

_____
Notary Public
My Commission Expires: _____

Name: _____
(type or print)

Title: _____

(SEAL)

CERTIFICATES OF INSURANCE

The Contractor shall furnish Certificates of Insurance as described in Supplemental Provisions, INSURANCE REQUIREMENTS and shall list the policies as follows:

Type of Insurance	Limits of Policy Coverage	Number	Insurance Co.	Expiration Date
Workman's Compensation				
General Liability				
Automobile Liability				

These Insurance Certificates as well as Performance and Payment Bonds must be furnished at or before the time of the execution of this document. Such certificates shall, with respect to comprehensive general liability and auto liability insurance, name the City of Manchester, Departments of Aviation, and any Architect and Engineering firms designated by the Owner as an additional insured (except worker's compensation).

IN WITNESS WHEREOF, the parties to these presents have executed this Contract Agreement in four (4) counterparts each of which shall be deemed an original, as of the year and day first above mentioned.

(Seal)
ATTEST:

_____ By: _____
Witness CONTRACTOR Date

_____ By: _____
Witness Department of Aviation Date

SAFETY RESPONSIBILITY COVENANT

It is hereby understood and agreed that the CONTRACTOR is responsible for health and safety on this project including, but not limited to, compliance with all applicable federal, state, and local regulations, codes, rules, orders, laws and ordinances regarding health and safety and shall, at all times, exercise and enforce reasonable precautions for the safety and welfare of all persons and property associated with or affected by this project. The CONTRACTOR's responsibility shall include providing adequate equipment and facilities necessary (including, if required, removal to a hospital) to furnish first aid to any person or person's who may be injured on the project site.

The CONTRACTOR further agrees to defend, indemnify and hold harmless the OWNER and the ENGINEER from any expense, cost or loss including but not limited to fines, demands, suits, legal fees, or penalties, including costs of corrective measures, that the CONTRACTOR, OWNER or ENGINEER may sustain by reason of the CONTRACTOR's failure to provide a safe workplace or to comply with all health and safety laws, rules and regulations in connection with the performance of this Contract Agreement.

To achieve the safety goals for this project, the CONTRACTOR shall designate a SAFETY OFFICER whose duty shall be to monitor the project on a daily basis in order to insure that all required safety measures are strictly adhered to and site safety is insured. The SAFETY OFFICER shall act for the CONTRACTOR on safety issues and shall have the right to shut down work on the site until safety deficiencies have been corrected. The project SAFETY OFFICER is designated as:

NAME:_____

TITLE:_____

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CONTRACT BONDS

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FORM OF PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

That we, _____

an individual*, a partnership*, a corporation* organized under the laws of the State of _____

_____ having a usual place of business in the State of _____

_____ as Principal, and _____

_____

a corporation organized under the laws of the State of _____

and having a usual place of business in the State of _____

as Surety, are holden and stand firmly bound and obligated unto the City of Manchester, New Hampshire, Department of Aviation (hereinafter the Owner), its successors and assigns, in the sum of _____

_____---- Dollars

($_____).

lawful money of the United States of America, to and for the true payment whereof, we bind ourselves and each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents. WHEREAS, the said Principal has by means of a written agreement dated_____

_____ , 2021, entered into a Contract Agreement with the Owner for:

Cargo Site Preparation and Hangars 6 & 7 Building Demolition at Manchester-Boston Regional Airport

a copy of which Contract Agreement is attached hereto and by reference made a part hereon.

*Strike out inapplicable terms.

NOW, THEREFORE, THE CONDITION of this obligation is such that if the said Principal and his/her subcontractors shall well and truly keep and perform all the agreements, terms and conditions in said Contract Agreement set forth and specified to be by said Principal kept and performed, and shall well and truly indemnify and save harmless the Owner against all counsel fees paid or incurred by the Owner as a result of a breach of any condition of this bond, and against all claims and suits for damage to person or property arising from carelessness or want of due care, or any act or omission on the part of said Principal during the performance of said Contract Agreement, then this obligation shall be void; otherwise, it shall remain in full force and virtue.

PROVIDED, FURTHER, that said Surety, for value received, hereby stipulates and agrees that no extension of time, or change in, alteration or addition to the terms of the Contract Agreement or to the work to be performed there under or the Contract Documents accompanying the same and no failure or refusal of the Owner to withhold any monies from the Principal shall in any way affect its obligations on this bond, and it does hereby waive notice of any such extension of time, change, alterations or addition to the terms of the Contract Agreement or the work or to the Contract Documents.

In the event that the Contract Agreement is abandoned by the Principal, or is terminated by the Owner under the provisions of said Contract Agreement, said Surety hereby further agrees that said Surety shall, if requested in writing by the Owner, take action as is necessary to complete said Contract Agreement.

This bond shall become effective at the same time as the Contract Agreement annexed hereto for the work hereinbefore mentioned.

IN WITNESS WHEREOF, we have hereunto set out hands and seals to this bond this _____ day of _____, 2021.

WITNESS:

(SEAL)

Name of Principal

By: _____

WITNESS:

(SEAL)

Name of Surety

Power of Attorney for person signing for the Surety Company must be attached.

CERTIFICATE AS TO CORPORATE PRINCIPAL

PERFORMANCE BOND

I, _____, certify that I am the _____ of the

Corporation named as Principal in the within bond; that, _____ who signed

the said bond on behalf of the principal was then _____,

of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said bond was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

_____ SEAL

(Power of attorney of person(s) signing Bond for Surety Company must be attached.)

NOTE: Date of Bond must not be prior to date of Contract Agreement. If Principal is Partnership, all partners must execute bond.

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FORM OF PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS

That we _____

an individual*, a partnership*, a corporation* organized under the laws of the State of _____

_____

having a usual place of business in the State of _____

as Principal, and _____,

a corporation organized under the laws of the State of _____

and having a usual place of business in the State of _____,

as Surety, are holden and stand firmly bound and obligated unto the City of Manchester, New Hampshire, Department of Aviation (hereinafter the Owner), its successors and assigns, in the sum of_____

_____Dollars ($ _____), lawful money of the United States of America, to and for the true payment whereof, we bind ourselves and each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has by means of a written agreement dated _____ , 2021 entered into a Contract Agreement with the Owner for:

Cargo Site Preparation and Hangars 6 & 7 Building Demolition at Manchester-Boston Regional Airport.

a copy of which Contract Agreement is attached hereto and by reference made a part hereof.

* Strike out inapplicable terms.

NOW, THEREFORE, THE CONDITION Of this obligation is such that is the said Principal and his/her subcontractors shall pay for all labor performed or furnished, for all equipment hired, including trucks, for all material used or employed in such construction, including lumber so employed which is not incorporated in the work, and for fuels, lubricants, power, tools, hardware, and supplies purchased by said principal and used in carrying out said Contract Agreement, and for labor and parts furnished upon the order of said Contractor for the repair of equipment used in carrying out said Contract Agreement, this agreement to make such payments being in compliance with the requirements of Section 16 of Chapter 447, of New Hampshire Revised Statutes, Annotated, 1955, to furnish security there under and being in fact such security, and if said Principal shall well and fully indemnify and save harmless the Owner against all counsel fees paid or incurred by the Owner as a result of a breach of any condition of this bond, and against all claims and suits for damage to person or property arising from carelessness or want of due care, or any act or omission on the part of said Principal during the performance of said Contract Agreement, then this obligation shall be void; otherwise, it shall remain in full force and virtue.

PROVIDED, FURTHER, that said Surety, for value received, hereby stipulates and agrees (1) that no extension of time, or change in, alteration or addition to the terms of the Contract Agreement or to the work to be performed there under or the Contract Documents accompanying the same and no failure or refusal of the Owner to withhold any monies from the Principal shall in any way affect its obligations on this bond, and it does hereby waive notice of any such extension of time, change, alterations, or addition to the terms of the Contract Agreement or the work or to the Contract Documents; (2) that in case of liabilities not covered by said Section 16 of Chapter 447 RSA, as amended, but covered by this bond, then the provisions of this bond shall control.

In addition to the obligations of the undersigned enumerated above, the bond is also made for the use and benefit of all persons, firms and corporations, who may furnish any material or perform any labor on account of said Contract Agreement, or rent or hire out any appliances or equipment used or employed in the execution of said Contract Agreement and they and each of them are hereby made Obligees hereunder the same as if their own proper respective names were written herein as such, and they and each of them may proceed or sue hereon, and in case of failure of said Principal to carry out the foregoing provisions made for the use and benefit of any said persons, firms and corporations, the Owner as an additional remedy may maintain an action against the undersigned in its own name, but in trust for and for the benefit of said persons, firms and corporations.

This bond shall become effective at the same time as the Contract Agreement annexed hereto for the work hereinbefore mentioned.

IN WITNESS WHEREOF, we have set our hands and seals to this bond, this _____ day of _____, 2021 In presence of:

_____SEAL
Individual Principal

_____
Business Address

_____SEAL
Individual Principal

_____
Business Address

Attest:

_____ _____SEAL
Corporate Principal

By:_____

Attest:

_____ _____SEAL
Corporate Surety

_____
Business Address

Countersigned: By: _____

By: _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

PAYMENT BOND

I, _____ , certify that I am the

_____ of the Corporation named as Principal in

the within bond; that, _____ who signed the said

bond on behalf of the principal was then _____,

of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said bond was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

_____ SEAL

(Power of attorney of person(s) signing Bond for Surety Company must be attached.)

NOTE: Date of Bond must not be prior to date of Contract Agreement. If Principal is Partnership, all partners must execute bond.

WARRANTY BOND

KNOW ALL MEN BY THESE PRESENTS

That we_____ , an individual*, a partnership*, a company* organized under the laws of the State of_____ _____ , having a usual place of business in the State of _____, as Principal, and _____, a company organized under the laws of the State of _____, and having a usual place of business in the State of _____, as Surety, are holden and stand firmly bound and obligated unto the City of Manchester, New Hampshire – Department of Aviation , (hereinafter the Owner), its successors and assigns, in the sum of _____ _____ ($_____.00), lawful money of the United States of America, to and for the true payment whereof, we bind ourselves and each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has, by means of a written agreement dated _____,2021, entered into a Contract Agreement with the Owner for a copy of which contract is attached hereto and by reference made a part hereof.

* Strike out inapplicable terms.

NOW, THEREFORE, THE CONDITION of this obligation is such that is the said Principal and his subcontractors shall remedy any defects due the contractor's failure to conform to the contract requirements or to faulty materials or workmanship, defect of equipment, or design furnished by the Contractor, and pay for any damage to other work resulting therefrom, which shall appear **within a period of one (1) year from the date of final acceptance** of the work provided for in the Contract Agreement, then this obligation to be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the Owner shall give Contractor and Surety notice of Observed defects with reasonable promptness.

PROVIDED, FURTHER, that said Surety, for value received, hereby stipulates and agrees that no extension of time, or change in, alteration or addition to the terms of the Contract Agreement or to the work to be performed thereunder or the specifications accompanying the same and no failure or refusal of the Owner to withhold any monies from the Principal shall in any way affect its obligations on this bond, and it does hereby waive notice of any such extension of time, change, alterations, or addition to the terms of the Contract Agreement or the work or to the specifications.

IN WITNESS WHEREOF, we have set our hands and seals to this bond, this _____ day of _____, 20_____ In presence of:

_____SEAL
Individual Principal

_____
Business Address

_____SEAL
Individual Principal

_____
Business Address

Attest:

_____ _____SEAL
Corporate Principal

By:_____

Attest:

_____ _____SEAL
Corporate Surety

_____
Business Address

Countersigned: By: _____

By: _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

WARRANTY BOND

I, _____ , certify that I am the _____ of the Corporation named as Principal in the within bond; that, _____ who signed the said bond on behalf of the principal was then _____, of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said bond was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

_____ SEAL

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FAA GENERAL CONTRACT PROVISIONS

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FAA GENERAL CONTRACT PROVISIONS
TABLE OF CONTENTS

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Section 10 Definition of Terms

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	**AASHTO**	The American Association of State Highway and Transportation Officials.
10-02	**Access Road**	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	**Advertisement**	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	**Airport**	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	**Airport Improvement Program (AIP)**	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	**Air Operations Area (AOA)**	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	**Apron**	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	**ASTM International (ASTM)**	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	**Award**	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	**Bidder**	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	**Building Area**	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	**Calendar Day**	Every day shown on the calendar.
10-13	**Certificate of Analysis (COA)**	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.

Paragraph Number	Term	Definition
10-14	**Certificate of Compliance (COC)**	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	**Change Order**	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	**Contract**	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	**Contract Item (Pay Item)**	A specific unit of work for which a price is provided in the contract.
10-18	**Contract Time**	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	**Contractor**	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	**Contractors Quality Control (QC) Facilities**	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	**Contractor Quality Control Program (CQCP)**	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	**Control Strip**	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.

Paragraph Number	Term	Definition
10-23	**Construction Safety and Phasing Plan (CSPP)**	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
10-24	**Drainage System**	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	**Engineer**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	**Equipment**	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	**Extra Work**	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	**FAA**	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	**Federal Specifications**	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	**Force Account**	**a.** Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. **b.** Owner Force Account - Work performed for the project by the Owner's employees.
10-31	**Intention of Terms**	Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard

Paragraph Number	Term	Definition
		shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
10-32	**Lighting**	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	**Major and Minor Contract Items**	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	**Materials**	Any substance specified for use in the construction of the contract work.
10-35	**Modification of Standards (MOS)**	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	**Notice to Proceed (NTP)**	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	**Owner**	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is: **City of Manchester, NH – Department of Aviation d/b/a Manchester-Boston Regional Airport**
10-38	**Passenger Facility Charge (PFC)**	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	**Pavement Structure**	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	**Payment bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	**Performance bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	**Plans**	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'

Paragraph Number	Term	Definition
10-43	**Project**	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	**Proposal**	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	**Proposal guaranty**	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	**Quality Assurance (QA)**	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	**Quality Control (QC)**	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	**Quality Assurance (QA) Inspector**	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	**Quality Assurance (QA) Laboratory**	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	**Resident Project Representative (RPR)**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	**Runway**	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	**Runway Safety Area (RSA)**	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	**Safety Plan Compliance Document (SPCD)**	Details how the Contractor will comply with the CSPP.
10-54	**Specifications**	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	**Sponsor**	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.

Paragraph Number	Term	Definition
10-56	**Structures**	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	**Subgrade**	The soil that forms the pavement foundation.
10-58	**Superintendent**	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	**Supplemental Agreement**	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%: (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	**Surety**	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	**Taxilane**	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	**Taxiway**	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	**Taxiway/Taxilane Safety Area (TSA)**	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	**Work**	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	**Working day**	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). See Advertisement for Bids and Instruction to Bidders of these specifications.

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

Bidders must be pre-qualified for this project in accordance with the City of Mancehester Procurement code. Please refer to the Airport's website for additional information regarding pre qualification.

Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the Owner at the time of bid opening.

20-03 Contents of proposal forms. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

A prebid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. Refer to the Advertisement of Bids for the time, date, and place of the meeting.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force

with the Owner at the time the Owner issues the proposal to a prospective bidder.

c. Documented record of Contractor default under previous contracts with the Owner.

d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

20-06 Examination of plans, specifications, and site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

20-07 Preparation of proposal. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals which they propose for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and responsible bidder. A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.

f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid guarantee. Each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-13 Public opening of proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms,* of this section.

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than the number of days outlined in the Advertisement of Bids prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

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END OF SECTION 20

Section 30 Award and Execution of Contract

30-01 Consideration of proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern. Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within **One Hundred Eighty (180) calendar days** of the date specified for publicly opening proposals, unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

30-03 Cancellation of award. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

30-04 Return of proposal guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals.* Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds.*

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within **fifteen (15) calendar days** from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract*, of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of work and quantities. The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

Supplemental agreements shall be approved by the FAA and shall include all applicable Federal contract provisions for procurement and contracting required under AIP. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds.

40-03 Omitted items. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work

that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

All change orders, supplemental agreements, and contract modifications must be reviewed by the FAA.

40-05 Maintenance of traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD). The Contractor shall also refer to AC 150/5210-5 (latest revision), Painting, Marking and Lighting of Vehicles Used on an Airport and AC 150/5370-2 (latest revision), Operational Safety on Airports During Construction for applicable standards.

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (http://mutcd.fhwa.dot.gov/), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior

to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the RPR; or

c. Use such material for the Contractor's own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 Final cleanup. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

END OF SECTION 40

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Section 50 Control of Work

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

50-02 Conformity with plans and specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of contract, plans, and specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs

contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

50-04 List of Special Provisions. Special Provisions (as applicable) are included in the Supplemental General Conditions and Special Provision Section of the Contract Documents.

50-05 Cooperation of Contractor. The Contractor shall be supplied with **five (5)** hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 Construction layout and stakes. The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and

control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): **AutoCAD, Microsoft Excel and PDF Format**.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being

complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within ten (10) calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

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Section 60 Control of Materials

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

All Contractor QC test data may be provided to the RPR in electronic PDF format, in lieu of hard copies.

The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP), as applicable.

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.

b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. The Contractor shall provide dedicated space for the use of the engineer, RPR, and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity.

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

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Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows:

> **No other major work anticipated within or adjacent to the project location during construction.**

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Participation. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights

of either party to the contract.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic,* and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on the CS sheet(s) of the project plans and in the narrative located within the specifications.

70-09 Use of explosives. The use of explosives is not permitted on this project.

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for

such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

REFER TO THE PROJECT AND CSPP PLANS FOR THE SCHEDULE OF WORK FOR ALL PROJECT PHASING AND ALLOWED TIME.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall

take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

REFER TO THE PROJECT PLANS FOR ANY KNOWN UTILITY SERVICE LOCATIONS WITHIN THE PROJECT LIMITS AND ASSOCIATED CONTACT INFORMATION.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport Owner a minimum of seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.

d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.

e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 No waiver of legal rights. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and

regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements. Refer to the Project Contract Agreement for the insurance requirements.

END OF SECTION 70

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least **twenty-five percent (25%)** of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR fourteen (14) days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within **ten (10) days** of the NTP date. The Contractor shall notify the RPR at least **twenty-four (24) hours** in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least **ten (10) days** prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least **twenty-four (24) hours** in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

The project schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified. It shall include information on the sequence of work activities, milestone dates, and activity duration. The schedule shall

show all work items identified in the project proposal for each work area and shall include the project start date and end date.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a **twice** monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least **forty-eight (48) hours** prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

REFER TO THE PROJECT PLANS FOR THE CSPP AND THE OPERATIONS IMPACTS.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time. The Owner shall coordinate any changes with the FAA.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The **number of calendar days** shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

80-07.1 Contract time based on calendar days. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

REFER TO THE INFORMATION TO BIDDERS, BID PROPOSAL SUMMARY, AND AGREEMENT OF THE CONTRACT DOCUMENTS FOR THE LIQUIDATED DAMAGES AND ALLOWED CONSTRUCTION TIME.

The maximum construction time allowed for the Project will be the sum of the time allowed for individual phase schedules as outlined in the CSPP but not more than the overall calendar days allowed. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such

work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of ten (10) days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of ten (10) days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall

plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

Section 90 Measurement and Payment

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.
When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term "ton" will mean the short ton consisting of 2,000 pounds (907 km) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be

Term	Description
	corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted. In the event inspection reveals the scales have been "overweighing" (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them. Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment. All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other

Term	Description
	items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 *Payment for Extra Work*.
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the "basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, **ten percent (10%)** of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than thirty (30) days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least ninety-five percent (95%) of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost

of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.

b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within thirty (30) calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and*

Disputes.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one (1) year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one (1) year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work. Light Emitting Diode emitting diode (LED) light fixtures with the exception of obstruction lighting, must be warranted by the manufacturer for a minimum of four (4) years after date of installation inclusive of all electronics.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within fourteen (14) days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Contractor Final Project Documentation. Approval of final payment to the Contractor is

contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

c. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

d. Complete all punch list items identified during the Final Inspection.

e. Provide complete release of all claims for labor and material arising out of the Contract.

f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.

g. When applicable per state requirements, return copies of sales tax completion forms.

h. Manufacturer's certifications for all items incorporated in the work.

i. All required record drawings, as-built drawings or as-constructed drawings.

j. Project Operation and Maintenance (O&M) Manual(s).

k. Security for Construction Warranty.

l. Equipment commissioning documentation submitted, if required.

END OF SECTION 90

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FAA
Airports

Contract Provision Guidelines for Obligated Sponsors and Airport Improvement Program Projects

Contents

ACCESS TO RECORDS AND REPORTS
(2 CFR § 200.333, 2 CFR § 200.336, FAA Order 5100.38)

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to ENSURE EQUAL EMPLOYMENT OPPORTUNITY (41 CFR part 60-4, Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables

Goals for minority participation for each trade (Rockingham County):	**4.0%**
Goals for female participation in each trade:	6.9%

These goals are applicable to all of the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area; including but not limited to pits, quarries, etc.; they shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is State of New Hampshire, Rockingham County, Town of Londonderry.

BREACH OF CONTRACT TERMS
(2 CFR § 200 Appendix II(A))

Any violation or breach of terms of this contract on the part of the ***Contractor*** or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide ***Contractor*** written notice that describes the nature of the breach and corrective actions the ***Contractor*** must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the ***Contractor*** must correct the breach. Owner may proceed with termination of the contract if the ***Contractor*** fails to correct the breach by the deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

BUY AMERICAN PREFERENCE
(Title 49 USC § 50101)

The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

Certificate of Buy American Compliance for Manufactured Products

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:

a) Only installing steel and manufactured products produced in the United States;
b) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing U.S. domestic product.
3. To furnish U.S. domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

☐ The bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that supports the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver – The cost of the item components and subcomponents produced in the United States is more that 60 percent of the cost of all components and subcomponents of the "item". The required documentation for a Type 3 waiver is:

a) Listing of all product components and subcomponents that are not comprised of 100 percent U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).
b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver – Total cost of project using U.S. domestic source product exceeds the total project cost using non-domestic product by 25 percent. The required documentation for a Type 4 of waiver is:

a) Detailed cost information for total project using U.S. domestic product
b) Detailed cost information for total project using non-domestic product

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date	Signature
Company Name	Title

GENERAL CIVIL RIGHTS PROVISIONS
(49 USC § 47123)

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

GENERAL CIVIL RIGHTS – TITLE VI ASSURANCES
(49 USC § 47123, FAA Order 1400.11)

Title VI Solicitation Notice:

The City of Manchester - Department of Aviation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Title VI Contract Clauses for Compliance with Nondiscrimination Requirements

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor"), agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.

4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

    a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or

    b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq*., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq*.), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq*.) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);

- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

CLEAN AIR AND WATER POLLUTION CONTROL
(2 CFR § 200, Appendix II(G))

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC § 740-7671q) and the Federal Water Pollution Control Act as amended (33 USC § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds $150,000.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS
(2 CFR § 200, Appendix II(E))

1. Overtime Requirements.

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration (FAA) or the Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this clause.

4. Subcontractors.

The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this clause.

COPELAND "ANTI-KICKBACK" ACT
(2 CFR § 200, Appendix II(D), 29 CFR Parts 3 and 5)

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 USC 874 and 40 USC 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

DAVIS-BACON REQUIREMENTS
(2 CFR § 200, Appendix II(D), 29 CFR Part 5)

1. Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided* that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized

representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers, or mechanics to be employed in the classification, or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program: *Provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding.

The Federal Aviation Administration or the sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the Contractor, Sponsor, Applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and Basic Records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker; his or her correct classification; hourly rates of wages paid (including rates of contributions or

costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records that show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and that show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.* the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at *www.dol.gov/whd/forms/wh347instr.htm* or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, Sponsor, or Owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) The payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;

(2) Each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(3) Each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the sponsor, the Federal Aviation Administration, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, Sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman’s hourly rate) specified in the Contractor’s or subcontractor’s registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice’s level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that

determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees, and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 USC 1001.

CERTIFICATION OF OFFERER/BIDDER REGARDING DEBARMENT
(2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5)

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT
(2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5)

The successful bidder, by administering each lower tier subcontract that exceeds $25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: http://www.sam.gov.
2. Collecting a certification statement similar to the Certification of Offerer /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

DISADVANTAGED BUSINESS ENTERPRISES
(49 CFR part 26)

SOLICITATION PROVISION

The requirements of CFR 49 Part 26, Regulations of the U. S. Department of Transportation, apply to this contract. It is the policy of The City of Manchester-Department of Aviation to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. These requirements apply to all bidders/offerors, including those who qualify as a DBE. The City of Manchester-Department of Aviation encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

PRIME CONTRACT PROVISIONS

Contract Assurance (§ 26.13) –

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner deems appropriate, which may include, but is not limited to:

1) Withholding monthly progress payments;
2) Assessing sanctions;
3) Liquidated damages; and/or
4) Disqualifying the Contractor from future bidding as non-responsible.

Prompt Payment (§26.29) – The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than **fifteen (15)** days from the receipt of each payment the prime contractor receives from the Owner. The prime contractor agrees further to return retainage payments to each subcontractor within **fifteen (15)** days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Owner. This clause applies to both DBE and non-DBE subcontractors.

DISTRACTED DRIVING
(Executive Order 13513, DOT Order 3902.10)

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving", (10/1/2009) and DOT Order 3902.10, "Text Messaging While Driving", (12/30/2009), the Federal Aviation Administration encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or subgrant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding $3,500 that involve driving a motor vehicle in performance of work activities associated with the project.

ENERGY CONSERVATION REQUIREMENTS
(2 CFR § 200, Appendix II(H))

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 USC 6201*et seq*).

EQUAL OPPORTUNITY CLAUSE
(2 CFR 200, Appendix II(C), 41 CFR § 60-1.4, 41 CFR § 60-4.3, Executive Order 11246)

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identify, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff, or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance*: Provided, however*, that in the event a contractor becomes involved in, or is threatened with, litigation

with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

(1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR part 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted

are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period and the Contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person

or female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions, including specific review of these items, with onsite supervisory personnel such superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally), the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these

specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR part 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)
(29 USC § 201, et seq)

SOLICITATION CLAUSE

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers.

The ***Contractor*** has full responsibility to monitor compliance to the referenced statute or regulation. The ***Contractor*** must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

CERTIFICATION REGARDING LOBBYING
(31 USC § 1352 – Byrd Anti-Lobbying Amendment, 2 CFR part 200, Appendix II(J), 49 CFR part 20, Appendix A)

The Bidder or Offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

PROHIBITION OF SEGREGATED FACILITIES
(41 CFR § 60)

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970
(29 CFR part 1910)

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The ***Contractor*** must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The ***Contractor*** retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The ***Contractor*** must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

PROCUREMENT OF RECOVERED MATERIALS
(2 CFR § 200.322, 40 CFR part 247, Solid Waste Act)

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

1) The contract requires procurement of $10,000 or more of a designated item during the fiscal year; or
2) The Contractor has procured $10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
b) Fails to meet reasonable contract performance requirements; or
c) Is only available at an unreasonable price.

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS
(Sections 415 and 416 of Title IV, Division L of the Consolidated Appropriations Act, 2014, DOT Order 4200.6)

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

1) The applicant represents that it is (✓) is not (✓) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

2) The applicant represents that it is (✓) is not (✓) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

TERMINATION OF CONTRACT

TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS) (2 CFR § 200 Appendix II(B))

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work, and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the Owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

1) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;

2) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;

3) reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and

4) reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

TERMINATION FOR DEFAULT (CONSTRUCTION) (FAA Advisory Circular 150/5370-10, Section 80-09)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights, and remedies associated with Owner termination of this contract due to default of the Contractor.

TERMINATION FOR DEFAULT (EQUIPMENT)
(2 CFR § 200 Appendix II(B))

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract if the Contractor:

1. Fails to commence the Work under the Contract within the time specified in the Notice- to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
4. Fails to comply with material provisions of the Contract;
5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements; or
6. Becomes insolvent or declares bankruptcy.

If one or more of the stated events occur, the Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within ten (10) days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the Work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

TRADE RESTRICTION CERTIFICATION
(49 USC § 50104, 49 CFR part 30)

SOLICITATION CLAUSE

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (USTR);

2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the USTR; and

3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18 USC Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR or
2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list or
3) who incorporates in the public works project any product of a foreign country on such USTR list.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by USTR, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration (FAA) may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

VETERAN'S PREFERENCE
(49 USC § 47112(c))

In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 USC 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

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DAVIS-BACON WAGE SCHEDULE
CARGO SITE PREPARATION AND HANGAR 6 & 7 BUILDING DEMOLITION

STATE OF NEW HAMPSHIRE
ROCKINGHAM COUNTY – BUILDING
NH20210022 – 07/16/2021

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General Decision Number: NH20210022 07/16/2021
Superseded General Decision Number: NH20200022

State: **New Hampshire**

Construction Type: **Building**

County: **Rockingham County in New Hampshire.**

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	02/12/2021
2	04/30/2021
3	07/16/2021

ASBE0006-014 09/01/2019

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR	$ 38.75	29.75

BOIL0029-004 01/01/2017

	Rates	Fringes
BOILERMAKER	$ 42.42	24.92

BRNH0003-001 06/01/2020

	Rates	Fringes
BRICKLAYER	$ 42.55	28.02

ELEC0490-006 01/01/2021

	Rates	Fringes
ELECTRICIAN (Includes Low Voltage Wiring and Alarm Installation	$ 31.45	20.94

ELEV0004-007 01/01/2021

	Rates	Fringes
ELEVATOR MECHANIC	$ 63.47	35.83

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day and the Friday after Thanksgiving.

b. VACATION: Employer contributes 8% of basic hourly rate for 5 years or more of service; 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

IRON0007-037 09/16/2020

	Rates	Fringes
IRONWORKER (Reinforcing and Structural)	$ 27.24	23.58

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* LABO0976-008 12/01/2020

	Rates	Fringes
LABORER: Common or General	$ 21.76	20.07

PLUM0131-004 06/07/2021

	Rates	Fringes
PIPEFITTER	$ 37.00	24.40

SUNH2015-008 06/16/2017

	Rates	Fringes
CARPENTER, Includes Acoustical Ceiling Installation and Form Work (Excludes Drywall Hanging and Drywall Finishing/Taping	$ 24.47	8.55
CEMENT MASON/CONCRETE FINISHER	$ 22.04	9.70
DRYWALL FINISHER/TAPER	$ 25.00	0.00
DRYWALL HANGER, Includes Metal Stud Installation	$ 25.00	0.00
GLAZIER	$ 26.75	3.48
LABORER: Mason Tender - Brick	$ 16.52	4.74
OPERATOR: Backhoe/Excavator/Trackhoe	$ 24.02	4.25
OPERATOR: Crane	$ 27.42	3.83
OPERATOR: Loader	$ 22.25	2.13
OPERATOR: Roller	$ 23.56	3.28
PAINTER (Brush and Roller)	$ 18.10	1.58
PAINTER: Spray	$ 22.99	3.28

PLUMBER, Includes HVAC Pipe Installation	$ 26.72	5.56
ROOFER	$ 19.22	0.00
SHEET METAL WORKER, Includes HVAC Duct Installation	$ 24.88	5.46
SPRINKLER FITTER (Fire Sprinklers)	$ 31.29	9.78
WATERPROOFER	$ 26.69	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year.

Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data.

EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29

CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

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SUPPLEMENTAL PROVISIONS

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SUPPLEMENTAL PROVISIONS

I. CONTRACT DOCUMENT DRAWINGS

Attention shall be directed to the General Provisions, FAA Required Contract Provisions for AIP Project, and these Supplemental Provisions for complete definition and enumeration of the Contract Documents. Attention shall be paid to the drawings, specifications, and addenda and other items enumerated in Contract Agreement which also form a part of this Contract.

A. Dimensions

The drawings are made to scale, unless otherwise noted, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the work, and in no case by scaling the prints. The CONTRACTOR (and his/her subcontractors) shall study and compare all drawings and verify all figures before laying out or constructing the work and shall be responsible for any and all errors in the Contract work which might have been avoided thereby. Whether or not an error is believed to exist, deviations from the drawings and the dimensions given thereon shall be made only after approval in writing is obtained from the Engineer. The CONTRACTOR (and his/her subcontractors) shall take all measurements of existing established conditions notwithstanding the figured dimensions are not in agreement with the CONTRACTOR's (or his/her subcontractors) measurements, the Engineer shall be immediately notified and the Engineer will promptly adjust same.

B. Diagrammatic Drawings

1. Work and Materials Included
   Plans or drawings where the work is shown diagrammatically indicate approved working systems. Every piece of material, fitting, fixture or small equipment is not shown nor is every difficulty or interference that may be encountered. To carry out the true intent and purpose of the Contract Documents, all necessary parts to make complete, approved working systems, or installations shall be included as if detailed on the drawings.
2. Location of Construction
   The location of construction or installations shown on the drawings, unless exactly dimensioned, shall be considered as approximate only. The CONTRACTOR (and his/her subcontractors) shall adjust the position of the construction and installation in accordance with good working practices and as directed or approved by the Engineer to meet interferences, provide proper clearance and provide proper access space for operations and maintenance.

C. Typical Details

Where shown on the drawings, typical details shall apply to each and every item of the Contract work where such items are incorporated and the detail is applicable. Unless noted otherwise, such typical details shall be applicable in full.

II. SPECIAL INSPECTION REQUIREMENTS

A. The project will be financially aided by grants from the Federal Aviation Administration (U. S. Government) and from the New Hampshire Department of Transportation, Bureau of Aeronautics. All work done under this Contract will be subject to the rules and regulations and the approval of said Administration and Department. The CONTRACTOR shall provide authorized representatives of said Administration and Department with proper access to the work for inspection purposes at any time during the preparation for or progress on the Contract work.

B. The Contractor shall throughout the course of the work give proper notice to the Engineer and all others having jurisdiction of his/her schedule of operations. It shall be the Contractor's responsibility to have all parts of the work inspected and approved by the proper authorities as required.

C. All applicable inspection and certification requirements of the Standard Specifications referred to herein will be enforced, in addition to any other inspections or certifications deemed necessary by the Engineer.

III. "OR EQUAL" CLAUSE

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendor's names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and, any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

IV . CONTRACTOR AGREEMENT INDEMNIFICATION

In consideration of the utilization of CONTRACTOR's services by the City of Manchester, Department of Aviation (Owner) – Manchester-Boston Regional Airport (AIRPORT) and other valuable considerations, the receipt of which is hereby acknowledged, CONTRACTOR agrees that all persons furnished by CONTRACTOR shall be considered the CONTRACTOR's employees or agents and that CONTRACTOR shall be responsible for payment of all unemployment, social security and other payroll taxes including contributions from them when required by law.

CONTRACTOR hereby agrees to protect, defend, indemnify and hold the Owner, AIRPORT and Architect/Engineer and their respective employees, agents, officers and servants free and harmless from any and all losses, claims, liens, demands and causes of action of every kind and character including but not limited to, the amounts of judgements, penalties, interests, court costs, legal fees and all other expenses incurred by the Owner, AIRPORT or Architect/Engineer arising in favor of any party, including claims, liens, debts, personal injuries, including employees of the Owner, AIRPORT and Architect/Engineer death or damages to property (including property of the Owner, AIRPORT and Architect/Engineer) and without limitation by enumeration, all other claims or demands of every character occurring or in any way incident to, in connection with or arising or directly indirectly out of the Contract Agreement. CONTRACTOR agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands or suits at the sole handle, of the CONTRACTOR. CONTRACTOR also agrees to bear all other costs and expense related thereto, even if the claim or claims alleged are groundless, false or fraudulent. This provision is not intended to create any cause of action in favor of any third party against CONTRACTOR or the Owner/AIRPORT or to enlarge in any way the CONTRACTOR'S liability but is intended solely to provide for indemnification of the Owner/AIRPORT from liability for damages or injuries to third persons or property arising from CONTRACTOR'S performance hereunder.

V. INSURANCE REQUIREMENTS

CONTRACTOR shall maintain in effect certain insurance coverage, which is described as follows:

COVERAGE	LIMIT OF LIABILITY
Commercial General Liability: Bodily and Personal Injury; Products and Completed Operations Coverage	Bodily Injury and Property Damage, Combined Limits of $2,000,000 each Occurrence, and $5,000,000 aggregate
Automobile Liability	$1,000,000 combined single limit for: (1) Any Auto or (2) All Owned, Hired, and Non-Owned Autos
Excess Liability Coverage, or Umbrella Coverage, for Commercial General Liability and Automobile Liability	$5,000,000.00
All-Risks or Builder's Risk	Not Applicable for this Project
Workers' Compensation	Statutory for Workers' Compensation
Aggregate Limits are per 12-month policy period unless otherwise indicated.	

At all times during the term of the Contract Agreement and any extensions or renewals, CONTRACTOR shall provide and maintain insurance coverage that meets the Contract Agreement requirements. Prior to beginning performance under this Contract Agreement or any extensions thereof, or at any time upon the AIRPORT'S request, or each time coverage is renewed or updated, the CONTRACTOR shall furnish to the AIRPORT current certificates of insurance, endorsements, all policies, or other policy documents evidencing adequate coverage, as necessary. CONTRACTOR shall be responsible for and pay (a) all premiums and (b) any claims or losses to the extent of any deductible amounts. CONTRACTOR waives any claim it may have for premiums or deductibles against the OWNER, its officers, agents, or employees.

Subcontractor's Commercial General Liability and Property Damage Insurance and Automobile Liability Insurance

The CONTRACTOR shall either: (a) require each of his/her subcontractors to procure, and to maintain during the life of his/her subcontract, Subcontractor's Public Liability and Property Damage Insurance and Automobile Liability and Property Damage Insurance of the types and amount specified above, or (b) insure the activities of all subcontractors under the CONTRACTOR's own policies as specified above.

Form of Insurance**.** The form of the insurance shall be approved by the AIRPORT; such approval (or lack thereof) shall never (a) excuse non- compliance with the terms of this Section, or (b) waive or estop the Owner from asserting its rights to terminate the Contract Agreement. The policy issuer shall (1) have a Certificate of Authority to transact insurance business in the State of New Hampshire, or (2) be an eligible non-admitted insurer in the State of New Hampshire and have a Best's rating of at least B+, and a Best's Financial Size Category of Class VI or better, according to the most current Best's Key Rating Guide.

Required Coverage**.** The Owner, AIRPORT and the Architect/Engineer shall be an Additional Insured under this Contract Agreement, and all policies, except Worker's Compensation, shall explicitly name the Owner, AIRPORT and Architect/Engineer as an Additional Insured. The Owner, AIRPORT and Architect/Engineer shall enjoy the same coverage as the Named Insured without regard to other contract provisions. CONTRACTOR waives any claim or right of subrogation to recover against the OWNER, its officers, agents, or employees. Each of CONTRACTOR'S insurance policies, except Worker's Compensation, must contain coverage waiving such claim. Each policy, except Workers' Compensation, must also contain an endorsement that the policy is primary to any other insurance available to the Additional Insured with respect to claims arising under the Contract Agreement.

Notice. CONTRACTOR SHALL GIVE 30 DAYS' ADVANCE WRITTEN NOTICE TO THE AIRPORT IF ANY OF ITS INSURANCE POLICIES ARE CANCELED OR NON-RENEWED. Within the 30-day period, CONTRACTOR shall provide other suitable policies in order to maintain the required coverage. If CONTRACTOR does not comply with this requirement, the AIRPORT, at their sole discretion, may immediately suspend CONTRACTOR from any further performance under the Contract Agreement and begin procedures to terminate the Contract Agreement for default.

VI. SPECIAL HAZARDS

The Contractor's and Subcontractor's Public Liability, Property Damage, Automobile Liability, and Automobile Property Damage insurance coverages shall provide adequate protection against the following special hazards:

A. Damage or injury to aircraft or persons in aircraft operating on or near the project site, resulting from any operations under this Contract.

B. Damage or injury resulting from the use, storage, handling or transportation of explosives in connection with the Contract work, as applicable.

VII. PROTECTION OF LIVES AND HEALTH

In order to protect the lives and health of his/her employees under the contract, the CONTRACTOR shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the

Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. He/she alone shall be responsible for the safety, efficiency, and adequacy of his/her plant, appliances, and methods, and for any damage which may result from their failure of their improper construction, maintenance or operation.

VIII. PRICING OF CONSTRUCTION CONTRACT CHANGE ORDER OR SUPPLEMENTAL AGREEMENT DOCUMENTATION

A. GENERAL

1. The contract language contained in this Section will supplement and take precedence over all other Change Order (CO) or Supplemental Agreement (SA) pricing contract provisions in the Contract Documents provided by the Owner, Design-Builder (CONTRACTOR), Construction Manager (CONTRACTOR), General Contractor (CONTRACTOR) and/or Architect/Engineer. It is understood that these contract provisions will govern the pricing and administration of all change order proposals to be submitted by the Construction Manager and/or the General Contractor and/or the Trade Contractors and/or the Subcontractors and/or all other lower tier sub-subcontractors (All referred to as "CONTRACTOR" in this Section). In the event of a conflict between the other Contract Documents used for the Project, the change order pricing contract provisions in this Section shall govern.
2. Contractor agrees that it will incorporate the provisions of this Section into all agreements with lower tier Contractors. It is understood that these change order pricing provisions apply to all types of contracts and/or subcontracts specifically including lump sum (or fixed price contracts), and/or, unit price contracts. It is further understood that these change order provisions will apply to all methods of change order pricing specifically including lump sum change order proposals and unit price change order proposals.
3. Whenever change order or Supplemental Agreement proposals to adjust the contract price become necessary, the Owner will have the right to select the method of pricing to be used by the Contractor in accordance with the pricing provisions found in this Section. The options will be (1) lump sum change order proposal, or (2) unit price change order proposal as defined in the following provisions.
4. The words "Change Order" in this Section applies to both Change Orders and Supplemental Agreements as defined by Section 10-12 and 10-48 of the General Provisions of these specifications.

B. CHANGE ORDER TYPES

1. Lump Sum Change Orders. Provides a single lump sum amount for extra work that comprises of multiple task and a well-defined amount of effort.
2 Unit Price Change Orders. Provides a per unit amount for a single task that will be measured for payment upon completion of the task.
3. If a CO proposal is not acceptable to the Owner and prompt agreement between the two parties cannot be reached, the Owner at its sole option, may order the Contractor to proceed with the work on a "Time and Material" basis. The resulting CO will be treated as a Lump Sum CO for determining cost. A Time and Material worksheet will be used to track time and materials on a daily basis and must be signed by the Contractor and the Engineer each day.

C. CHANGE ORDER PROPOSALS

1. The following will apply to all types of Change Orders:
    a. For all labor the Contractor shall receive the rate of the personnel reasonably anticipated to perform the work, or in the case of Time and Materials, the wage actually paid as shown by his certified payroll, which shall be at least the minimum rate established by the Contract Documents.
        i. The labor rate shall include allowable overhead labor burden defined as employer's net actual cost of payroll taxes (FICA, Medicare, SUTA, FUTA), net actual cost for employer's cost of union benefits (or other usual and customary fringe benefits if the employees are not union employees), and net actual cost to employer for worker's compensation insurance.
        ii. For all foremen in direct charge of the work the Contractor shall receive the actual wage

paid the foremen, as shown on (his certified payroll). No part of the salary or expense of anyone above the grade of foreman and having general supervision of the work will be included in the labor item.

iii. Contractor shall receive the actual cost of such labor and labor burden, to which shall be added a maximum of fifteen percent (15%) of the sum thereof.

b. For all materials used by the Contractor, he shall receive the actual cost of such materials, less any allowable cash discounts, delivered on the work, including delivery charges as shown by original receipted bills, to which shall be added a maximum of five percent (5%) of the sum thereof.

c. For any major power operated machinery, trucks or equipment, which it may be necessary to use, the Owner shall allow the Contractor the rental price as set forth in the standard schedule of equipment rental prices established by the Rental Rate Blue Book for Construction Equipment, current edition as published by Dataquest, or equivalent publication.

i. Should the proper completion of the work require equipment of a type not covered by the above-mentioned schedule, the Owner shall allow the Contractor a reasonable rental price to be agreed upon in writing before the work is begun.

ii. No percentage shall be added to the amounts of any of the above stated equipment rental prices, but the price as set forth in the schedule or agreed upon shall be total compensation allowed for the use of such equipment.

iii. Major equipment is defined as tools and equipment with an individual purchase cost of more than $750.

d. For all cost of all insurance, bonds, and taxes imposed by law on labor employed on the work, the Contractor shall receive the actual amount paid without being marked up.

i. In the event the Contractor has been required to furnish comprehensive general liability insurance and/or performance and/or payment bonds as part of the base contract price, a final contract change order will be processed to account for the Contractor's net increase or decrease in comprehensive general liability insurance costs and/or bond premium costs associated with change orders to Contractor's base contract price.

e. All extra work performed by a subcontractor will be according to the above requirements as if the work were preformed directly by the Contractor. Extra work performed by a subcontractor may be marked up by the General Contractor by a maximum of five percent (5%). If there are second and third tier subcontractors, subcontractors can markup lower tier subcontractors by a maximum of five percent (5%), the aggregate mark-up of all subcontractors involved shall be a maximum of twenty percent (20%), including the General Contractors markup. The maximum mark-up for all labor, materials and subcontractors is twenty-five percent (25%).

f. In no event will any lump sum or percentage amounts for "contingency" be allowed to be added as a separate line item in change order estimates. Unknowns attributable to labor hours will be accounted for when estimating labor hours anticipated performing the work. Unknowns attributable to material scrap and waste will be estimated as part of material costs.

g. The Contractor's proposals for changes in the contract amount or time shall be submitted within seven (7) calendar days of the Owner's request, unless the Owner extends such period of time due to the circumstances involved. If such proposals are not received in a timely manner, if the proposals are not acceptable to Owner, or if the changed work should be started immediately to avoid damage to the project or costly delay, the Owner may direct the Contractor to proceed with the changes without waiting for the Contractor's proposal or for the formal change order to be issued. In the case of an unacceptable Contractor proposal, the Owner may direct the Contractor to proceed with the changed work on a time and material basis with an agreed upon "not-to-exceed" price for the work to be performed. Such directions to the Contractor by the Owner shall be confirmed in writing within seven (7) calendar days. The cost or credit, and or time extensions will be determined by negotiations as soon as practical thereafter and incorporated in a Change Order to the Contract.

D. UNAUTHORIZED CHANGES IN THE WORK

1. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented.

IX. AIRPORT SECURITY

A. DESCRIPTION

1. The Contractor shall comply with all applicable federal (FAA, TSA, etc.), state and local laws. This includes but is not limited to: 14 CFR Part 77 (Obstructions to Navigable Airspace), 14 CFR Part 139 (Certification of Airports), 49 CFR 1540 (Civil Aviation Security – General Rules) and 49 CFR Part 1542 (Airport Security), as amended.
2. Provide protection for materials, tools and equipment being employed on the Project including the tools of workers. The Owner shall not be held to have incurred any liability for loss of, and damage to, materials, tools and equipment of the Contractor, or of those employed by him, by contract or otherwise.
3. The Contractor shall employ such security service as he may deem necessary to properly protect and safeguard the work. The Owner shall not in any way be liable or responsible for the damage or loss to the work due to trespass or theft.
4. The Owner may provide such security service as they deem necessary to protect his/her interest during the progress of the work. Any protection provided by the Owner shall not in any way relieve the Contractor of the responsibility for the safety of the work and acceptance thereof.
5. The Contractor shall be responsible for controlling access to the work area and insuring that airport security is maintained at all times, including set-back security clearances enforced at the Airport, parking garage(s) and parking lots. The Federal Aviation Administration (FAA) and Transportation Security Administration (TSA) may impose fines of $11,000.00 or more for security violations and incursions into active aircraft operation areas. In addition, the Owner may impose additional fines and/or penalties for such violations. The Contractor shall pay all fines assessed against the Airport due to violations caused by the Contractor and his personnel, subcontractors, and vendors.
6. Parking of personal cars at the work sites will not be permitted, except in areas indicated on Contract Drawings. The Contractor, as a subsidiary obligation shall provide adequate and safe transportation for his employees from the area where the cars are parked, to and from the work area. Employees and drivers of work vehicles will be instructed as to proper access roads and will be cautioned that unauthorized use of aircraft pavements or other areas outside the designated work area may lead to their arrest and subsequent payment of fines.
7. Trucks delivering material to an actual work area will be subject to search and provided with an escort.
8. All orders for material shall instruct the supplier of the procedures to be followed.
9. The Contractor shall submit to the Owner within ten (10) days after signing of the contract a written Safety Plan Compliance Document (SPCD) detailing his methods of operations including but not limited the precautions the Contractor proposes for the control of vehicle traffic including flag person, signs, escorts and any other measures the Contractor proposes. After Owner approval of the operations, the Contractor shall follow it explicitly. The Owner may close the work at any time this schedule is violated so as not to endanger airport or aircraft operations. Such closure shall not be considered a valid reason for extending the contract time or for any claim for extras by the Contractor.
10. All security arrangements shall be subject to the approval of the Owner.
11. The Contractor's personnel and vehicles will not have access to the entire airport, but shall be limited to work areas and the staging area.
12. In addition to the information contained herein, the Contractor shall reference the requirements of the Manchester-Boston Regional Airport Safety and Security Phasing Plan, including for the project badging and gate security requirements.
13. This section contains supplemental information and/or requirements for Airport Improvement Program (AIP) projects on the AOA.

B. PROTECTION

1. Continuously maintain protection as necessary to protect the work as a whole and in part, and adjacent property and improvements from accidents, injuries or damage.
2. Properly protect the work:
   a. With lights approved by the Owner, guard rails, temporary covers, and barricades.

b. Enclose excavations with proper barricades.
c. Brace and secure all parts of the work against storm and accident.
d. Provide such additional forms of protection which may be necessary under existing circumstances.

3. Provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the work and to exclude unauthorized persons from the work area. When regulated by Building Code, OSHA or other authority, such legal requirements for protection shall be considered as minimum requirements; be responsible for the protection in excess of such minimum requirements as required

C. WORK IN THE AIR OPERATIONS AREA

1. If the Contractor is required to perform work within the AIR OPERATIONS AREA (AOA), the Contractor shall be required to follow the requirements outlined herein and in accordance with Section X. entitled Security Badging Requirements.
   These requirements include, but are not limited to, the following:
   a. Badging and identifying Contractor personnel;
   b. Securing access point to the AOA.

D. CONTROL OF SITE

1. The Contractor shall ensure that no alcohol, firearm, weapon or controlled substance enters or is used at the Project site. The Contractor shall immediately remove from the site and terminate the employment of any employee found in violation of this provision.
2. Install approved temporary enclosure of partially completed construction areas to prevent unauthorized entrance, vandalism and theft.
3. Secure temporary storage areas as required to prevent theft.
4. To the extent possible through reasonable control and protection methods, supervise performance of work in a manner and by means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging, or otherwise deleterious exposures during construction period. Such exposures include (where applicable, but not by way of limitation) static loading, dynamic loading, internal pressures, external pressures, high or low temperatures, thermal shock, high or low humidity, air contamination or pollution, water, solvents, chemicals, light, radiation, puncture, abrasion, heavy traffic, soiling, bacteria, insect infestation, combustion, electrical current, high-speed operation, improper lubrication, unusual wear, misuse, incompatible interface, destructive testing, misalignment excessive weathering, unprotected storage, improper shipping and handling, theft and vandalism.
5. The airfield is a completely secured and controlled access site. The primary means for controlling access to the site is the surrounding fence and gates. For any given work area, the access for vehicles, equipment, materials, and manpower shall be restricted to the routes depicted in the plans and in the Construction Safety and Phasing Plan (CSPP).
6. Controlled access points to the work area that impact the AOA shall be manned by an approved and trained gate guard. The Owner will provide gate guards to control access to the work areas through gates that are identified as contractor access points. Any and all vehicles entering the airfield are subject to search by gate guards or Owner personnel.
7. Failure to provide sufficient security and safety can result in serious penalties and fines of up to $10,000 per incident. If for any reason, the Owner is fined for actions or inactions of the Contractor, the Contractor shall be liable for any and all fines incurred.

X. SECURITY BADGING REQUIREMENTS

A. AIRPORT SECURITY IDENTIFICATION DISPLAY AREA (SIDA) BADGES:

Full-time competent and responsible employees of the Contractor, such as superintendents and foremen, shall obtain an Airport SIDA badge. The SIDA badge requires fingerprint screening, a criminal history check, and successful completion of security training upon receiving approval to undergo the training. The badge application process may take up to fourteen (14) days, the Contractor shall plan accordingly.

The Contractor shall have a minimum of 1/2 (50%) of on-site workers submit to the badging process, unless

otherwise approved by MHT Operations Management. Badged individuals must display their Airport issued badges on their outermost garment at all times while on the airfield.

At all times while on the airfield, non-badged workers must be escorted by a badged worker and comply with the following:

1. Within 100 ft of a badged worker
2. Within visual contact of a badged worker
3. Able to respond to the requests of a badged worker
4. Able to command the attention of a badged worker

Any non-badged workers will not be allowed on the airfield without valid picture identification acceptable to the TSA (current and valid driver's license, passport, etc.), and shall remain with a badged worker or Airport escort at all times. All non-badged workers under escort of a badged worker and will be required to have a temporary construction badge approved by the Owner.

Refer to the Construction Safety and Phasing Plan (CSPP) documents for more information associated with obtaining badges and vehicle permit stickers or inspections. The Contractor will need to appoint a badge coordinator that will coordinate with the Airport Security Badging Office. The cost for a New Badge application process and training is $45 per applicant and will be billed directly to the Contractor.

The Contractor is responsible for the cost of security badges, including replacements thereof at no cost to the Owner. The Contractor's personnel and its Subcontractor's personnel losing badges will be charged for replacement and/or lost badges at the current rate at no cost to the Owner. All badging costs (including the complete application process and training) shall be considered incidental to the cost of the contract and shall not be measured or paid for separately.

B. INDENTIFICATION OF EMPLOYEES

The Contractor shall provide the Owner with a list of all employees on the job site and their badge number. The list shall include subcontractors and temporary badged employees. The list shall be updated and submitted weekly.

END OF SECTION

SUPPLEMENTAL PROVISIONS
CARGO FACILITY SITE PREPARATION AND HANGARS 6 AND 7 BUILDING DEMOLITION

BUILDING HAZARDOUS MATERIALS REPORT

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Mr. David Brouillet, Engineer

McFarland Johnson
53 Regional Drive
Concord, New Hampshire 03301

Re: Hazardous Materials Surveys-5 & 7A Green Drive

TLG Job Number 21-18674

Prepared By: Richard Lent

Report Date: April 26, 2021

The LAWSON GROUP
Thinking. Without the Box.

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LAWSON
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603 228 3610
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April 26, 2021

Mr. David Brouillet, Engineer
McFarland Johnson
53 Regional Drive
Concord, New Hampshire 03301

Re: Hazardous Materials Surveys–5 & 7A Green Drive
TLG Job Number 21-18674

Dear Mr. Brouillet:

Please find the results of our Hazardous Materials/Asbestos Survey attached to this report. The Surveys were conducted on April 8, 2021 for McFarland Johnson at two (2) hanger buildings at 5 & 7A Green Drive in Manchester, New Hampshire.

Thank you for utilizing the services of The Lawson Group. We enjoyed working with you on this project and would welcome the opportunity to work with you on future projects. We trust that you will find everything in order; however, should you have any questions, please contact me at your earliest convenience.

Sincerely,

The Lawson Group

Richard Lent
Senior Environmental, Health and Safety Consultant
State of NH Asbestos Inspector License No. AI 000061

Enclosures

Introduction:

On April 8, 2021, Richard Lent, Senior Safety & Health Professional with The Lawson Group (TLG), performed an inspection for Asbestos-Containing Building Materials (ACM/ACBM) at two (2) old hanger-type buildings located at the Manchester Airport in Manchester, New Hampshire. In addition to suspect ACM, TLG inspected or screened for Lead Paint, and Polychlorinated Biphenyl (PCB). Other potentially hazardous materials that could be impacted by the planned demolition of the building were noted visually during the Survey and a general description is provided in the report.

Discussion:

Asbestos Survey:

The Surveys included all accessible areas of both buildings. The Surveys were conducted to document the presence of ACM in interior and exterior building materials that may be impacted during scheduled demolition, as required by State of New Hampshire and the United States Environmental Protection Agency (EPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), regulations.

Based on the analytical results for the bulk samples collected, **ACM are present** on the interior of both buildings at 5 and 7A Green Drive.

During the surveys, samples were collected from following guidelines in the Asbestos Hazard Emergency Response Act (AHERA), and was performed to comply with the EPA, NESHAP, and State of New Hampshire Department of Environmental Services (NH DES) Env-A 1804.01 regulations, which require a thorough inspection for ACBM be conducted prior to any demolition/renovation of a facility. Suspect materials were analyzed for Asbestos content at an accredited laboratory. According to Federal and State regulations, materials containing greater than one percent (> 1%) Asbestos by dry weight are Asbestos containing.

TLG performed only limited exploratory demolition in representative locations to identify areas where hidden ACM may be present. Since not all these types of locations could be accessed, additional ACM may be present in these areas, and care should be utilized when opening wall or ceiling chases.

Asbestos-Containing Building Materials:

5 Green Drive

ACM	General Location	% Asbestos	Approx. Quantity
12 x 12 Grey/White Floor Tile and Mastic	Old Office areas	2-5% Chrysotile	1550 SF
Old Flooring Mastic	Rear side of office section under floor leveling materials	5% Chrysotile	750 SF **

SF = Square feet

**- The exact amount of this material is only a best estimate. It is located under floor leveling/concrete skim coat and exact quantities could only be determined by additional floor demolition.

7 Green Drive

ACM	General Location	% Asbestos	Approx. Quantity
12 x 12 Grey/White Floor Tile and Mastic	Old Sign Office area (Tile only)	3% Chrysotile	450 SF
Brown Flooring	Old Bathroom in Hanger section (bottom layer)	3% Chrysotile	65 SF

ACM must be abated in accordance with the State of New Hampshire and Federal requirements prior to activities such as renovation or demolition, which may directly disturb these materials.

Abatement in this case would include the removal and proper disposal by a New Hampshire licensed Asbestos Abatement Contractor of all listed ACM. Following this, and removal, disposal, or recycling of the other listed hazardous or potentially hazardous materials, the buildings could be scheduled for demolition.

No Asbestos was detected in the following materials that were sampled and analyzed during the survey.

Non-Asbestos Materials:

Material	General Location
Gypsum Wall Board and Joint Compound	Throughout both Buildings
White Textured Roof Paint	5 Green Drive, Metal Roof Coating
Window, Door, and Roof Caulking	5 Green Drive
Flooring Paper and Black Mastic	5 Green Drive, under old Ceramic Tile locations
Ceiling Tiles	5 & 7A Green Drive
Ceramic Tile Mastics	5 Green Drive
Cove Base Mastic	
Ceiling Skim Coat	7A Green Drive
Yellow/Black Linoleum	7A Green Drive, old Hanger Bathroom, top layer

The analytical results for the Asbestos samples are in Appendix A.

Lead-Based Paint:

During the Survey, TLG collected representative paint chip samples from painted surfaces with the most common colors at the buildings included in the inspection.

TLG collected eight (8) representative paint chip samples and submitted them to an accredited laboratory to be analyzed for Lead content.

None of the collected samples were above The United States Department of Housing and Urban Development (HUD) guideline for Lead (>0.5% Lead by dry weight). The analytical results for the Lead samples are in Appendix B.

PCB Survey:

The intent of the PCB Survey was to screen representative Caulking Materials in the buildings for possible PCB content. TLG collected two (2) samples of representative caulking materials and submitted them to the laboratory to be analyzed for PCB content.

No PCB was detected in either of the samples collected. The EPA PCB bulk material limit is 50 parts per million (50 ppm). The analytical results for the PCB samples are in Appendix C.

Other Potentially Hazardous Materials:

Some potentially hazardous materials were noted in some locations throughout the buildings. These materials should also be removed, recycled, or properly disposed of before demolition.

- **Fluorescent Lights** – Bulbs and/or Ballasts should be removed for proper disposal prior to demolition.
- **Mercury Thermostat Switches –** Three (3) were noted at 5 Green Street.
- **Heating Oil Tank-** One (1) was noted at 5 Green Street.

Since both buildings contain various types of maintenance equipment and trucks, oils and other materials associated with these vehicles are also stored in both buildings.

APPENDIX A

ANALYTICAL RESULTS

Asbestos

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EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 21-04-01878

Client: The Scott Lawson Group Ltd.
20 Chenell Drive
Concord, NH 03301

Received Date: 04/12/2021
Analyzed Date: 04/14/2021, 04/15/2021
Reported Date: 04/15/2021

Project/Test Address: Airport; 5 Green

Client Number: 201023

Fax Number: 603-228-3871

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01878-001	B01A		Gray Paint-Like; White Powdery; Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	5% Cellulose 2% Fibrous Glass 93% Non-Fibrous
21-04-01878-002	B01B		White Paint-Like; Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
21-04-01878-003	B01C		Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
21-04-01878-004	B01D		Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	15% Cellulose 85% Non-Fibrous
21-04-01878-005	B01E		Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	10% Cellulose 90% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 201023 **Report Number:** 21-04-01878
Project/Test Address: Airport; 5 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01878-006	B02A		White Paint-Like; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-007	B02B		White Paint-Like; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-008	B03A		Gray Pliable; Homogeneous	NAD	5% Talc 95% Non-Fibrous
21-04-01878-009	B03B		Gray Pliable; Homogeneous	NAD	5% Talc 95% Non-Fibrous
21-04-01878-010	B03C		Gray Pliable; Homogeneous	NAD	2% Fibrous Glass 98% Non-Fibrous
21-04-01878-011	B04		White Pliable; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-012	B05A		Yellow/Black Adhesive; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01878-013	B05B		Yellow/Black Adhesive; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 201023 **Report Number:** 21-04-01878
Project/Test Address: Airport; 5 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01878-014	B06A		Gray Paint-Like; Brown Fibrous; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
21-04-01878-015	B06B		Brown Fibrous; Homogeneous	NAD	99% Cellulose 1% Non-Fibrous
21-04-01878-016	B07		Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-017	B08A		Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-018	B08B		Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-019	B09A		Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-020	B09B		Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-021	B10A		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	

Environmental Hazards Services, L.L.C

Client Number: 201023 **Report Number:** 21-04-01878
Project/Test Address: Airport; 5 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01878-022	B10B		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-023	B11A		Red Cementitious; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-024	B11B		Red Cementitious; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-025	B12A		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-026	B12B		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-027	B13A		Gray Vinyl; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
21-04-01878-028	B13B		Gray Vinyl; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
21-04-01878-029	B14A		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-030	B14B		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	

Environmental Hazards Services, L.L.C

Client Number: 201023 **Report Number:** 21-04-01878
Project/Test Address: Airport; 5 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01878-031	B15A		Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-032	B15B		Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
21-04-01878-033	B16A		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-034	B16B		Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
21-04-01878-035	B17A		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	60% Cellulose 35% Fibrous Glass 5% Non-Fibrous
21-04-01878-036	B07B		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	60% Cellulose 35% Fibrous Glass 5% Non-Fibrous

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EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 21-04-01900

Client: The Scott Lawson Group Ltd.
20 Chenell Drive
Concord, NH 03301

Received Date: 04/12/2021
Analyzed Date: 04/14/2021
Reported Date: 04/15/2021

Project/Test Address: 21-18674; Airport; 7 Green

Client Number: 201023

Fax Number: 603-228-3871

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01900-001	040821-18674-B18A		White Powdery; Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	15% Cellulose 85% Non-Fibrous
21-04-01900-002	040821-18674-B18B		White Paint-Like; White Powdery; Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	15% Cellulose 85% Non-Fibrous
21-04-01900-003	040821-18674-B18C		White Powdery; White/Brown Fibrous; Gray Chalky; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
21-04-01900-004	040821-18674-B19A		White Powdery; Homogeneous	NAD	100% Non-Fibrous

Client Number: 201023 **Report Number:** 21-04-01900

Project/Test Address: 21-18674; Airport; 7 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01900-005	040821-18674-B19B		White Powdery; Homogeneous	NAD	100% Non-Fibrous
21-04-01900-006	040821-18674-B19C		White Granular Paint-Like; White Powdery; Off- White Chalky; Inhomogeneous	NAD	100% Non-Fibrous
21-04-01900-007	040821-18674-B20A		Tan-Gray Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
21-04-01900-008	040821-18674-B20B		Tan-Gray Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
21-04-01900-009A	040821-18674-B21A	Mastic I	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-009B	040821-18674-B21A	Mastic II	Black Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-010A	040821-18674-B21B	Mastic I	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-010B	040821-18674-B21B	Mastic II	Black Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 201023 **Report Number:** 21-04-01900

Project/Test Address: 21-18674; Airport; 7 Green

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
21-04-01900-011A	040821-18674-B22A	Linoleum	Tan/Brown/Black Vinyl; Gray Fibrous; Inhomogeneous	NAD	25% Cellulose 10% Fibrous Glass 65% Non-Fibrous
21-04-01900-011B	040821-18674-B22A	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-012A	040821-18674-B22B	Linoleum	Tan/Brown/Black Vinyl; Gray Fibrous; Inhomogeneous	NAD	25% Cellulose 10% Fibrous Glass 65% Non-Fibrous
21-04-01900-012B	040821-18674-B22B	Mastic II	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-013	040821-18674-B23A		White-Gray Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
21-04-01900-014	040821-18674-B23B		White-Gray Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
21-04-01900-015	040821-18674-B24A		Black Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
21-04-01900-016	040821-18674-B24B		Black Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

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APPENDIX B

ANALYTICAL RESULTS

Lead Paint

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Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 21-04-01873

Client: The Scott Lawson Group Ltd.
20 Chenell Drive
Concord, NH 03301

Received Date: 04/12/2021
Analyzed Date: 04/15/2021
Reported Date: 04/15/2021

Project/Test Address: 21-18674; McFarland; Airport
Collection Date: 04/08/2021

Client Number: 201023

Laboratory Results

Fax Number: 603-228-3871

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
21-04-01873-001	040821-18674-L01	5	520	0.052	
21-04-01873-002	040821-18674-L02	5	480	0.048	
21-04-01873-003	040821-18674-L03	5	250	0.025	
21-04-01873-004	040821-18674-L04	5	53	0.0053	
21-04-01873-005	040821-18674-L05	7	510	0.051	
21-04-01873-006	040821-18674-L06	7	180	0.018	
21-04-01873-007	040821-18674-L08	7	120	0.012	

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APPENDIX C

ANALYTICAL RESULTS

PCB

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EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

PCB Bulk Analysis Report

Report Number: 21-04-01896

Client: The Scott Lawson Group Ltd.
20 Chenell Drive
Concord, NH 03301

Received Date: 04/12/2021
Reported Date: 04/19/2021

Project/Test Address: Mcfarland; Airport

Client Number:
201023

Laboratory Results

Fax Number:
603-228-3871

Lab Sample Number: 21-04-01896-001
Client Sample Number: 040821-18674-PC1
Sample Matrix: Bulk
Reporting Limit (mg/kg): 0.99

Preparation Date: 04/15/2021
Analysis Date: 04/19/2021
Sample Weight (g): 1.019
Narrative ID:

Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Aroclor 1262 (mg/kg)	Aroclor 1268 (mg/kg)
<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99

Lab Sample Number: 21-04-01896-002
Client Sample Number: 040821-18674-PC2
Sample Matrix: Bulk
Reporting Limit (mg/kg): 19

Preparation Date: 04/15/2021
Analysis Date: 04/19/2021
Sample Weight (g): 1.091
Narrative ID:

Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Aroclor 1262 (mg/kg)	Aroclor 1268 (mg/kg)
<19	<19	<19	<19	<19	<19	<19	<19	<19

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SUPPLEMENTAL PROVISIONS
CARGO FACILITY SITE PREPARATION AND
HANGARS 6 AND 7 BUILDING DEMOLITION

NEW HAMPSHIRE DEPARTMENT OF ENVINRONMENTAL SERVICES
ASBESTOS REMOVAL NOTIFICATION FORM AND INSTRUCTIONS

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Asbestos Demolition/Renovation Notification Form

VERSION 1.5

INSTRUCTIONS

NHDES-A-01-016
10/21/2019
RSA/Rule: RSA 141-E:4, I and II, Env-A 1800

Introduction

New Hampshire Code of Administrative Rule Env-A 1804 requires owners or operators of demolition and asbestos abatement activities to complete and submit, by mail or delivered in hand, a *Demolition/Renovation Notification Form* to the Asbestos Program of the New Hampshire Department of Environmental Services (NHDES) and the local government official, as applicable for the worksite location, at least 10 working days before the start of demolition or asbestos abatement activities. Notification to the Asbestos Program is not required for homeowners who are personally conducting their own asbestos abatement under certain conditions, and any asbestos abatement activities that are equal to or less than 10 linear feet, 25 square feet, or three cubic feet. Notification is also required for disposal of asbestos-containing material.

Purpose

To notify the NHDES Asbestos Program of planned demolition and asbestos abatement activities so that the Asbestos Program can protect human health by verifying that asbestos-containing material will be safely managed prior to the start of those activities.

Applicability

Applies to the owner or operator of the following: any demolition of a facility, even when no asbestos-containing material is present in the facility; a renovation that involves asbestos abatement of asbestos-containing material that is greater than 10 linear feet, 25 square feet, or 3 cubic feet; and any disposal of asbestos-containing material. The owner of a private, single-family residence occupied by the owner and not used as a rental dwelling, who performs asbestos abatement activities on that residence is not subject to the notification requirements for renovations as long the owner personally performs the work and the work is not done within 6 months of the selling the home, but the homeowner is subject to the notification requirements for disposal of asbestos-containing material.

Statute and Administrative Rules

RSA 141-E Asbestos Management and Control
Env-A 1800 Asbestos Management and Control
Env-Sw 2100 Management and Control of Asbestos Disposal Sites Not Operated After July 10, 1981

Fee

Fees to accompany the *Demolition/Renovation Notification Form* are:

CONTACT INFORMATION

Contact

New Hampshire Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

CONTACTS

Application Status :
603-271-4609

James Tilley, NHDES Asbestos Program Manager :
asbestos@des.nh.gov

ADDITIONAL LINKS

NHDES Asbestos Management Website

- $300 for projects involving greater than 260 linear feet, 160 square feet, or 35 cubic feet of regulated asbestos-containing material.
- $50 for projects involving more than 10 linear feet, 25 square feet, 3 cubic feet of regulated asbestos-containing material, and less than 260 linear feet, 160 square feet, and 35 cubic feet of regulated asbestos-containing material.
- $25 for revisions to a previous notification.
- NO FEE is required for projects not more than 10 linear feet, 25 square feet, or 3 cubic feet of regulated asbestos-containing material or for demolitions that do not involve regulated asbestos-containing material.

Processing Time
Notification is accomplished upon Asbestos Program receipt of a **complete** notification form at least 10 working days before the start of the project.

Term/Renewal
None.

Modification/Amendments
The Asbestos Program must be notified in writing of changes to the original notification conditions in the Demolition/Renovation Notification Form before the revised condition occurs. A $25 fee must accompany each revision.

Transferability
Non-transferable.

Appeals
Any person aggrieved by a final decision may file an appeal to the Air Resources Council in accordance with Env-AC 200.

Status of Current Applications
Contact James Tilley, NHDES Asbestos Program Manager, at asbestos@des.nh.gov or (603) 271-0885.

Download Mail-in Form

NHDES-A-01-016

Asbestos Demolition/Renovation Notification Form

Air Resources Division/Compliance Bureau
Asbestos Management and Control Program
RSA/Rule: RSA 141-E:4, I and II and Env-A 1800

***Complete all sections of this form in detail.**

***See the attached Directions for Completing Your Asbestos Demolition/Renovation Notification Form.**

I. TYPE OF NOTIFICATION (Check One)

☐ New Notification	☐ Revised Notification	☐ Cancelled Project	Fee Enclosed: $

II. PROJECT TYPE (Check All That Apply)

☐ Demolition ☐ Renovation ☐ Pickup and Disposal ☐ *Emergency

**For emergency projects, describe the emergency on a supplemental sheet. Attach any government order requiring the work.*

For Official Use, Do not write in this box

**Contact the department to obtain waiver # for inclusion on this form.*
Waiver #: _____ Date Obtained: _____

III. BUILDING INFORMATION

Building/Site Name			
Street Address	Town/City	State	ZIP Code
Year Constructed	Size (ft^2)	Number of Floors	
Current Use	Prior Use		

IV. ACM INSPECTION AND WORK DETAILS

Asbestos Supervisor to perform abatement: _____ Cert #: AS_____

Asbestos Inspection Conducted by: _____ Date: _____

Type of inspection (Check all that apply): ☐ Visual ☐ Analytical Testing ☐ No ACM Present

Asbestos Abatement	**Demolition**	**Weekly Work Schedule**
Start Date: _____	Start Date: _____	Days of Work: _____
End Date: _____	End Date: _____	Time of Day of Work: _____ to _____

ACM Present		**ACM to be Abated**		**List Types of Asbestos and Location in Building**
Friable	**Non-Friable**	**Friable**	**Non-Friable**	
ft	ft	ft	ft	
ft^2	ft^2	ft^2	ft^2	
ft^3	ft^3	ft^3	ft^3	

Briefly describe work practices to be employed. Attach additional pages if needed.

asbestos@des.nh.gov
Phone (603) 271-1373; Fax (603) 271-7053
PO Box 95, Concord, NH 03302-0095

V. PROPERTY OWNER INFORMATION			
Owners Name			
Owners Mailing Address	Town/City	State	ZIP Code
Owner Contact			
Contact's Phone	Email (Optional)		

VI. ABATEMENT CONTRACTOR INFORMATION			
Company Name			
Company Mailing Address	Town/City	State	ZIP Code
Company Contact	Phone Email (Optional)		

VII. DEMOLITION CONTRACTOR INFORMATION			
Company Name			
Company Mailing Address	Town/City	State	ZIP Code
Company Contact	Phone Email (Optional)		

VIII. ACM WASTE TRANSPORTER				
Transporter Name	Mailing Address	Town/City	State	ZIP Code
Transporter Contact Name	Phone Number			

IX. FINAL WASTE DISPOSAL FACILITY				
Facility Name	Street Address	Town/City	State	ZIP Code
Phone Number				

X. I Certify That the Above Information Is Correct	
Signature	Print Name
Title	Date

SUPPLEMENTAL PROVISIONS
CARGO FACILITY SITE PREPARATION AND
HANGARS 6 AND 7 BUILDING DEMOLITION

HANGAR 6 TANK CLOSURE REPORTS

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DES Waste Management Division
29 Hazen drive; PO Box 95
Concord, NH 03302-0095

UST Tank Closure Report
Manchester-Boston Regional Airport
5 Green Drive
Londonderry, New Hampshire

NHDES Site #199707010
UST Facility #0111000

Prepared for:
Manchester-Boston Regional Airport
One Airport Road, Suite 300
Manchester, New Hampshire 03103
Phone Number: (603) 624-6539
Contact Name: John Hagopian
Airport Environmental Specialist
E-mail: jhagopian@flymanchester.com

Prepared by:
The Smart Associates, Environmental Consultants, Inc.
72 North Main Street
Concord, New Hampshire 03301
Phone Number: (603) 224-7550
Contact: Glenn R. Smart, P.G.
E-mail gsmart@smartenvironmental.com

January 4, 2012

Karen Martel

Digitally signed by Karen Martel
DN: cn=Karen Martel, c=US, o=The Smart Associates, email=kmartel@smartenvironmental.com
Reason: I have reviewed this document
Date: 2012.01.24 14:33:52 -05'00'

TABLE OF CONTENTS

1.0 INTRODUCTION

In a letter dated June 17, 2011 (Appendix A), the New Hampshire Department of Environmental Services (NHDES) Oil Remediation and Compliance Bureau requested that Manchester-Boston Regional Airport (the Airport) permanently close two 50,000-gallon underground storage tanks (USTs) located at 7 Green Drive in Londonderry, New Hampshire (Figures 1, 2, & 3 and Photograph #1 & #2). The USTs were formerly used to store Jet A aviation fuel as part of the former Wiggins Airways (Wiggins) fuel farm (NHDES UST Facility #011100). The fuel farm consisted of sixteen USTs, the majority of which were permanently closed in 1997 (Table 1). Following the closure of the fuel farm tanks, a site investigation report was generated and the site was assigned the NHDES site #199107010.

In January 1997 three aboveground storage tanks were installed at the site (NHDES AST Facility #970710A) and used for fuel storage until they were removed on April 5, 2004 (Table 1).

The Airport opted to leave the two 50,000-gallon tanks in place with the intention to potentially use them for future fuel storage. The two tanks were cleaned and temporarily closed by Cyn Environmental on May 13, 2004. The tanks passed a compliance inspection on January 29, 2010 and the Airport was issued a Permit to Operate on December 1, 2010 (Appendix A).

2.0 SITE INVESTIGATION ACTIVITIES

In August 2011 in response to the June 17th letter from NHDES, the Airport's on-call environmental consultant, The Smart Associates, Environmental Consultants, Inc. (TSA), contracted with C.A.B. Services, Inc. (CAB) to initiate the process of closing the two 50,000-gallon tanks. During the initial site activities, an unregistered 6,000-gallon single-walled steel tank was discovered at the site (Photograph #3). The precise history of the tank is not known. However, the presence of what appear to be filler ports on the top of the tank and a pump located in a concrete vault on top of the tank indicated it was once used to store fuel (likely Jet-A). When discovered, the tank served as an overflow storage tank for the oil/water separator (Photograph #4). The oil/water separator received flow from two drains that collected incidental spillage from hand pumps used to collect samples from the 50,000-gallon tanks to assess the quality of the fuel. Additional flow to the oil/water separator came from a hooded catch basin (Photograph #5) located in proximity to the aboveground piping through which tank trucks refilled the fuel farm USTs. The catch basin would collect any spilled fuel and direct it to the oil/water separator. Since the temporary closure of the 50,000-gallon USTs, additional flow through the catch basin-oil/water separator-holding tank system has consisted solely of storm water runoff.

Flow from the 6,000-gallon UST discharged to the Airport's sub-drainage basin #19 which directs storm water runoff to the south, through another oil/water separator, into detention basin #12, and ultimately to the Merrimack River just north of its confluence with Little Cohas Brook.

On August 23, 2011, personnel from TSA and CAB opened the oil/water separator and the 6,000-gallon UST. The former was nearly filled with fluid that appeared to be "weathered" Jet-A jet fuel and water; the latter was full of fluid that appeared to be mostly water. On August 24, 2011, personnel from CAB pumped the contents of the oil/water separator (approximately 400 gallons) into a trailer-mounted tank, and the contents of the 6,000-gallon UST into a frac-tank (Photograph #6). Several inches of sludge at the bottom of the tank was also pumped into the trailer-mounted tank. Several inches of water was also pumped from one of the 50,000-gallon USTs (Tank #10) into the frac-tank. Once the fluid was removed from the oil/water separator and the 6,000-gallon UST (Photograph #7), both structures were cleaned and all pipes leading into and out of them were plugged.

The weathered fuel from the oil/water separator and the sludge from the 6,000-gallon UST were removed from the site and prepared to be transported to Maine Energy Recovery Company for recycling. Analytical results for a sample of this material are included in Table 2 and copies of the laboratory data sheets are included in Appendix B. A bill of lading documenting the transport of the material to the disposal facility is included in Appendix C.

On August 25th and 26th, 2011, personnel from CAB excavated four test pits (Photographs #8, #9, #10, & #11) adjacent to the two 50,000-gallon USTs, the oil/water separator, and the 6,000-gallon UST (see Figure 3). Soil samples were field screened for volatile organic compounds (VOCs) using a photo-ionization detector. Groundwater was encountered at a depth of approximately 8 feet below ground surface, in three test pits (TP-1, TP-2, and TP-3) excavated adjacent to the tanks (TP-2 was excavated to a depth of approximately 6 feet and no groundwater was not encountered), and composite soil samples and groundwater grab samples were collected by personnel from EnviroSense to be used as tank closure samples. The samples were sent to the Absolute Resource Associates laboratory in Portsmouth, New Hampshire where the soil samples were analyzed for VOCs, polycyclic aromatic hydrocarbon compounds (PAHs), and diesel range total petroleum hydrocarbon compounds (TPH); and the groundwater samples were analyzed for VOCs and PAHs.

On October 6, 2011 CAB removed asphalt and concrete pavement and excavated soil material from around the newly discovered 6,000-gallon tank. The excavated soils was stockpiled on polyethylene sheeting and screened for VOCs with a PID. During this process, a 2,000-gallon UST was encountered adjacent to, and north of the 6,000-gallon tank (Figures 2 & 3). The contents of the newly discovered tank were pumped to the frac-tank and the tank was cleaned in place. The 6,000-gallon and 2,000-gallon tanks

were then excavated, removed, and staged on site pending final disposal (Photographs #12, #13, #14, & #15). The tanks were in generally good shape, with some incidental rust, but no observed breeches in the tank integrity except for damage incurred during the removal process. A single, composite soil sample was taken from eight sampling locations in the excavated soil stockpile (Photograph #16). The sample was sent to Resource Associates laboratory to be analyzed VOCs, TPH, and PAH. The excavation was filled in at the end of the day in anticipation of predicted heavy rainfall.

On October 11, 2011, TSA and CAB personnel met on site with Jason Domke of NHDES to discuss the tank closure strategy. It was decided to re-open the excavation in the area of the two removed tanks, dewater the excavation (Photograph #17) by pumping groundwater to the frac-tank, and excavate and screen additional soil material to determine the nature and extent of soil contamination around the tanks. The excavated soil was screen with a PID and staged in the stock pile area. A single, composite soil sample was taken from eight sampling locations in the excavated soil stockpile. The sample was sent to Resource Associates laboratory to be analyzed VOCs, TPH, and PAH.

Due to the size of the two 50,000-gallon USTs, their proximity to the former Wiggins Airways hangar, and the relatively shallow depth to the water table, CAB suggested that it would be advisable to close the tanks in place rather than risk potential structural damage to the building. On October 14, 2011, Jason Domke approved the Airport's request to close the tanks in place. Mr. Domke also notified the Airport that based upon the results of field screening data and test pit and composite soil sample laboratory analytical results no further soil excavation would be required.

Registration forms were completed for the 6,000-gallon UST and the 2,000-gallon UST and submitted to the NHDES on October 14, 11.

On October 17, 2011, CAB began dewatering the excavation to facilitate the collection of tank closure samples for the 6,000-gallon and 2,000-gallon USTs. A total of four composite soil samples and a single groundwater grab sample were collected in proximity to where the tanks had been removed. The samples were sent to Resource Associates laboratory where the soils were analyzed for VOCs, TPH, and PAHs; and the groundwater sample was analyzed for VOCs and PAHs.

On October 18, 2011, the two 50,000-gallon tanks were excavated (Photograph #18), the tops of the tanks were cut away (Photograph #19), and the final closure process was initiated. The tanks were in excellent condition with no observed breeches of tank integrity (Photograph #20). Based upon the soil and groundwater sampling results, NHDES approved the use of the excavated soils as fill material. Additional sand and gravel was purchased to complete the in-place closure of the tanks (Photographs 20 through 24), as well as the excavation left after the removal of the two smaller tanks. The tank closure process was completed on October 24, 2011.

Completed and signed NHDE UST/AST System Closure Notification Forms are included in Appendix D.

3.0 FIELD SCREENING AND LABORATORY ANALYTICAL DATA

Soil and groundwater samples were collected for field screening and laboratory analytical purposes. All soil field screening was completed following guidance provided in the NHDES Master Quality Assurance Plan *SOP No. HWRB-12 Jar Headspace Technique – Field Screening Soil Samples*. Laboratory analyses were conducted by a New Hampshire NELAC certified laboratory.

3.1 Field Screening Data

As noted above, representative soil samples were collected from the test pits and excavations at the site and field screened for VOCs using a PID. A total of three field screening samples were collected on August 25, 2011, one each from test pits TP-1, TP-2, and TP-3. A single sample was collected on August 26, 2011 from TP-4. The field screening data from these samples are summarizes in Table 3. The concentration of VOCs detected in the four samples ranged from 33.1 parts per million (ppm) to 459.0 ppm.

A total of nine soil samples were collected from the excavation around the 6,000-gallon UST and the 2,000-gallon UST and areas adjacent to them to determine the nature and extent of possible soil contamination in the area. The field screening data from these samples are summarizes in Table 4. The concentrations of VOCs detected ranged from 5.0 ppm to 194.0. The latter reading was recorded from a sample collected in saturated soils in the southern end of the excavation, and was an order of magnitude higher than any of the other samples.

Two rounds of composite soil samples were collected from the soil stockpile on October 6, 2011 and October 11, 2011, respectively. The samples were delivered to the Absolute Resource Associates laboratory and analyzed for VOCs, TPH, and PAHs. The purpose of these samples was to evaluate the concentrations of potential contaminants with respect to the NHDES Soil Remediation Standards and determine if the soil needed to be disposed of off-site. The laboratory analytical results for these two samples are summarized in Table 5. Both samples contained low concentrations of VOCs and PAHs, none of which exceeded the applicable NHDES soil standards. Sample SS-1 collected on October 6th contained 1,700 mg/kg of TPH (DRO C10-C36), and Sample SS-2 collected on October 11th contained 3,500 mg/kg of TPH (DRO C10-C36). Neither concentration exceeds the applicable state soil standard.

Based upon the results of the field screening and laboratory analytical data, NHDES decided that the excavated soils could be used on site as fill material.

3.2 Tank Closure Sampling

As noted above, tank closure samples were collected from four test pits around the 50,000-gallon tanks and from the excavation after the 6,000-gallon UST and the 2,000-gallon UST were removed. Groundwater was encountered in three of the four test pits, therefore two soil samples and one groundwater sample were collected from each test pit. Since no groundwater was encountered in the fourth test pit, only a single soil sample was required. The laboratory analytical results for the seven soils samples are summarized in Table 6. The analytical results for the three groundwater samples are summarized in Table 7.

The laboratory analytical results for the seven soil samples from the test pits included the following:

- Test Pit TP-1 sample S-1 – no detectable VOCs, PAHs, or TPH;
- Test Pit TP-1 sample S-2 – no detectable VOCs or TPH; low concentrations of several PAHs, four of which exceeded the applicable soil standards [benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene];
- Test Pit TP-2 sample S-1 - no detectable low concentrations of several VOCs and PAHs none of which exceeded the applicable soil standards; and 3,000 mg/kg TPH;
- Test Pit TP-3 sample S-1 - no detectable PAHs, low concentrations of three VOCs none of which exceeded the applicable soil standard, and 1,700 mg/kg TPH;
- Test Pit TP-3 sample S-2 – low concentration of VOCs and PAHs, three of which exceeded the applicable soil standards [benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene] and 19,000 mg/kg TPH;
- Test Pit TP-4 sample S-1 - no detectable VOCs, PAHs, or TPH; and
- Test Pit TP-4 Sample S-2 – no detectable VOCs or TPH, and one PAH at a concentration below the applicable soil standard.

The laboratory analytical results for the three groundwater samples from the test pits included the following:

- Test Pit TP-1 sample - low concentrations of two VOCs and several PAHs, six of which exceeded the applicable Ambient Groundwater Quality Standard [benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene];
- Test Pit TP-3 sample - no VOCs and low concentrations of several PAHs, six of which exceeded the applicable Ambient Groundwater Quality Standard [benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene]; and

- Test Pit TP-4 sample - no VOCs and low concentrations of several PAHs, seven of which exceeded the applicable Ambient Groundwater Quality Standard [benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene].

The laboratory analytical results for the four soil samples from the excavation included the following:

- 6,000-gallon UST sample CSS-1 – no VOCs or PAH, and 430 mg/kg TPH;
- 6,000-gallon UST sample CSS-2 – no VOCs, two PAHs at concentrations below the applicable soil standard, and 860 mg/kg TPH;
- 2,000-gallon UST sample CSS-3 – low concentrations of several VOCs and PAHs, one of which exceeds the applicable soil standard (naphthalene), and 8,000 mg/kg TPH.
- 2,000-gallon UST sample CSS-4 - no VOCs or PAH, and 800 mg/kg TPH.

The laboratory analytical results for the single groundwater samples from the test pits included the following:

- Groundwater sample CGW-1 - no VOCs and low concentrations of several PAHs, six of which exceeded the applicable Ambient Groundwater Quality Standard [benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene

4.0 SITE HYDROGEOLOGY

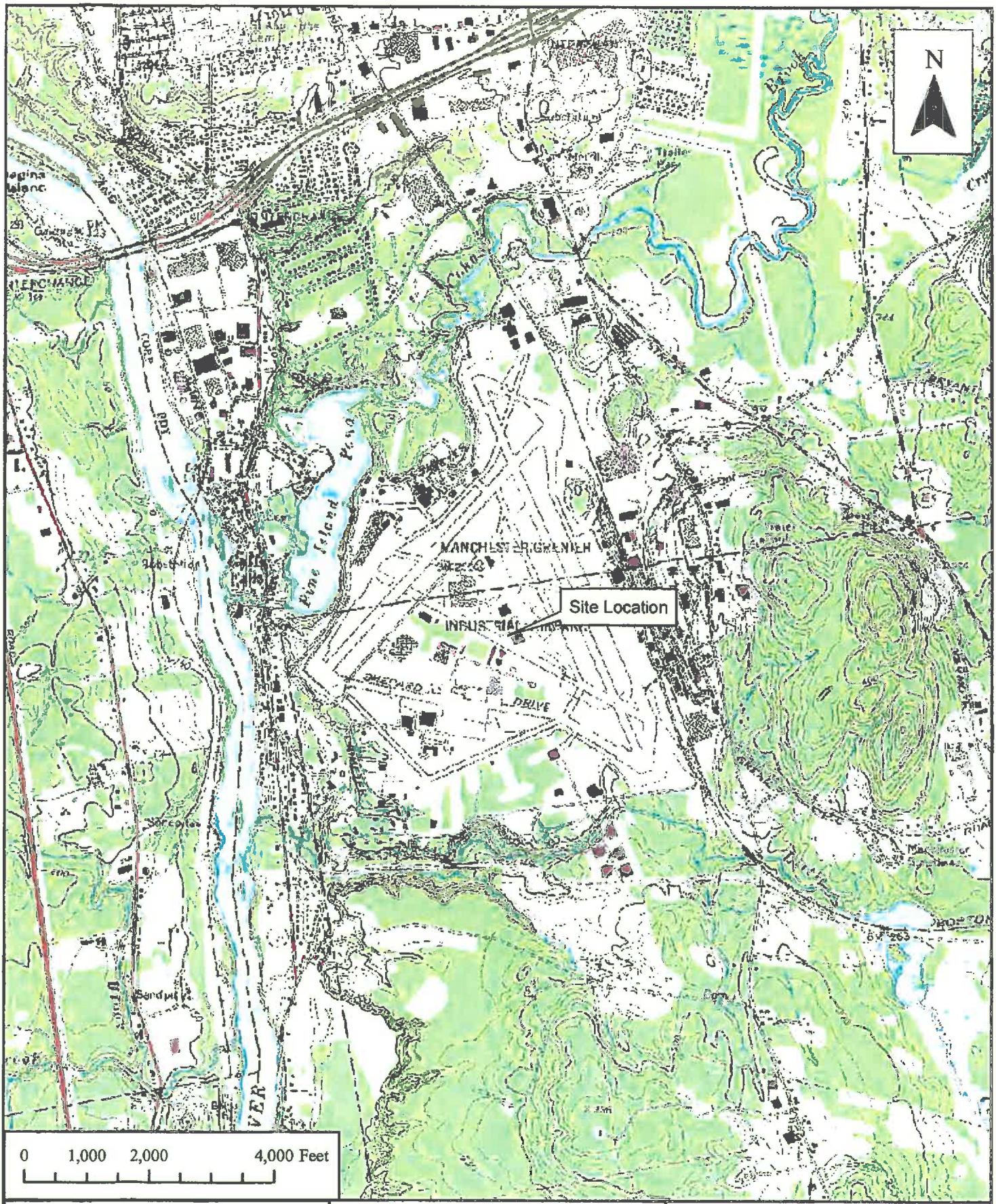
The entire site is underlain by glacio-fluvial deposits of tan, medium to coarse sand. Groundwater monitoring wells installed elsewhere at the Airport have encountered similar sandy deposits with thicknesses of up to twenty or thirty feet. These deposits overlay gray, fine-grained lake bottom deposits of silt and clay which in turn overlay a thin mantel of dense basal till.

Groundwater at the site was encountered at a depth of between eight and nine feet below the ground surface and in monitoring wells previously installed at the site (see Figure 2). Three of the four well previously installed were either destroyed prior to the UST closures or during the closure activities. A single well, located just south of the 50,000-gallon tank location in a paved parking area remains intact.

5.0 DISPOSAL OF DEWATERING EFFLUENT

The effluent pumped from the USTs, as well as the dewatering discharges from the excavation were stored in the on-site frac-tank pending discharge to the City of Manchester Publicly-Owned Treatment Works (POTW). The effluent was discharged on two separate occasions, the first on September 22, 2011 and the second on November 3-

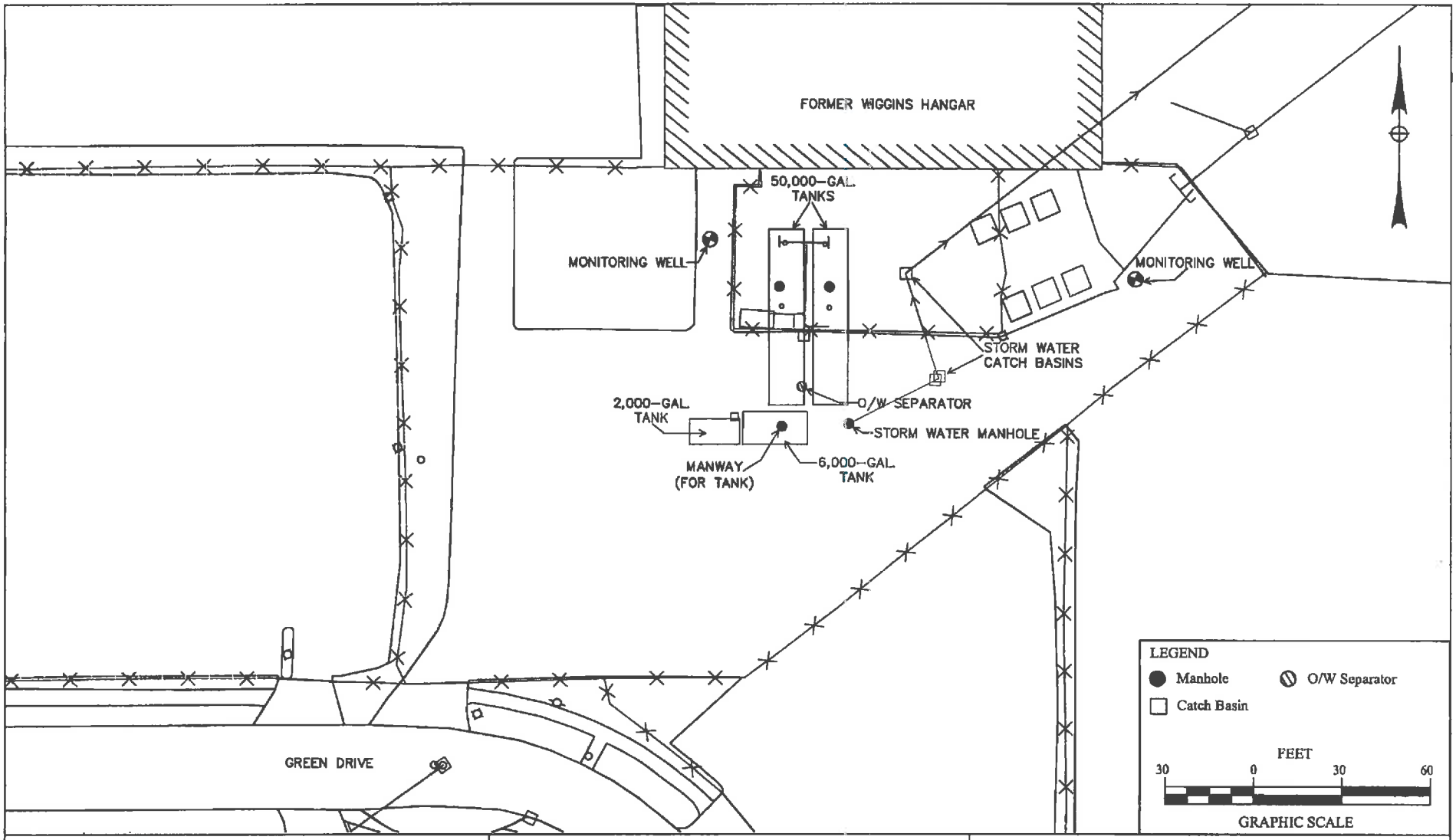
4, 2011. Both discharges were approved by the Manchester POTW and the Town of Londonderry, subject to the requirements of Temporary Industrial Wastewater Discharge Permits issued by the Londonderry Department of Pubic Works, since the sewer line to which the discharge was directed is located in the Town of Londonderry.



Manchester-Boston
REGIONAL AIRPORT

Figure 1
Site Location Map

The Smart Associates
Environmental Consultants, Inc.



Manchester-Boston REGIONAL AIRPORT

FIGURE 2: SITE PLAN

The Smart Associates
Environmental Consultants, Inc.

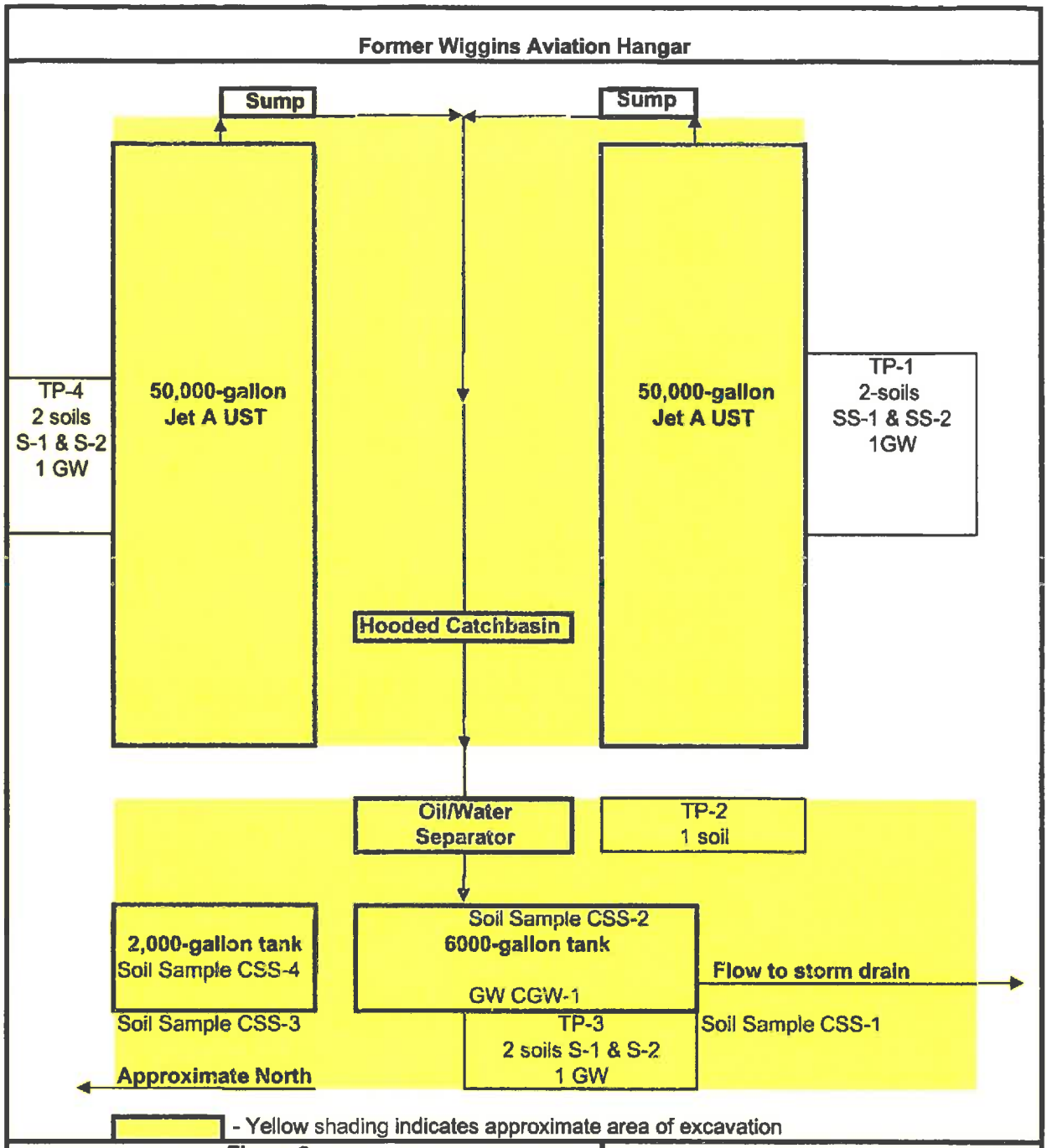


Figure 3
Site Sketch Map - USTs & Test Pits
Former Wiggins Aviation Facility
Manchester-Boston Regional Airport
(not to scale)

The Smart Associates
Environmental Consultants, Inc.

GRS	October 7, 2011

Table 1. Former Wiggins Fuel Farm USTs

NHDES UST Facility #0111100 Information				
Tank #	Size (gallons)	Use	Temporary Closure Date	Permanent Closure Date
1	10,000	Jet Fuel[1]	09/02/93	06/16/97
2	10,000	Jet Fuel	09/02/93	06/16/97
3	10,000	Gasoline	09/02/93	06/16/97
4	10,000	Gasoline	09/02/93	06/16/97
5	10,000	Jet Fuel	N/A	06/23/97
6	10,000	Jet Fuel	N/A	06/23/97
7	10,000	Jet Fuel	N/A	06/23/97
8	10,000	Gasoline	N/A	06/23/97
9	50,000	Jet Fuel	05/13/04	11/24/11
10	50,000	Jet Fuel	05/13/04	11/24/11
11	2,000	Used Oil	N/A	06/27/97
12	500	Used Oil	N/A	06/27/97
13	6,000	#2 Oil	N/A	06/27/97
14	2,000	#2 Oil	N/A	06/27/97
15	6,000[2]	Jet Fuel		10/06/11
16	2,000[3]	Unknown		10/06/11
NHDES AST Facility #970710A Information				
3	12,000	Gasoline	N/A	04/05/04
4	12,000	Jet Fuel	N/A	04/05/04
5	12,000	Avgas	N/A	04/05/04

Table 2. Disposal Facility Prequalification Analysis[1]

Analyte	Results	Units
% Oil	50	Percent
% Water	50	Percent
Flash Point	140	Degrees Fahrenheit
Total Halogens	200	Parts per million
PCB's	None detected	Parts per million
pH	7	Standard Units
Cyanide Screen	Negative	Positive/Negative
Sulfide Screen	Negative	Positive/Negative
Ammonia Screen	Negative	Positive/Negative

1) Analysis conducted by Clean Harbors, Inc. Rumery Road Facility

Table 3. Soil Screening Data from Tank Closure Test Pits

Sample Location	Sample #	Approximate Depth	PID Reading (ppm)
TP-1	SS-1	8'	409.0
TP-2	SS-2	6'	459.0
TP-3	SS-3	8'	33.1
TP-4	SS-4	8'	40.0

Table 4. Soil Screening Data from 6,000-gallon UST and 2,000-gallon UST Tank Closure Excavation

Sample Location	Sample #	Approximate Depth	PID Reading (ppm)
NW side of 6,000 gallon UST	S-1	2-3'	11.2
South end of 6,000 gallon UST	S-2	4-5'	45
South end of 6,000 gallon UST at water table	S-3	6-8'	31
Beneath 2,000 gallon UST	S-4	6-8'	35.8
South end of excavation	S-5	7-9'	194.0
South end of excavation	S-6	7-9'	46.3
South end of excavation	S-7	10-12'	5.0
West wall of excavation	S-8	8-10'	30.0
Five off west end of 2,000 gallon UST	S-9	10-12'	51.1

Table 5. Soil Stockpile Sampling – Laboratory Analytical Results

Analyte	NHDES Soil Remediation Standards Mg/Kg	SS-1	SS-2
		10/06/11	10/11/11
TPH (DRO C10-C36)	10,000	1,700	3,500
Naphthalene	5	<0.5	2.1
2-methylnaphthalene	96	<0.5	3.5
2-Butanone (MEK)	51	0.9	<0.4
Phenanthrene	960	<0.5	0.7
Fluoranthene	960	<0.5	0.9
Pyrene	720	0.6	0.7
Ethylbenzene	140	<0.1	0.2
1,3,5-trimethylbenzene	96	0.2	3.8
1,2,4-trimethylbenzene	130	0.4	11.0
Isopropylbenzene	330	<0.1	0.3
Sec-butylbenzene	130	<0.1	1.1
4-isopropyltoluene	N/A	0.1	1.3
M&p-xylenes	500 Total Xylenes	<0.1	1.1
O-xylene		<0.1	0.4

Mg/Kg – Milligrams per kilogram
<0.5 - None detected above the equipment detection limit
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
N/A – No standard established

Table 6. Initial Test Pit/UST Closure Soil Sampling – Laboratory Analytical Data

	NHDES Soil Remediation Standards Mg/Kg	TP-1		TP-2	TP-3		TP-4	
		SS-1 08/25/11	SS-2 08/25/11	S-1 08/25/11	S-1 08/25/11	S-2 08/25/11	S-1 08/26/11	S-2 08/26/11
TPH (DRO C10-C36)	10,000	<250	<230	3,000	1,700	**19,000**	<210	<240
2-methylnaphthalene	96	<0.6	<0.6	2.1	<0.6	3.1	<0.6	<0.6
Acenaphthylene	490	<0.6	1.3	<0.6	<0.6	<0.6	<0.6	<0.6
Fluorene	77	<0.6	<0.6	<0.6	<0.6	0.8	<0.6	<0.6
Phenanthrene	960	<0.6	4.4	<0.6	<0.6	1.5	<0.6	<0.6
Anthracene	1,000	<0.6	1.3	<0.6	<0.6	<0.6	<0.6	<0.6
Fluoranthene	960	<0.6	9.1	<0.6	<0.6	4.3	<0.6	0.7
Pyrene	720	<0.6	7.7	<0.6	<0.6	5.4	<0.6	<0.6
Benzo(a)anthracene	1	<0.6	**4.3**	<0.6	<0.6	**2.0**	<0.6	<0.6
Chrysene	120	<0.6	3.1	<0.6	<0.6	1.6	<0.6	<0.6
Benzo(b)fluoranthene	1	<0.6	**2.9**	<0.6	<0.6	**2.1**	<0.6	<0.6
Benzo(k)fluoranthene	12	<0.6	2.6	<0.6	<0.6	1.4	<0.6	<0.6
Benzo(a)pyrene	0.7	<0.6	**3.2**	<0.6	<0.6	**1.6**	<0.6	<0.6
Indeno(1,2,3-cd)pyrene	1.0	<0.6	**1.6**	<0.6	<0.6	0.9	<0.6	<0.6
Dibenzo(a,h)anthracene	0.7	<0.6	0.7	<0.6	<0.6	<0.6	<0.6	<0.6
Benzo(g,h,i)perylene	960	<0.6	1.6	<0.6	<0.6	0.9	<0.6	<0.6
1,3,5-trimethylbenzene	96	<0.1	<0.1	1.2	1.2	0.2	<0.1	<0.1
1,2,4-trimethylbenzene	130	<0.1	<0.1	1.5	1.8	0.2	<0.1	<0.1
Sec-butylbenzene	130	<0.1	<0.1	0.2	<0.5	<0.1	<0.1	<0.1
4-isopropyltoluene	N/A	<0.1	<0.1	0.4	0.9	0.1	<0.1	<0.1

Mg/Kg – Milligrams per kilogram

<0.6 - None detected above the equipment detection limit

Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard

N/A – No standard established

Table 7. UST Closure Groundwater Sampling Laboratory Analytical Data

Analyte	NHDES AGQS µg/L	TP-1 8/25/11	TP-3 8/25/11	TP-4 8/26/11	CGW-1 10/17/11
Naphthalene	20	<0.5	<5.5	0.8	<5.0
2-methylnaphthalene	280	<0.5	22.0	<0.5	32
Acenaphthylene	420	2.3	7.3	3.7	<5.0
Dibenzofuran	N/A	<0.5	<5.5	0.6	<5.0
Fluorene	280	<0.5	6.1	0.9	6.2
Phenanthrene	210	1.5	10.0	6.3	11
Anthracene	2,100	1.0	<5.5	7.4	<5.0
Fluoranthene	280	3.1	23.0	11.0	28
Pyrene	210	2.9	29.0	10.0	21
Benzo(a)anthracene	0.1	**1.3**	**8.2**	**7.0**	**7.3**
Chrysene	5	1.8	**9.7**	**11.0**	**11**
Benzo(b)fluoranthene	0.1	**2.8**	**17.0**	**8.6**	**6.9**
Benzo(k)fluoranthene	0.5	**2.6**	**8.4**	**5.0**	**11**
Benzo(a)pyrene	0.2	**2.6**	**14.0**	**5.5**	**9.2**
Indeno(1,2,3-cd)pyrene	0.1	**2.7**	**7.3**	**3.1**	**8.4**
Dibenzo(a,h)anthracene	0.1	**1.1**	<5.5	**1.3**	<5.0
Benzo(g,h,i)perylene	210	2.5	6.6	2.8	8.8
1,3,5-trimethylbenzene	330	<2.0	17.0	<2.0	51
1,2,4-trimethylbenzene	330	<2.0	36.0	<2.0	120
Ethylbenzene	700	<2.0	<10	<2.0	3.0
Isopropylbenzene	800	<2.0	<10	<2.0	3.0
N-propylbenzene	260	<2.0	<10	<2.0	7.0
Sec-Butylbenzene	260	<2.0	<10	<2.0	9.0
4-isopropyltoluene	N/A	<2.0	<10	<2.0	13.0
m&p xylene	10,000 Total Xylenes	5.0	<10	<2.0	15
o xylene		2.0	<10	<2.0	9

ug/L – Microgram per liter
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
<0.6 - None detected above the equipment detection limit
N/A – No standard established

Table 8. 6,000-Gallon and 2,000 Gallon UST Closure - Soil Sampling Laboratory Analytical Data

	NHDES Soil Remediation Standards Mg/Kg	6,000-Gallon Tank		2,000-Gallon Tank	
		CSS-1	CSS-2	CSS-3	CSS-4
		10/17/11	10/17/11	10/17/11	10/17/11
TPH (DRO C10-C36)	10,000	450	860	8,000	800
Naphthalene	5	<0.6	<0.5	**8.8**	<0.5
2-methylnaphthalene	96	<0.6	<0.5	16.0	<0.5
Dibenzofuran	N/A	<0.6	<0.5	0.8	<0.5
Fluorene	77	<0.6	<0.5	1.3	<0.5
Phenanthrene	960	<0.6	<0.5	3.0	<0.5
Fluoranthene	960	<0.6	<0.5	3.3	<0.5
Pyrene	720	<0.6	<0.5	1.4	<0.5
Benzo(a)anthracene	1	<0.6	<0.5	0.8	<0.5
Chrysene	120	<0.6	<0.5	0.6	<0.5
Benzo(b)fluoranthene	1	<0.6	<0.5	0.7	<0.5
Ethylbenzene	140	<0.1	<0.1	1.2	<0.1
1,3,5-trimethylbenzene	96	<0.1	0.2	10	<0.1
1,2,4-trimethylbenzene	130	<0.1	0.3	30	<0.1
Isopropylbenzene	330	<0.1	<0.1	1.1	<0.1
N-propylbenzene	N/A	<0.1	<0.1	2.7	<0.1
Sec-butylbenzene	130	<0.1	<0.1	3.7	<0.1
4-isopropyltoluene	N/A	<0.1	<0.1	3.9	<0.1
M&p-xylenes	500 Total Xylenes	<0.1	<0.1	6.3	<0.1
O-xylene		<0.1	<0.1	0.4	<0.1

Mg/Kg – Milligrams per kilogram
<0.6 - None detected above the equipment detection limit
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
N/A – No standard established

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

January 29, 2010

JOHN J HAGOPIAN
MANCHESTER AIRPORT AUTHORITY
ONE AIRPORT RD STE 300
MANCHESTER, NH 03103

Subject Site: **MANCHESTER, MANCHESTER AIRPORT, 5 GREEN DR**
DES Site #199707010, UST Facility #0111000, Project Type UST

Reference: **Underground Storage Tank Facility Compliance Inspection Notice of Findings**

On January 29, 2010 the New Hampshire Department of Environmental Services (DES) conducted an on site inspection of the underground storage tank(s) (USTs) at the above referenced facility. The purpose of the inspection was to determine the operational compliance status of the UST(s) at this facility.

New Hampshire Revised Statute Annotated (RSA), Chapter 146 C, and New Hampshire Code of Administrative Rules, Part Env Wm 1401, Underground Storage Facilities, were established for the purpose of reducing the number of product releases to the environment from USTs and to establish a leak detection system which would alert a facility operator and/or owner before significant environmental damage and economic loss were to occur. The inspection conducted at this facility is part of DES's release prevention effort.

The DES is happy to report there were no deficiencies found during this inspection.

New Hampshire appreciates your efforts in helping to prevent and minimize contamination of the land and waters of the state by maintaining an excellent program of storing and handling of regulated substances

Sincerely,

1/29/10

HARDING SCHOFIELD Inspector — Date

JOHN J HAGOPIAN
Faciliy Manager — **1/29/10**

Printed Name and Title of Owner or Authorized Representative — Signature — Date

It is the responsibility of the owner's representative to forward a copy of this letter to the owner.

DES Web site: www.des.nh.gov
P.O.Box 95, 29 Hazen Drive, Concord, New Hampshire 03302-0095
Telephone: (603) 271-3644 * Fax: (603) 271-2181 * TDD Access: Relay NH 1-800-735-2964

HILLSBOROUGH

State of New Hampshire

Department of Environmental Services

Waste Management Division

UNDERGROUND STORAGE FACILITY

PERMIT TO OPERATE

Facility Identification Number 0111000

This certifies that MANCHESTER AIRPORT AUTHORITY

(This permit is issued to the above owner and is not transferable.)

in accordance with New Hampshire Revised Statutes Annotated Chapter 146-C and N.H. Code of Administrative Rules Env-Wm 1401.07 is issued this Permit to Operate the Underground Storage Tank Facility located at

MANCHESTER AIRPORT, MANCHESTER

Date Issued December 1, 2010

Site Number: 199707010

Chief, Underground Storage Tank Compliance

THIS PERMIT TO OPERATE DOES NOT SUPERCEDE ANY LOCAL ORDINANCE OR REGULATION. STATE STANDARDS ARE MINIMAL REQUIREMENTS AND MUST BE MET STATEWIDE.

This permit is issued pursuant to RSA 146-C and Code of Administrative Rules Env-Wm 1401 for an underground storage tank facility. The facility is subject to all material and procedural requirements of N.H. Code of Administrative Rules Env-Wm 1401 (see below for specifics). This permit is issued based on information supplied by the owner and no liability shall be incurred by the N.H.D.E.S. or the State of New Hampshire.

This permit may be revoked for failure to comply with the requirements of N.H. Code of Administrative Rules Env-Wm 1401 and the owner may be subject to the penalties specified by RSA 146-C.

This permit shall be posted in a highly visible location, under cover, and protected from the weather and direct sunlight.

The owner, when selling this facility, shall notify the buyer of the facility's status of compliance with the requirements of N.H. Code of Administrative Rules Env-Wm 1401.08

The owner of this facility shall file an amended registration with the Department within 10 days of transfer of ownership.

NO GUARANTEE IS INTENDED OR IMPLIED BY REASON OF ANY ADVICE GIVEN BY THE DEPARTMENT OR ANY OF ITS STAFF.

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
P.O. BOX 95, 29 HAZEN DRIVE, CONCORD, N.H. 03302
(603) 271-3644 Underground Storage Tank

NHDES

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

June 17, 2011

John J. Hagopian
Manchester Airport
One Airport Road Suite 300
Manchester, NH 03103-3395

Subject Site: Manchester, Manchester Airport, 5 Green Drive,
DES Site #199707010, UST Facility #0111000

Reference: PREVIOUSLY GRANTED WAIVER REQUEST

Dear Mr. Hagopian:

The New Hampshire Department of Environmental Services (DES) granted a waiver for the cathodic protection testing requirements and an extension of time to permanently close the two 50,000-gallon jet fuel underground storage tanks (USTs) in a letter to you dated March 11, 2005. According to our files, the two jet fuel USTs remain temporarily closed.

Your original waiver request stated that the tanks were originally scheduled to be removed as part of capital improvements in 2005 which may be delayed but will likely be conducted within two years. More than enough time has passed to allow for the two USTs' removal. Therefore, DES is requesting that the two jet fuel USTs be permanently closed and a closure report submitted within 60 days of the date of this letter. Permanent closure shall be performed in accordance with Env-Wm 1401.18.

Should you have any questions concerning the content of this letter, please immediately contact the undersigned in the Waste Management Division of DES.

Sincerely,

Michael W. Juranty, P.E., Supervisor
Oil Remediation and Compliance Bureau
Tel: (603) 271-6058
E-mail: Michael.juranty@des.nh.gov

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Absolute Resource associates

124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22289

Company Name: EnviroSense
Company Address: 1F Commons Dr
Report To: MGibson@envirosense.com
Phone #: 603 8 437 8827
Invoice To: John Hagopian - MHT

Project Name: Airport UST Pull
Project #: 07865-11
Project Location: (NH) MA ME VT Other
Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER
Reporting Limits: QAPP EPA DW GW-1 Other S-1
Quote # ____ ☐ NH GREE/ODD Fund Pricing
PO # ____

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Water	Solid	Other	HCl	HNO_3	H_2SO_4	NaOH	MeOH	Other (Specify) NP	Date	Time	Sampler	VOC 8260 NHDES	TPH DRO 8015	8270PAH	Grab (G) or Composite (C)
22289-01	SS-1	3		X						X	X	8/25/11	11:00	PD	X	X	X	G
02	SS-2	3		X						X	X	8/25/11	11:15	PD	X	X	X	G
03	TP-2 OWS S-1	3		X						X	X	8/25/11	10:55	PD	X	X	X	G
04	TP-3 S-1	2		X						X	X	8/25/11	12:15	PD	X	X	X	G
05	TP-3 S-2	2		X						X	X	8/25/11	12:20	PD	X	X	X	G
06	TP-1	3	X			X					X	8/25/11	12:10	PD	X		X	G
07	TP-3	3	X			X					X	8/25/11	12:20	PD	X		X	G

Analysis request options: ☒ VOC 8260 ☒ VOC 8260 NHDES ☐ VOC 8260 MADEP; ☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT; ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015; ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:; ☐ TPH ☒ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint; ☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1; ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB; ☐ O&G 1664 ☐ Mineral O&G SM5520F; ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity; ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity; ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals; ☐ Total Metals-list:; ☐ Dissolved Metals-list:; ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON; ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN; ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride; ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP; ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide; Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed 8/29/11

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) MGibson@envirosense.com
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 6 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	8/25/11	1:10	Received by: [signature]	8/25/11	1:10
Relinquished by: [signature]	8/26/11	11:41	Received by:		
Relinquished by:			Received by Laboratory: [signature] Way Bill#:	8/26/11	11:41

QSD-01 Revision 12/23/10

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-001
Sample ID: SS-1
Matrix: Solid Percent Dry: 78.8% Results expressed on a dry weight basis.
Sampled: 8/25/11 11:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
tetrahydrofuran (THF)	< 0.6	0.6	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
2-hexanone	< 0.6	0.6	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289

Sample#: 22289-001
Sample ID: SS-1
Matrix: Solid Percent Dry: 78.8% Results expressed on a dry weight basis.
Sampled: 8/25/11 11:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**96**	78-114	%	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
4-bromofluorobenzene SUR	**103**	86-115	%	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B
a,a,a-trifluorotoluene SUR	**91**	70-130	%	1	LMM	8/29/11	4490	8/29/11	16:39	SW5035A8260B

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-002
Sample ID: SS-2
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 11:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
Isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
tetrahydrofuran (THF)	< 0.6	0.6	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
2-hexanone	< 0.6	0.6	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-002
Sample ID: SS-2
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 11:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**96**	78-114	%	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B
a,a,a-trifluorotoluene SUR	**93**	70-130	%	1	LMM	8/29/11	4490	8/29/11	17:13	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289

Sample#: 22289-003
Sample ID: TP-2OW5S-1
Matrix: Solid Percent Dry: 78.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 10:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
chloromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
vinyl chloride	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
bromomethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
chloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
trichlorofluoromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
diethyl ether	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
acetone	< 4	4	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1-dichloroethene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
methylene chloride	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
carbon disulfide	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
trans-1,2-dichloroethene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
isopropyl ether (DIPE)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1-dichloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
t-butanol (TBA)	< 4	4	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
2-butanone (MEK)	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
2,2-dichloropropane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
cis-1,2-dichloroethene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
chloroform	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
bromochloromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
tetrahydrofuran (THF)	< 0.8	0.8	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1,1-trichloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1-dichloropropene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
carbon tetrachloride	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2-dichloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
benzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
trichloroethene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2-dichloropropane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
bromodichloromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,4-dioxane	< 4	4	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
dibromomethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.7	0.7	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
cis-1,3-dichloropropene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
toluene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
trans-1,3-dichloropropene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
2-hexanone	< 0.8	0.8	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1,2-trichloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,3-dichloropropane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
tetrachloroethene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
dibromochloromethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289

Sample#: 22289-003
Sample ID: TP-2OW5S-1
Matrix: Solid Percent Dry: 78.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 10:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
chlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
ethylbenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
m&p-xylenes	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
o-xylene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
styrene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
bromoform	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
isopropylbenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2,3-trichloropropane	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
n-propylbenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
bromobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,3,5-trimethylbenzene	**1.2**	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
2-chlorotoluene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
4-chlorotoluene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
tert-butylbenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2,4-trimethylbenzene	**1.5**	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
sec-butylbenzene	**0.2**	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,3-dichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
4-isopropyltoluene	**0.4**	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,4-dichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2-dichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
n-butylbenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2,4-trichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,3,5-trichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
hexachlorobutadiene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
naphthalene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
1,2,3-trichlorobenzene	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**96**	78-114	%	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
toluene-D8 SUR	**103**	88-110	%	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
4-bromofluorobenzene SUR	**92**	86-115	%	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B
a,a,a-trifluorotoluene SUR	**89**	70-130	%	1	LMM	8/29/11	4490	8/29/11	18:53	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-004
Sample ID: TP-3 S-1
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 12:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
chloromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
vinyl chloride	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
bromomethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
chloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
trichlorofluoromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
diethyl ether	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
acetone	< 13	13	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1-dichloroethene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
methylene chloride	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
carbon disulfide	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
trans-1,2-dichloroethene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
isopropyl ether (DIPE)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1-dichloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
t-butanol (TBA)	< 13	13	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
2-butanone (MEK)	< 1.6	1.6	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
2,2-dichloropropane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
cis-1,2-dichloroethene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
chloroform	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
bromochloromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
tetrahydrofuran (THF)	< 2.6	2.6	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1,1-trichloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1-dichloropropene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
carbon tetrachloride	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2-dichloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
benzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
trichloroethene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2-dichloropropane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
bromodichloromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,4-dioxane	< 13	13	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
dibromomethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 2.3	2.3	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
cis-1,3-dichloropropene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
toluene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
trans-1,3-dichloropropene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
2-hexanone	< 2.6	2.6	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1,2-trichloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,3-dichloropropane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
tetrachloroethene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
dibromochloromethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-004
Sample ID: TP-3 S-1
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 12:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
chlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
ethylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
m&p-xylenes	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
o-xylene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
styrene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
bromoform	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
isopropylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2,3-trichloropropane	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
n-propylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
bromobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,3,5-trimethylbenzene	**1.2**	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
2-chlorotoluene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
4-chlorotoluene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
tert-butylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2,4-trimethylbenzene	**1.8**	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
sec-butylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,3-dichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
4-isopropyltoluene	**0.9**	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,4-dichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2-dichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
n-butylbenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2,4-trichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,3,5-trichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
hexachlorobutadiene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
naphthalene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
1,2,3-trichlorobenzene	< 0.5	0.5	ug/g	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**100**	78-114	%	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
toluene-D8 SUR	**103**	88-110	%	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B
a,a,a-trifluorotoluene SUR	**78**	70-130	%	5	LMM	8/29/11	4490	8/29/11	21:08	SW5035A8260B

Note: Dilution was required due to the presence of hydrocarbons in the sample.

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11

Job ID: 22289

Sample#: 22289-005

Sample ID: TP-3 S-2

Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.

Sampled: 8/25/11 12:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-005
Sample ID: TP-3 S-2
Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.
Sampled: 8/25/11 12:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,3,5-trimethylbenzene	**0.2**	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2,4-trimethylbenzene	**0.2**	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
4-isopropyltoluene	**0.1**	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**93**	78-114	%	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
4-bromofluorobenzene SUR	**100**	86-115	%	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B
a,a,a-trifluorotoluene SUR	**85**	70-130	%	1	LMM	8/29/11	4490	8/29/11	19:27	SW5035A8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-006
Sample ID: TP-1
Matrix: Water
Sampled: 8/25/11 12:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-006
Sample ID: TP-1
Matrix: Water
Sampled: 8/25/11 12:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
m&p-xylenes	5	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
o-xylene	2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	101	78-114	%	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
toluene-D8 SUR	102	88-110	%	1	LMM		1101883	8/29/11	13:51	SW5030B8260B
4-bromofluorobenzene SUR	98	86-115	%	1	LMM		1101883	8/29/11	13:51	SW5030B8260B

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-007
Sample ID: TP-3
Matrix: Water
Sampled: 8/25/11 12:20

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
chloromethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
vinyl chloride	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
bromomethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
chloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
trichlorofluoromethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
diethyl ether	< 25	25	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
acetone	< 250	250	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1-dichloroethene	< 5	5	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
methylene chloride	< 25	25	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
carbon disulfide	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
methyl t-butyl ether (MTBE)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
trans-1,2-dichloroethene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
isopropyl ether (DIPE)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1-dichloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
t-butanol (TBA)	< 150	150	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
2-butanone (MEK)	< 50	50	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
2,2-dichloropropane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
cis-1,2-dichloroethene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
chloroform	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
bromochloromethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
tetrahydrofuran (THF)	< 50	50	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1,1-trichloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1-dichloropropene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
t-amyl-methyl ether (TAME)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
carbon tetrachloride	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2-dichloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
benzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
trichloroethene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2-dichloropropane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
bromodichloromethane	< 3.0	3.0	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,4-dioxane	< 250	250	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
dibromomethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 50	50	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
cis-1,3-dichloropropene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
toluene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
trans-1,3-dichloropropene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
2-hexanone	< 50	50	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1,2-trichloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,3-dichloropropane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
tetrachloroethene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
dibromochloromethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-007
Sample ID: TP-3
Matrix: Water
Sampled: 8/25/11 12:20

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
chlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1,1,2-tetrachloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
ethylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
m&p-xylenes	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
o-xylene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
styrene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
bromoform	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
isopropylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,1,2,2-tetrachloroethane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2,3-trichloropropane	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
n-propylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
bromobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,3,5-trimethylbenzene	**17**	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
2-chlorotoluene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
4-chlorotoluene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
tert-butylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2,4-trimethylbenzene	**36**	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
sec-butylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,3-dichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
4-isopropyltoluene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,4-dichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2-dichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
n-butylbenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2,4-trichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,3,5-trichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
hexachlorobutadiene	< 2.5	2.5	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
naphthalene	< 25	25	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
1,2,3-trichlorobenzene	< 10	10	ug/L	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**99**	78-114	%	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
toluene-D8 SUR	**101**	88-110	%	5	LMM		1101892	8/30/11	14:39	SW5030B8260B
4-bromofluorobenzene SUR	**105**	86-115	%	5	LMM		1101892	8/30/11	14:39	SW5030B8260B

Note: Dilution was necessary due to interferences in the sample chromatogram.

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11

Job ID: 22289

Sample#: 22289-001

Sample ID: SS-1

Matrix: Solid Percent Dry: 78.8% Results expressed on a dry weight basis.

Sampled: 8/25/11 11:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
2-methylnaphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
phenanthrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**92**	43-116	%	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D
o-terphenyl SUR	**77**	33-141	%	1	AJD	8/29/11	4489	8/30/11	10:36	SW3550B8270D

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11

Job ID: 22289

Sample#: 22289-002

Sample ID: SS-2

Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.

Sampled: 8/25/11 11:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
2-methylnaphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
acenaphthylene	**1.3**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
phenanthrene	**4.4**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
anthracene	**1.3**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
fluoranthene	**9.1**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
pyrene	**7.7**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
benzo(a)anthracene	**4.3**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
chrysene	**3.1**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
benzo(b)fluoranthene	**2.9**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
benzo(k)fluoranthene	**2.6**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
benzo(a)pyrene	**3.2**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
indeno(1,2,3-cd)pyrene	**1.6**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
dibenzo(a,h)anthracene	**0.7**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
benzo(g,h,i)perylene	**1.6**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**93**	43-116	%	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D
o-terphenyl SUR	**82**	33-141	%	1	AJD	8/29/11	4489	8/30/11	14:24	SW3550B8270D

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-003
Sample ID: TP-2OW5S-1
Matrix: Solid Percent Dry: 78.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 10:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
2-methylnaphthalene	**2.1**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
phenanthrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**93**	43-116	%	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D
o-terphenyl SUR	**85**	33-141	%	1	AJD	8/29/11	4489	8/30/11	11:14	SW3550B8270D

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-004
Sample ID: TP-3 S-1
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 8/25/11 12:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
2-methylnaphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
phenanthrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**89**	43-116	%	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D
o-terphenyl SUR	**83**	33-141	%	1	AJD	8/29/11	4489	8/30/11	11:52	SW3550B8270D

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-005
Sample ID: TP-3 S-2
Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.
Sampled: 8/25/11 12:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
2-methylnaphthalene	**3.1**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
fluorene	**0.8**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
phenanthrene	**1.5**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
fluoranthene	**4.3**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
pyrene	**5.4**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
benzo(a)anthracene	**2.0**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
chrysene	**1.6**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
benzo(b)fluoranthene	**2.1**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
benzo(k)fluoranthene	**1.4**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
benzo(a)pyrene	**1.6**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
indeno(1,2,3-cd)pyrene	**0.9**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
benzo(g,h,i)perylene	**0.9** M	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**87**	43-116	%	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D
o-terphenyl SUR	**83**	33-141	%	1	AJD	8/29/11	4489	8/30/11	13:46	SW3550B8270D

M = The percent recovery for the matrix spike was 34. The acceptance criteria is 40-140%. All other batch QC was within acceptance. Matrix interference suspected.

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-006
Sample ID: TP-1
Matrix: Water
Sampled: 8/25/11 12:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
acenaphthylene	**2.3**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
phenanthrene	**1.5**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
anthracene	**1.0**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
fluoranthene	**3.1**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
pyrene	**2.9**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
benzo(a)anthracene	**1.3**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
chrysene	**1.8**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
benzo(b)fluoranthene	**2.8**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
benzo(k)fluoranthene	**2.6**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
benzo(a)pyrene	**2.6**	0.2	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
indeno(1,2,3-cd)pyrene	**2.7**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
dibenzo(a,h)anthracene	**1.1**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
benzo(g,h,i)perylene	**2.5**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**59**	43-116	%	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D
o-terphenyl SUR	**61**	33-141	%	1	AJD	8/29/11	4486	8/30/11	15:01	SW3510C8270D

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11
Job ID: 22289
Sample#: 22289-007
Sample ID: TP-3
Matrix: Water
Sampled: 8/25/11 12:20

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 5.5	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
2-methylnaphthalene	**22**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
acenaphthylene	**7.3**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
acenaphthene	< 5.5	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
dibenzofuran	< 5.5	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
fluorene	**6.1**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
phenanthrene	**10**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
anthracene	< 5.5	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
fluoranthene	**23**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
pyrene	**29**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
benzo(a)anthracene	**8.2**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
chrysene	**9.7**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
benzo(b)fluoranthene	**17**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
benzo(k)fluoranthene	**8.4**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
benzo(a)pyrene	**14**	2.2	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
indeno(1,2,3-cd)pyrene	**7.3**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
dibenzo(a,h)anthracene	< 5.5	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
benzo(g,h,i)perylene	**6.6**	5.5	ug/L	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**76**	43-116	%	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D
o-terphenyl SUR	**61**	33-141	%	10	AJD	8/29/11	4486	8/30/11	16:55	SW3510C8270D

Absolute Resource associates

Project ID: Airport US5 Pull 07865-11

Job ID: 22289

Sample#: 22289-001

Sample ID: SS-1

Matrix: Solid Percent Dry: 78.8% Results expressed on a dry weight basis.

Sampled: 8/25/11 11:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 250	250	ug/g	1	JLZ	8/29/11	4488	8/30/11	9:46	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**71**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	9:46	SW3550B8015B
o-terphenyl SUR	**78**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	9:46	SW3550B8015B

Sample#: 22289-002

Sample ID: SS-2

Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.

Sampled: 8/25/11 11:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 230	230	ug/g	1	JLZ	8/29/11	4488	8/30/11	10:02	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**80**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:02	SW3550B8015B
o-terphenyl SUR	**87**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:02	SW3550B8015B

Note: Hydrocarbons exist beyond the method defined range.

Sample#: 22289-003

Sample ID: TP-2OW5S-1

Matrix: Solid Percent Dry: 78.3% Results expressed on a dry weight basis.

Sampled: 8/25/11 10:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**3000**	250	ug/g	1	JLZ	8/29/11	4488	8/30/11	10:19	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**44**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:19	SW3550B8015B
o-terphenyl SUR	**84**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:19	SW3550B8015B

Sample#: 22289-004

Sample ID: TP-3 S-1

Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.

Sampled: 8/25/11 12:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**1700**	240	ug/g	1	JLZ	8/29/11	4488	8/30/11	10:35	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**#**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:35	SW3550B8015B
o-terphenyl SUR	**85**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	10:35	SW3550B8015B

 # The surrogate could not be distinguished from the hydrocabons present in the chromatogram.

Project ID: Airport US5 Pull 07865-11

Job ID: 22289

Sample#: 22289-005

Sample ID: TP-3 S-2

Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.

Sampled: 8/25/11 12:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**19000**	2200	ug/g	10	JLZ	8/29/11	4488	8/30/11	14:19	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**DOR**	40-140	%	10	JLZ	8/29/11	4488	8/30/11	14:19	SW3550B8015B
o-terphenyl SUR	**DOR**	40-140	%	10	JLZ	8/29/11	4488	8/30/11	14:19	SW3550B8015B

DOR = Diluted out of range.

Absolute Resource associates

Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22290

Company Name: EnviroSense Inc
Company Address: 1F Commons Dr Suite 3H
Report To: Marshall Gibson
Phone #: 603 437 5227
Invoice To: John MTH

Project Name: MTH Airport
Project #: 07865-11
Project Location: (NH) MA ME VT Other
Protocol: RCRA SDWA NPDES MCP (NHDES) OTHER
Reporting Limits: QAPP GW-1 S-1 EPA DW Other
Quote # ____ ☐ NH GREE/ODD Fund Pricing
PO # ____

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER (Specify)	Sampling: DATE	TIME	SAMPLER	Grab (G) or Composite (C)
22290-01	Test Pit 4	3	X			X					X	8/26/11	9:25	RD	G
02	TP-4S-1622	2		X						X		8/26/11	9:30	RD	G
03	TP4 S.2 (1-2')	2		X						X	X	8/26/11	9:35	RD	G
04	Trip Blank	1								X					
05	Trip Blank	1				X									

ANALYSIS REQUEST

☒ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624 ☐ VOC BTEX ☐ MtBE only ☐ VOC 8021VT
☐ VPH MADEP ☐ MEGRO ☐ GRO 8015
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☒ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint
☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
☐ 0&G 1664 ☐ Mineral O&G SM5520F
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals
☐ Total Metals-list:
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON
☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitability/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed 8/29/11

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☐ PDF (e-mail address)____
☐ HARD COPY REQUIRED ☐ FAX (FAX#)____ ☐ OTHER (specify)____

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 6 °C

CUSTODY RECORD
QSD-01 Revision 12/23/10

	Date	Time		Date	Time
Relinquished by Sampler:	8/26/11	9:55	Received by:	8/26/11	9:55
Relinquished by:	8/26/11	11:41	Received by:		
Relinquished by:			Received by Laboratory:	8/26/11	11:41
			Way Bill#:		

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-001
Sample ID: Test Pit 4
Matrix: Water
Sampled: 8/26/11 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-001
Sample ID: Test Pit 4
Matrix: Water
Sampled: 8/26/11 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**103**	78-114	%	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM		1101883	8/29/11	13:17	SW5030B8260B
4-bromofluorobenzene SUR	**98**	86-115	%	1	LMM		1101883	8/29/11	13:17	SW5030B8260B

Absolute Resource associates

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-002
Sample ID: TP-4S-1 (6')
Matrix: Solid Percent Dry: 92.8% Results expressed on a dry weight basis.
Sampled: 8/26/11 9:30

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
2-butanone (MEK)	< 0.2	0.2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-002
Sample ID: TP-4S-1 (6')
Matrix: Solid Percent Dry: 92.8% Results expressed on a dry weight basis.
Sampled: 8/26/11 9:30

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**96**	78-114	%	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
toluene-D8 SUR	**104**	88-110	%	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
4-bromofluorobenzene SUR	**106**	86-115	%	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B
a,a,a-trifluorotoluene SUR	**102**	70-130	%	1	LMM	8/29/11	4490	8/29/11	20:00	SW5035A8260B

Absolute Resource associates

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-003
Sample ID: TP4 S-2 (8-10')
Matrix: Solid Percent Dry: 79.5% Results expressed on a dry weight basis.
Sampled: 8/26/11 9:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-003
Sample ID: TP4 S-2 (8-10')
Matrix: Solid Percent Dry: 79.5% Results expressed on a dry weight basis.
Sampled: 8/26/11 9:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**95**	78-114	%	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
4-bromofluorobenzene SUR	**108**	86-115	%	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B
a,a,a-trifluorotoluene SUR	**90**	70-130	%	1	LMM	8/29/11	4490	8/29/11	20:33	SW5035A8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-004
Sample ID: Trip Blank
Matrix: Solid
Sampled: 8/26/11

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-004
Sample ID: Trip Blank
Matrix: Solid
Sampled: 8/26/11

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
toluene-D8 SUR	**103**	88-110	%	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B
a,a,a-trifluorotoluene SUR	**91**	70-130	%	1	LMM	8/29/11	4490	8/29/11	16:05	SW5035A8260B

Absolute Resource associates

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-005
Sample ID: Trip Blank
Matrix: Water
Sampled: 8/26/11

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-005
Sample ID: Trip Blank
Matrix: Water
Sampled: 8/26/11

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**103**	78-114	%	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM		1101883	8/29/11	12:43	SW5030B8260B
4-bromofluorobenzene SUR	**98**	86-115	%	1	LMM		1101883	8/29/11	12:43	SW5030B8260B

Absolute Resource associates

Project ID: MHT Airport 07865-11
Job ID: 22290
Sample#: 22290-001
Sample ID: Test Pit 4
Matrix: Water
Sampled: 8/26/11 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**0.8**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
acenaphthylene	**3.7**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
dibenzofuran	**0.6**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
fluorene	**0.9**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
phenanthrene	**6.3**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
anthracene	**7.4**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
fluoranthene	**11**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
pyrene	**10**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
benzo(a)anthracene	**7.0**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
chrysene	**11**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
benzo(b)fluoranthene	**8.6**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
benzo(k)fluoranthene	**5.0**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
benzo(a)pyrene	**5.5**	0.2	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
indeno(1,2,3-cd)pyrene	**3.1**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
dibenzo(a,h)anthracene	**1.3**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
benzo(g,h,i)perylene	**2.8**	0.5	ug/L	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**62**	43-116	%	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D
o-terphenyl SUR	**59**	33-141	%	1	AJD	8/29/11	4486	8/30/11	18:11	SW3510C8270D

Project ID: MHT Airport 07865-11
Job ID: 22290

Sample#: 22290-002
Sample ID: TP-4S-1 (6')
Matrix: Solid Percent Dry: 92.8% Results expressed on a dry weight basis.
Sampled: 8/26/11 9:30

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
2-methylnaphthalene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
acenaphthylene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
acenaphthene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
dibenzofuran	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
fluorene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
phenanthrene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
anthracene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
fluoranthene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
pyrene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
benzo(a)anthracene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
chrysene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
benzo(a)pyrene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
benzo(g,h,i)perylene	**0.5**	0.5	ug/g	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**92**	43-116	%	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D
o-terphenyl SUR	**78**	33-141	%	1	AJD	8/29/11	4489	8/30/11	13:08	SW3550B8270D

Absolute Resource associates

Project ID: MHT Airport 07865-11

Job ID: 22290

Sample#: 22290-003

Sample ID: TP4 S-2 (8-10')

Matrix: Solid Percent Dry: 79.5% Results expressed on a dry weight basis.

Sampled: 8/26/11 9:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
2-methylnaphthalene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
phenanthrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
fluoranthene	**0.7**	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**70**	43-116	%	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D
o-terphenyl SUR	**67**	33-141	%	1	AJD	8/29/11	4489	8/30/11	12:30	SW3550B8270D

Project ID: MHT Airport 07865-11

Job ID: 22290

Sample#: 22290-002

Sample ID: TP-4S-1 (6')

Matrix: Solid Percent Dry: 92.8% Results expressed on a dry weight basis.

Sampled: 8/26/11 9:30

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 210	210	ug/g	1	JLZ	8/29/11	4488	8/30/11	11:08	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**75**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	11:08	SW3550B8015B
o-terphenyl SUR	**82**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	11:08	SW3550B8015B

Sample#: 22290-003

Sample ID: TP4 S-2 (8-10')

Matrix: Solid Percent Dry: 79.5% Results expressed on a dry weight basis.

Sampled: 8/26/11 9:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 240	240	ug/g	1	JLZ	8/29/11	4488	8/30/11	11:24	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**66**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	11:24	SW3550B8015B
o-terphenyl SUR	**71**	40-140	%	1	JLZ	8/29/11	4488	8/30/11	11:24	SW3550B8015B

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Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
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CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22576

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST CONCORD NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL

Project Name: WIGGINS TANK PULL
Project #: 11-027-042
Project Location: (NH circled) MA ME VT ___ Other
Protocol: RCRA MCP SDWA (NHDES circled) NPDES OTHER
Reporting Limits: QAPP EPA DW GW-1 S-1 Other ___
Quote # ___ ☐ NH GREE/ODD Fund Pricing
PO # ___

ANALYSIS REQUEST

Analysis columns:
1. ☒ VOC 8260 ☒ VOC 8260 NHDES ☐ VOC 8260 MADEP
2. ☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT
3. ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015
4. ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
5. ☒ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint
6. ☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1
7. ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
8. ☐ O&G 1664 ☐ Mineral O&G SM5520F
9. ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity
10. ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity
11. ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals
12. ☐ Total Metals-list:
13. ☐ Dissolved Metals-list:
14. ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON
15. ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
16. ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
17. ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
18. ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
19. ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
20. Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides
21. Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Pres.: HCl	Pres.: HNO_3	Pres.: H_2SO_4	Pres.: NaOH	Pres.: MeOH	Pres.: OTHER (Specify)	Sampling: DATE	Sampling: TIME	SAMPLER	VOC 8260	TPH	8270PAH
22576-01	SS-1	2		X						✓		10/6/11	3:00	GS	X	X	X
-02	Trip Blank																

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☒
Standard (10 Business Days) ☐ *
*Date Needed ___

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS * Per Glenn - 24hr TAT @ 10/7/11

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ___ ☐ OTHER (specify) ___

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 3 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	10/7/11	10:41	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by Laboratory: [signature] King Way Bill#:	10-7-11	10:41

QSD-01 Revision 12/23/10

Project ID: Wiggins Tank Pull 11-027-042

Job ID: 22576

Sample#: 22576-001

Sample ID: SS-1

Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.

Sampled: 10/6/11 15:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,3,5-trimethylbenzene	**0.2**	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2,4-trimethylbenzene	**0.4**	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
4-isopropyltoluene	**0.1**	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**99**	78-114	%	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
toluene-D8 SUR	**98**	88-110	%	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
4-bromofluorobenzene SUR	**107**	86-115	%	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
a,a,a-trifluorotoluene SUR	**86**	70-130	%	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B

Note: Preliminary data pending quality control analysis.

Absolute Resource associates

Project ID: Wiggins Tank Pull 11-027-042
Job ID: 22576
Sample#: 22576-001
Sample ID: SS-1
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/6/11 15:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
2-butanone (MEK)	0.9	0.3	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
tetrahydrofuran (THF)	< 0.6	0.6	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.5	0.5	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
2-hexanone	< 0.6	0.6	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:04	SW5035A8260B

Project ID: Wiggins Tank Pull 11-027-042
Job ID: 22576

Sample#: 22576-001
Sample ID: SS-1
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/6/11 15:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
2-methylnaphthalene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
acenaphthylene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
acenaphthene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
dibenzofuran	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
fluorene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
phenanthrene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
anthracene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
pyrene	**0.6**	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
benzo(a)anthracene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
chrysene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
benzo(a)pyrene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/g	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**91**	43-116	%	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D
o-terphenyl SUR	**88**	33-141	%	1	AJD	10/10/11	4616	10/10/11	15:50	SW3550B8270D

Sample#: 22576-001
Sample ID: SS-1
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/6/11 15:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	**1700**	210	ug/g	1	JLZ	10/10/11	4617	10/10/11	14:06	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**75**	40-140	%	1	JLZ	10/10/11	4617	10/10/11	14:06	SW3550B8100m
o-terphenyl SUR	**140**	40-140	%	1	JLZ	10/10/11	4617	10/10/11	14:06	SW3550B8100m

Absolute Resource associates

Project ID: Wiggins Tank Pull 11-027-042
Job ID: 22576
Sample#: 22576-002
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/6/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
2-butanone (MEK)	0.3	0.3	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B

Project ID: Wiggins Tank Pull 11-027-042
Job ID: 22576
Sample#: 22576-002
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/6/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**93**	78-114	%	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
toluene-D8 SUR	**96**	88-110	%	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
4-bromofluorobenzene SUR	**99**	86-115	%	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B
a,a,a-trifluorotoluene SUR	**87**	70-130	%	1	LMM	10/10/11	4618	10/10/11	16:36	SW5035A8260B

Note: Preliminary data pending quality control analysis.

Absolute Resource Associates

Absolute Resource associates

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Portswmouth, NH 03801
603-436-2001
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CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22606

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST CONCORD, NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGODIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS TANK CLOSURE
Project #: 11-027-042
Project Location: (NH) MA ME VT Other
Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER
Reporting Limits: QAPP EPA DW GW-1 Other S-1
Quote #: ☐ NH GREE/ODD Fund Pricing
PO #:

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Pres.: HCl	Pres.: HNO_3	Pres.: H_2SO_4	Pres.: NaOH	Pres.: MeOH	Pres.: OTHER (Specify)	DATE	TIME	SAMPLER	☒ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP	☒ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint	☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1
2260601	SS-2	2		X						X		10/11/11	10:49	GS	✓	✓	✓

Other analysis options (not selected): ☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT; ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015; ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List; ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB; ☐ O&G 1664 ☐ Mineral O&G SM5520F; ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity; ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity; ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals; ☐ Total Metals-list; ☐ Dissolved Metals-list; ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON; ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN; ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride; ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP; ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide; Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides; Grab (G) or Composite (C)

TAT REQUESTED
Priority (24 hr)* ☒
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed ______

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART @ SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☒ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☑ YES ☐ NO
TEMPERATURE 2 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	10/12/11	11:30 am	Received by: [signature]	10/12/11	1130am
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by Laboratory: Way Bill#:	Date	Time

QSD-01 Revision 12/23/10

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22606
Sample#: 22606-001
Sample ID: SS-2
Matrix: Solid Percent Dry: 78.1% Results expressed on a dry weight basis.
Sampled: 10/11/11 10:49

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
tetrahydrofuran (THF)	< 0.6	0.6	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.6	0.6	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
2-hexanone	< 0.6	0.6	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22606

Sample#: 22606-001

Sample ID: SS-2

Matrix: Solid Percent Dry: 78.1% Results expressed on a dry weight basis.

Sampled: 10/11/11 10:49

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
ethylbenzene	**0.2**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
m&p-xylenes	**1.1**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
o-xylene	**0.4**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
isopropylbenzene	**0.3**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
n-propylbenzene	**0.8**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,3,5-trimethylbenzene	**3.8**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2,4-trimethylbenzene	**11**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
sec-butylbenzene	**1.1**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
4-isopropyltoluene	**1.3**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
naphthalene	**2.1**	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**91**	78-114	%	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
toluene-D8 SUR	**97**	88-110	%	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B
a,a,a-trifluorotoluene SUR	**71**	70-130	%	1	LMM	10/12/11	4618	10/12/11	20:33	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22606

Sample#: 22606-001

Sample ID: SS-2

Matrix: Solid Percent Dry: 78.1% Results expressed on a dry weight basis.

Sampled: 10/11/11 10:49

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
2-methylnaphthalene	**3.5**	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
phenanthrene	**0.7**	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
fluoranthene	**0.9**	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
pyrene	**0.7**	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**98**	43-116	%	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D
o-terphenyl SUR	**102**	33-141	%	1	AJD	10/13/11	4632	10/13/11	15:15	SW3550B8270D

Sample#: 22606-001

Sample ID: SS-2

Matrix: Solid Percent Dry: 78.1% Results expressed on a dry weight basis.

Sampled: 10/11/11 10:49

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	**3500**	250	ug/g	1	JLZ	10/13/11	4629	10/13/11	13:46	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**65**	40-140	%	1	JLZ	10/13/11	4629	10/13/11	13:46	SW3550B8100m
o-terphenyl SUR	**100**	40-140	%	1	JLZ	10/13/11	4629	10/13/11	13:46	SW3550B8100m

Absolute Resource Associates

Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22669

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST. CONCORD, NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS TANK CLOSURE
Project #: 11-027-042
Project Location: (NH) MA ME VT Other
Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER
Reporting Limits: QAPP EPA DW GW-1 Other S-1
Quote # ______ ☐ NH GREE/ODD Fund Pricing
PO # ______

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Matrix: Water	Matrix: Solid	Matrix: Other	HCl	HNO_3	H_2SO_4	NaOH	MeOH	Other (Specify)	Date	Time	Sampler	☒ VOC 8260	☒ TPH	☒ 8270PAH
22669-01	CSS-1	2		✓						✓		11/17/11	9:43	GS	✓	✓	✓
-02	CSS-2	2		✓						✓		↓	9:50	↓	✓	✓	✓
-03	CSS-3	2		✓						✓		↓	9:54	↓	✓	✓	✓
-04	CSS-4			✓						✓		↓	10:36	↓	✓	✓	✓
-05	CGW-1		✓									↓	10:46	↓	✓	✓	✓
-06	Trip Blank	1	✓			jg added 10/19/11									✓		
-07	Trip Blank	1		✓											✓		

Date annotation: per receipt 10/19/11

Analysis options: ☒ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP; ☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT; ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015; ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:; ☒ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint; ☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1; ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB; ☐ O&G 1664 ☐ Mineral O&G SM5520F; ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity; ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity; ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals; ☐ Total Metals-list:; ☐ Dissolved Metals-list:; ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON; ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN; ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride; ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP; ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide; Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides; Grab (G) or Composite (C)

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☒
*Date Needed ______

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
Per Glenn - TPH water due 10/21/11, all others due 10/24/11 jg

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 4 °C

CUSTODY RECORD		Date	Time		Date	Time
Relinquished by Sampler: [signature]		11/17/11	12:35	Received by: [signature]	11/17/11	12:30
Relinquished by: [signature]		11/19/11	9:50	Received by:		
Relinquished by:				Received by Laboratory: [signature] Way Bill:	11/18/11	950

QSD-01 Revision 12/23/10

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-001
Sample ID: CSS-1
Matrix: Solid Percent Dry: 80.9% Results expressed on a dry weight basis.
Sampled: 10/17/11 9:43

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
acetone	< 4	4	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
t-butanol (TBA)	< 4	4	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
tetrahydrofuran (THF)	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,4-dioxane	< 4	4	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.6	0.6	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
2-hexanone	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-001

Sample ID: CSS-1

Matrix: Solid Percent Dry: 80.9% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:43

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**89**	78-114	%	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
toluene-D8 SUR	**96**	88-110	%	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
4-bromofluorobenzene SUR	**98**	86-115	%	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B
a,a,a-trifluorotoluene SUR	**84**	70-130	%	1	LMM	10/19/11	4642	10/20/11	17:29	SW5035A8260B

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-002
Sample ID: CSS-2
Matrix: Solid Percent Dry: 91.1% Results expressed on a dry weight basis.
Sampled: 10/17/11 9:50

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
tetrahydrofuran (THF)	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.6	0.6	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
2-hexanone	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-002

Sample ID: CSS-2

Matrix: Solid Percent Dry: 91.1% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:50

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,3,5-trimethylbenzene	**0.2**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2,4-trimethylbenzene	**0.3**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**85**	78-114	%	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
toluene-D8 SUR	**96**	88-110	%	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B
a,a,a-trifluorotoluene SUR	**81**	70-130	%	1	LMM	10/19/11	4642	10/20/11	19:34	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-003

Sample ID: CSS-3

Matrix: Solid Percent Dry: 83% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:54

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
tetrahydrofuran (THF)	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.6	0.6	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
2-hexanone	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-003

Sample ID: CSS-3

Matrix: Solid Percent Dry: 83% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:54

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
ethylbenzene	**1.2**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
m&p-xylenes	**6.3**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
o-xylene	**0.4**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
isopropylbenzene	**1.1**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
n-propylbenzene	**2.7**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,3,5-trimethylbenzene	**10**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2,4-trimethylbenzene	**30**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
sec-butylbenzene	**3.7**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
4-isopropyltoluene	**3.9**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
naphthalene	**5.9**	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**91**	78-114	%	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
4-bromofluorobenzene SUR	**98**	86-115	%	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B
a,a,a-trifluorotoluene SUR	**87**	70-130	%	1	LMM	10/19/11	4642	10/20/11	20:36	SW5035A8260B

Absolute Resource Associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-004
Sample ID: CSS-4
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/17/11 10:36

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
acetone	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
t-butanol (TBA)	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
2-butanone (MEK)	< 0.4	0.4	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
tetrahydrofuran (THF)	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,4-dioxane	< 3	3	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.6	0.6	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
2-hexanone	< 0.7	0.7	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-004
Sample ID: CSS-4
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/17/11 10:36

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**90**	78-114	%	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
toluene-D8 SUR	**94**	88-110	%	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
4-bromofluorobenzene SUR	**93**	86-115	%	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B
a,a,a-trifluorotoluene SUR	**85**	70-130	%	1	LMM	10/19/11	4642	10/20/11	16:58	SW5035A8260B

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-005
Sample ID: CGW-1
Matrix: Water
Sampled: 10/17/11 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-005
Sample ID: CGW-1
Matrix: Water
Sampled: 10/17/11 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
ethylbenzene	**3**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
m&p-xylenes	**15**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
o-xylene	**9**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
isopropylbenzene	**3**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
n-propylbenzene	**7**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,3,5-trimethylbenzene	**51**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2,4-trimethylbenzene	**120**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
sec-butylbenzene	**9**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
4-isopropyltoluene	**13**	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
naphthalene	**27**	5	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**89**	78-114	%	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
toluene-D8 SUR	**93**	88-110	%	1	LMM		1102369	10/20/11	23:42	SW5030B8260B
4-bromofluorobenzene SUR	**88**	86-115	%	1	LMM		1102369	10/20/11	23:42	SW5030B8260B

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-006
Sample ID: Trip Blank
Matrix: Water
Sampled: 10/17/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-006
Sample ID: Trip Blank
Matrix: Water
Sampled: 10/17/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**88**	78-114	%	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
toluene-D8 SUR	**93**	88-110	%	1	LMM		1102369	10/20/11	15:24	SW5030B8260B
4-bromofluorobenzene SUR	**90**	86-115	%	1	LMM		1102369	10/20/11	15:24	SW5030B8260B

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-007
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/17/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-007
Sample ID: Trip Blank
Matrix: Solid
Sampled: 10/17/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**90**	78-114	%	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
toluene-D8 SUR	**96**	88-110	%	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
4-bromofluorobenzene SUR	**99**	86-115	%	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B
a,a,a-trifluorotoluene SUR	**83**	70-130	%	1	LMM	10/19/11	4642	10/20/11	15:56	SW5035A8260B

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-001

Sample ID: CSS-1

Matrix: Solid Percent Dry: 80.9% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:43

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
2-methylnaphthalene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
dibenzofuran	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
fluorene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
phenanthrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
pyrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
benzo(a)anthracene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
chrysene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
benzo(b)fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**100**	43-116	%	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D
o-terphenyl SUR	**141**	33-141	%	1	AJD	10/20/11	4649	10/24/11	1:15	SW3550B8270D

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-002

Sample ID: CSS-2

Matrix: Solid Percent Dry: 91.1% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:50

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
2-methylnaphthalene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
acenaphthylene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
acenaphthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
dibenzofuran	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
fluorene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
phenanthrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
benzo(a)anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
chrysene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
benzo(a)pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**81**	43-116	%	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D
o-terphenyl SUR	**118**	33-141	%	1	AJD	10/20/11	4649	10/24/11	1:53	SW3550B8270D

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-003

Sample ID: CSS-3

Matrix: Solid Percent Dry: 83% Results expressed on a dry weight basis.

Sampled: 10/17/11 9:54

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**8.8**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
2-methylnaphthalene	**16**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
acenaphthylene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
acenaphthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
dibenzofuran	**0.8**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
fluorene	**1.3**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
phenanthrene	**3.0**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
anthracene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
fluoranthene	**3.3**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
pyrene	**1.4**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
benzo(a)anthracene	**0.8**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
chrysene	**0.6**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
benzo(b)fluoranthene	**0.7**	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
benzo(k)fluoranthene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
benzo(a)pyrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
dibenzo(a,h)anthracene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
benzo(g,h,i)perylene	< 0.6	0.6	ug/g	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**101**	43-116	%	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D
o-terphenyl SUR	**130**	33-141	%	1	AJD	10/20/11	4649	10/24/11	2:30	SW3550B8270D

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042

Job ID: 22669

Sample#: 22669-004

Sample ID: CSS-4

Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.

Sampled: 10/17/11 10:36

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
2-methylnaphthalene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
acenaphthylene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
acenaphthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
dibenzofuran	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
fluorene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
phenanthrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
benzo(a)anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
chrysene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
benzo(a)pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/g	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**81**	43-116	%	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D
o-terphenyl SUR	**121**	33-141	%	1	AJD	10/20/11	4649	10/24/11	3:07	SW3550B8270D

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-005
Sample ID: CGW-1
Matrix: Water
Sampled: 10/17/11 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
2-methylnaphthalene	**32**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
acenaphthylene	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
acenaphthene	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
dibenzofuran	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
fluorene	**6.2**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
phenanthrene	**11**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
anthracene	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
fluoranthene	**28**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
pyrene	**21**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
benzo(a)anthracene	**7.3**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
chrysene	**11**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
benzo(b)fluoranthene	**6.9**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
benzo(k)fluoranthene	**11**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
benzo(a)pyrene	**9.2**	2.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
indeno(1,2,3-cd)pyrene	**8.4**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
dibenzo(a,h)anthracene	< 5.0	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
benzo(g,h,i)perylene	**8.8**	5.0	ug/L	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**17 ***	43-116	%	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D
o-terphenyl SUR	**18 ***	33-141	%	10	AJD	10/20/11	4654	10/24/11	18:47	SW3510C8270D

**** The surrogate is low due to heavy emulsion formation during extraction. No additional sample remains for re-analysis.***

Absolute Resource associates

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669

Sample#: 22669-001
Sample ID: CSS-1
Matrix: Solid Percent Dry: 80.9% Results expressed on a dry weight basis.
Sampled: 10/17/11 9:43

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	450	230	ug/g	1	JLZ	10/20/11	4648	10/21/11	14:08	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	46	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:08	SW3550B8100m
o-terphenyl SUR	152 *	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:08	SW3550B8100m

**** The surrogate showed recovery outside the acceptance limits. Matrix interference suspected.***

Sample#: 22669-002
Sample ID: CSS-2
Matrix: Solid Percent Dry: 91.1% Results expressed on a dry weight basis.
Sampled: 10/17/11 9:50

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	860	210	ug/g	1	JLZ	10/20/11	4648	10/21/11	14:25	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	80	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:25	SW3550B8100m
o-terphenyl SUR	93	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:25	SW3550B8100m

Sample#: 22669-003
Sample ID: CSS-3
Matrix: Solid Percent Dry: 83% Results expressed on a dry weight basis.
Sampled: 10/17/11 9:54

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	8000	230	ug/g	1	JLZ	10/20/11	4648	10/21/11	14:41	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	#	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:41	SW3550B8100m
o-terphenyl SUR	100	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:41	SW3550B8100m

 # The surrogate could not be distinguished from the hydrocarbons present in the chromatogram.

Sample#: 22669-004
Sample ID: CSS-4
Matrix: Solid Percent Dry: 89.2% Results expressed on a dry weight basis.
Sampled: 10/17/11 10:36

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	800	210	ug/g	1	JLZ	10/20/11	4648	10/21/11	14:57	SW3550B8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	92	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:57	SW3550B8100m
o-terphenyl SUR	90	40-140	%	1	JLZ	10/20/11	4648	10/21/11	14:57	SW3550B8100m

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22669
Sample#: 22669-005
Sample ID: CGW-1
Matrix: Water
Sampled: 10/17/11 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	100000	4000	ug/L	20	JLZ	10/20/11	4650	10/21/11	12:35	SW3510C8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	#	40-140	%	20	JLZ	10/20/11	4650	10/21/11	12:35	SW3510C8100m
o-terphenyl SUR	#	40-140	%	20	JLZ	10/20/11	4650	10/21/11	12:35	SW3510C8100m

 # The surrogate could not be distinguished from the hydrocarbons present in the chromatogram.

Absolute Resource associates

Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 22680
Date Received: 10/20/11

Project: Wiggins Tank Closure 11-027-042

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

(for)

Sue Sylvester
Principal, General Manager

Date of Approval: 10/25/2011
Total number of pages: 6

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

PAGE____ OF____

Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22680

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST. CONCORD, NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS TANK CLOSURE
Project #: 11-027-042
Project Location: (NH) [illegible] Other
Protocol: RCRA SDWA NPDES MCP (NHDES) OTHER
Reporting Limits: QAPP GW-1 S-1 EPA DW Other______
Quote #______ ☐ NH GREE/ODD Fund Pricing
PO #______

ANALYSIS REQUEST

Analysis options:
- ☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
- ☒ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 6021VT
- ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015
- ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
- ☐ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint
- ☐ 8270PAH ☐ 8270ABN ☒ 625 ☐ EDB 504.1
- ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
- ☐ O&G 1664 ☐ Mineral O&G SM5520F
- ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity
- ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity
- ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals
- ☐ Total Metals-list:
- ☐ Dissolved Metals-list:
- ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON
- ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
- ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
- ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
- ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
- ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
- Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides
- Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Water	Solid	Other	HCl	HNO_3	H_2SO_4	NaOH	MeOH	Other (Specify)	Date	Time	Sampler	VOC 624 group	8270 group	Grab (G) or Composite (C)
[illegible]8001	FRAC TANK 3	3	✓			✓						10/20/11	8:24	GS	✓	✓	G
6 02	Trip Blank	"	"			"						"	"		✓ added 10/20/11 @		

Sampling note: per bottle

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☒
Standard (10 Business Days) ☐
*Date Needed ______

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#)______ ☐ OTHER (specify)______

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 8 °C

CUSTODY RECORD

	Date	Time		Date	Time
Relinquished by Sampler: Glenn R Smart	10/20/11	11:40	Received by: [signature]	10/20/11	11:40
Relinquished by:			Received by:		
Relinquished by:			Received by Laboratory: Way Bill#:		

QSD-01 Revision 12/23/10

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22680
Sample#: 22680-001
Sample ID: Frac Tank 3
Matrix: Water
Sampled: 10/20/11 8:24

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
chloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
vinyl chloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
bromomethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
chloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
trichlorofluoromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,1-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
methylene chloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
trans-1,2-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,1-dichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
cis-1,2-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
chloroform	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,1,1-trichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
carbon tetrachloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
benzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,2-dichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
trichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,2-dichloropropane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
bromodichloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
cis-1,3-dichloropropene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
2-chloroethylvinylether (2-CEVE)	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
toluene	**5**	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
trans-1,3-dichloropropene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,1,2-trichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
tetrachloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
dibromochloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
chlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
ethylbenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
bromoform	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,1,2,2-tetrachloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,2-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,3-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
1,4-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	14:17	E624
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**91**	78-114	%	1	LMM		1102384	10/21/11	14:17	E624
toluene-D8 SUR	**94**	88-110	%	1	LMM		1102384	10/21/11	14:17	E624
4-bromofluorobenzene SUR	**95**	86-115	%	1	LMM		1102384	10/21/11	14:17	E624

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22680
Sample#: 22680-002
Sample ID: Trip Blank
Matrix: Water
Sampled: 10/20/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
chloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
vinyl chloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
bromomethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
chloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
trichlorofluoromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,1-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
methylene chloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
trans-1,2-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,1-dichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
cis-1,2-dichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
chloroform	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,1,1-trichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
carbon tetrachloride	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
benzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,2-dichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
trichloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,2-dichloropropane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
bromodichloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
cis-1,3-dichloropropene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
2-chloroethylvinylether (2-CEVE)	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
toluene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
trans-1,3-dichloropropene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,1,2-trichloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
tetrachloroethene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
dibromochloromethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
chlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
ethylbenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
bromoform	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,1,2,2-tetrachloroethane	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,2-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,3-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
1,4-dichlorobenzene	< 5	5	ug/L	1	LMM		1102384	10/21/11	13:48	E624
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**91**	78-114	%	1	LMM		1102384	10/21/11	13:48	E624
toluene-D8 SUR	**94**	88-110	%	1	LMM		1102384	10/21/11	13:48	E624
4-bromofluorobenzene SUR	**88**	86-115	%	1	LMM		1102384	10/21/11	13:48	E624

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22680
Sample#: 22680-001
Sample ID: Frac Tank 3
Matrix: Water
Sampled: 10/20/11 8:24

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
N-nitrosodimethylamine	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
aniline	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
phenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2-chlorophenol	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
bis(2-chloroethyl)ether	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
1,3-dichlorobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
1,4-dichlorobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
1,2-dichlorobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzyl alcohol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2-methylphenol	**4**	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
bis(2-chloroisopropyl) ether	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
hexachloroethane	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
N-nitroso-di-N-propylamine	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4-methylphenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
nitrobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
isophorone	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2-nitrophenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2,4-dimethylphenol	**6**	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
bis(2-chloroethoxy)methane	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2,4-dichlorophenol	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
1,2,4-trichlorobenzene	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
naphthalene	< 0.5	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzoic acid	< 53	53	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
4-chloroaniline	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
hexachlorobutadiene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4-chloro-3-methylphenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2-methylnaphthalene	**1.1**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
hexachlorocyclopentadiene	< 11	11	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2,4,6-trichlorophenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2,4,5-trichlorophenol	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2-chloronaphthalene	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2-nitroaniline	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
acenaphthylene	**0.6**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
dimethylphthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2,6-dinitrotoluene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2,4-dinitrotoluene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
acenaphthene	**0.8**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
3-nitroaniline	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2,4-dinitrophenol	< 53	53	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
dibenzofuran	**0.9**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4-nitrophenol	< 21	21	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
fluorene	**1.3**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
diethyl phthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22680
Sample#: 22680-001
Sample ID: Frac Tank 3
Matrix: Water
Sampled: 10/20/11 8:24

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
4-chlorophenyl phenyl ether	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4-nitroaniline	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4,6-dinitro-2-methylphenol	< 21	21	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
azobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
N-nitrosodiphenylamine	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
4-bromophenyl phenyl ether	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
hexachlorobenzene	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
pentachlorophenol	< 11	11	ug/L	1	AJD	10/21/11	4659	10/24/11	4:59	E625
phenanthrene	**0.8**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
anthracene	< 0.5	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
carbazole	< 2	2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
di-n-butylphthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
fluoranthene	**1.7**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzidine	< 32	32	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
pyrene	**1.9**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
butyl benzyl phthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzo(a)anthracene	**0.6**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
chrysene	**0.9**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
3,3'-dichlorobenzidine	< 32	32	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
bis(2-ethylhexyl)phthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
di-n-octyl phthalate	< 5	5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzo(b)fluoranthene	**1.0**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzo(a)pyrene	**0.7**	0.2	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
indeno(1,2,3-cd)pyrene	**0.8**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
dibenzo(a,h)anthracene	< 0.5	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
benzo(g,h,i)perylene	**0.8**	0.5	ug/L	1	AJD	10/21/11	4659	10/24/11	5:36	E625
Surrogate Recovery		**Limits**								
2-fluorophenol SUR	**31**	21-100	%	1	AJD	10/21/11	4659	10/24/11	4:59	E625
phenol-D5 SUR	**23**	10-102	%	1	AJD	10/21/11	4659	10/24/11	4:59	E625
2,4,6-tribromophenol SUR	**71**	10-123	%	1	AJD	10/21/11	4659	10/24/11	4:59	E625
nitrobenzene-D5 SUR	**63**	35-114	%	1	AJD	10/21/11	4659	10/24/11	5:36	E625
2-fluorobiphenyl SUR	**58**	43-116	%	1	AJD	10/21/11	4659	10/24/11	5:36	E625
p-terphenyl-D14 SUR	**77**	33-141	%	1	AJD	10/21/11	4659	10/24/11	5:36	E625

Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 22629
Date Received: 10/14/11

Project: Wiggins Tank Closure 11-027-042

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

(for)

Sue Sylvester
Principal, General Manager

Date of Approval: 10/19/2011
Total number of pages: 3

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Absolute Resource associates

124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22629

Company Name: THE SMART ASSOCIATES

Company Address: 72 N. MAIN ST.

Report To: GLENN SMART

Phone #: 603-224-7550

Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS TANK CLOSURE

Project #: 11-027-042

Project Location: (NH) MA ME VT Other

Protocol: RCRA SDWA NPDES MCP (NHDES) OTHER

Reporting Limits: QAPP GW-1 S-1 EPA DW Other

Quote # ☐ NH GREE/ODD Fund Pricing

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Preservation: HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER (Specify)	Sampling: DATE	TIME	SAMPLER	Analysis: TPH
	~~(crossed out)~~														X
2262901	TANK 2	1	1									10/13/11	8:10	GS	

ANALYSIS REQUEST

- ☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
- ☐ VOC 624 ☐ VOC BTEX ☐ MBE, only ☐ VOC 8021VT
- ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015
- ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
- ☒ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint
- ☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1
- ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
- ☐ O&G 1664 ☐ Mineral O&G SM5520F
- ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity
- ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity
- ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals
- ☐ Total Metals-list:
- ☐ Dissolved Metals-list:
- ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON
- ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
- ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
- ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
- ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
- ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
- Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides
- Grab (G) or Composite (C)

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☒
Standard (10 Business Days) ☐
*Date Needed

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☐ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 6 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler:	10/14/11	11:55	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by Laboratory: / Way Bill#:	10-14-11	11:55

QSD-01 Revision 12/23/10

3

Project ID: Wiggins Tank Closure 11-027-042
Job ID: 22629
Sample#: 22629-001
Sample ID: Tank 2
Matrix: Water
Sampled: 10/13/11 8:10

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	**63000**	10000	ug/L	50	JLZ	10/17/11	4636	10/18/11	13:42	SW3510C8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**DOR**	40-140	%	50	JLZ	10/17/11	4636	10/18/11	13:42	SW3510C8100m
o-terphenyl SUR	**DOR**	40-140	%	50	JLZ	10/17/11	4636	10/18/11	13:42	SW3510C8100m

DOR = Diluted out of range.

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Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

22356

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST. CONCORD, NH 03301
Report To: GLENN SMART
Phone #: 603 - 224 - 2550
Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: TANK PULL
Project #:
Project Location: (NH) MA ME VT Other
Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER
Reporting Limits: QAPP EPA DW GW-1 S-1 Other UST
Quote #: ☐ NH GREE/ODD Fund Pricing
PO #:

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Matrix: Water	Matrix: Solid	Matrix: Other	Preservation: HCl	HNO3	H2SO4	NaOH	MeOH	Other	Date	Time	Sampler	VOC 8260	TPH	8270PAH (No PAH)	Subcontract: Cu, Pb, Hg, Zn, Ag (TOTAL)	Grab (G) or Composite (C)
22356-01	TANK 1	4	X									9/8/11	10:02	GS	X	X	X		G
-02	~~Trip Blank~~ TANK 2	1										9/9/11	9:45	GS	~~X~~			X	G
-03	Trip Blank	1	✓									—	—		✓ @ 9/9/11				

Analysis options listed on the form: ☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP; ☐ VOC 624 ☐ VOC BTEX ☐ MBE, only ☐ VOC 8021VT; ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015; ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List; ☐ TPH ☐ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint; ☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1; ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB; ☐ O&G 1664 ☐ Mineral O&G SM5520F; ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity; ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity; ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals; ☐ Total Metals-list:; ☐ Dissolved Metals-list:; ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON; ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN; ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride; ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP; ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide; Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☒
Standard (10 Business Days) ☐
*Date Needed ____

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS – NOTED: SAMPLE COLLECTED FROM HOLDING TANK "DOWNSTREAM" OF AN OIL/WATER SEPARATOR.

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☒ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 2 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	9/9/11	1:07	Received by: —		
Relinquished by: —			Received by: —		
Relinquished by: —			Received by Laboratory: [signature] Way Bill#:	9-9-11	13:07

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-001
Sample ID: TANK 1
Matrix: Water
Sampled: 9/8/11 10:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
acetone	**58**	50	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
2-butanone (MEK)	**12**	10	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
toluene	**18**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B

Absolute Resource associates

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-001
Sample ID: TANK 1
Matrix: Water
Sampled: 9/8/11 10:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
ethylbenzene	**12**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
m&p-xylenes	**54**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
o-xylene	**34**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
isopropylbenzene	**4**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
n-propylbenzene	**8**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,3,5-trimethylbenzene	**29**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2,4-trimethylbenzene	**110**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
sec-butylbenzene	**4**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
4-isopropyltoluene	**5**	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
naphthalene	**110**	5	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM		1101990	9/12/11	14:22	SW5030B8260B
4-bromofluorobenzene SUR	**100**	86-115	%	1	LMM		1101990	9/12/11	14:22	SW5030B8260B

Absolute Resource associates

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-003
Sample ID: Trip Blank
Matrix: Water
Sampled: 9/9/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-003
Sample ID: Trip Blank
Matrix: Water
Sampled: 9/9/11 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
toluene-D8 SUR	**98**	88-110	%	1	LMM		1101990	9/12/11	12:22	SW5030B8260B
4-bromofluorobenzene SUR	**94**	86-115	%	1	LMM		1101990	9/12/11	12:22	SW5030B8260B

Absolute Resource associates

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-001
Sample ID: TANK 1
Matrix: Water
Sampled: 9/8/11 10:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
N-nitrosodimethylamine	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
aniline	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
phenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-chlorophenol	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
bis(2-chloroethyl)ether	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
1,3-dichlorobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
1,4-dichlorobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
1,2-dichlorobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzyl alcohol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-methylphenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
bis(2-chloroisopropyl) ether	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
hexachloroethane	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
N-nitroso-di-N-propylamine	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-methylphenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
nitrobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
isophorone	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-nitrophenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4-dimethylphenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
bis(2-chloroethoxy)methane	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4-dichlorophenol	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
1,2,4-trichlorobenzene	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
naphthalene	**36**	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzoic acid	< 260	260	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-chloroaniline	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
hexachlorobutadiene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-chloro-3-methylphenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-methylnaphthalene	**99**	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
hexachlorocyclopentadiene	< 52	52	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4,6-trichlorophenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4,5-trichlorophenol	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-chloronaphthalene	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-nitroaniline	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
acenaphthylene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
dimethylphthalate	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,6-dinitrotoluene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4-dinitrotoluene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
acenaphthene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
3-nitroaniline	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4-dinitrophenol	< 260	260	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
dibenzofuran	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-nitrophenol	< 52	52	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
fluorene	**2.6**	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
diethyl phthalate	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D

Absolute Resource associates

Project ID: Tank Pull
Job ID: 22356
Sample#: 22356-001
Sample ID: TANK 1
Matrix: Water
Sampled: 9/8/11 10:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
4-chlorophenyl phenyl ether	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-nitroaniline	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4,6-dinitro-2-methylphenol	< 100	100	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
azobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
N-nitrosodiphenylamine	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
4-bromophenyl phenyl ether	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
hexachlorobenzene	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
pentachlorophenol	< 52	52	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
phenanthrene	**5.2**	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
anthracene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
carbazole	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
di-n-butylphthalate	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
fluoranthene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzidine	< 150	150	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
pyrene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
butyl benzyl phthalate	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzo(a)anthracene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
chrysene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
3,3'-dichlorobenzidine	< 150	150	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
bis(2-ethylhexyl)phthalate	< 26	26	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
di-n-octyl phthalate	< 10	10	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzo(b)fluoranthene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzo(k)fluoranthene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzo(a)pyrene	< 1.0	1.0	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
dibenzo(a,h)anthracene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
benzo(g,h,i)perylene	< 2.6	2.6	ug/L	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorophenol SUR	**36**	21-100	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
phenol-D5 SUR	**22**	10-102	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2,4,6-tribromophenol SUR	**93**	10-123	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
nitrobenzene-D5 SUR	**94**	35-114	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
2-fluorobiphenyl SUR	**84**	43-116	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D
p-terphenyl-D14 SUR	**74**	33-141	%	5	AJD	9/12/11	4520	9/13/11	9:14	SW3510C8270D

Note: Dilution was required due to the presence of hydrocarbons in the sample.

Project ID: Tank Pull
Job ID: 22356

Sample#: 22356-001
Sample ID: TANK 1
Matrix: Water
Sampled: 9/8/11 10:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
TPH C10-C36	**16000**	1100	ug/L	5	JLZ	9/12/11	4521	9/13/11	13:28	SW3510C8100m
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**96**	40-140	%	5	JLZ	9/12/11	4521	9/13/11	13:28	SW3510C8100m
o-terphenyl SUR	**163 ***	40-140	%	5	JLZ	9/12/11	4521	9/13/11	13:28	SW3510C8100m

**** The surrogate showed recovery outside the acceptance limits as a result of co-eluting hydrocarbons.***

Sample#: 22356-002
Sample ID: TANK 1
Matrix: Water
Sampled: 9/9/11 9:45

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Copper	< 0.05	0.05	mg/L	1	BJS	9/13/11	4527	9/13/11	15:38	SW3005A6010C
Lead	**0.054**	0.008	mg/L	1	BJS	9/13/11	4527	9/13/11	15:38	SW3005A6010C
Note: The RPD for the sample duplicate, run as internal QC, was outside the 20% acceptance range. The duplicate result was 0.034 mg/L.										
Mercury	< 0.0002	0.0002	mg/L	1	BJS	9/13/11	4525	9/13/11	15:36	SW7470A
Silver	< 0.007	0.007	mg/L	1	BJS	9/13/11	4527	9/13/11	15:38	SW3005A6010C
Zinc	**0.84**	0.05	mg/L	1	BJS	9/13/11	4527	9/13/11	15:38	SW3005A6010C

Absolute Resource associates

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NHD [illegible]	1 1	1-800-483-3718	004946443 FLE

GENERATOR

5. Generator's Name and Mailing Address
CAB Services
PO Box 8
Dover New Hampshire
Generator's Phone: 603- 749-6[illegible]

Generator's Site Address (if different than mailing address)
CAB Services
72 Littlworth Rd
Dover New Hampshire

6. Transporter 1 Company Name
Clean Harbors Environmental Services Inc
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Environmental Services
37 Runway Rd
S Portland Maine
Facility's Phone: 207-772-2021
U.S. EPA ID Number: MED 980671192

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. Non Hazardous, Non DOT Regulated Material (Oil Contaminated Water) Non, None	001	T-T	697	G	
	2. Non Hazardous, Non DOT Regulated Material (Oil Contaminated Water) Non, None	001	T-T	135	G	
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Generator #1 Nonwaster Airport
Generator #2 Fuller

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [illegible] | Signature: [illegible] | Month: 11 | Day: 10 | Year: 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Alan Maitland | Signature: [illegible] | Month: 11 | Day: 10 | Year: 11

Transporter 2 Printed/Typed Name: | Signature: | Month: | Day: | Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

DOCUMENT NO. 00331

WORK ORDER NO. _____

STRAIGHT BILL OF LADING

TRANSPORTER 1 CAB SERVICES INC — VEHICLE ID # 89-00
EPA ID # _____ — TRANS. 1 PHONE 603 749 6355

TRANSPORTER 2 _____ — VEHICLE ID # _____
EPA ID # _____ — TRANS. 2 PHONE _____

DESIGNATED FACILITY	SHIPPER
CAB SERVICES INC	MANCHESTER / BOSTON AIRPORT
FACILITY EPA ID #	SHIPPER EPA ID #
ADDRESS	ADDRESS
72 LITTLEWORTH RD	GREEN ST
CITY STATE ZIP	CITY STATE ZIP
DOVER NH 03820	MANCHESTER NH

CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
1 X 1000	SKID VAC		A. VIRGIN PETROLEUM FOR RECYCLE UN 1993 HEATING OIL / WATER.	250	GALS
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		

SPECIAL HANDLING INSTRUCTIONS
FUEL OIL FOR RECYCLE — E.R. # 1800-633-8253

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

AGENT FOR

	PRINT	SIGN	DATE
SHIPPER	DAN GRIMES	[signature]	10/6/11
TRANSPORTER 1	DAN GRIMES	[signature]	10/6/11
TRANSPORTER 2			
RECEIVED BY			

CHI 190

Town Londonderry Date of Closure October 24, 2011 Mailed

comp *New Hampshire Department of Environmental Services (603) 271-3644 FAX (603) 271-2181*

UST CLOSURE NOTIFICATION

1. Telephone Message

Name John Hagopian Initial

Date:

Street 6 Industrial Drive Telephone: 603-624-6539

City Londonderry, NH Fax #

2. **Facility Registration Number:** 0111000

Name Former Wiggins Airways Hangar City Londonderry, NH

Street 5 Green Drive Telephone N/A

3. Owner Name

Name Manchetser-Boston Regional Airp City Manchester Telephone: 603-624-6539

4. Tank Removal Information *****L=Leaker Suspected; R=Removal; F=Filled in Place*

L R F	L R F	L R F	L R F	L R F
Tank # 0111000-9	Tank # 0111000-10	Tank #	Tank #	Tank #
Size 50,000	Size 50,000	Size	Size	Size
Product Jet-A fuel	Product Jet-A fuel	Product	Product	Product
Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No

5. Consultant / Contractor: The Smart Associates/C.A.B. Services Inc. **IFCI Certification :** 8063008

6. Local Fire Dept. Notified

7. Inspector Bruce Bentham Date

8. Field Screening Methods (tank and piping):

9. Sample Information

tank # 0111000-9	tank # 0111000-10	tank #	tank #	tank #
Soil ☑ Water ☑	Soil ☑ Water ☑	Soil ☐ Water ☐	Soil ☐ Water ☐	Soil ☐ Water ☐

Taken By:

10. Tank Condition:

tank # Excellent, no leaks	tank # Excellent, no leaks	tank #	tank #	tank #

11. Indicate tank and sample locations by sketching on back of this report.

12. Include photographs of the excavation and tank(s) condition if avaliable.

13. **Estimated cubic yards of stock piled contaminated soil:** 0.0 cubic yards

14 . Verification

I have inspected the site of the removed tank(s), including the entire excavation area. I am knowledgable in field observation techniques to determine regulated substance contamination in soils and groundwater. There is no evidence of soil or groundwater contamination at the site. I have also inspected the excavated tank(s) and found no evidence of leakage.

Name:	Signature:	Date:

Town Londonderry Date of Closure October 6, 2011 Mailed

comp *New Hampshire Department of Environmental Services (603) 271-3644 FAX (603) 271-2181*

UST CLOSURE NOTIFICATION

1. Telephone Message

Name John Hagopian Initial

Date:

Street 6 Industrial Drive Telephone: 603-624-6539

City Londonderry, NH Fax #

2. **Facility Registration Number:** 0111000

Name Former Wiggins Airways Hangar City Londonderry, NH

Street 5 Green Drive Telephone N/A

3. Owner Name

Name Manchetser-Boston Regional Airp City Manchester Telephone: 603-624-6539

4. Tank Removal Information *****L=Leaker Suspected; R=Removal; F=Filled in Place*

L R F	L R F	L R F	L R F	L R F
Tank # 0111000-15	Tank # 0111000-16	Tank #	Tank #	Tank #
Size 6,000	Size 2,000	Size	Size	Size
Product Jet-A fuel	Product Jet-A fuel	Product	Product	Product
Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No	Will tank be replaced underground ? Yes No

5. Consultant / Contractor: The Smart Associates/C.A.B. Services Inc. **IFCI Certification :** 8063008

6. Local Fire Dept. Notified

7. Inspector Bruce Bentham Date

8. Field Screening Methods (tank and piping):

9. Sample Information

tank # 0111000-15	tank # 0111000-16	tank #	tank #	tank #
Soil ☑ Water ☑	Soil ☑ Water ☑	Soil ☐ Water ☐	Soil ☐ Water ☐	Soil ☐ Water ☐

Taken By:

10. Tank Condition:

tank # Excellent, no leaks	tank # Excellent, no leaks	tank #	tank #	tank #

11. Indicate tank and sample locations by sketching on back of this report.

12. Include photographs of the excavation and tank(s) condition if avaliable.

13. **Estimated cubic yards of stock piled contaminated soil:** 0.0 cubic yards

14 . Verification

I have inspected the site of the removed tank(s), including the entire excavation area. I am knowledgable in field observation techniques to determine regulated substance contamination in soils and groundwater. There is no evidence of soil or groundwater contamination at the site. I have also inspected the excavated tank(s) and found no evidence of leakage.

Name:	Signature:	Date:

Photograph #1 – Project Site Circa 2002 (NHDES Photograph)

Photograph #2 – Project Site 2011

Photograph #3 – 6,000-gallon UST

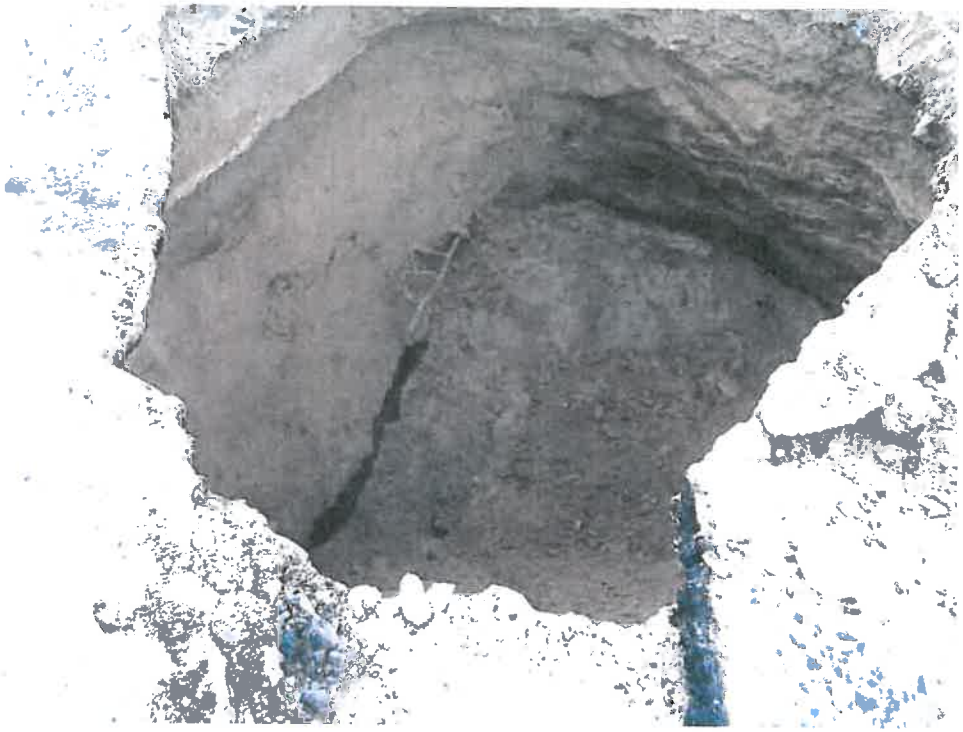
Photograph #4 – Oil/Water Separator

Photograph #5 – Catch Basin with Hooded Outlet

Photograph #6 – On-Site Frac-Tank

Photograph #7 - Pumping Fluid from 6,000-Gallon Tank

Photograph #8 – Test Pit TP-1



Photograph #9 – Test Pit TP-2

Photograph #10 – Test Pit TP-3

Photograph #11 – Test Pit TP-4

Photograph #12 – 6,000 Gallon Tank Removal

Photograph # 13 – 2,000-Gallon Tank Removal

Photograph #14 – Excavated Tanks

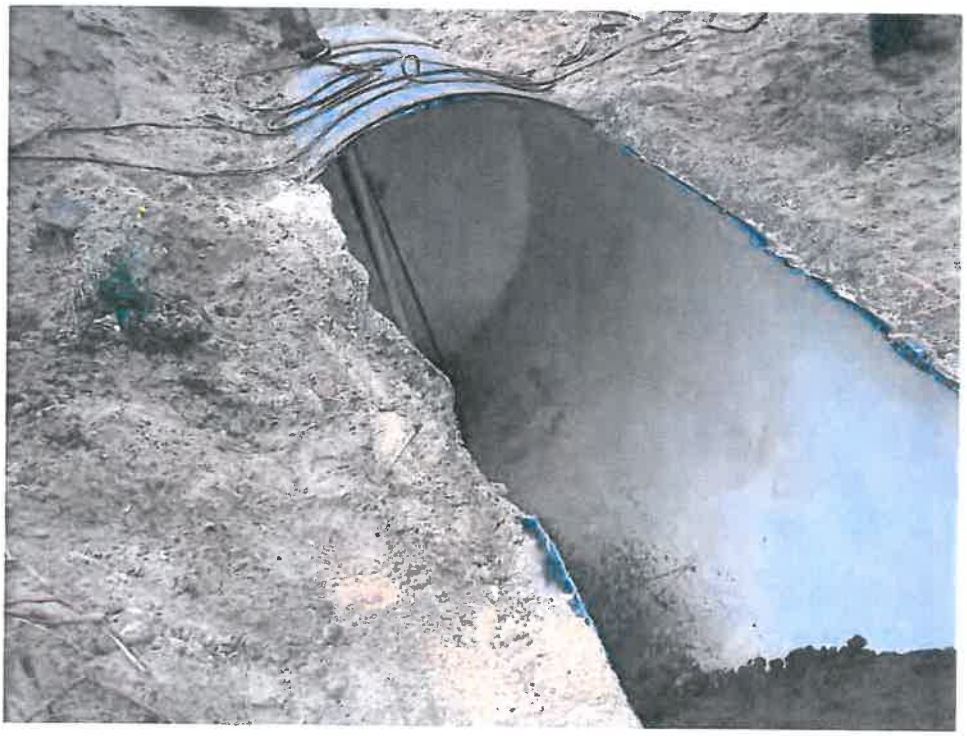
Photograph # 15 – Excavation Post Tank Removal

Photograph #16 – Soil Stockpile Area

Photograph #17 – Dewatering Excavation

Photograph # 18 – Excavated 50,000-Gallon Tanks

Photograph #19 – Opening 50,000-Gallon Tanks



Photograph #20 – Interior of Exposed 50,000-Gallon Tank

Photograph #21 – Partially Filled 50,000-Gallon Tank

Photograph #22 – Partially Filled 50,000-Gallon Tank

Photograph #23 – Backfilling 50,000-Gallon Tank Excavation

Photograph #24 – Completed Site Closure

SUPPLEMENATAL PROVISIONS
CARGO FACILITY SITE PREPARATION AND
HANGARS 6 AND 7 BUILDING DEMOLITION

LEVEL II SITE INVESTIGATION – BOTH HANGARS

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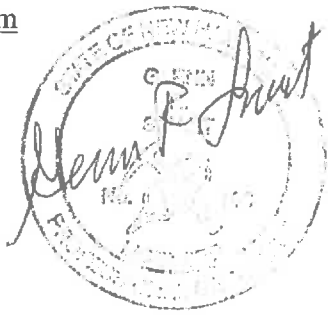
DES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

Level II Site Investigation
Former Wiggins Airways Fuel Farm
7 Green Drive
Londonderry, NH

NHDES Site#: 199707010
Project Type: Site Investigation
Project Number: 0027600

Prepared For:
Manchester-Boston Regional Airport
One Airport Road, Suite 300
Manchester, NH 03103
Phone Number: (630) 624-6539
RP Contact Name: John Hagopian
RP Contact Email: jhagopian@flymanchester.com



Prepared By:
The Smart Associates, Environmental Consultants, Inc.
72 North Main Street
Concord, NH 03301
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June 14, 2012

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Table of Contents

Appendices

1.0 INTRODUCTION

In a letter dated February 14, 2012 the New Hampshire Department of environmental Services (DES) requested that Manchester-Boston Regional Airport (the Airport) conduct a Level II Site Investigation at the former Wiggins Airway, Inc. (Wiggins) fuel farm located at 7 Green Drive in Londonderry, New Hampshire. The site investigation was requested following the review of an Underground Storage Tank (UST) Closure Report prepared by The Smart Associates, Environmental Consultants, Inc. (TSA) that identified "the presence of several petroleum compounds in soil and groundwater samples collected from test pits and tank graves" at the site. Pursuant to the DES's request TSA was retained by the Airport to conduct a Level II Site Investigation, the results of which are detailed in this report.

2.0 BACKGROUND INFORMATION

The project site is located in the Town of Londonderry, New Hampshire on an approximately 2.2 acre parcel of land (Londonderry Town Assessors Map 028 Lot 023-1) located in the central portion of the Airport just north of the terminal facility (Figures 1 and 2 in Appendix A). Additional information regarding current ownership and contacts is included in Table 1 (Appendix B).

A circa 1970 corrugated steel structure is located in the eastern portion of the lot and is herein referred to as Hangar #2. Hangar #1 was used by the Airport's former fixed base operator (FBO) Stead Aviation and later by the current FBO Wiggins to store and service aircraft. The structure is currently used by the Airport to store snow removal equipment and other vehicles. Portions of the site have historically been used as a fuel farm that dispensed jet fuel, avgas, and gasoline to aircraft and airport ground vehicles. The fuel farm has been inactive since 1997.

2.1 History of Site Ownership & Land Use

The Airport was constructed circa 1927 and ownership was later transferred to the US Army. In 1942, the airport was renamed Grenier Field and it served as a US Army Air Base through World War II. Ownership of the airport was transferred to the City of Manchester in 1966. Information regarding the transfer of ownership is on file at the Rockingham County (Book 1646 Page 484) and Hillsborough County (Book 1703 Page 317) Registries of Deeds. The site and an adjoining property (Londonderry Town Assessors Map 028 Lot 023-2) were operated by the Airport's FBO (Stead Aviation and later Wiggins Airways) as aviation hangars, offices, and fuel farms from the late 1960's to 1997. The project site, hereafter referred to as Hangar #1, the adjoining facility hereafter referred to as Hangar #2, and the approximate locations of twelve underground storage tanks (USTs) are shown on Figure 3. Two 50,000-gallon USTs and two smaller,

previously unregistered tanks were also located at Hangar #2, and are discussed further below.

According to data on file at the NHDES OneStop Data Retrieval site, Tanks #1 through #4 and #11 through #14 were installed on January 1, 1968; Tanks #5 through #8 were installed on January 1, 1970; and Tanks #9 and #10 were installed on July 1, 1979. There are no records regarding the installation dates of tanks #15 and #16. Data regarding the size, contents, installation dates and closure dates of the tanks are included in Table 2.

Tanks #1 through #8 and #11 through #14 were removed in June 1997. A UST Closure Report documenting the removal and closure process was prepared by Les A. Cartier and Associates, Inc. (LCA) of Candia, New Hampshire and submitted to NHDES on July 15, 1997. Tanks #9 and #10 were drained, cleaned, and temporarily closed on September 2, 1993.

The conditions of the removed tanks were described in the closure report as "good", however soil and groundwater contamination by petroleum related compounds was detected at several UST locations. Groundwater samples were collected from the tank grave at Tanks #1 and #2 and analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and total petroleum hydrocarbons (TPH) by EPA Method 8100(mod). The results of the groundwater sample analyses are summarized in Table 4. No water was encountered at Tanks #3 and #4, so soil samples were collected and analyzed for the same parameters. The results of the soil sample analyses are summarized in Table 5. No groundwater was encountered during the removal of Tanks #5 through #8 and Tanks #11 through #14, therefore, soil samples were collected and analyzed for VOCs and TPH. The analytical results for these samples are summarized in Table 6 and Table 7.

Following the removal of the twelve USTs in 1997 and the temporary closure of the remaining two 50,000-gallon USTs, three 12,000-gallon aboveground storage tanks (ASTs) were installed at the site and served as the Airport's fuel farm until their closure and removal in 2004.

Based upon a review of the tank closure sample analyses, on August 8, 1997 NHDES requested that an Initial Site Characterization Report be prepared for the two fuel farm sites. A work scope to perform the study was submitted to NHDES on November 4, 1997 by LCA and approved on November 14, 1997 by NHDES. The scope of work included the installation and sampling of soil borings and the construction and sampling of seven groundwater monitoring wells. Wells MW-1, MW-2, MW-3 and MW-7 were installed at Hangar #2 and wells MW-4, MW-5

and MW-6 were installed at Hangar #1. The approximate locations of the seven wells are shown on Figures 4 and 5.

Four rounds of groundwater VOC samples were collected from wells MW-2, MW-4, MW-5, MW-6, and MW-7. No VOCs were detected in any of the samples from wells MW-2 and MW-6. Several petroleum-related VOCs were detected in wells MW-4, MW-5, and MW-7. Two exceedances of NHDES Ambient Groundwater Standards were detected: a single sample from well MW-5 contained 6 micrograms per liter (µg/L) of benzene and a single sample from well MW-7 contained 1,500 µg/L of acetone. The analytical results from the four rounds of samples are summarized in Tables 8a, 8b, and 9.

A proposed Administrative Order of Consent regarding the closure of Tanks #9 and #10 was issued by NHDES on May 11, 2003. The Airport requested a waiver from NHDES on February 9, 2005, and NHDES granted it on March 11, 2006.

On June 17, 2011 NHDES issued a letter requesting that the Airport close Tanks #9 and #10. A copy of the letter is enclosed in Appendix C.

In August 2011 in response to the June 17th letter from NHDES, the Airport's on-call environmental consultant, TSA, contracted with C.A.B. Services, Inc. (CAB) to initiate the process of closing the two 50,000-gallon tanks. During the initial site activities, two unregistered USTs, 6,000-gallon tank (Tank #15) and a 2,000-gallon tank (Tank #16), were discovered just west of the 50,000-gallon tanks (see photographs 1 & 2 in Appendix E). The approximate location and configuration USTs is shown on Figure 6. The two unregistered tanks were removed on October 6, 2011 and after-the fact registration forms were filed with NHDES on October 14, 2011. When removed, Tanks #15 and #16 were in good condition with no obvious hole or fractures. Due to there proximity to Hangar #1 and the potential for structural damage to the building, it was decided to close Tanks #9 and #10 in place. Closure of Tanks #9 and #10 was completed on October 18, 2011 (see Photographs #3 through #6). A UST Tank Closure Report was submitted to NHDES on January 25, 2012. A summary of the findings of the UST Tank Closure Report is included in Section 3.2.

On February 14, 2012, NHDES issued a Request for Site Investigation citing as the reason for the request, "the presence of several petroleum compounds in soil and groundwater samples collected from test pits and tank graves." The letter stated that NHDES had determined that the Airport was a responsible party with respect to the discharge of petroleum products and was therefore, required to complete a Level II Site investigation to "assess the full extent of soil and groundwater contamination, identify potential human and environmental

complete a Level II Site investigation to "assess the full extent of soil and groundwater contamination, identify potential human and environmental receptors, and develop an appropriate remedial action." A discussion of the elements of the investigation and its findings is included in Section 3.3.

A chronology of site activities is included in Table 3. Several archival aerial images of the site are included in Appendix D.

2.2 Possible Past or Present Sources of Contamination

A review of available records found no evidence of any significant releases of petroleum-related products at the subject property. However, as a fuel farm with USTs, ASTs, filler pipes, pumps, and associated piping, it is likely that small or incidental releases of fuel occurred during the time that the site served as an active fuel farm, and the cumulative result is the contamination detected there.

No significant holes or cracks were noted in any of the four tanks removed/closed in 2012, or in the tanks previously removed by LCA.

Other potential sources of groundwater contaminations consider as part of this investigation included the following:

- There are no records or indications of any dry wells on or near the property.
- No areas of stained soil or dead vegetation were observed at the site.
- The closest landfill is an inactive facility located approximately 5 miles northeast of the site on the north side of North Perimeter Road.
- There are no records or indications of any lagoons ever having been located on or adjacent to the site.
- Hangar #1 is served by the Town of Londonderry municipal sanitary sewer system, therefore no discharges to the groundwater from site septic tanks have occurred
- There are no records of or indications that the site was ever used for the outside storage of drums containing potentially hazardous materials.
- There has been no known use of the site for treatment, storage, or disposal of hazardous wastes.
- There has been no known use of the site for stockpiling of soils prior to the 2011 tank closure operations when soil removed from the tank graves was temporarily staged on plastic sheeting lad down on a paved area.
- There are no records of drums being buried on-site and none were encountered during site excavations to install and/or remove USTs.

2.3 Description of Discharges of Regulated Contaminants

As noted above, no records of any significant releases of petroleum products were found during background data searches. However, the use of the site as a fuel farm likely resulted in minor spills or other discharges which accumulated over time at the subject property.

3.0 SUMMARY OF SUBSURFACE EXPLORATION AND SAMPLING

3.1 1997 Tank Closures

As noted above, twelve UST's were removed from the subject property in 1997 by LCA. Several petroleum-related VOCs were detected in soil samples taken at Hangar #2 from the UST graves at Tanks #5, #6, #7, and #8 (Table 6). Only the sample from Tank #8 contained VOCs in concentrations that exceeded the applicable soil standards (benzene 2.1 mg/kg, MTBE 20.0 mg/kg, and naphthalene 6.0 mg/kg). During follow-up studies, four rounds of groundwater samples were collected from monitoring wells MW-2 and MW-7 (Figure 5). Acetone was detected in a single sample collected from well MW-7 at a concentration in excess of the NHDES Ambient Groundwater Quality Standard (AGQS) of 700 µg/L (1,500 µg/L). All other detections met the applicable AGQS Standards (see Table 8b).

3.2 2011 Tank Closures

Four test pits were excavated in proximity to Tanks #9 and #10 during the tank closure operations. Soil samples from the test pits were field screened with a photo-ionization detector (PID). PID readings of 33.1 to 459.0 parts per million (ppm) were detected in the samples (Table 10). Nine additional soil screening samples were collected from the UST grave in the vicinity of Tanks #15 and #16. The PID readings for these samples ranged from 5.0 to 194.0 ppm. The approximate locations of the tank closure sampling locations are shown on Figure 7. Two composite soil samples were also collected from the excavated soil staging area (Table 12).

A total of eleven soil samples were collected for laboratory analysis during the tank closure operation. The samples were analyzed for total petroleum hydrocarbons (TPH), VOCs, and polycyclic aromatic hydrocarbons (PAH). The laboratory analytical results are summarized in Tables 13 and 14. Groundwater grab samples were collected from test pits TP-1, TP-3, TP-4, and the UST grave for Tanks #15 and #16, and analyzed for VOCs and PAH. The analytical results are summarized in Table 15.

3.3 2012 Level II Site Investigation

On April 5 and 9, 2012 a TSA geologist supervised the installation of five groundwater monitoring wells by a drilling crew from Miller Engineering and Testing, Inc. (Miller) of Manchester, New Hampshire. The well borings were advanced to approximately fifteen feet below ground surface by a truck-mounted drill rig using 4.25-inch inside diameter augers. Soil samples were collected at five foot intervals by driving a 2-foot long, 1 3/8-inch inside diameter split spoon sampler with a 140-pound hammer. Representative samples were collected from each split spoon sample. The soil samples were field screened for the presence of VOCs following the sampling methodology described in Appendix F. A well log describing the soil sample material and listing the respective PID readings was maintained by the site geologist. The soil descriptions and PID readings are summarized in Table 16 and copies of well logs and well completion diagrams prepared by Miller are included in Appendix G.

Following the completion of the well boring, approximately fifteen foot deep monitoring wells were constructed by the methodology described in Appendix F using 10-foot long, 2.0-inch diameter, schedule 80 PVC 010 slot well screen and riser pipe. The wells were completed using silica sand, bentonite seals, and concrete-encases gate boxes.

The horizontal locations and top of PVC casing elevations of each well were field surveyed in April 2012 by personnel of Eric C Mitchell & Associates, Inc.

3.3.1 Site Geology and Hydrology

The unconsolidated material encountered in monitoring wells WMW-1 through WMW-4 was relatively homogeneous medium to coarse sand. Well WMW-5 was installed in the Tank #15 grave, the suspected source area. The site's subsurface conditions are depicted in cross-sections A-A' and B-B' (Figures 8 and 9).

During two rounds of groundwater sampling, the water table was encountered at depths ranging from 6.78 to 7.80 feet below ground surface. A groundwater contour map was constructed using data collected during the April 28, 2012 sampling round (Figure 10). The water table beneath the site is relatively flat with an approximate hydraulic gradient of 0.0016 feet per foot and a southwesterly flow direction.

3.2.1 Sampling and Analytical Data

As noted above, soil samples were collected at five-foot intervals in each monitoring well and screened for VOCs using a PID. A soil sample was collected for laboratory analysis from the split-spoon sample with the highest PID reading. The samples were collected using sampling procedures detailed in Appendix F. Each soil sample was analyzed for VOCs by EPA Method 8260B and TPH by EPA Method 8015B. Copies of the laboratory analytical reports are included in Appendix H and are summarized in Table 18. No VOCs or TPH were detected above the laboratory equipment detection limits in the samples from wells WMW-1 through WMW-4. Three VOCs were detected in the sample from well WMW-5 at concentrations below the applicable NHDES standards (1,3,5-trimethylbenzene 0.4 µg/g; 1,2,4-trimethylbenzene 0.4 µg/g; and 4-isopropyltoluene 0.1 µg/g). No TPH was detected above the detection in the well WMW-5.

Two rounds of groundwater samples were collected on April 12, 2012 and April 28, 2012, respectively. A QA/QC duplicate sample was collected from well WMW-5 during the second round of sampling. The samples were collected following sampling procedures detailed in the attached field sampling techniques document (Appendix F). Each soil sample was analyzed for VOCs by EPA Method 8260B, PAHs by EPA Method 8270D, and TPH by EPA Method 8015B. Copies of the laboratory analytical reports are included in Appendix H and are summarized in Table 19. No VOCs, PAHs, or TPH were detected above the laboratory equipment detection limits in either round of samples from wells WMW-1 through WMW-4. The samples collected from well WMW-5 contained elevated concentrations of petroleum-related VOCs, PAHs, and TPH in both rounds of samples, including several PAHs in concentrations that exceed the applicable AGQSs.

4.0 CONCEPTUAL MODEL

The following conceptual model was developed based upon data collected during this and previously conducted studies:

- The site is underlain by metamorphic bedrock of the pre-Silurian and Precambrian Ages (Srirmadas, 1966). The areas bedrock formations' structure generally trend toward the north-northeast. Major fault zones within the area tend to parallel the regional structure, while secondary faults may cut across the primary fracture zones. Area bedrock well inventoried by the US Geological Survey (1995) found

well yields ranging from 0.25 to 150 gallons per minute (gpm), with a median yield of 7 gpm.

- The present day features of the study area's surficial geology are a result of continental glaciation and subsequent deglaciation. A discontinuous layer of dense basal till was deposited by the advancing glaciers and is found overlying the area's bedrock. Much of the region was later inundated by glacial lakes formed when gigantic blocks dammed the Merrimack River valley. Fine-grained lake bottom deposits of silt and clay blanketed much of the area. Coarse-grained material (sand and gravel) was deposited on top of the fine-grained deposits as ice contact features and deltaic deposits that were later reworked by the meandering motion of the river. The current stratigraphic sequence generally includes medium to coarse glacio-fluvial material overlying fine-grained (silt and clay) lake bottom deposits and dense basal clay. Based upon data contained in driller's logs from monitoring wells installed for various site investigations at the Airport, local depths to bedrock are estimated to range from 80 to 110 feet.
- The project site is underlain by light brown to brown medium to coarse sand to depths of at least 22 feet. The central portion of the site, in proximity to well WMW-5 is underlain by sand and gravel fill and reworked native sands, used to fill the two 50,000-gallon USTs that were closed in place and the excavations left by the removal and closure of tanks #15 and #16. Geologic cross sections A-A' and B-B', depicting the stratigraphic sequences, are shown in plan view on Figure 2 and in cross section in Figures 8 & 9.
- Falling head permeability tests conducted as part of a geophysical investigation at the Airport's terminal just south of the site found hydraulic conductivities in the surficial deposits ranging from $5.9x10^{-5}$ cm/sec to $4.4x10^{-4}$, with a median value of $1.7x10^{-4}$ cm/sec.
- Based upon water table measures collected on May 30, 2012, groundwater flow across the site in the unconsolidated material is generally in a southwesterly direction with a hydraulic gradient of approximately 0.0016 feet per foot.
- Assuming a porosity of 30 to 40 percent and a median hydraulic conductivity of 1.7×10^{-4} cm/sec (3.6 ft/day), the average seepage velocity of groundwater at the site would range from 9 to 12 ft/day.
- Soil and groundwater contamination at the site consists primarily of petroleum-related compounds, and the lateral distribution of the contaminants is limited to the area surrounding monitoring well WMW-5.
- The absence of any detectable concentrations of contaminants in monitoring wells WMW-1 through WMW-4 appears to indicate little or no off-site migration of contaminated groundwater.
- Due to their hydrophobicity, PAHs are often bound to fine particles in aquatic environments. They may undergo volatilization, chemical oxidation, photodecomposition, and microbial degradation. Lower molecular weight PAHs such as naphthalene and phenanthrene are degraded rapidly in sediments, but

higher molecular weight PAHs such a pyrene, chrysene, benzo(a)anthracene, and benzo(a) payrene are more recalcitrant (Obayori, 2010).

- The suspected source area of the soil and groundwater contamination is located on and limited to the 2.2 acre lot on which the former Wiggins Hangar #2 is located. Access to the lot is restricted by fencing and a locked gate and the Airport currently has plans to pave the entire lot. Therefore, direct contact with any site contamination is unlikely. With respect to other potential receptors:

    - There are no surface water bodies within 1,000 feet of the site;
    - There are no hospitals, daycare centers, schools, playgrounds, parks, senior citizen housing, or other sensitive populations within 1,000 feet of the site; and
    - There are no records of drinking water wells within 1,000 feet of the site.

5.0 REMEDIAL ACTION ALTERNATIVES

There are numerous remedial action alternatives for PAH and TPH contaminated soil and groundwater including: *in situ* bioremediation, pump and treat technologies, physical removal and disposal of the contaminant sources, and natural attenuation. Due to the relatively low concentrations of contaminants at the Hangar #2 site; the site's location in an area of commercial/industrial land use with few, if any, potential receptors; and the apparent lack of off-site contaminant migration evidenced by no detectable concentrations of contaminants in four of the five site monitoring wells; natural attenuation appears to be the most cost-effect remedial alternative.

6.0 SUMMARY

During the excavation and removal/closure of the four USTs at the former Wiggins Airways, Inc. TPH, VOCs, and PAHs were detected in site soil and groundwater in concentrations that exceed applicable NHDES standards. As a result, NHDES requested that the Airport conduct a Level II Site Investigation "to assess the full extent of soil and groundwater contamination, identify potential human and environmental receptors, and develop an appropriate remedial action (NHDES 2012). TSA implemented site investigation that included the installation and soil sampling of five borings and the construction of five shallow groundwater monitoring wells. The results of the soil sampling and two subsequent rounds of groundwater sampling from the five monitoring wells confirmed the presence of TPH, VOCs, and PAHs in concentrations that exceed applicable NHDES standards. The sampling results indicate that the site contamination is limited to the area in proximity to well WMW-5 which was installed in the suspected source area, the UST grave of Tanks #15 and #16. The source of the contamination is likely the release of small quantities of petroleum products during the time when the fuel farm was active. No records of any significant releases of petroleum products were found during a background data review, and the site has been inactive since 1997. Since

the site is surrounded by commercial/industrial land use, since there are no sensitive receptors within 1,000 feet of the site, and since there does not appear to have been any significant off-site migration of contaminants the proposed mitigation alternative is natural attenuation with periodic groundwater sampling.

7.0 RECOMMENDATIONS

The former Wiggins fuel farm is located in an area of commercial/industrial land use at Manchester-Boston Regional Airport. The suspected source area is limited to a relatively small portion of the 2.2 acre lot on which the site is located and will be isolated from any direct contact by potential receptors by asphalt paving. Access to the site is controlled by fencing and a locked gate and regular observation by airport security personnel. Off-site migration of contaminants is minimal, as evidenced by the lack of any detectable contamination in the four groundwater monitoring wells that surround the suspected source area. No sensitive receptors have been identified within 1,000+ feet of the property. Therefore the following recommendations are offered:

- Site remedial actions should be limited to natural attenuation;
- A groundwater management zone consisting of the property included on the Town of Londonderry Lot 023-01 Assessor's Map 028 should be established; and
- The five site monitoring wells should be sampled three times per year during the months of April, August, and November, for TPH, VOCs, and PAHs. The results of which should be forwarded to NHDES.

APPENDIX A – FIGURES

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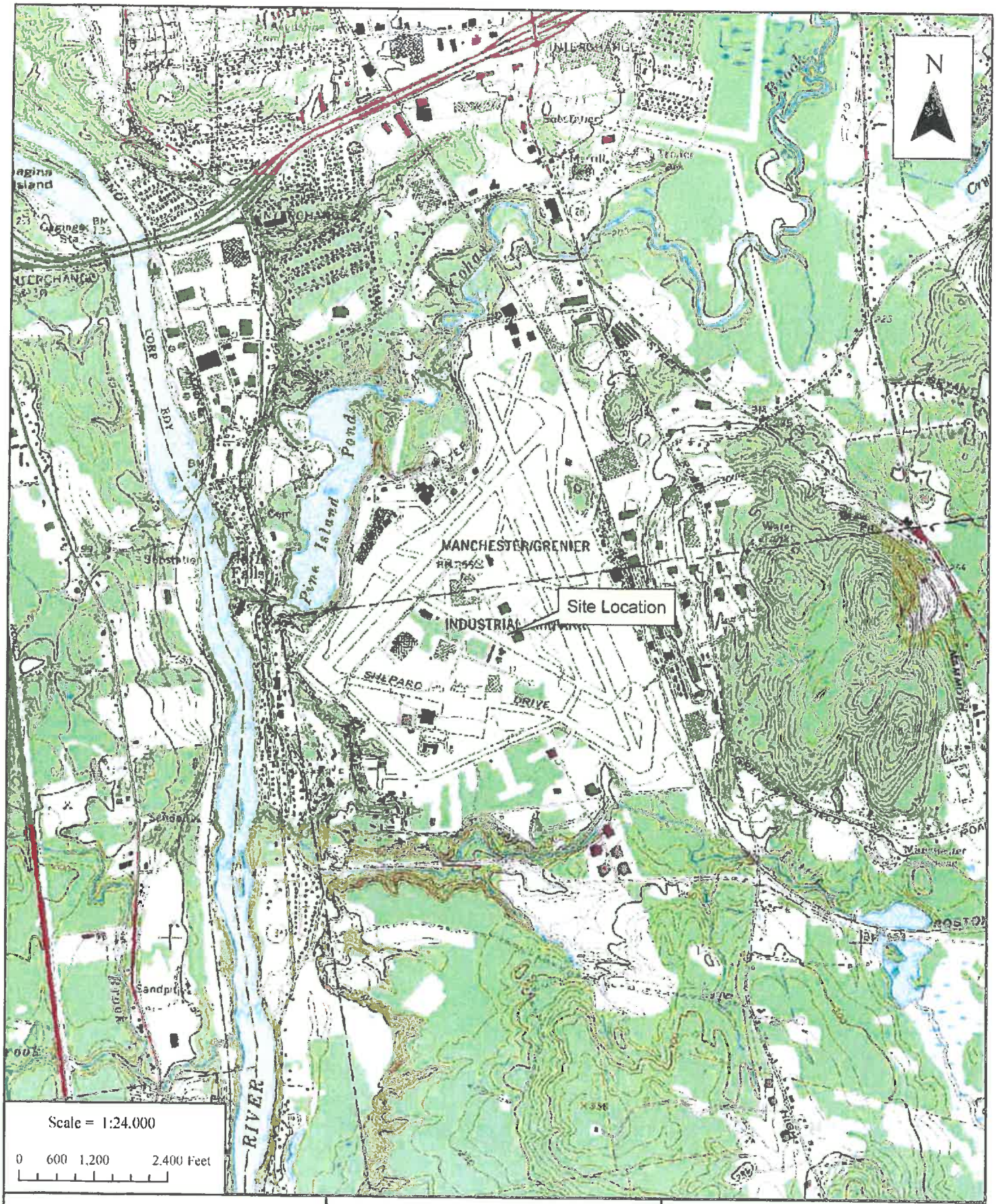
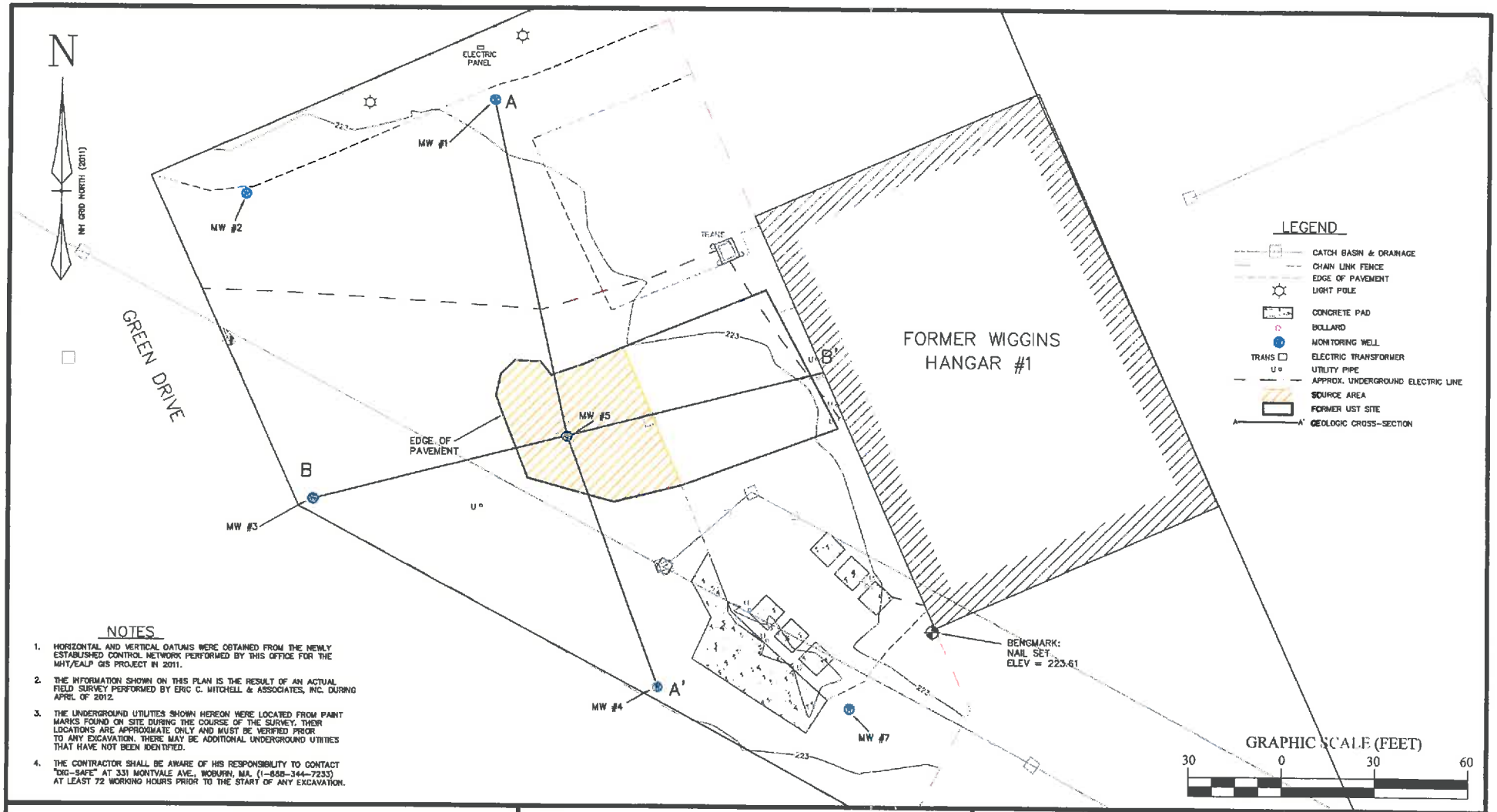


Manchester-Boston REGIONAL AIRPORT

Figure 1
Site Locus Map

The Smart Associates
Environmental Consultants, Inc.



NOTES

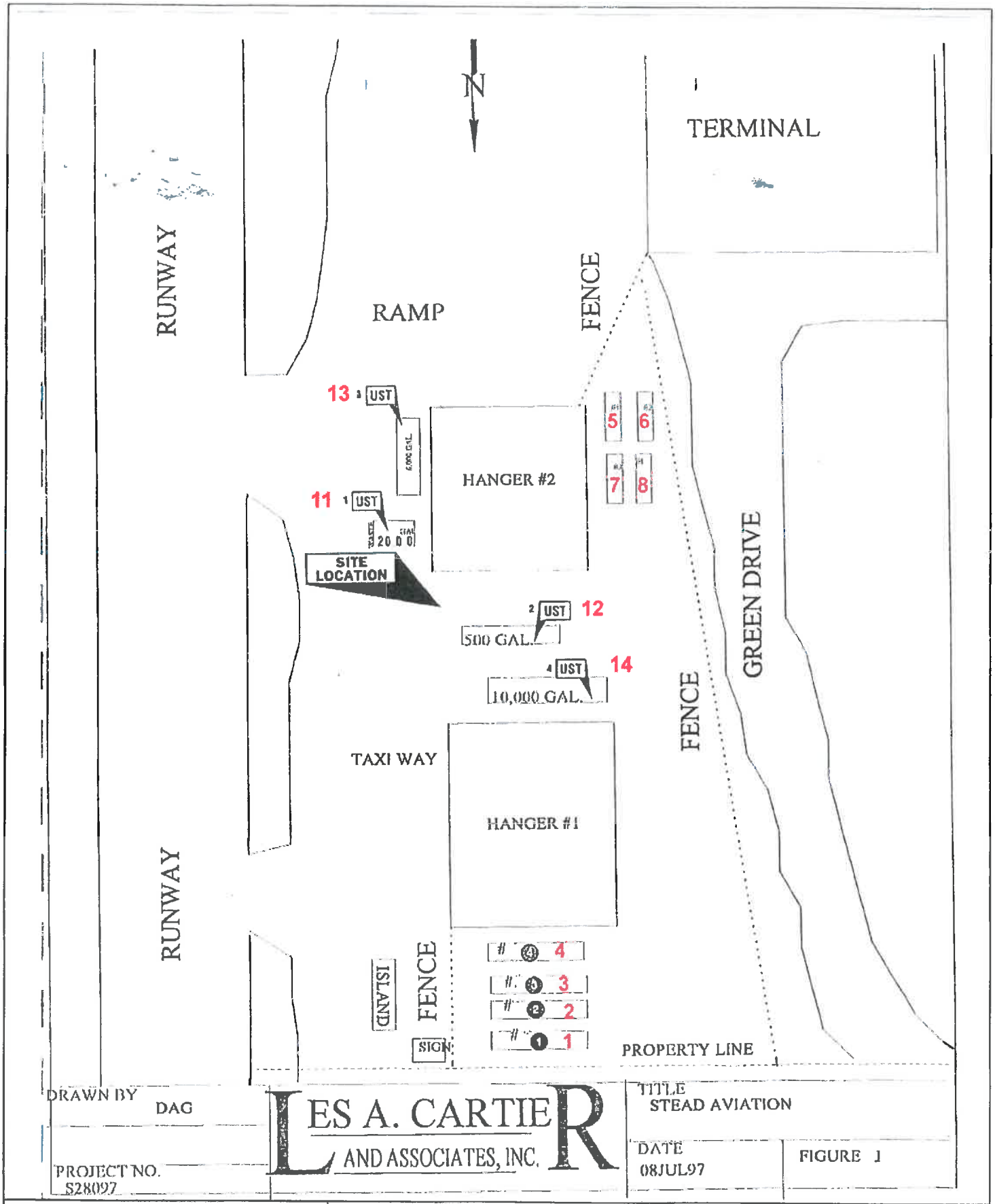
1. HORIZONTAL AND VERTICAL DATUMS WERE OBTAINED FROM THE NEWLY ESTABLISHED CONTROL NETWORK PERFORMED BY THIS OFFICE FOR THE MHT/EALP GIS PROJECT IN 2011.
2. THE INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY PERFORMED BY ERIC C. MITCHELL & ASSOCIATES, INC. DURING APRIL OF 2012.
3. THE UNDERGROUND UTILITIES SHOWN HEREON WERE LOCATED FROM PAINT MARKS FOUND ON SITE DURING THE COURSE OF THE SURVEY. THEIR LOCATIONS ARE APPROXIMATE ONLY AND MUST BE VERIFIED PRIOR TO ANY EXCAVATION. THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES THAT HAVE NOT BEEN IDENTIFIED.
4. THE CONTRACTOR SHALL BE AWARE OF HIS RESPONSIBILITY TO CONTACT "DIG-SAFE" AT 331 MONTVALE AVE., WOBURN, MA. (1-888-344-7233) AT LEAST 72 WORKING HOURS PRIOR TO THE START OF ANY EXCAVATION.

Manchester-Boston REGIONAL AIRPORT

Figure 2 - Site Plan

The Smart Associates
Environmental Consultants, Inc.

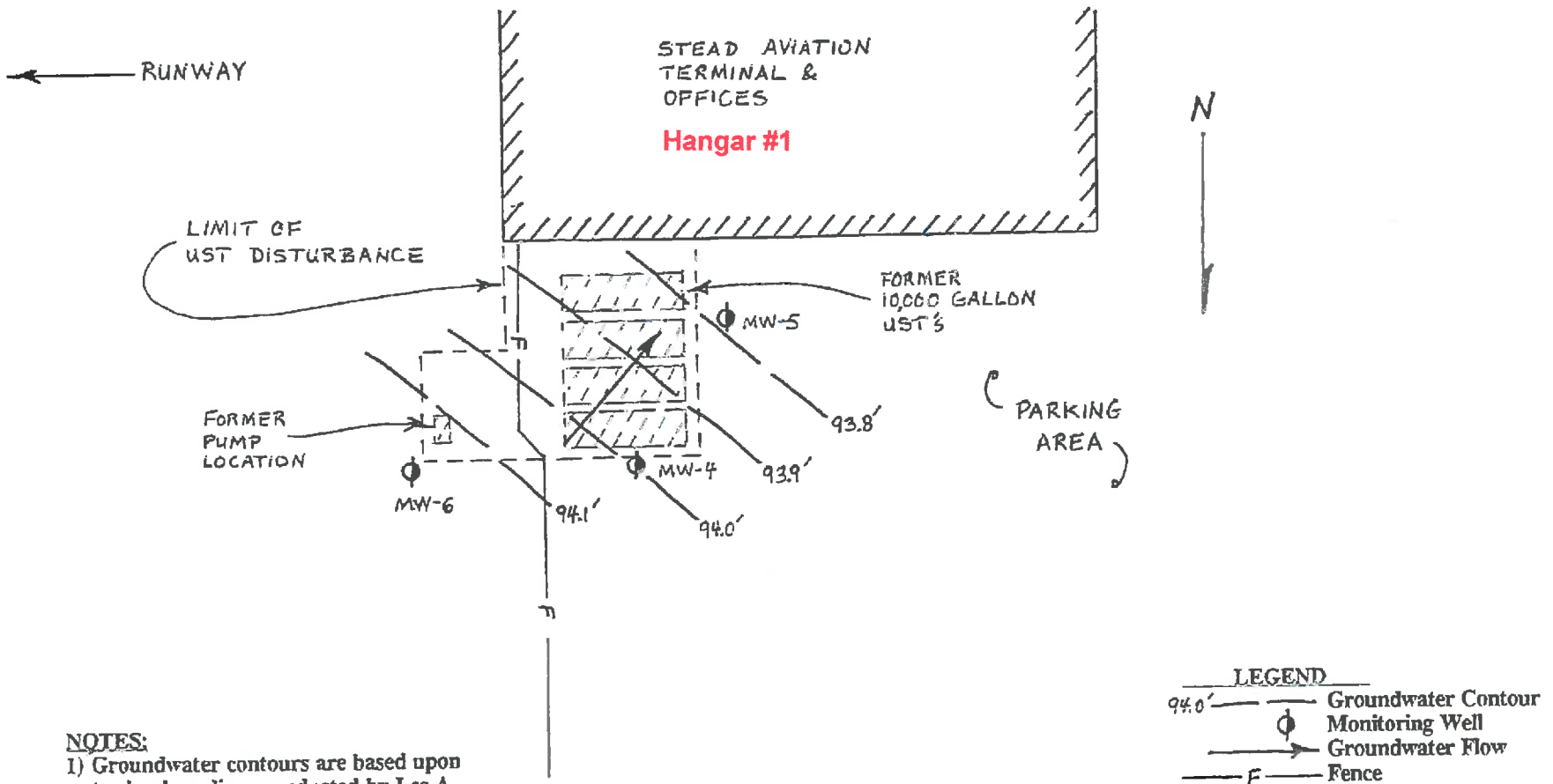
Survey & Base Plan Prepared by Eric C. Mitchell & Associates, Inc.



Manchester-Boston Regional Airport

Figure 3
Hangars #1 and #2

The Smart Associates
Environmental Consultants, Inc.



NOTES:
1) Groundwater contours are based upon water level readings conducted by Les A. Cartier and Associates Inc. on December 17, 1997.
2) Monitoring Wells MW-4, MW-5 and MW-6 were installed on December 2, 1997 by LCA.

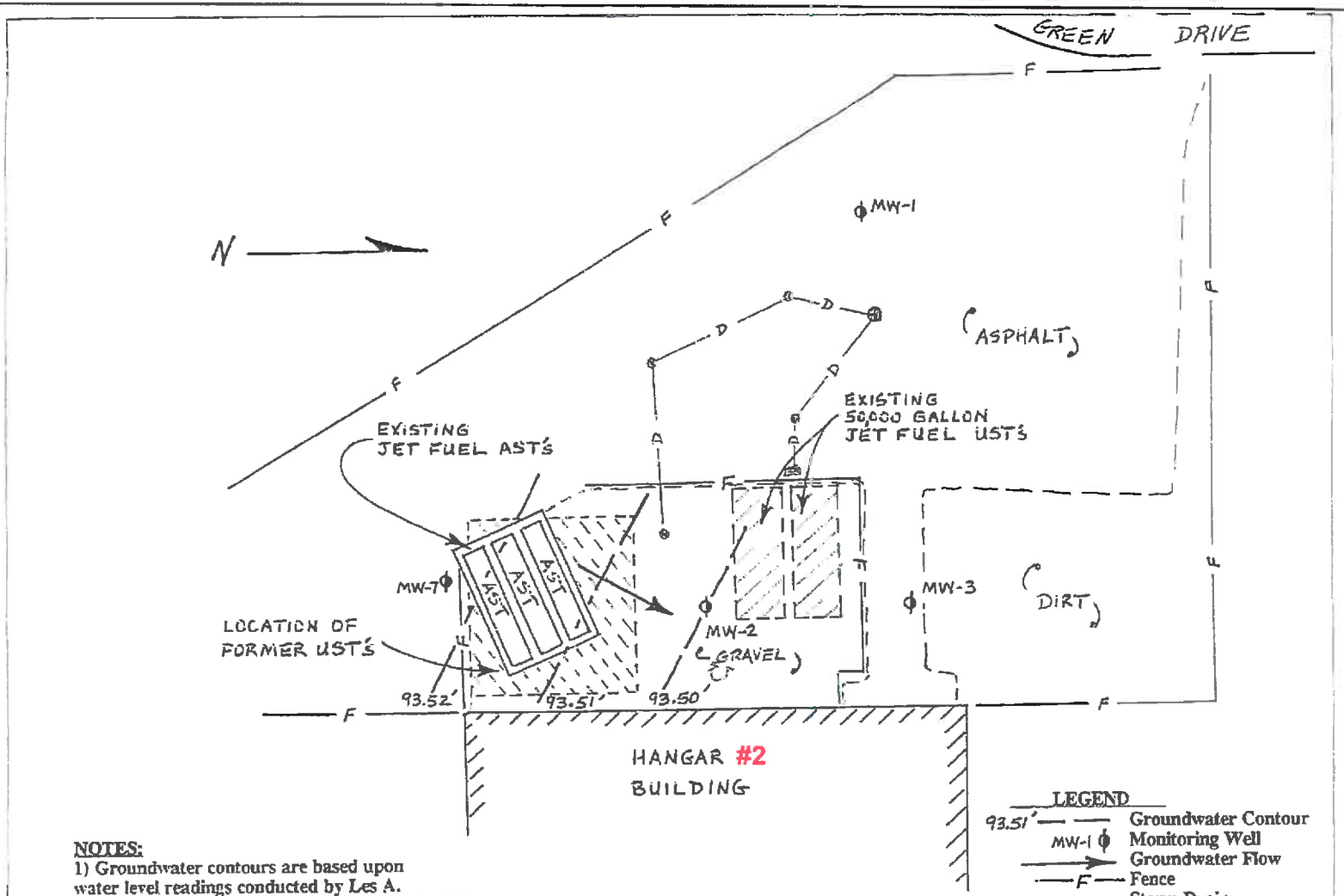
SCALE
1" = 40'

REVISIONS			DRAWN BY:	TITLE: Site Plan	CLIENT: Stead Aviation	DATE: 2/4/98
NO.	DATE	BY	Gregory W. Howard	Stead Aviation Corporation 7 Green Drive, Manchester, NH	7 Green Drive Manchester, NH	
			APPROVED BY:	LES A. CARTIER AND ASSOCIATES, INC. P.O. BOX 559, CANDIA, N.H. 03034		FIGURE 3

Manchester-Boston REGIONAL AIRPORT

Figure 4
1998 Site Plan - Hangar #1

The Smart Associates
Environmental Consultants, Inc.



NOTES:
1) Groundwater contours are based upon water level readings conducted by Les A. Cartier and Associates Inc. on December 17, 1997.
2) Monitoring Wells MW-1, MW-2 and MW-3 were installed on June 17, 1997 by LCA.
3) Monitoring Well MW-7 was installed on December 2, 1997 by LCA.

SCALE
1" = 40'

REVISIONS NO.	DATE	BY	DRAWN BY: Gregory W. Howard	TITLE: Site Plan Stead Aviation Corporation 7 Green Drive, Manchester, NH	CLIENT: Stead Aviation 7 Green Drive Manchester, NH	DATE: 2/4/98
			APPROVED BY: GH	LES A. CARTIER AND ASSOCIATES, INC. P.O. BOX 559, CANDIA, N.H. 03034		FIGURE 2

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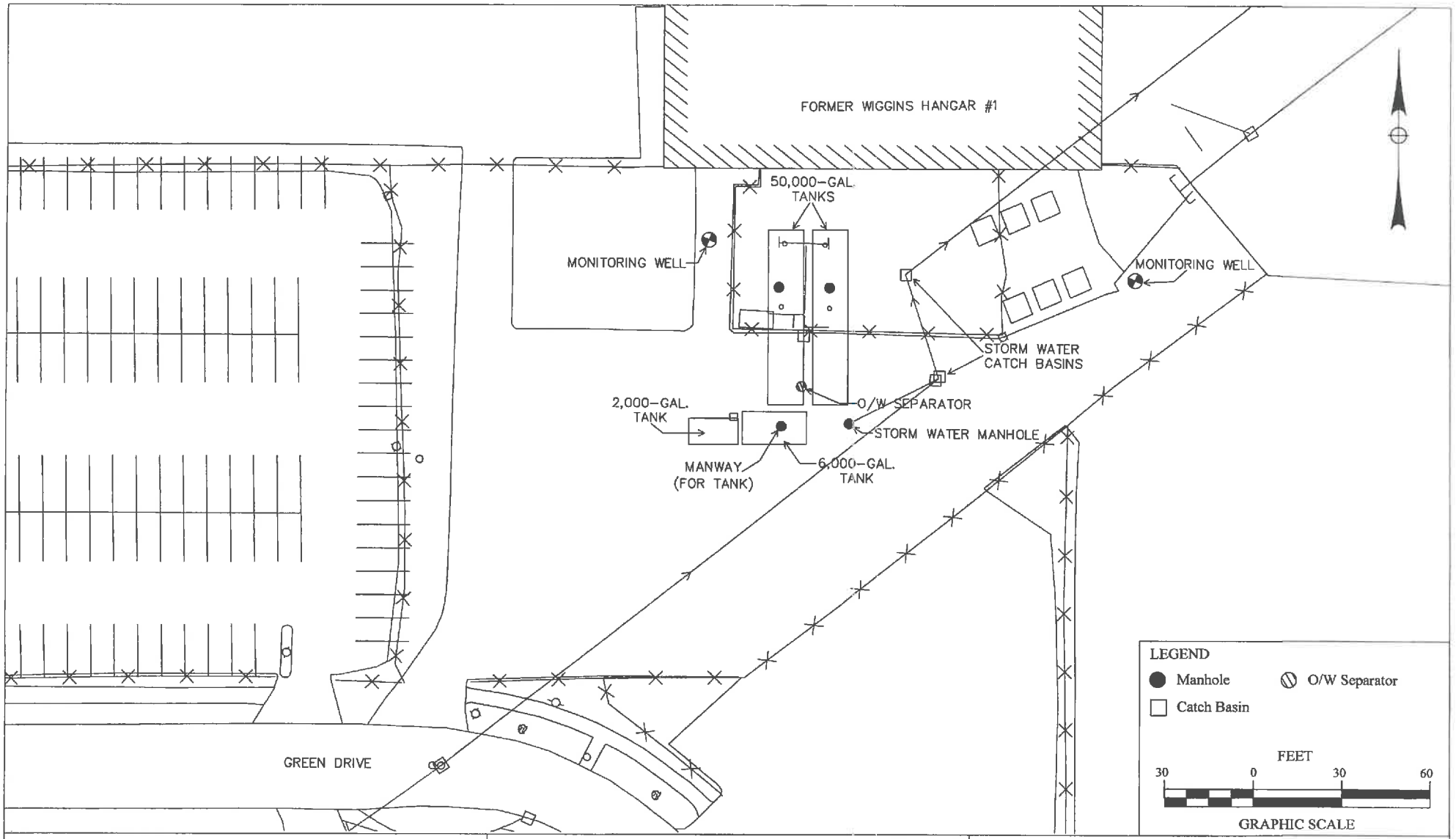
Figure 5
1998 Site Plan - Hangar #2

The Smart Associates
Environmental Consultants, Inc.



Manchester-Boston REGIONAL AIRPORT

Figure 6
2011 Tank Closure Site Plan - Hangar #1

The Smart Associates
Environmental Consultants, Inc.

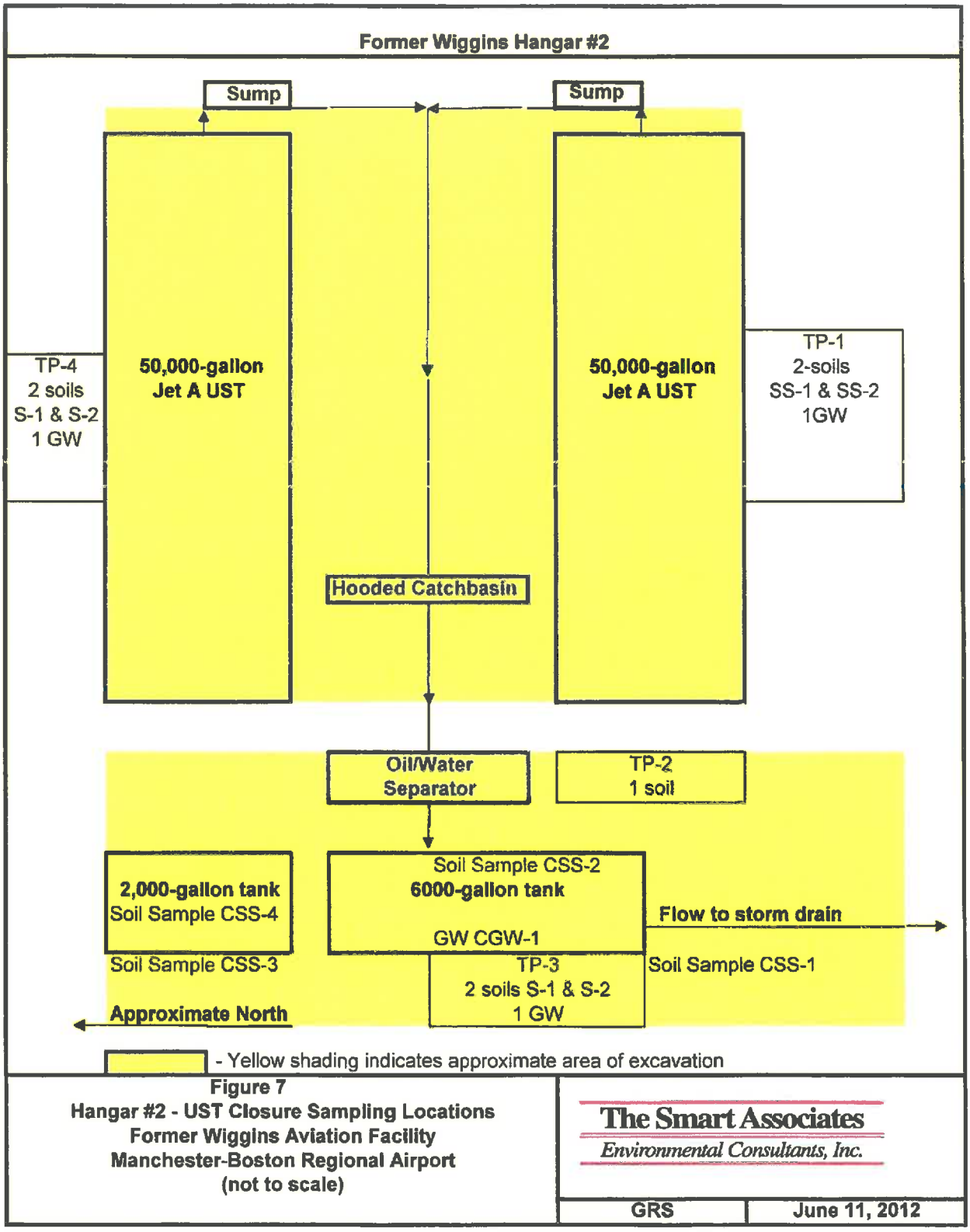


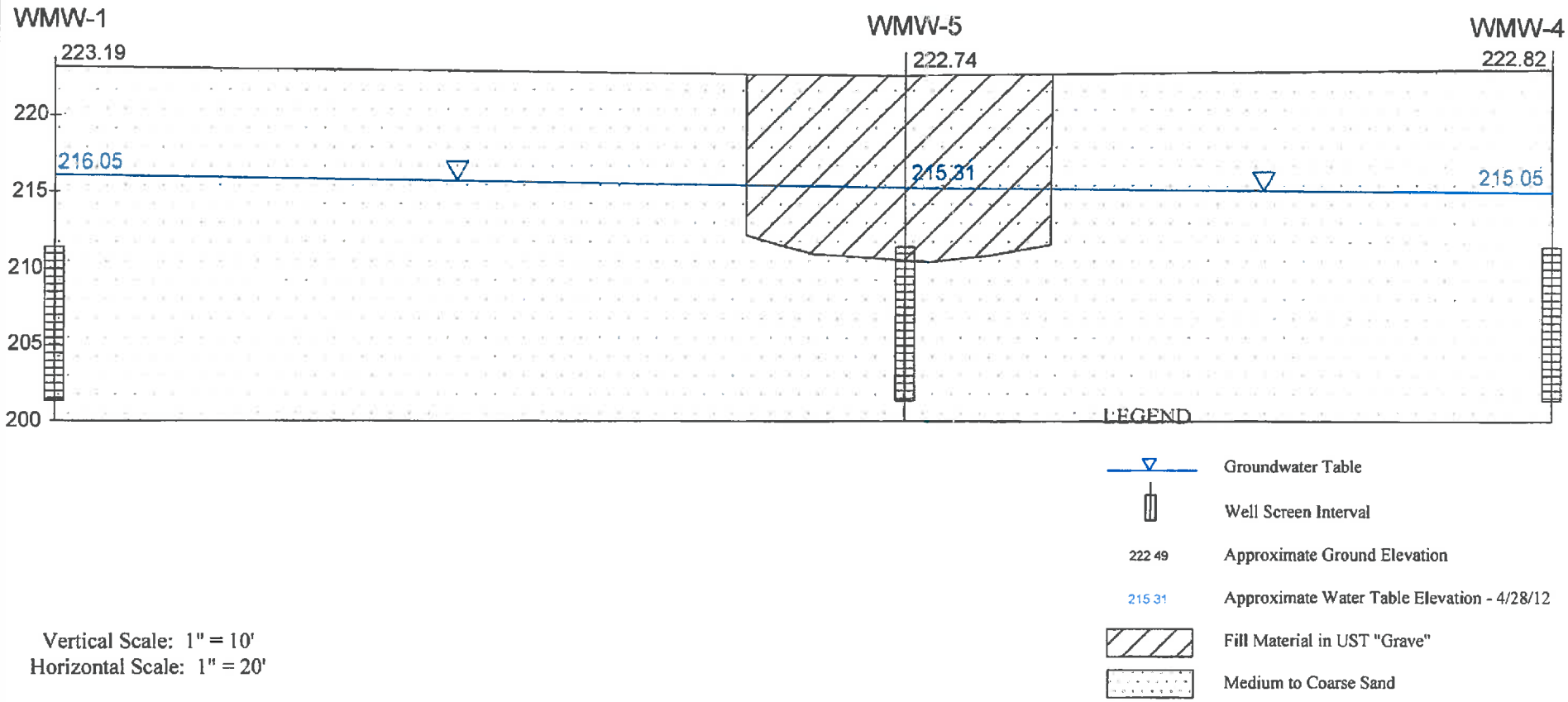
Figure 7
Hangar #2 - UST Closure Sampling Locations
Former Wiggins Aviation Facility
Manchester-Boston Regional Airport
(not to scale)

The Smart Associates
Environmental Consultants, Inc.

GRS	June 11, 2012

A

A'



Vertical Scale: 1" = 10'
Horizontal Scale: 1" = 20'

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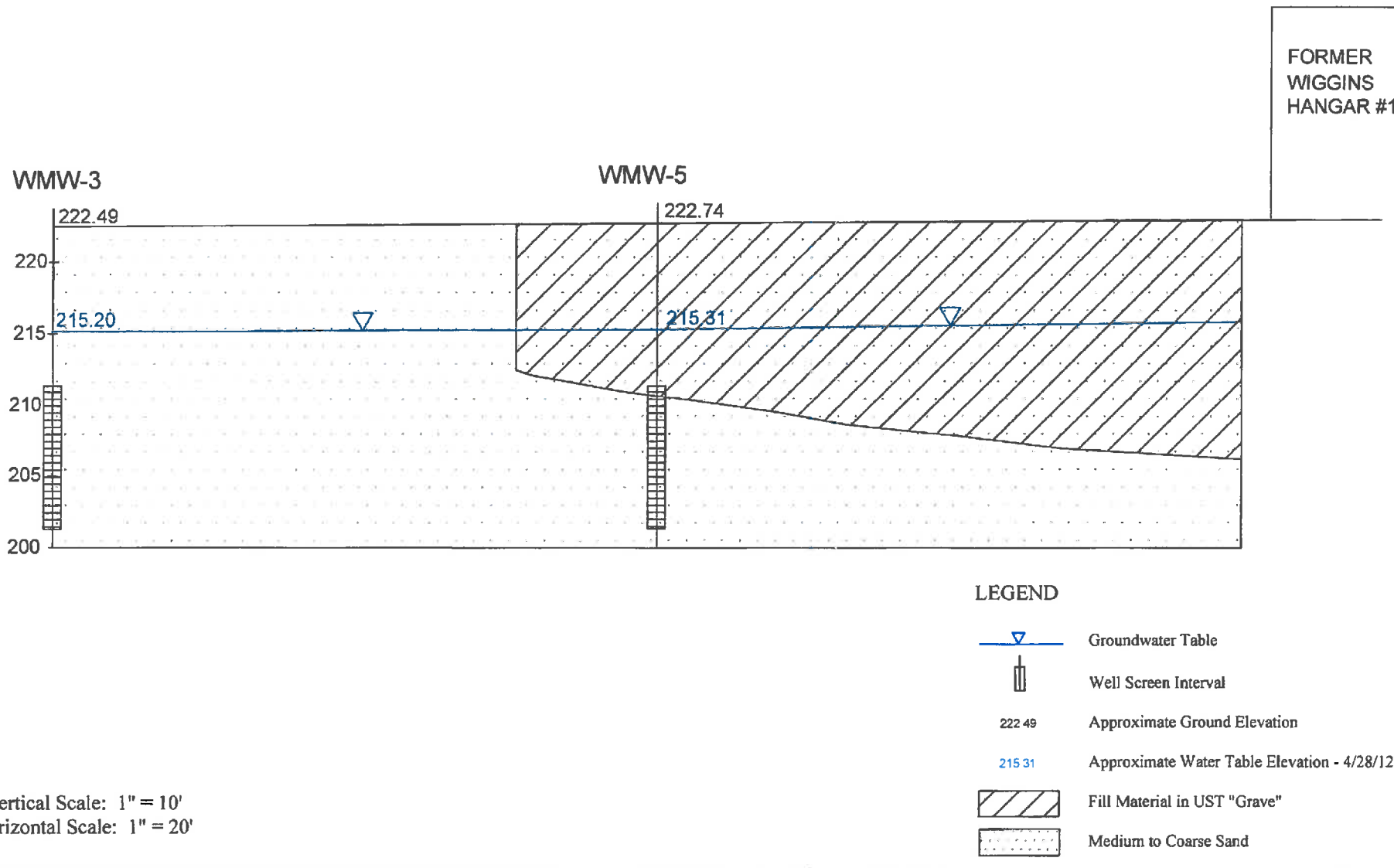
Figure 8
Geologic Cross-Section A-A'

The Smart Associates
Environmental Consultants, Inc.



Manchester-Boston
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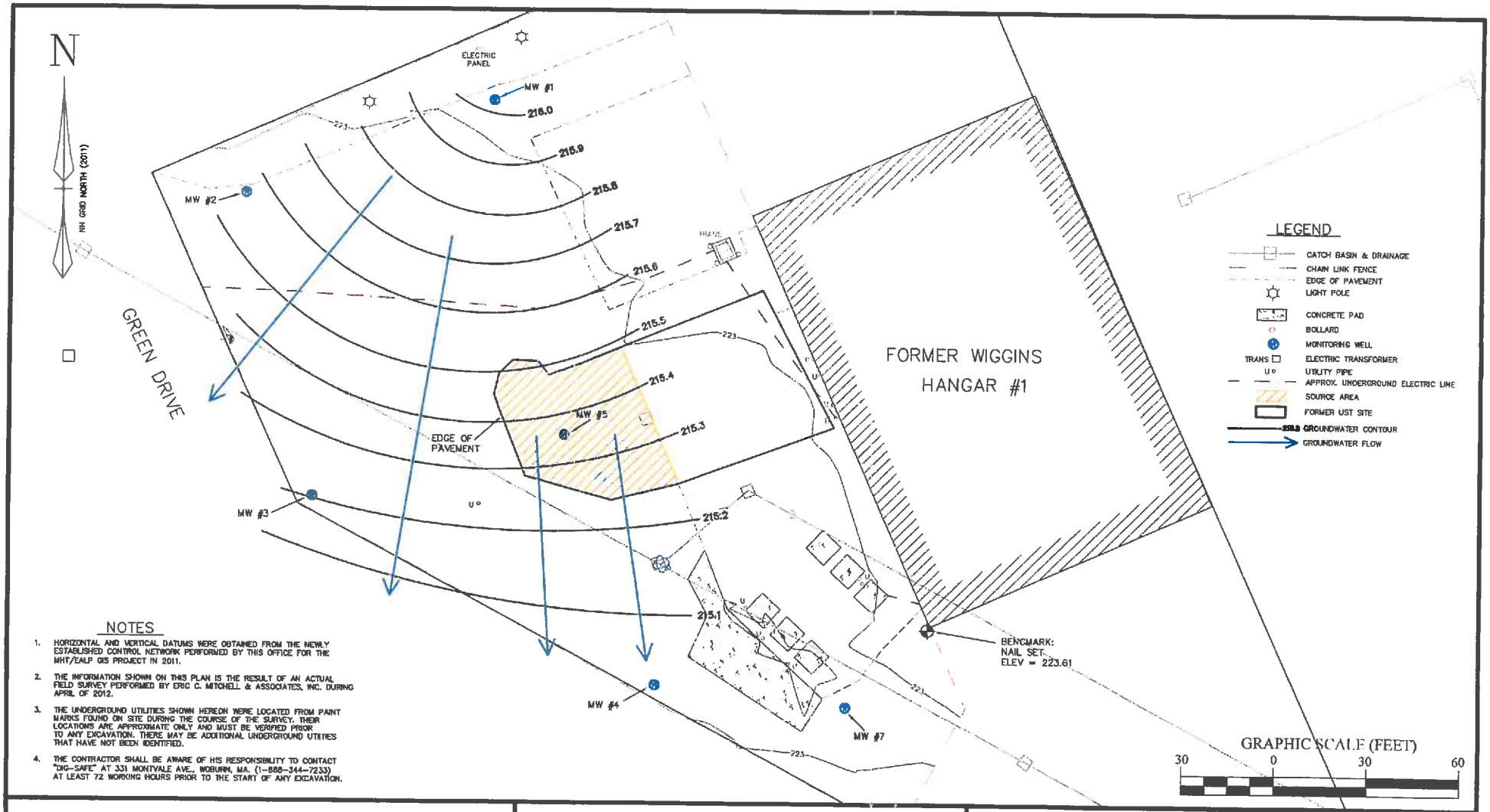
Figure 9
Geologic Cross-Section B-B'

The Smart Associates
Environmental Consultants, Inc.



NOTES

1. HORIZONTAL AND VERTICAL DATUMS WERE OBTAINED FROM THE NEWLY ESTABLISHED CONTROL NETWORK PERFORMED BY THIS OFFICE FOR THE MHT/EALP GIS PROJECT IN 2011.
2. THE INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY PERFORMED BY ERIC C. MITCHELL & ASSOCIATES, INC. DURING APRIL OF 2012.
3. THE UNDERGROUND UTILITIES SHOWN HEREON WERE LOCATED FROM PAINT MARKS FOUND ON SITE DURING THE COURSE OF THE SURVEY. THEIR LOCATIONS ARE APPROXIMATE ONLY AND MUST BE VERIFIED PRIOR TO ANY EXCAVATION. THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES THAT HAVE NOT BEEN IDENTIFIED.
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Manchester-Boston REGIONAL AIRPORT

Figure 10 - Groundwater Contour Map
4/28/2012

The Smart Associates
Environmental Consultants, Inc.

Survey & Base Plan Prepared by Eric C. Mitchell & Associates, Inc.

APPENDIX B – TABLES

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Table 1. Site Ownership and Contact Information

Site Identification	Former Wiggins Fuel Farm DES Site #199707010 UST Facility #
Site Location	5 Green Drive Manchester-Boston Regional Airport Londonderry, New Hampshire
Assessor's Map and Lot Number	Map 028 Lot 023-1
Rockingham County Registry of Deeds	Book 1646 Page 484
Hillsborough County Registry of Deeds	Book 1703 Page 484
Site Owner	Manchester-Boston Regional Airport One Airport Road, Suite 300 Manchester, New Hampshire 03103
Site Owner Contact Information	Contact: John Hagopian Address: Airport Planning & Engineering Industrial Drive Londonderry, NH Telephone: (603) 624-6539
Consultant Contact Information	The Smart Associates, Environmental Consultants, Inc. 72 North Main Street Concord, New Hampshire 03301 Telephone: (603) 224-7550 Contact Person: Glenn R. Smart, P.G. E-mail: gsmart@smartenvironmental.com

Table 2. Former Wiggins Fuel Farms USTs – Hangars #1 and #2

NHDES UST Facility #0111100 Information				
Tank #	**Size (gallons)**	**Use**	**Temporary Closure Date**	**Permanent Closure Date**
1	10,000	Jet Fuel	09/02/93	06/16/97
2	10,000	Jet Fuel	09/02/93	06/16/97
3	10,000	Gasoline	09/02/93	06/16/97
4	10,000	Gasoline	09/02/93	06/16/97
5	10,000	Avgas	N/A	06/23/97
6	10,000	Jet Fuel	N/A	06/23/97
7	10,000	Gasoline	N/A	06/23/97
8	10,000	Jet Fuel	N/A	06/23/97
9	50,000	Jet Fuel	05/13/04	11/24/11
10	50,000	Jet Fuel	05/13/04	11/24/11
11	2,000	Used Oil	N/A	06/27/97
12	500	Used Oil	N/A	06/27/97
13	6,000	#2 Oil	N/A	06/27/97
14	2,000	#2 Oil	N/A	06/27/97
15	6,000[1]	Jet Fuel	N/A	10/06/11
16	2,000[2]	Unknown	N/A	10/06/11
NHDES AST Facility #970710A Information				
3	12,000	Gasoline	N/A	04/05/04
4	12,000	Jet Fuel	N/A	04/05/04
5	12,000	Avgas	N/A	04/05/04

1 – After-the-fact registration form submitted 10/14/11
2 - After-the-fact registration form submitted 10/14/11
N/A – Not applicable

Table 3. Chronology of Site Activities

Date	Activity
1/1/68	Tanks 1-4 and 11-14 Installed
1/1/70	Tanks 5-8 Installed
7/1/79	Tanks 9 and 10 Installed
6/16/97	Tanks 1-4 Removed
6/23/97	Tanks 5-8 Removed
6/27/97	Tanks 11-14 Removed
8/4/97	Initial Site Characterization Report Requested by NHDES
11/4/97	Work Scope Submitted to NHDES
2/10/98	Initial Site Characterization Report Submitted
5/18/98	Work Scope for Additional Sampling Submitted to NHDES
10/14/98	Additional Groundwater Sampling Report Submitted to NHDES
5/3/02	Proposed Administrative Order by Consent Issued by NHDES
2/9/05	Waiver from UST Rule Requested by Manchester Airport
3/11/06	Waiver Approved by NHDES
6/17/11	Letter from NHDES Requesting Removal of Tanks 9 and !0 Issued
10/6/11	Unregistered Tanks 15 and 16 Removed
10/14/11	After-the-Fact Registration of Tanks 15 and 18 Submitted
10/18/11	Tanks 9 and 10 Closed in Place
1/4/12	Tank Closure Report Submitted to NHDES
3/14/12	Requested for Level II Site Investigation Issued by NHDES
4/5 & 4/9/12	Five Monitoring Wells (WMW-1 through WMW-5) Installed
4/13/12	First Round of Groundwater Samples Collected
4/30/12	Second Round of Groundwater Samples Collected

Table 4. Tank Closure Groundwater Samples – Hangar #1

Parameter (µg/L)	NHDES AGQS	Tank #1 6/19/97	Tank #2 6/19/97
Sec-Butylbenzene	260	14	1
Ethybenzene	700	42	22
Isopropylbenzene	800	15	9
p-Isopropyltoluene	260	29	23
Napthalene	20	**150**	**110**
n-Propylbenzene	260	26	14
Toluene	1,000	8	2
1,2,4-Trimethylbenzene	70	**310**	**200**
1,3,5-Trimethylbenzene	40	**120**	**96**
o-Xylene	Total	96	35
m,p-Xylene	10,000	180	110
TPH C-9-C-40	N/A	430,000	200,000

AGQS – Ambient Groundwater Quality Standard
µg/L – Micrograms per liter
Bold – Concentration exceeds the applicable NHDES Soil Remediation Standard
N/A – No standard established

Table 5. Tank Closure Soil Samples – Hangar #1

Parameter (mg/kg)	Remediation Standards	Tank #3 6/19/97	Tank #4 6/19/97
Sec-Butylbenzene	260	0.1	<10
Isopropylbenzene	330	<0.05	<10
p-Isopropyltoluene	3,400	0.53	<10
1,2,4-Trimethylbenzene	130	0.44	<10
1,3,5-Trimethylbenzene	96	1.2	<10
TPH C-9-C-40	10,000	170	<50

Mg/kg – milligrams per kilogram
<0.05 - None detected above the equipment detection limit

Table 6. Hangar #2 - Closure Soil Samples

Parameter (mg/kg)	Remediation Standards	Tank #5 6/24/97	Tank #6 6/24/97	Tank #7 6/24/97	Tank #8 6/24/97
Benzene	0.3	<0.05	<0.05	<0.01	**2.1**
Sec-Butylbenzene	130	0.3	<0.05	0.4	2.5
Ethybenzene	140	0.16	<0.05	0.2	6.0
Isopropylbenzene	330	0.1	<0.05	0.1	1.4
p-Isopropyltoluene	2,400	0.45	0.8	0.9	4.4
Napthalene	5	0.57	1.8	0.3	**6.0**
n-Propylbenzene	85	0.22	<0.05	0.3	3.6
Toluene	100	0.34	<0.05	0.2	20.0
1,2,4-Trimethylbenzene	130	2.4	5.7	3.2	31.0
1,3,5-Trimethylbenzene	96	1.2	3.6	2.1	14.0
o-Xylene	Total	0.68	1.9	0.8	13.0
m,p-Xylene	500	1.0	2.2	<2.0	27.0
MTBE	0.2	<1.0	<10.0	<2.0	**20.0**
TPH C-9-C-40	10,000	2.1	3.4	1.6	9.8

mg/kg – milligrams per kilogram
Bold – Concentration exceeds the applicable NHDES Soil Remediation Standard
<0.05 - None detected above the equipment detection limit

Table 7. Miscellaneous Tank Closure Soils Samples – Hangars #1 and #2

Parameter (mg/kg)	Remediation Standards	Tank #11 6/19/97	Tank #12 6/19/97	Tank #13 6/19/97	Tank #14 6/19/97
Sec-Butylbenzene	10	<0.01	0.01	<0.01	<0.01
p-Isopropyltoluene	330	<0.01	0.01	<0.01	<0.01
Napthalene	5	0.010	0.17	<0.01	<0.01
n-Propylbenzene	85	<0.01	0.02	<0.01	<0.01
1,2,4-Trimethylbenzene	130	0.02	0.05	<0.01	<0.01
1,3,5-Trimethylbenzene	96	0.04	0.04	<0.01	<0.01
o-Xylene	Total	<0.01	0.03	<0.01	<0.01
m,p-Xylene	500	<0.01	0.01	<0.01	<0.01
TPH C-9-C-40	10,000	<0.05	0.46	0.49	<50
2-Methylnaphthalene	96	<0.2	<0.2	<0.2	0.4
Fluoranthene	960	<0.2	0.	<0.2	<0.2
Pyrene	720	<0.2	0.3	<0.2	<0.2
Chrysene	120	<0.2	0.2	<0.2	<0.2
Benzo[b]fluoranthene	1	<0.2	0.2	<0.2	<0.2
Benzo[k]fluorathene	12	<0.2	0.2	<0.2	<0.2

mg/kg – Milligrams per kilogram
<0.01 - None detected above the equipment detection limit

Table 8a. Groundwater Monitoring Data – Hangar #1

Parameter, µg/L	NHDES AGQS	MW-4			
		12/17/97	1/6/98	6/23/98	9/2/98
Benzene	5	<1	<1	2	<1
Toluene	1,000	<1	4	2	2
Ethylbenzene	700	5	10	12	14
Total Xylenes	10,000	23	33	31	15

AGQS – Ambient Groundwater Quality Standard
µg/L – Micrograms per liter
Bold – Concentration exceeds the applicable NHDES Soil Remediation Standard
<1 - None detected above the equipment detection limit

Table 8b. Groundwater Monitoring Data – Hangar #1

Parameter, µg/L	NHDES AGQS	MW-5			
		12/17/97	1/6/98	6/23/98	9/2/98
Benzene	5	2	**6**	2	3
Toluene	1,000	<1	5	2	2
Ethylbenzene	700	19	55	20	17
Total Xylenes	10,000	84	164	36	15

AGQS – Ambient Groundwater Quality Standard
µg/L – Micrograms per liter
<1 - None detected above the equipment detection limit

Table 9. Groundwater Monitoring Data – Hangar #2

Parameter, µg/L	NHDES AGQS	MW-7			
		12/17/97	1/2/98	6/23/98	9/2/98
Toluene	1,000	13	5	<1	<1
Ethylbenzene	700	1	<1	<1	<1
Acetone	6,000	**1,500**	NS	<10	20
2-Butanone (MEK)	4,000	40	NS	<10	<10
Total Xylenes	10,000	1	<1	<2	<2

AGQS – Ambient Groundwater Quality Standard
µg/L – Micrograms per liter
Bold – Concentration exceeds the applicable NHDES Soil Remediation Standard
<1 - None detected above the equipment detection limit

Table. 10 Soil Screening Data from Tanks #9 and #10 Closure Test Pits

Sample Location	Sample #	Approximate Depth	PID Reading (ppm)
TP-1	SS-1	8'	409.0
TP-2	SS-2	6'	459.0
TP-3	SS-3	8'	33.1
TP-4	SS-4	8'	40.0

Table 11. Soil Screening Data from Tanks 15 and 16 UST Tank Closure Excavation – Hangar #1

Sample Location	Sample #	Approximate Depth	PID Reading (ppm)
NW side of Tank #15	S-1	2-3'	11.2
South end of Tank #15	S-2	4-5'	45
South end of Tank #15	S-3	6-8'	31
Beneath Tank #16	S-4	6-8'	35.8
South end of excavation	S-5	7-9'	194.0
South end of excavation	S-6	7-9'	46.3
South end of excavation	S-7	10-12'	5.0
West wall of excavation	S-8	8-10'	30.0
Five feet off west end Tank #16	S-9	10-12'	51.1

Table 12. Soil Stockpile Sampling – Laboratory Analytical Results

Analyte	NHDES Soil Remediation Standards mg/kg	SS-1 10/06/11	SS-2 10/11/11
TPH (DRO C10-C36)	10,000	1,700	3,500
Naphthalene	5	<0.5	2.1
2-methylnaphthalene	96	<0.5	3.5
2-Butanone (MEK)	51	0.9	<0.4
Phenanthrene	960	<0.5	0.7
Fluoranthene	960	<0.5	0.9
Pyrene	720	0.6	0.7
Ethylbenzene	140	<0.1	0.2
1,3,5-trimethylbenzene	96	0.2	3.8
1,2,4-trimethylbenzene	130	0.4	11.0
Isopropylbenzene	330	<0.1	0.3
Sec-butylbenzene	130	<0.1	1.1
4-isopropyltoluene	N/A	0.1	1.3
M&p-xylenes	500 Total Xylenes	<0.1	1.1
O-xylene		<0.1	0.4

mg/kg – Milligrams per kilogram
<0.5 - None detected above the equipment detection limit
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
N/A – No standard established

Table 13. Tanks #9 and #10 Closure Soil Sampling – Laboratory Analytical Data

	NHDES Soil Remediation Standards mg/kg	TP-1		TP-2	TP-3		TP-4	
		SS-1 08/25/11	SS-2 08/25/11	S-1 08/25/11	S-1 08/25/11	S-2 08/25/11	S-1 08/26/11	S-2 08/26/11
TPH (DRO C10-C36)	10,000	<250	<230	3,000	1,700	**19,000**	<210	<240
2-methylnaphthalene	96	<0.6	<0.6	2.1	<0.6	3.1	<0.6	<0.6
Acenaphthylene	490	<0.6	1.3	<0.6	<0.6	<0.6	<0.6	<0.6
Fluorene	77	<0.6	<0.6	<0.6	<0.6	0.8	<0.6	<0.6
Phenanthrene	960	<0.6	4.4	<0.6	<0.6	1.5	<0.6	<0.6
Anthracene	1,000	<0.6	1.3	<0.6	<0.6	<0.6	<0.6	<0.6
Fluoranthene	960	<0.6	9.1	<0.6	<0.6	4.3	<0.6	0.7
Pyrene	720	<0.6	7.7	<0.6	<0.6	5.4	<0.6	<0.6
Benzo(a)anthracene	1	<0.6	**4.3**	<0.6	<0.6	**2.0**	<0.6	<0.6
Chrysene	120	<0.6	3.1	<0.6	<0.6	1.6	<0.6	<0.6
Benzo(b)fluoranthene	1	<0.6	**2.9**	<0.6	<0.6	**2.1**	<0.6	<0.6
Benzo(k)fluoranthene	12	<0.6	2.6	<0.6	<0.6	1.4	<0.6	<0.6
Benzo(a)pyrene	0.7	<0.6	**3.2**	<0.6	<0.6	**1.6**	<0.6	<0.6
Indeno(1,2,3-cd)pyrene	1.0	<0.6	**1.6**	<0.6	<0.6	0.9	<0.6	<0.6
Dibenzo(a,h)anthracene	0.7	<0.6	0.7	<0.6	<0.6	<0.6	<0.6	<0.6
Benzo(g,h,i)perylene	960	<0.6	1.6	<0.6	<0.6	0.9	<0.6	<0.6
1,3,5-trimethylbenzene	96	<0.1	<0.1	1.2	1.2	0.2	<0.1	<0.1
1,2,4-trimethylbenzene	130	<0.1	<0.1	1.5	1.8	0.2	<0.1	<0.1
Sec-butylbenzene	130	<0.1	<0.1	0.2	<0.5	<0.1	<0.1	<0.1
4-isopropyltoluene	N/A	<0.1	<0.1	0.4	0.9	0.1	<0.1	<0.1

Mg/mg – Milligrams per kilogram
<0.6 - None detected above the equipment detection limit
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
N/A – No standard established

Table 14. Tanks #15 & #16 - Soil Sampling Laboratory Analytical Data

Parameters	NHDES Soil Remediation Standards Mg/Kg	Tank #15		Tank #16	
		CSS-1 10/17/11	CSS-2 10/17/11	CSS-3 10/17/11	CSS-4 10/17/11
TPH (DRO C10-C36)	10,000	450	860	8,000	800
Naphthalene	5	<0.6	<0.5	**8.8**	<0.5
2-methylnaphthalene	96	<0.6	<0.5	16.0	<0.5
Dibenzofuran	N/A	<0.6	<0.5	0.8	<0.5
Fluorene	77	<0.6	<0.5	1.3	<0.5
Phenanthrene	960	<0.6	<0.5	3.0	<0.5
Fluoranthene	960	<0.6	<0.5	3.3	<0.5
Pyrene	720	<0.6	<0.5	1.4	<0.5
Benzo(a)anthracene	1	<0.6	<0.5	0.8	<0.5
Chrysene	120	<0.6	<0.5	0.6	<0.5
Benzo(b)fluoranthene	1	<0.6	<0.5	0.7	<0.5
Ethylbenzene	140	<0.1	<0.1	1.2	<0.1
1,3,5-trimethylbenzene	96	<0.1	0.2	10	<0.1
1,2,4-trimethylbenzene	130	<0.1	0.3	30	<0.1
Isopropylbenzene	330	<0.1	<0.1	1.1	<0.1
N-propylbenzene	N/A	<0.1	<0.1	2.7	<0.1
Sec-butylbenzene	130	<0.1	<0.1	3.7	<0.1
4-isopropyltoluene	N/A	<0.1	<0.1	3.9	<0.1
M&p-xylenes	500 Total Xylenes	<0.1	<0.1	6.3	<0.1
O-xylene		<0.1	<0.1	0.4	<0.1

Mg/Kg – Milligrams per kilogram N/A – No standard established
<0.6 - None detected above the equipment detection limit
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard

Table 15. UST Closure Groundwater Sampling Laboratory Analytical Data

Analyte	NHDES AGQS µg/L	TP-1 8/25/11	TP-3 8/25/11	TP-4 8/26/11	CGW-1 10/17/11
Naphthalene	20	<0.5	<5.5	0.8	<5.0
2-methylnaphthalene	280	<0.5	22.0	<0.5	32
Acenaphthylene	420	2.3	7.3	3.7	<5.0
Dibenzofuran	N/A	<0.5	<5.5	0.6	<5.0
Fluorene	280	<0.5	6.1	0.9	6.2
Phenanthrene	210	1.5	10.0	6.3	11
Anthracene	2,100	1.0	<5.5	7.4	<5.0
Fluoranthene	280	3.1	23.0	11.0	28
Pyrene	210	2.9	29.0	10.0	21
Benzo(a)anthracene	0.1	**1.3**	**8.2**	**7.0**	**7.3**
Chrysene	5	1.8	**9.7**	**11.0**	**11**
Benzo(b)fluoranthene	0.1	**2.8**	**17.0**	**8.6**	**6.9**
Benzo(k)fluoranthene	0.5	**2.6**	**8.4**	**5.0**	**11**
Benzo(a)pyrene	0.2	**2.6**	**14.0**	**5.5**	**9.2**
Indeno(1,2,3-cd)pyrene	0.1	**2.7**	**7.3**	**3.1**	**8.4**
Dibenzo(a,h)anthracene	0.1	**1.1**	<5.5	**1.3**	<5.0
Benzo(g,h,i)perylene	210	2.5	6.6	2.8	8.8
1,3,5-trimethylbenzene	330	<2.0	17.0	<2.0	51
1,2,4-trimethylbenzene	330	<2.0	36.0	<2.0	120
Ethylbenzene	700	<2.0	<10	<2.0	3.0
Isopropylbenzene	800	<2.0	<10	<2.0	3.0
N-propylbenzene	260	<2.0	<10	<2.0	7.0
Sec-Butylbenzene	260	<2.0	<10	<2.0	9.0
4-isopropyltoluene	N/A	<2.0	<10	<2.0	13.0
m&p xylene	10,000 Total Xylenes	5.0	<10	<2.0	15
o xylene		2.0	<10	<2.0	9

ug/L – Microgram per liter N/A – No standard established
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
<0.6 - None detected above the equipment detection limit

Table 16. Monitoring Well Soil Descriptions and PID Readings

WMW-1		
Depth	Description	PID, ppm
4-6'	Medium dense, light brown medium to coarse sand	0.0
9-11'	Wet, loose, light brown medium to coarse sand	0.0
14-16'	Wet, loose, light brown medium to coarse sand	0.0*
WMW-2		
Depth	Description	PID, ppm
4-6'	Damp, loose, light brown medium to coarse sand	1.8
9-11'	Wet, loose, light brown medium to coarse sand	9.1*
14-16'	Wet, loose, light brown medium to coarse sand	0.8
WMW-3		
Depth	Description	PID, ppm
4-6'	Medium dense, light brown medium to coarse sand	0.3
9-11'	Wet, loose, brown medium to coarse sand	0.1
14-16'	Wet, loose, brown medium to coarse sand	0.8*
WMW-4		
Depth	Description	PID, ppm
4-6'	Medium dense, light brown medium to coarse sand	0.6
9-11'	Wet, loose, brown medium to coarse sand	0.4
14-16'	Wet, loose, brown medium to coarse sand	1.0*
WMW-5		
Depth	Description	PID, ppm
0-9'[1]	Medium to coarse sand (fill material)	NS
9-11'	Wet, loose, brown medium to coarse sand	26.1*
14-16'	Wet, loose, brown medium to coarse sand	1.8

PID – Photo-ionization Detector
ppm –Parts per million
1 – "Grave" of Tank #16 (removed 10/6/11) backfilled with sandy fill material
* - Soil sample collected for laboratory analysis
N/S – No PID reading.

Table 17. Groundwater Table Elevations

Well #	Top of Casing Elevation (ft.)	Water Table Elevation (ft.)			
		4/13/12		4/28/12	
		DTW	WTE	DTW	WTE
WMW-1	222.19	7.12	215.79	6.86	216.05
WMW-2	222.56	6.86	215.47	6.78	215.55
WMW-3	222.49	7.04	215.22	7.06	215.20
WMW-4	222.85	7.80	214.92	7.67	215.05
WMW-5	222.74	7.39	215.14	7.22	215.31

DTW – Depth to water table
WTE – Water table elevation

Table 18. Monitoring Well Soil Samples – Analytical Data

Parameters	NHDES Soil Remediation Standards µg/g	WMW-1-S2	WMW-2-S3	WMW-3-S3	WMW-4-S3	WMW-5-S2
		4/5/12	4/5/12	4/5/12	4/5/12	4/9/12
TPH (DRO C10-C36)	10,000	<240	<250	<230	<240	2,000
1,3,5-trimethylbenzene	96	<0.1	<0.1	<0.1	<0.1	0.4
1,2,4-trimethylbenzene	130	<0.1	<0.1	<0.1	<0.1	0.4
4-isopropyltoluene	330	<0.1	<0.1	<0.1	<0.1	0.1

µg/g – micrograms per gram
<0.1 - None detected above the equipment detection limit

Table 19. Groundwater Sampling – Analytical Data

Analyte	NHDES AGQS µg/L	WMW-1		WMW-2		WMW-3		WMW-4		WMW-5		
		4/12/12	4/28/12	4/12/12	4/28/12	4/12/12	4/28/12	4/12/12	4/28/12	4/12/12	4/28/12	4/28/12 Dup.
Diesel Range Organics	N/A	<200	<200	<200	<200	<200	,200	<200	<200	140,000	110,00	140,000
Naphthalene	20	<0.5	<5	<0.5	<5	<0.5	<5	<0.5	<5	**20**	**20**	17
2-methylnaphthalene	280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	41	11	18
Fluorene	280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.1	2.6	3.5
Phenanthrene	210	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	4.4	6.1
Fluoranthene	280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	25	7.7	11
Pyrene	210	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	27	8.7	12
Benzo(a)anthracene	0.1	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	**8.7**	**3.1**	**4.3**
Chrysene	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**12**	3.4	4.5
Benzo(b)fluoranthene	0.1	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	**14**	**4.0**	**5.1**
Benzo(k)fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**9.8**	**4.4**	**7.0**
Benzo(a)pyrene	0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	**14**	**4.4**	**6.5**
Indeno(1,2,3-cd)pyrene	0.1	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	**8.4**	**2.9**	**3.6**
Dibenzo(a,h)anthracene	0.1	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	<0.1	<0.5	**3.1**	<2.5	<2.5
Benzo(g,h,i)perylene	210	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.8	2.8	3.4
1,3,5-trimethylbenzene	330	<2	<2	<2	<2	<2	<2	<2	<2	23	19	18
1,2,4-trimethylbenzene	330	<2	<2	<2	<2	<2	<2	<2	<2	44	36	33
Sec-Butylbenzene	260	<2	<2	<2	<2	<2	<2	<2	<2	2	<2	<2
4-isopropyltoluene	N/A	<2	<2	<2	<2	<2	<2	<2	<2	5	4	4
m&p xylene	10,000 Total	<2	<2	<2	<2	<2	<2	<2	<2	5	4	4
o xylene	Xylenes	<2	<2	<2	<2	<2	<2	<2	<2	9	7	7

ug/L – Microgram per liter
Bold – Indicates the concentration exceeds the applicable NHDES Soil Remediation Standard
<0.6 - None detected above the equipment detection limit
N/A – No standard established

APPENDIX C – AGENCY CORRESPONDENCE

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JUNE 17, 2011 NHDES REQUEST FOR TANK CLOSURES

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

June 17, 2011

John J. Hagopian
Manchester Airport
One Airport Road Suite 300
Manchester, NH 03103-3395

Subject Site: Manchester, Manchester Airport, 5 Green Drive,
DES Site #199707010, UST Facility #0111000

Reference: PREVIOUSLY GRANTED WAIVER REQUEST

Dear Mr. Hagopian:

The New Hampshire Department of Environmental Services (DES) granted a waiver for the cathodic protection testing requirements and an extension of time to permanently close the two 50,000-gallon jet fuel underground storage tanks (USTs) in a letter to you dated March 11, 2005. According to our files, the two jet fuel USTs remain temporarily closed.

Your original waiver request stated that the tanks were originally scheduled to be removed as part of capital improvements in 2005 which may be delayed but will likely be conducted within two years. More than enough time has passed to allow for the two USTs' removal. Therefore, DES is requesting that the two jet fuel USTs be permanently closed and a closure report submitted within 60 days of the date of this letter. Permanent closure shall be performed in accordance with Env-Wm 1401.18.

Should you have any questions concerning the content of this letter, please immediately contact the undersigned in the Waste Management Division of DES.

Sincerely,

Michael W. Juranty, P.E., Supervisor
Oil Remediation and Compliance Bureau
Tel: (603) 271-6058
E-mail: Michael.juranty@des.nh.gov

FEBRUARY 14, 2012 NHDES REQUEST FOR SITE INVESTIGATION

The State of New Hampshire
Department of Environmental Services
Thomas S. Burack, Commissioner

Celebrating 25 Years of Protecting New Hampshire's Environment

February 14, 2012

John Hagopian
Manchester Boston Regional Airport
One Airport Road, Suite 300
Manchester, NH 03103

REQUEST FOR SITE INVESTIGATION

Subject Site: **Manchester** – Manchester Boston Regional Airport, 5 Green Drive
DES Site #199707010, LUST Project #27699

UST Tank Closure Report, prepared by The Smart Associates, Inc., dated January 4, 2012 (Activity #179871)

Dear Mr. Hagopian:

The New Hampshire Department of Environmental Services (DES) has reviewed the above referenced report, and other information in our files, regarding the discharge of petroleum at the subject site. The oil discharge was confirmed by the presence of several petroleum compounds in soil and groundwater samples collected from test pits and tank graves.

Manchester Boston Regional Airport is a *strictly liable party*, under New Hampshire State Law, RSA Chapter 146-a:3-a., with respect to this discharge. Under this State Law, any person who, without regard to fault, directly or indirectly, causes or suffers the discharge of oil into, or onto any surface water or groundwater of the state, or in a land area where oil will ultimately seep into any surface water or groundwater of the state in violation of this chapter, or rules adopted under this chapter, shall be strictly liable for costs directly or indirectly resulting from the violation. A Notice of Strict Liability is enclosed with this letter. As a responsible party, Manchester Boston Regional Airport must take all steps necessary to stop and contain the discharge, remove the free product, conduct any requested studies, and remediate the remaining soil and groundwater contamination to state standards.

DES has determined that you are a responsible party with respect to this discharge and requires that you complete a Level II Site Investigation. The Site Investigation is necessary to assess the full extent of soil and groundwater contamination, identify potential human and environmental receptors, and develop an appropriate remedial action. The requirements of the Site Investigation are detailed in Env-Or 606.03 through 606.09. These rules are available on our website at http://des.nh.gov/organization/commissioner/legal/rules/documents/env-or600.pdf.

The Site Investigation report is due within 120 days of receipt of this letter. DES will provide guidance on the need for further investigation, remediation or closure of this project after we have reviewed the Site Investigation report. The Site Investigation and report shall be completed by, or under the direction of, a professional engineer or professional geologist licensed under RSA 310-A, and the report shall bear the seal of the professional responsible for the work. A list of companies that conduct Site Investigations is available on our website at http://www2.des.state.nh.us/OneStop/ORCB_Web_Reports_Menu.aspx. Please note that we do not pre-qualify consultants on this list; therefore, DES strongly recommends that you review a firm's experience and qualifications prior to retaining them to conduct the required work.

Facility Compliance and Cost Reimbursement

The New Hampshire Petroleum Reimbursement Fund Program (Fund) provides financial assistance to qualified owners of petroleum storage facilities who incur costs for investigation and cleanup of contamination from the release of petroleum products. To qualify for Fund coverage, the facility must be in compliance with all applicable state and federal rules for petroleum storage facilities. The Oil Fund Disbursement Board *Guidance Manual: Policies, Procedures & Rules for Reimbursement* will direct you through the Fund reimbursement process. This manual is available on our website at http://des.nh.gov/organization/divisions/waste/orcb/fms/prfp/documents/ofdb_manual.pdf.

A review of our files indicates that eligibility has not yet been determined for this facility. To secure eligibility, Manchester Boston Regional Airport must submit a cover letter, a Request for Reimbursement Authorization Form, information concerning private insurance coverage, and certification of tank compliance. Copies of the cover letter format and form are attached. Prompt submittal of eligibility documentation will facilitate claims processing and reimbursement. The Oil Fund Disbursement Board Guidance Manual: Policies, Procedures & Rules for Reimbursement will direct you through the Fund reimbursement process, and is available on our website at http://des.nh.gov/organization/divisions/waste/orcb/fms/prfp/documents/ofdb_manual.pdf. If you have questions regarding Fund eligibility, please email Timothy.Denison@des.nh.gov, or call 603 271-2570

To receive reimbursement from the Fund, all work must be pre-approved and conducted in accordance with the unit-based and project-based costs described in the above referenced guidance manual. Please direct your consultant to use the unit-based and project-based costs and work scope for a Level II Site Investigation to complete the required work.

Please do not hesitate to contact me if you have any questions regarding this letter.

Sincerely,

Charles Berube, P.G.
Oil Remediation & Compliance Bureau
Tel: (603) 271-3899
Email: Charles.Berube@des.nh.gov

Enclosure: Notice of Strict Liability

cc: Gary Lynn, P.E., ORCB
Manchester Health Officer
The Smart Associates, Inc.

NOTICE OF STRICT LIABILITY FOR OIL DISCHARGE – RSA 146-A
REQUEST FOR INSURANCE COVERAGE DETERMINATION

A. OIL STORAGE FACILITY/PROPERTY, ON-SITE SPILL, OR UNKNOWN SOURCE

Type (check one): Motor Fuel AST ("LAST") ☐ Motor Fuel UST ("LUST") ☒ Fuel Oil AST ("FUEL") ☐

On-Premise-Use Fuel Oil ("OPUF") ☐ Motor Oil ("MOST") ☐ On-Site Spill ☐ Unknown Source ☐

B. FACILITY AND/OR PROPERTY, OR LOCATION INFORMATION

(1) Facility and/or property, or location name	(1) Manchester Boston Regional Airport
(2) Address	(2) 5 Green Drive
(3) Town	(3) Manchester
(4) NHDES facility registration/permit number, if applicable	(4) 0111000
(5) NHDES site number and project number (TBD)	(5) 199707010 27699
(6) Date of discovery	(6) October 6, 2011

C. OWNER/RESPONSIBLE PARTY INFORMATION

(1) Owner/Responsible Party name	(1) Manchester Boston Regional Airport
(2) Mailing address	(2)One Airport Road, Suite 300 Manchester, NH 03103
(3) Day/Evening phone	(3) 603-624-6539

D. NOTICE OF STRICT LIABILITY & STATEMENT OF INSURANCE REQUIREMENTS

The New Hampshire Department of Environmental Services (NHDES) has determined that as of the date listed in B(6), the person(s) or entity listed in C(1) is strictly liable under New Hampshire RSA 146-A:3-a for cleanup of the oil discharge discovered at the location listed in B(1), which has impacted the waters of the State. NHDES has or will issue specific instructions for performing cleanup, and requires that insurance coverage information be provided. A state fund, which is designed to be excess coverage to any private insurance, may be available for cleanup cost reimbursement if private insurance is unavailable or insufficient. Pursuant to Insurance Department Bulletin INS No. 11-009-AB, upon receipt of this Notice, the private insurer must make a coverage determination as to whether or not the State's claim in strict liability for damages to waters of the State is covered by the policy. Coverage determination notification to the insured must comply with the guidelines outlined in New Hampshire Code of Administrative Rules, Part Ins 1002.

Charles Berube *February 14, 2012*

NHDES Representative & Date Signed

SEE INFORMATION AND GENERAL INSTRUCTIONS ON PAGE 2

E. INFORMATION AND GENERAL INSTRUCTIONS

- New Hampshire's Oil Pollution Control statute (RSA 146-A) gives NHDES primary jurisdiction over oil spill cleanup operations. Responsible parties must perform the cleanup to the Department's satisfaction and be consistent with the Department's directives. RSA 146-A:4, I; see also RSA 146-A:7. The law also authorizes NHDES to perform cleanup, but the liable parties will be billed for those services, which must be paid in order to obtain a release from the State that cleanup work is complete.
- Under New Hampshire law (RSA 146-A:3-a), any person who causes or suffers a discharge of oil into or onto any surface water or groundwater, or in a land area where oil will ultimately impact water, is **strictly liable** for cleanup. Petroleum storage tank facility owners, and owners of land where such facilities are or were located, need to understand that they are legally liable even if they were not negligent in the operation of a facility.
- NHDES expects private insurance companies to pay cleanup costs that are covered under the insurance policy. Once NHDES has issued a Notice of Strict Liability, the party determined to be strictly liable is responsible for seeking a **coverage determination** from each private insurance company that has issued a policy on the property or oil storage facility. Coverage determinations from insurance agents interpreting policies are not acceptable. The coverage determination must be from the insurance company or an authorized adjuster, based on a claim filed by the insured. If there is no private insurance, the owner or company officer must supply NHDES with a notarized letter stating this fact.
- The New Hampshire Petroleum Reimbursement Fund Program oil spill cleanup funds, available under RSA 146-D, RSA 146-E and RSA 146-F, provide excess insurance coverage. Private insurance for cleanup costs and/or third-party damages must be exhausted before the State funds are available. The initial request for reimbursement authorization under the State funds must include documents to demonstrate there is no private insurance coverage.
- When water contamination becomes known during a cleanup initially financed by State funds, but it is later determined that there is coverage under a private insurance policy, NHDES expects the insurance company to assume the cost of any water quality assessment that is necessary. Costs excluded from coverage under private insurance may be covered by the State excess insurance funds, provided all eligibility requirements are met.
- The N.H. Department of Insurance (DOI) has issued Bulletin INS No. 11-009-AB to insurance companies regarding the process for handling insurance claims relating to oil discharges, where NHDES has issued a Notice of Strict Liability. The Bulletin directs insurers to issue coverage decisions (i.e., denial or payment of a claim) in accordance with DOI rules, Ins 1002 (http://www.gencourt.state.nh.us/rules/state_agencies/ins1000.html). The Bulletin advises insurers they must give the insured written notice of the reason for denial in whole or in part of any claim; under Ins 1002.06(a), this includes notice of the applicable policy provision upon which denial is based. The Bulletin also encourages insurers to make their oil discharge coverage decisions consistent with the approach outlined in this notice.
- If a private insurer (1) is non-responsive to a request for a coverage determination, (2) states that the policy does not cover the State's strict liability claim, or (3) will not certify that such coverage is not available under its policy, State fund coverage may still be provided. However, the State reserves its right to take legal action against the insurer to recover costs.
- NHDES personnel will complete the Notice of Strict Liability form as soon as possible after an oil discharge is reported and initially investigated, and water impacts are found. The owner/responsible party should provide a copy of both sides of the completed form to their insurance company to request a coverage determination. The owner/responsible party should report the results of the coverage determination to NHDES immediately. The findings of the coverage determination must be included with the owner's request for State excess insurance fund coverage.

If you have questions, email Timothy.Denison@des.nh.gov or call (603) 271-2570.

APPENDIX D - ARCHIVAL AERIAL IMAGERY

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INQUIRY #: 2772193.4
YEAR: 2006
= 604'
N


INQUIRY #: 2772193.4
YEAR: 1998
= 750'
N


INQUIRY #: 2772193.4
YEAR: 1992
= 750'
N


INQUIRY #: 2772193.4
YEAR: 1985
= 1000'
N


INQUIRY #: 2772193.4
YEAR: 1977
= 1000'
N

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APPENDIX E. PHOTOGRAPHIC LOG

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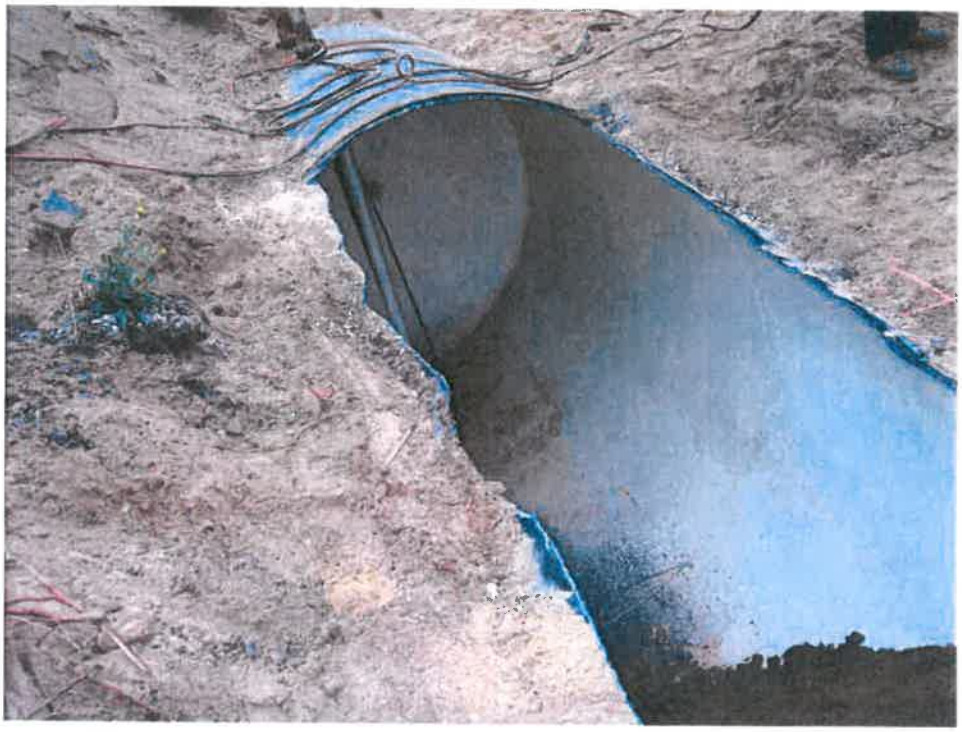
Photograph #1- 6,000 Gallon Tank Removal

Photograph # 2 – 2,000-Gallon Tank Removal

Photograph # 3 – Excavated 50,000-Gallon Tanks



Photograph #4 – Interior of Exposed 50,000-Gallon Tank

Photograph #5 – Partially Filled 50,000-Gallon Tank

Photograph #6 – Completed Site Closure

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APPENDIX F. FIELD SAMPLING TECHNIQUE

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FIELD SAMPLING TECNIQUES

F-1. Monitoring Well Installation

The monitoring wells were installed by Miller Engineering and Testing of Manchester, New Hampshire, using a Truck-mounted rig to advance a 4¼-inch inside diameter hollow-stem auger. Soil samples were collected from each borehole at five foot intervals by advancing a 2-inch nominal diameter, 24-inch split spoon sampler with a 140-pound drive hammer, following established ASTM procedures. The soil samples were used to develop a soil description of the site. A bound logbook was used to record site conditions, soil boring logs, and well completion details. Copies of the well logs prepared by the driller, including are contained in Appendix G.

The boreholes were advanced to a depth of 15 feet below ground surface, and the monitoring wells were constructed using 2-inch diameter, flush-threaded, schedule 40 PVC casing and ten feet of schedule 40, 0.010-inch slotted well screen. The annular space of the boring was backfilled with washed sand to a point approximately one foot above the top of the well screen, and a two foot layer of bentonite chips was then placed above the sand pack. The remaining annular space was backfilled with drill cutting to a point approximately one foot below ground surface. The wells were completed

The horizontal location and the top-of-casing elevation of the monitoring wells were surveyed by a crew from Eric C .Mitchell & Associates.

F-2 Soil Sampling

A total of five soil samples, one from each monitoring well borehole, were collected for laboratory analysis. Each split-spoon sample of soil was field screened using a MiniRAE Plus photo-ionization detector (PID) with a 10.6 eV lamp that was calibrated with isobutylene.

A single soil sample was collected for laboratory analysis from each well at the point of greatest volatile organic compound (VOC) contamination detected. All laboratory samples were analyzed for the presence of VOCs and TPH, the contaminants of concern detected in excess of New Hampshire S-1 standards during the original UST closure (see Appendix D for the original UST closure report). The VOC samples were taken in accordance with EPA Method 5035. The samples were collected directly from the split spoon sampler and placed in 20-milliliter sample bottles preserved with methanol. Laboratory samples to be analyzed for Total Petroleum Hydrocarbons (TPH) were composites taken from the same length of split spoon recovery as the VOC samples. The TPH samples were placed in unpreserved 4-oz. amber

bottles. Immediately after collection, the sample bottles were placed in ice-filled coolers, pending delivery to Eastern Analytical, Inc. in Concord, New Hampshire for analysis. Proper chain-of-custody procedures were followed throughout the sampling operation. Soil sample results are discussed in the section below.

F-3 Groundwater Sampling

Two rounds of groundwater samples were collected on June 11, 2001 and June 25, 2001 for laboratory analysis for VOCs and Polynuclear Aromatic Hydrocarbons (PAHs). The well sampling procedure was as follows:

- The depth to the water table was measured and recorded;
- The volume of water in the well was computed;
- Approximately 3 well volumes were removed from each well using a peristaltic pump;
- The samples were collected with the peristaltic pump. Each VOC sample were placed in two 40-milliliter vials containing hydrochloric acid with teflon coated septa, and the PAH samples were placed in unpreserved 1-liter amber glass bottles; and
- After the samples were collected, they were placed on ice in laboratory-supplied coolers pending delivery to the laboratory. Proper chain-of-custody procedures were observed throughout the sampling operation.

The groundwater samples were transported to the Eastern Analytical Laboratory, Inc. for analysis.

APPENDIX G – MONITORING WELL LOGS AND COMPLETON DIAGRAMS

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TEST BORING LOG

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

Project:	WIGGINS AIRWAYS
	LONDONDERRY, NH
Project No:	12.093.NH
Date Start:	04-05-12
Date End:	04-05-12
Sheet	1 of 1
Boring No:	WMW-1
Location:	By Client
Approx. Surface Elev:	

	CASING	SAMPLER	GROUNDWATER OBSERVATIONS			
			Date	Depth	Casing At	Stabilization Period
Type	HSA	SS	04-05-12	8.0	-	Upon Completion
Size	4.25" ID	1-3/8" ID				
Hammer		140 lbs.				
Fall		30"				

Depth/ Elev.	Cas bl/ft	SAMPLE Sample No.	Depth Range	Pen.	Rec.	BLOWS 0-6"	6-12"	12-18"	18-24"	Strata Change	Sample Description	Notes
0												
4		S-1	4.0-6.0	24	22	5	7	8	8		S-1: Medium dense, light brown fine sand	
8		S-2	9.0-11.0	24	20	3	4	3	4		S-2: Wet, loose, light brown fine sand	
12		S-3	14.0-16.0	24	22	3	2	1	3		S-3: Wet, loose, light brown fine sand Install monitoring well	(1)
16											BORING TERMINATED AT 16 ft	
20												
24												

Driller: B. Marcoux
Helper: J. Martel
Inspector:

COHESIVE CONSISTENCY (Blows/Foot)
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM STIFF
8-15 STIFF
15-30 HARD

COHESIONLESS (Blows/Foot)
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM DENSE
30-50 DENSE
50+ VERY DENSE

PROPORTIONS USED
TRACE: 0-10%
LITTLE: 10-20%
SOME: 20-35%
AND: 35-50%

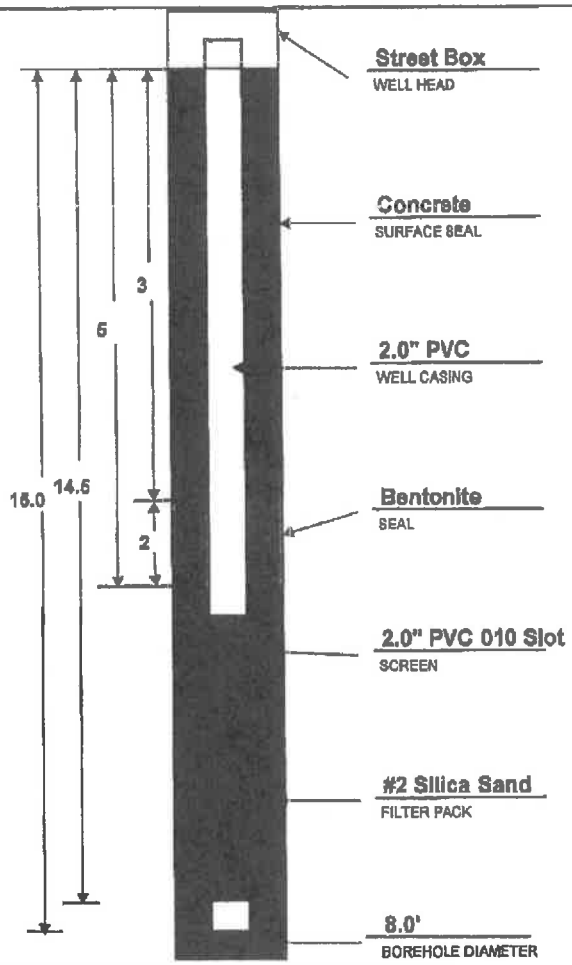
NOTES: (1) 10.0' screen, 5.0' riser, gate box

REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITION MAY BE GRADUAL.
WATER LEVEL READINGS HAVE BEEN MADE IN THIS DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS.
FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

MONITORING WELL INSTALLATION REPORT

MILLER ENGINEERING & TESTING, INC. 100 Sheffield Road - Manchester, NH 03103 Ph. (603) 668-6016 - Fax (603) 668-8641	MONITORING WELL NUMBER: WMW-1	Page 1 of 1
	DRILLER/FIRM Miller Engineering & Testing Inc.	
PROJECT NUMBER 12.093.NH	DRILLING METHOD HSA 4.25"	INSPECTOR Glen Smart
PROJECT NAME WIGGINS AIRWAYS		SAMPLING METHOD Split Spoon
PROJECT LOCATION LONDONDERRY, NH	TOTAL BORING DEPTH 15.0	STATIC WATER LEVEL +/- 10.0'
DATE 04-05-12	TOP OF CASING ELEVATION	GROUND SURFACE ELEVATION

WELL CONSTRUCTION DETAILS



COMMENTS:

TEST BORING LOG

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

Project:	WIGGINS AIRWAYS LONDONDERRY, NH	Sheet	1 of 1
Project No:	12.093.NH	Boring No:	WMW-2
Date Start:	04-05-12	Location:	By Client
Date End:	04-05-12	Approx. Surface Elev:	

	CASING	SAMPLER
Type	HSA	SS
Size	4.25" ID	1-3/8" ID
Hammer		140 lbs.
Fall		30"

GROUNDWATER OBSERVATIONS

Date	Depth	Casing At	Stabilization Period
04-05-12	8.0	-	Upon Completion

Depth/ Elev.	Cas bl/ft	SAMPLE Sample No.	SAMPLE Depth Range	SAMPLE Pen.	SAMPLE Rec.	BLOWS 0-6"	BLOWS 6-12"	BLOWS 12-18"	BLOWS 18-24"	Strata Change	Sample Description	Notes
0												
4		S-1	4.0-6.0	24	22	3	4	6	8		S-1: Damp, light brown fine sand, loose	
8		S-2	9.0-11.0	24	20	4	4	2	2		S-2: Wet, loose, light brown fine sand	
12		S-3	14.0-16.0	24	20	3	3	2	1		S-3: Wet, loose, light brown fine sand Install monitoring well	(1)
16											BORING TERMINATED AT 16 ft	
20												
24												

Driller: B. Marcoux
Helper: J. Martel
Inspector:

COHESIVE CONSISTENCY (Blows/Foot)
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM STIFF
8-15 STIFF
15-30 HARD

COHESIONLESS (Blows/Foot)
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM DENSE
30-50 DENSE
50+ VERY DENSE

PROPORTIONS USED
TRACE: 0-10%
LITTLE: 10-20%
SOME: 20-35%
AND: 35-50%

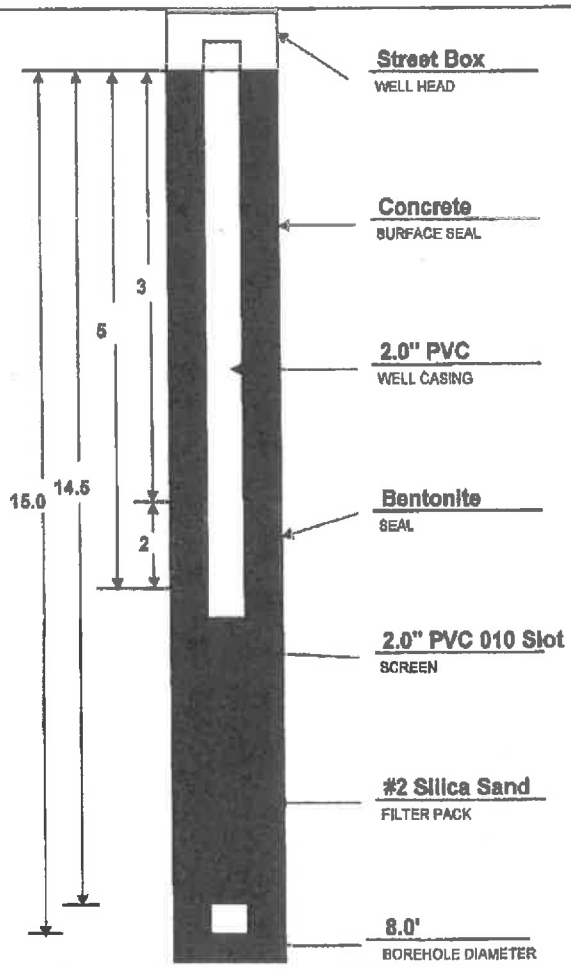
NOTES: (1) 10.0' screen, 5.0' riser, gate box

REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITION MAY BE GRADUAL.
WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS.
FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

MONITORING WELL INSTALLATION REPORT

MILLER ENGINEERING & TESTING, INC. 100 Sheffield Road - Manchester, NH 03103 Ph. (603) 668-6016 - Fax: (603) 668-8641	MONITORING WELL NUMBER: WMW-2	Page 1 of 1
	DRILLER/FIRM: Miller Engineering & Testing Inc.	
PROJECT NUMBER: 12.093.NH	DRILLING METHOD: HSA 4.25"	INSPECTOR: Glen Smart
PROJECT NAME: WIGGINS AIRWAYS		SAMPLING METHOD: Split Spoon
PROJECT LOCATION: LONDONDERRY, NH	TOTAL BORING DEPTH: 15.0	STATIC WATER LEVEL: +/- 10.0'
DATE: 04-05-12	TOP OF CASING ELEVATION:	GROUND SURFACE ELEVATION:

WELL CONSTRUCTION DETAILS



COMMENTS:

TEST BORING LOG

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

Project:	WIGGINS AIRWAYS
	LONDONDERRY, NH
Project No:	12.093.NH
Date Start:	04-05-12
Date End:	04-05-12
Sheet	1 of 1
Boring No:	WMW-3
Location:	By Client
Approx. Surface Elev:	

	CASING	SAMPLER	GROUNDWATER OBSERVATIONS			
			Date	Depth	Casing At	Stabilization Period
Type	HSA	SS	04-05-12	8.0	-	Upon Completion
Size	4.25" ID	1-3/8" ID				
Hammer		140 lbs.				
Fall		30"				

Depth/ Elev.	Cas bl/ft	SAMPLE Sample No.	Depth Range	Pen.	Rec.	BLOWS 0-6"	6-12"	12-18"	18-24"	Strata Change	Sample Description	Notes
0												
4		S-1	4.0-6.0	24	20	4	7	8	8		S-1: Medium dense, light brown fine sand	
8		S-2	9.0-11.0	24	16	4	4	4	3		S-2: Wet, loose, brown fine sand	
12		S-3	14.0-16.0	24	18	4	4	2	1		S-3: Wet, loose, brown fine sand Install monitoring well	(1)
16											BORING TERMINATED AT 16 ft	
20												
24												

Driller: B. Marcoux
Helper: J. Martel
Inspector:

COHESIVE CONSISTENCY (Blows/Foot)
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM STIFF
8-15 STIFF
15-30 HARD

COHESIONLESS (Blows/Foot)
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM DENSE
30-50 DENSE
50+ VERY DENSE

PROPORTIONS USED
TRACE: 0-10%
LITTLE: 10-20%
SOME: 20-35%
AND: 35-50%

NOTES: (1) 10.0' screen, 5.0' riser, gate box

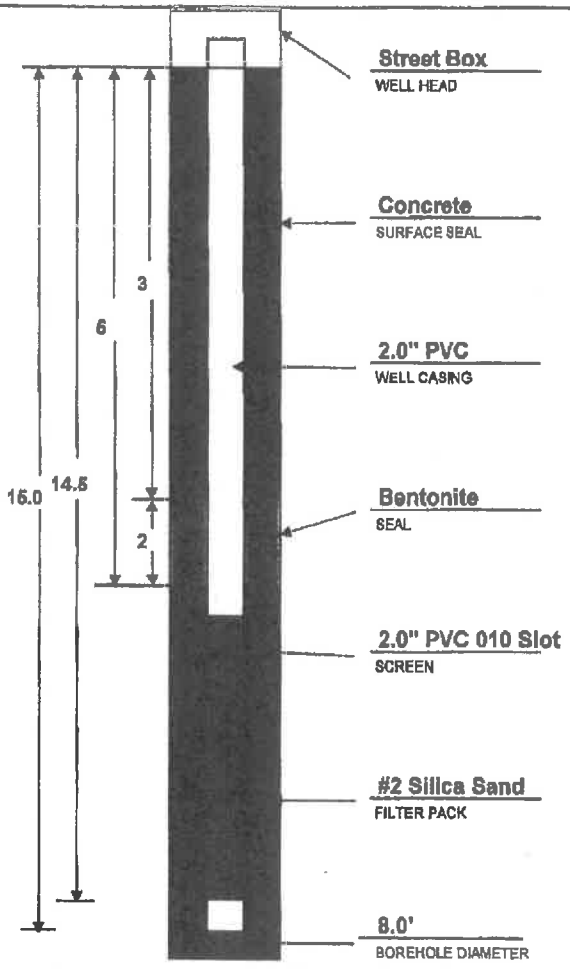
REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITION MAY BE GRADUAL.
WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS.
FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

MONITORING WELL INSTALLATION REPORT

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

	MONITORING WELL NUMBER: WMW-3	Page 1 of 1
	DRILLER/FIRM: Miller Engineering & Testing Inc.	
PROJECT NUMBER: 12.093.NH	DRILLING METHOD: HSA 4.25"	INSPECTOR: Glen Smart
PROJECT NAME: WIGGINS AIRWAYS		SAMPLING METHOD: Split Spoon
PROJECT LOCATION: LONDONDERRY, NH	TOTAL BORING DEPTH: 15.0	STATIC WATER LEVEL: +/- 10.0'
DATE: 04-05-12	TOP OF CASING ELEVATION:	GROUND SURFACE ELEVATION:

WELL CONSTRUCTION DETAILS



COMMENTS:

TEST BORING LOG

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

Project:	WIGGINS AIRWAYS
	LONDONDERRY, NH
Project No:	12.093.NH
Date Start:	04-05-12
Date End:	04-05-12
Sheet	1 of 1
Boring No:	WMW-4
Location:	By Client
Approx. Surface Elev:	

	CASING	SAMPLER	GROUNDWATER OBSERVATIONS			
			Date	Depth	Casing At	Stabilization Period
Type	HSA	SS	04-05-12	8.0	-	Upon Completion
Size	4.25" ID	1-3/8" ID				
Hammer		140 lbs.				
Fall		30"				

Depth/ Elev.	Cas bl/ft	SAMPLE Sample No.	SAMPLE Depth Range	SAMPLE Pen.	SAMPLE Rec.	BLOWS 0-6"	BLOWS 6-12"	BLOWS 12-18"	BLOWS 18-24"	Strata Change	Sample Description	Notes
0												
4		S-1	4.0-6.0	24	22	9	7	7	8		S-1: Medium dense, light brown fine sand	
8		S-2	9.0-11.0	24	20	4	3	4	4		S-2: Wet, loose, brown fine sand	
12		S-3	14.0-16.0	24	18	1	1	2	2		S-3: Wet, loose, brown fine sand Install monitoring well	(1)
16											BORING TERMINATED AT 16 ft	
20												
24												

Driller: B. Marcoux
Helper: J. Martel
Inspector:

COHESIVE CONSISTENCY (Blows/Foot)
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM STIFF
8-15 STIFF
15-30 HARD

COHESIONLESS (Blows/Foot)
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM DENSE
30-50 DENSE
50+ VERY DENSE

PROPORTIONS USED
TRACE: 0-10%
LITTLE: 10-20%
SOME: 20-35%
AND: 35-50%

NOTES: (1) 10.0' screen, 5.0' riser, gate box

REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITION MAY BE GRADUAL.
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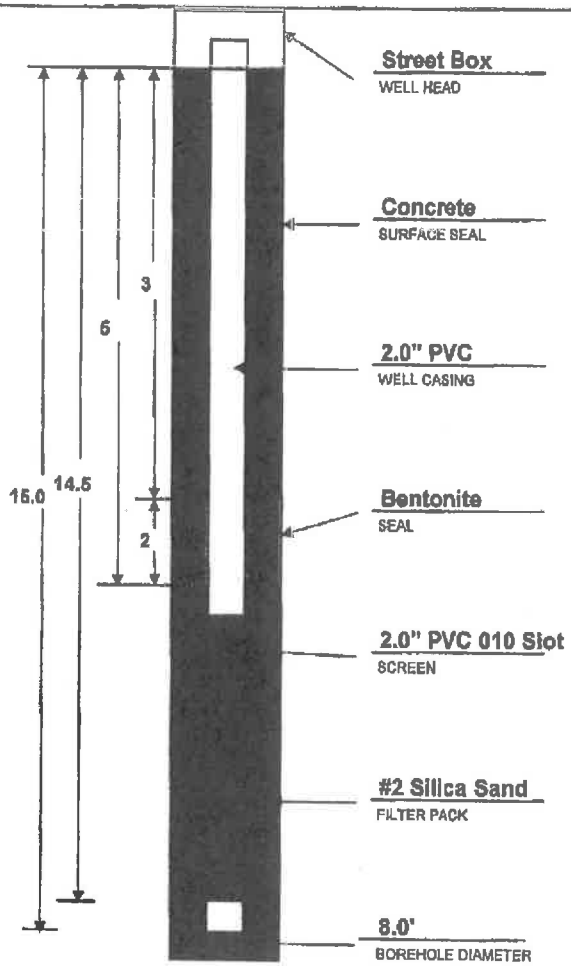
FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

MONITORING WELL INSTALLATION REPORT

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-5016 - Fax: (603) 668-8641

	MONITORING WELL NUMBER: MWW-4	Page 1 of 1
	DRILLER/FIRM: Miller Engineering & Testing Inc.	
PROJECT NUMBER: 12.093.NH	DRILLING METHOD: HSA 4.25"	INSPECTOR: Glen Smart
PROJECT NAME: WIGGINS AIRWAYS		SAMPLING METHOD: Split Spoon
PROJECT LOCATION: LONDONDERRY, NH	TOTAL BORING DEPTH: 15.0	STATIC WATER LEVEL: +/- 10.0'
DATE: 04-05-12	TOP OF CASING ELEVATION:	GROUND SURFACE ELEVATION:

WELL CONSTRUCTION DETAILS



COMMENTS:

TEST BORING LOG

MILLER ENGINEERING & TESTING, INC.
100 Sheffield Road - Manchester, NH 03103
Ph. (603) 668-6016 - Fax: (603) 668-8641

Project:	WIGGINS AIRWAYS
	LONDONDERRY, NH
Project No:	12.093.NH
Date Start:	04-05-12
Date End:	04-05-12
Sheet	1 of 1
Boring No:	WMW-5
Location:	By Client
Approx. Surface Elev:	

	CASING	SAMPLER	GROUNDWATER OBSERVATIONS			
			Date	Depth	Casing At	Stabilization Period
Type	HSA	SS	04-05-12	8.0	-	Upon Completion
Size	4.25" ID	1-3/8" ID				
Hammer		140 lbs.				
Fall		30"				

Depth/ Elev.	Cas bl/ft	SAMPLE				BLOWS				Strata Change	Sample Description	Notes
		Sample No.	Depth Range	Pen.	Rec.	0-6"	6-12"	12-18"	18-24"			
0												
4												
8		S-1	9.0-11.0	24	24	1	1	1	2		S-1: Wet, loose, brown fine sand	
12		S-2	14.0-16.0	24	22	WOH	1	2	4		S-2: Wet, loose, brown fine sand Install monitoring well	(1)
16											BORING TERMINATED AT 16 ft	
20												
24												

Driller: B. Marcoux
Helper: J. Martel
Inspector:

COHESIVE CONSISTENCY (Blows/Foot)
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM STIFF
8-15 STIFF
15-30 HARD

COHESIONLESS (Blows/Foot)
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM DENSE
30-50 DENSE
50+ VERY DENSE

PROPORTIONS USED
TRACE: 0-10%
LITTLE: 10-20%
SOME: 20-35%
AND: 35-50%

NOTES: (1) 10.0' screen, 5.0' riser, gate box

REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITION MAY BE GRADUAL.
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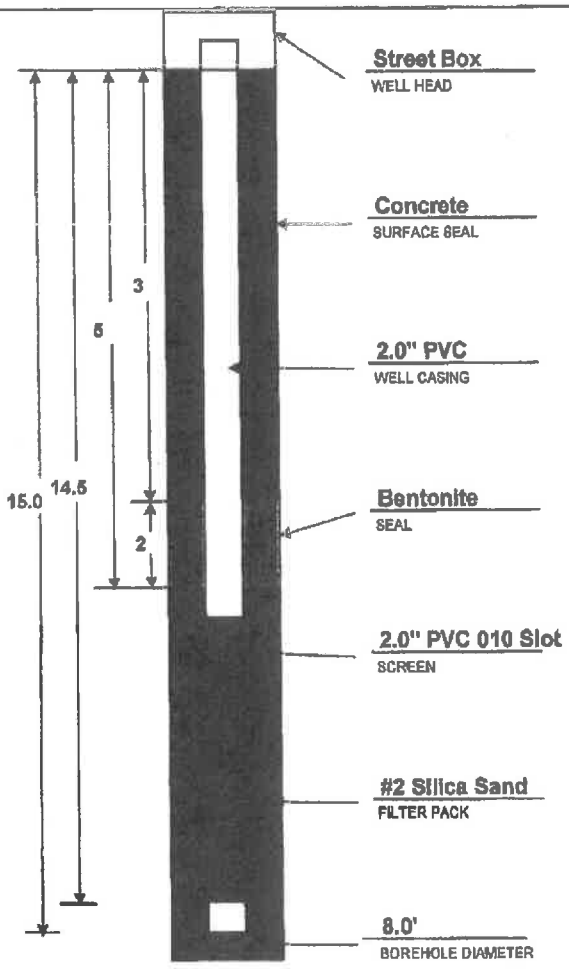
FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

MONITORING WELL INSTALLATION REPORT

MILLER ENGINEERING & TESTING, INC. 100 Sheffield Road - Manchester, NH 03103 Ph. (603) 668-6016 - Fax (603) 668-8641	MONITORING WELL NUMBER: WMW-5	Page 1 of 1
	DRILLER/FIRM Miller Engineering & Testing Inc.	
PROJECT NUMBER 12.093.NH	DRILLING METHOD HSA 4.25"	INSPECTOR Glen Smart
PROJECT NAME WIGGINS AIRWAYS		SAMPLING METHOD Split Spoon
PROJECT LOCATION LONDONDERRY, NH	TOTAL BORING DEPTH 15.0	STATIC WATER LEVEL +/- 10.0'
DATE 04-05-12	TOP OF CASING ELEVATION	GROUND SURFACE ELEVATION

WELL CONSTRUCTION DETAILS



COMMENTS:

APPENDIX H – LABORATORY ANALYTICAL REPORTS

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MONITORING WELL SOIL SAMPLING ANALYSES

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Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 23767
Date Received: 4/6/12

Project: Wiggins Level II

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Sue Sylvester (for)
Principal, General Manager

Date of Approval: 4/19/2012
Total number of pages: 11

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

PAGE 1 OF 1

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 23767

Company Name: THE SMART ASSOCIATES

Company Address: 72 N. MAIN ST CONCORD, NH

Report To: GLENN SMART

Phone #: 603-224-7550

Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS LEVEL II

Project #:

Project Location: (NH) MA ME VT Other

Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER

Reporting Limits: QAPP EPA DW GW-1 Other (S-1)

Quote #: ☐ NH GREE/ODD Fund Pricing

PO #:

ANALYSIS REQUEST

☐ VOC 8260 ☒ VOC 8260 NHDES ☐ VOC 8260 MADEP; ☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT; ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015; ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:; ☐ TPH ☒ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint; ☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1; ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB; ☐ O&G 1664 ☐ Mineral O&G SM5520F; ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity; ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity; ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness; ☐ Total Metals-list:; ☐ Dissolved Metals list:; ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC; ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN; ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride; ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP; ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide; Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde; Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER (Specify)	DATE	TIME	SAMPLER	VOC 8260 NHDES	TPH DRO 8015
23767-01	WMW-2-S3	2		X						X		4/5/12	9:23	GS	X	X
-02	WMW-1-S2	2		X						X		4/5/12	11:35	GS	X	X
-03	WMW-3-S3	2		X						X		4/5/12	1:53	GS	X	X
-04	WMW-4-S3	2		X						X		4/5/12	3:35	GS	X	X

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS NOTE: TRIP BLANK VIAL WAS BROKEN DURING SAMPLING.

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 3 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	4/6/12	2:32	Received by: —		
Relinquished by: —			Received by: —		
Relinquished by: —			Received by Laboratory: Joanne King	4-6-12	2:32

QSD-01 Revision 03/26/11

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-001
Sample ID: WMW-2-S3
Matrix: Solid Percent Dry: 78.4% Results expressed on a dry weight basis.
Sampled: 4/5/12 9:23

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B

Absolute Resource associates

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-001
Sample ID: WMW-2-S3
Matrix: Solid Percent Dry: 78.4% Results expressed on a dry weight basis.
Sampled: 4/5/12 9:23

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**102**	78-114	%	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
toluene-D8 SUR	**97**	88-110	%	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
4-bromofluorobenzene SUR	**99**	86-115	%	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B
a,a,a-trifluorotoluene SUR	**95**	70-130	%	1	LMM	4/12/12	5105	4/14/12	16:26	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-002
Sample ID: WMW-1-S2
Matrix: Solid Percent Dry: 80% Results expressed on a dry weight basis.
Sampled: 4/5/12 11:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767
Sample#: 23767-002
Sample ID: WMW-1-S2
Matrix: Solid Percent Dry: 80% Results expressed on a dry weight basis.
Sampled: 4/5/12 11:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**100**	78-114	%	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
toluene-D8 SUR	**98**	88-110	%	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
4-bromofluorobenzene SUR	**96**	86-115	%	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B
a,a,a-trifluorotoluene SUR	**103**	70-130	%	1	LMM	4/12/12	5105	4/14/12	17:02	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-003
Sample ID: WMW-3-S3
Matrix: Solid Percent Dry: 78.7% Results expressed on a dry weight basis.
Sampled: 4/5/12 13:53

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767
Sample#: 23767-003
Sample ID: WMW-3-S3
Matrix: Solid Percent Dry: 78.7% Results expressed on a dry weight basis.
Sampled: 4/5/12 13:53

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**102**	78-114	%	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
toluene-D8 SUR	**100**	88-110	%	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
4-bromofluorobenzene SUR	**97**	86-115	%	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B
a,a,a-trifluorotoluene SUR	**93**	70-130	%	1	LMM	4/12/12	5105	4/14/12	18:48	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-004
Sample ID: WMW-4-S3
Matrix: Solid Percent Dry: 77.1% Results expressed on a dry weight basis.
Sampled: 4/5/12 15:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-004
Sample ID: WMW-4-S3
Matrix: Solid Percent Dry: 77.1% Results expressed on a dry weight basis.
Sampled: 4/5/12 15:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**101**	78-114	%	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
toluene-D8 SUR	**98**	88-110	%	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
4-bromofluorobenzene SUR	**97**	86-115	%	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B
a,a,a-trifluorotoluene SUR	**94**	70-130	%	1	LMM	4/12/12	5105	4/14/12	19:25	SW5035A8260B

Project ID: Wiggins Level II
Job ID: 23767

Sample#: 23767-001
Sample ID: WMW-2-S3
Matrix: Solid Percent Dry: 78.4% Results expressed on a dry weight basis.
Sampled: 4/5/12 9:23

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 240	240	ug/g	1	JLZ	4/11/12	5094	4/13/12	14:39	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**108**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	14:39	SW3550B8015B
o-terphenyl SUR	**107**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	14:39	SW3550B8015B

Sample#: 23767-002
Sample ID: WMW-1-S2
Matrix: Solid Percent Dry: 80% Results expressed on a dry weight basis.
Sampled: 4/5/12 11:15

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 250	250	ug/g	1	JLZ	4/11/12	5094	4/13/12	14:55	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**75**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	14:55	SW3550B8015B
o-terphenyl SUR	**77**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	14:55	SW3550B8015B

Sample#: 23767-003
Sample ID: WMW-3-S3
Matrix: Solid Percent Dry: 78.7% Results expressed on a dry weight basis.
Sampled: 4/5/12 13:53

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 230	230	ug/g	1	JLZ	4/11/12	5094	4/13/12	16:17	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**95**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	16:17	SW3550B8015B
o-terphenyl SUR	**94**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	16:17	SW3550B8015B

Sample#: 23767-004
Sample ID: WMW-4-S3
Matrix: Solid Percent Dry: 77.1% Results expressed on a dry weight basis.
Sampled: 4/5/12 15:35

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 240	240	ug/g	1	JLZ	4/11/12	5094	4/13/12	16:33	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**94**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	16:33	SW3550B8015B
o-terphenyl SUR	**92**	40-140	%	1	JLZ	4/11/12	5094	4/13/12	16:33	SW3550B8015B

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Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 23788
Date Received: 4/10/12

Project: Wiggins Level II 120-027-042

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

(for)

Sue Sylvester
Principal, General Manager

Date of Approval: 4/24/2012
Total number of pages: 5

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Absolute Resource associates

124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

23788

Company Name: THE SMART ASSOCIATES

Company Address: 72 N. MAIN ST. CONCORD, NH [illegible]

Report To: GLENN SMART

Phone #: 603-224-7550

Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS LEVEL II

Project #: 12-027-042

Project Location: (NH) MA ME VT Other

Protocol: RCRA MCP SDWA (NHDES) NPDES OTHER

Reporting Limits: QAPP EPA DW GW-1 Other (S-1)

Quote #: ____ ☐ NH GREE/ODD Fund Pricing

PO #: ____

ANALYSIS REQUEST

☐ VOC 8260 ☒ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT
☐ VPH MADEP ☐ MEGRO ☐ GRO 8015
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☒ DRO 8015 ☐ MEDRO ☐ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G SM5520F
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals
☐ Total Metals list:
☐ Dissolved Metals list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON
☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides
Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Preservation: HCl	Preservation: HNO_3	Preservation: H_2SO_4	Preservation: NaOH	Preservation: MeOH	Preservation: OTHER (Specify)	Sampling: DATE	Sampling: TIME	SAMPLER	VOC 8260 NHDES	DRO 8015
23788-01	WMW-SS2	2		X						X		[illegible]12	10:08	GS	X	X

TAT REQUESTED	
Priority (24 hr)*	☐
Expedited (48 hr)*	☐
Standard (10 Business Days)	☐
*Date Needed	

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#) ☐ OTHER (specify)

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 4 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	4/10/12	10:05	Received by: [signature]	4/10/12	1:05
Relinquished by:			Received by:		
Relinquished by:			Received by Laboratory: Way Bill#:		

QSD-01 Revision 12/23/10

Project ID: Wiggins Level II 120-027-042
Job ID: 23788
Sample#: 23788-001
Sample ID: WMW-5-S2
Matrix: Solid Percent Dry: 82.5% Results expressed on a dry weight basis.
Sampled: 4/9/12 10:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
2-butanone (MEK)	< 0.2	0.2	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
tetrahydrofuran (THF)	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.3	0.3	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
2-hexanone	< 0.4	0.4	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B

Absolute Resource associates

Project ID: Wiggins Level II 120-027-042
Job ID: 23788
Sample#: 23788-001
Sample ID: WMW-5-S2
Matrix: Solid Percent Dry: 82.5% Results expressed on a dry weight basis.
Sampled: 4/9/12 10:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,3,5-trimethylbenzene	**0.4**	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2,4-trimethylbenzene	**0.4**	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
4-isopropyltoluene	**0.1**	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**97**	78-114	%	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B
a,a,a-trifluorotoluene SUR	**100**	70-130	%	1	LMM	4/12/12	5105	4/16/12	13:42	SW5035A8260B

Project ID: Wiggins Level II 120-027-042
Job ID: 23788

Sample#: 23788-001
Sample ID: WMW-5-S2
Matrix: Solid Percent Dry: 82.5% Results expressed on a dry weight basis.
Sampled: 4/9/12 10:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**2000**	220	ug/g	1	JLZ	4/17/12	5117	4/18/12	12:56	SW3550B8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**70**	40-140	%	1	JLZ	4/17/12	5117	4/18/12	12:56	SW3550B8015B
o-terphenyl SUR	**99**	40-140	%	1	JLZ	4/17/12	5117	4/18/12	12:56	SW3550B8015B

Absolute Resource associates

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APRIL 12, 2012 GROUNDWATER SAMPLING ANALYSES

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Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 23827
Date Received: 4/13/12

Project: Wiggins Level II 12-027-042

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

(for)

Sue Sylvester
Principal, General Manager

Date of Approval: 5/7/2012
Total number of pages: 21

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 23827

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST. CONCORD NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGGERTY MANCHESTER-BOSTON REGIONAL AIRPORT

Project Name: WIGGINS LEVEE II
Project #: 12-027-042
Project Location: (NH) MA ME VT Other
Protocol: RCRA SDWA NPDES MCP (NHDES) OTHER
Reporting Limits: QAPP (GW-1) S-1 EPA DW Other
Quote # ☐ NH GREE/ODD Fund Pricing
PO #

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER (Specify)	Sampling: DATE	TIME	SAMPLER	ANALYSIS REQUEST: ☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP	☐ VOC 624 ☐ VOC BTEX ☐ MtBE, only ☐ VOC 8021VT	☐ VPH MADEP ☐ MEGRO ☐ GRO 8015	☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:	☐ TPH ☐ GRO 8015 ☐ MEGRO ☐ EPH MADEP ☐ TPH Fingerprint	☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1	☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB	☐ O&G 1664 ☐ Mineral O&G SM5520F	☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity	☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity	☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness	☐ Total Metals-list:	☐ Dissolved Metals-list:	☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC	☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN	☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P	☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride	☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP	☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide	Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde	Grab (G) or Composite (C)
23827-01	WMW-1	3	X			X						4/12/12	10:28	GS	X				X	X																G
02	WMW-2	3	X			X							9:55		X				X	X																
03	WMW-3	3	X			X							10:56		X				X	X																
04	WMW-4	3	X			X							11:28		X				X	X																
05	WMW-5	3	X			X							12:02		X				X	X																
06	Trip Blank		X									—	—		X added 4/13/12																					

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed _____

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS PETROLEUM ODOR IN SAMPLE FROM WMW-5

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENTAL.COM
☐ HARD COPY REQUIRED ☐ FAX (FAX#)_____ ☐ OTHER (specify)_____

RECEIVED ON ICE ☑ YES ☐ NO
TEMPERATURE 2 °C

CUSTODY RECORD
QSD-01 Revision 03/26/11

	Date	Time		Date	Time
Relinquished by Sampler:	4/13/12	8:34	Received by:	4/13/12	8:34AM
Relinquished by:	4/13/12	10:10AM	Received by:	Date	Time
Relinquished by:	Date	Time	Received by Laboratory:	4/13/12	1010

21

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/12/12 10:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/12/12 10:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**103**	78-114	%	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM		1200938	4/20/12	5:25	SW5030B8260B
4-bromofluorobenzene SUR	**87**	86-115	%	1	LMM		1200938	4/20/12	5:25	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/12/12 9:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/12/12 9:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**99**	78-114	%	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
toluene-D8 SUR	**100**	88-110	%	1	LMM		1200938	4/20/12	5:56	SW5030B8260B
4-bromofluorobenzene SUR	**86**	86-115	%	1	LMM		1200938	4/20/12	5:56	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/12/12 10:56

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/12/12 10:56

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
toluene-D8 SUR	**101**	88-110	%	1	LMM		1200938	4/20/12	6:28	SW5030B8260B
4-bromofluorobenzene SUR	**88**	86-115	%	1	LMM		1200938	4/20/12	6:28	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/12/12 11:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/12/12 11:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
toluene-D8 SUR	**103**	88-110	%	1	LMM		1200938	4/20/12	6:59	SW5030B8260B
4-bromofluorobenzene SUR	**88**	86-115	%	1	LMM		1200938	4/20/12	6:59	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/12/12 12:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
2-butanone (MEK)	14	10	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/12/12 12:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
m&p-xylenes	**5**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
o-xylene	**9**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,3,5-trimethylbenzene	**23**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2,4-trimethylbenzene	**44**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
sec-butylbenzene	**2**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
4-isopropyltoluene	**5**	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
naphthalene	**20**	5	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**99**	78-114	%	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM		1200938	4/20/12	12:07	SW5030B8260B
4-bromofluorobenzene SUR	**99**	86-115	%	1	LMM		1200938	4/20/12	12:07	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-006
Sample ID: Trip Blank
Matrix: Water
Sampled: 4/12/12 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-006
Sample ID: Trip Blank
Matrix: Water
Sampled: 4/12/12 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**100**	78-114	%	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
toluene-D8 SUR	**100**	88-110	%	1	LMM		1200938	4/20/12	3:51	SW5030B8260B
4-bromofluorobenzene SUR	**91**	86-115	%	1	LMM		1200938	4/20/12	3:51	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/12/12 10:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
benzo(a)anthracene	< 0.1	0.1	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
benzo(b)fluoranthene	< 0.1	0.1	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.1	0.1	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
dibenzo(a,h)anthracene	< 0.1	0.1	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**50**	43-116	%	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D
o-terphenyl SUR	**51**	33-141	%	1	AJD	4/17/12	5119	4/20/12	11:25	SW3510C8270D

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/12/12 9:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
benzo(a)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
benzo(b)fluoranthene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
dibenzo(a,h)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**54**	43-116	%	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D
o-terphenyl SUR	**58**	33-141	%	1	AJD	4/18/12	5119	4/20/12	10:47	SW3510C8270D

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/12/12 10:56

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
benzo(a)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
benzo(b)fluoranthene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
dibenzo(a,h)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**64**	43-116	%	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D
o-terphenyl SUR	**61**	33-141	%	1	AJD	4/18/12	5119	4/20/12	10:10	SW3510C8270D

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/12/12 11:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
benzo(a)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
benzo(b)fluoranthene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
dibenzo(a,h)anthracene	< 0.1	0.1	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**62**	43-116	%	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D
o-terphenyl SUR	**64**	33-141	%	1	AJD	4/18/12	5119	4/20/12	9:32	SW3510C8270D

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/12/12 12:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 5.0	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
2-methylnaphthalene	**41**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
acenaphthylene	< 5.0	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
acenaphthene	< 5.0	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
dibenzofuran	< 5.0	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
fluorene	**9.1**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
phenanthrene	**15**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
anthracene	< 5.0	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
fluoranthene	**25**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
pyrene	**27**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
benzo(a)anthracene	**8.7**	1.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
chrysene	**12**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
benzo(b)fluoranthene	**14**	1.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
benzo(k)fluoranthene	**9.6**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
benzo(a)pyrene	**14**	2.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
indeno(1,2,3-cd)pyrene	**8.4**	1.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
dibenzo(a,h)anthracene	**3.1**	1.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
benzo(g,h,i)perylene	**8.8**	5.0	ug/L	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**86**	43-116	%	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D
o-terphenyl SUR	**57**	33-141	%	10	AJD	4/18/12	5119	4/20/12	13:13	SW3510C8270D

Note: Dilution was required due to the presence of hydrocarbons in the sample.

Project ID: Wiggins Level II 12-027-042
Job ID: 23827

Sample#: 23827-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/12/12 10:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	4/17/12	5122	4/19/12	18:36	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**66**	40-140	%	1	JLZ	4/17/12	5122	4/19/12	18:36	SW3510C8015B
o-terphenyl SUR	**70**	40-140	%	1	JLZ	4/17/12	5122	4/19/12	18:36	SW3510C8015B

Sample#: 23827-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/12/12 9:55

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	4/18/12	5122	4/19/12	18:20	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**68**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	18:20	SW3510C8015B
o-terphenyl SUR	**74**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	18:20	SW3510C8015B

Sample#: 23827-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/12/12 10:56

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	4/18/12	5122	4/19/12	17:47	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**75**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	17:47	SW3510C8015B
o-terphenyl SUR	**80**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	17:47	SW3510C8015B

Sample#: 23827-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/12/12 11:28

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	4/18/12	5122	4/19/12	18:04	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**74**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	18:04	SW3510C8015B
o-terphenyl SUR	**79**	40-140	%	1	JLZ	4/18/12	5122	4/19/12	18:04	SW3510C8015B

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23827
Sample#: 23827-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/12/12 12:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
Diesel Range Organics (DRO) C10-C28	**140000**	10000	ug/L	50	JLZ	4/18/12	5122	4/30/12	15:40	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**DOR**	40-140	%	50	JLZ	4/18/12	5122	4/30/12	15:40	SW3510C8015B
o-terphenyl SUR	**DOR**	40-140	%	50	JLZ	4/18/12	5122	4/30/12	15:40	SW3510C8015B

DOR = Diluted out of range.

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APRIL 28, 2012 GROUNDWATER SAMPLING ANALYSES

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Absolute Resource associates
124 Heritage Avenue #10 Portsmouth, NH 03801

Glenn Smart
Manchester-Boston Regional Airport
The Smart Associates
72 N. Main Street
Concord, NH 03301

PO Number: None
Job ID: 23962
Date Received: 5/1/12

Project: Wiggins Level II 12-027-042

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Sue Sylvester (for)
Principal, General Manager

Date of Approval: 5/18/2012
Total number of pages: 24

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Absolute Resource associates
124 Heritage Avenue #10
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

23962

Company Name: THE SMART ASSOCIATES
Company Address: 72 N. MAIN ST. CONCORD NH
Report To: GLENN SMART
Phone #: 603-224-7550
Invoice To: JOHN HAGOPIAN MANCHESTER-BOSTON REGIONAL

Project Name: WIGGINS LEVEL II
Project #: 12-027-042
Project Location: (NH) MA ME VT ___ Other
Protocol: RCRA SDWA NPDES / MCP (NHDES) OTHER
Reporting Limits: QAPP GW-1 S-1 / EPA DW Other ___
Quote # ___ ☐ NH GREE/ODD Fund Pricing
PO # ___

ANALYSIS REQUEST

☐ VOC 8260 NHDES ☐ VOC 8260 MADEP ☐ VOC 8260 ☒ VOC 624 ☐ VOC BTEX ☐ MtBE only ☐ VOC 8021VT ☐ VPH MADEP ☐ MEGRO ☐ GRO 8015 ☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List: ☐ TPH ☒ GRO 8015 ☐ MEGRO ☐ EPH MADEP ☐ TPH Fingerprint ☒ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB 504.1 ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB ☐ O&G 1664 ☐ Mineral O&G SM5520F ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Total Metals-list: ☐ Dissolved Metals-list: ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride ☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitability/FP ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide Subcontract: ☐ TOC ☐ Grain Size ☐ TCLP Herbicides

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER (Specify)	Sampling: DATE	TIME	SAMPLER	Grab (G) or Composite (C)
23962-01	WMW-1	2	X			X						4/20/12	9:02	GS	G
02	WMW-2	2	X			X							9:25		
03	WMW-3	2	X			X							10:03		
04	WMW-4	2	X			X							10:46		
05	WMW-5	2	X			X							11:04		
06	DUPMW-5A		X			X							11:08		
07	Trip Blank			X						X		—	—		

added per Jean 5/1/12 BJ

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard (10 Business Days) ☐
*Date Needed ___

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) GSMART@SMARTENVIRONMENT.COM ☐ HARD COPY REQUIRED ☐ FAX (FAX#) ___ ☐ OTHER (specify) ___

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 1 °C

CUSTODY RECORD
QSD-01 Revision 12/29/10

	Date	Time		Date	Time
Relinquished by Sampler:	5/1/12	1:26PM	Received by:	5/1/12	126
Relinquished by:			Received by:		
Relinquished by:			Received by Laboratory: Way Bill#:		

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/28/12 9:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/28/12 9:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**101**	78-114	%	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
toluene-D8 SUR	**100**	88-110	%	1	LMM		1201083	5/4/12	15:24	SW5030B8260B
4-bromofluorobenzene SUR	**89**	86-115	%	1	LMM		1201083	5/4/12	15:24	SW5030B8260B

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/28/12 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/28/12 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**102**	78-114	%	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
toluene-D8 SUR	**103**	88-110	%	1	LMM		1201125	5/10/12	2:44	SW5030B8260B
4-bromofluorobenzene SUR	**102**	86-115	%	1	LMM		1201125	5/10/12	2:44	SW5030B8260B

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/28/12 10:03

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B

Project ID: Wiggins Level II 12-027-042

Job ID: 23962

Sample#: 23962-003

Sample ID: WMW-3

Matrix: Water

Sampled: 4/28/12 10:03

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**105**	78-114	%	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
toluene-D8 SUR	**103**	88-110	%	1	LMM		1201125	5/10/12	3:17	SW5030B8260B
4-bromofluorobenzene SUR	**104**	86-115	%	1	LMM		1201125	5/10/12	3:17	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/28/12 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/28/12 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
m&p-xylenes	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
o-xylene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,3,5-trimethylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2,4-trimethylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
4-isopropyltoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
naphthalene	< 5	5	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**100**	78-114	%	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
toluene-D8 SUR	**100**	88-110	%	1	LMM		1201094	5/7/12	19:21	SW5030B8260B
4-bromofluorobenzene SUR	**97**	86-115	%	1	LMM		1201094	5/7/12	19:21	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/28/12 11:04

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/28/12 11:04

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
m&p-xylenes	4	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
o-xylene	7	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,3,5-trimethylbenzene	19	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2,4-trimethylbenzene	36	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
4-isopropyltoluene	4	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
naphthalene	20 J	5	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	103	78-114	%	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
toluene-D8 SUR	101	88-110	%	1	LMM		1201094	5/7/12	20:25	SW5030B8260B
4-bromofluorobenzene SUR	101	86-115	%	1	LMM		1201094	5/7/12	20:25	SW5030B8260B

J = The QC samples associated with this compound showed high recovery for this analyte. The result is an estimate.

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-006
Sample ID: WMW-5A
Matrix: Water
Sampled: 4/28/12 11:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
chloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
vinyl chloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
bromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
chloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
trichlorofluoromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
diethyl ether	< 5	5	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
acetone	< 50	50	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1-dichloroethene	< 1	1	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
methylene chloride	< 5	5	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
carbon disulfide	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
methyl t-butyl ether (MTBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
trans-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
isopropyl ether (DIPE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
ethyl t-butyl ether (ETBE)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
t-butanol (TBA)	< 30	30	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
2-butanone (MEK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
2,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
cis-1,2-dichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
chloroform	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
bromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
tetrahydrofuran (THF)	< 10	10	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1,1-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
t-amyl-methyl ether (TAME)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
carbon tetrachloride	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2-dichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
benzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
trichloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
bromodichloromethane	< 0.6	0.6	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,4-dioxane	< 50	50	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
dibromomethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
4-methyl-2-pentanone (MIBK)	< 10	10	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
cis-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
toluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
trans-1,3-dichloropropene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
2-hexanone	< 10	10	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1,2-trichloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,3-dichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
tetrachloroethene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
dibromochloromethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-006
Sample ID: WMW-5A
Matrix: Water
Sampled: 4/28/12 11:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
1,2-dibromoethane (EDB)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
chlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1,1,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
ethylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
m&p-xylenes	4	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
o-xylene	7	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
styrene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
bromoform	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
isopropylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,1,2,2-tetrachloroethane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2,3-trichloropropane	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
n-propylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
bromobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,3,5-trimethylbenzene	18	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
2-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
4-chlorotoluene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
tert-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2,4-trimethylbenzene	33	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
sec-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,3-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
4-isopropyltoluene	4	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,4-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2-dichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
n-butylbenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2-dibromo-3-chloropropane (DBCP)	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2,4-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,3,5-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
hexachlorobutadiene	< 0.5	0.5	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
naphthalene	17 J	5	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
1,2,3-trichlorobenzene	< 2	2	ug/L	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	98	78-114	%	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
toluene-D8 SUR	101	88-110	%	1	LMM		1201094	5/7/12	21:28	SW5030B8260B
4-bromofluorobenzene SUR	100	86-115	%	1	LMM		1201094	5/7/12	21:28	SW5030B8260B

J = The QC samples associated with this compound showed high recovery. The reported result is an estimate.

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-007
Sample ID: Trip Blank
Matrix: Solid
Sampled: 4/28/12 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
dichlorodifluoromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
chloromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
vinyl chloride	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
bromomethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
chloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
trichlorofluoromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
diethyl ether	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
acetone	< 2	2	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1-dichloroethene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
methylene chloride	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
carbon disulfide	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
trans-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
isopropyl ether (DIPE)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
ethyl t-butyl ether (ETBE)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1-dichloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
t-butanol (TBA)	< 2	2	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
2-butanone (MEK)	< 0.3	0.3	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
2,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
cis-1,2-dichloroethene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
chloroform	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
bromochloromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
tetrahydrofuran (THF)	< 0.5	0.5	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1,1-trichloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1-dichloropropene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
t-amyl-methyl ether (TAME)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
carbon tetrachloride	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2-dichloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
benzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
trichloroethene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2-dichloropropane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
bromodichloromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,4-dioxane	< 2	2	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
dibromomethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
4-methyl-2-pentanone (MIBK)	< 0.4	0.4	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
cis-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
toluene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
trans-1,3-dichloropropene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
2-hexanone	< 0.5	0.5	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1,2-trichloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,3-dichloropropane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
tetrachloroethene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
dibromochloromethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962

Sample#: 23962-007
Sample ID: Trip Blank
Matrix: Solid
Sampled: 4/28/12 0:00

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
1,2-dibromoethane (EDB)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
chlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1,1,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
o-xylene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
styrene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
bromoform	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
isopropylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,1,2,2-tetrachloroethane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2,3-trichloropropane	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
n-propylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
bromobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,3,5-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
2-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
4-chlorotoluene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
tert-butylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2,4-trimethylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
sec-butylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,3-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
4-isopropyltoluene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,4-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2-dichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
n-butylbenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2-dibromo-3-chloropropane (DBCP)	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2,4-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,3,5-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
hexachlorobutadiene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
naphthalene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
1,2,3-trichlorobenzene	< 0.1	0.1	ug/g	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**102**	78-114	%	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
toluene-D8 SUR	**102**	88-110	%	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
4-bromofluorobenzene SUR	**90**	86-115	%	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B
a,a,a-trifluorotoluene SUR	**104**	70-130	%	1	LMM	5/3/12	5154	5/4/12	13:50	SW5035A8260B

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/28/12 9:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
benzo(a)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**40** *	43-116	%	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D
o-terphenyl SUR	**51**	33-141	%	1	AJD	5/3/12	5156	5/4/12	15:01	SW3510C8270D

**** The surrogate showed recovery outside the acceptance limits. No additional sample remained for re-analysis.***

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/28/12 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
benzo(a)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**44**	43-116	%	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D
o-terphenyl SUR	**54**	33-141	%	1	AJD	5/3/12	5156	5/4/12	14:24	SW3510C8270D

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/28/12 10:03

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Prep Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
benzo(a)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**44**	43-116	%	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D
o-terphenyl SUR	**51**	33-141	%	1	AJD	5/3/12	5156	5/4/12	13:08	SW3510C8270D

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/28/12 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
2-methylnaphthalene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
acenaphthylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
acenaphthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
dibenzofuran	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
fluorene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
phenanthrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
benzo(a)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
chrysene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
benzo(b)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
benzo(k)fluoranthene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
benzo(a)pyrene	< 0.2	0.2	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
indeno(1,2,3-cd)pyrene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
dibenzo(a,h)anthracene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
benzo(g,h,i)perylene	< 0.5	0.5	ug/L	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**46**	43-116	%	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D
o-terphenyl SUR	**56**	33-141	%	1	AJD	5/3/12	5156	5/4/12	13:46	SW3510C8270D

Absolute Resource associates

Project ID: Wiggins Level II 12-027-042
Job ID: 23962
Sample#: 23962-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/28/12 11:04

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
2-methylnaphthalene	**11**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
acenaphthylene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
acenaphthene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
dibenzofuran	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
fluorene	**2.6**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
phenanthrene	**4.4**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
anthracene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
fluoranthene	**7.7**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
pyrene	**8.7**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
benzo(a)anthracene	**3.1**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
chrysene	**3.4**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
benzo(b)fluoranthene	**4.0**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
benzo(k)fluoranthene	**4.4**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
benzo(a)pyrene	**4.4**	1.0	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
indeno(1,2,3-cd)pyrene	**2.9**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
dibenzo(a,h)anthracene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
benzo(g,h,i)perylene	**2.8**	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**43**	43-116	%	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D
o-terphenyl SUR	**33**	33-141	%	5	AJD	5/3/12	5156	5/4/12	15:39	SW3510C8270D

Note: Dilution was required due to the presence of hydrocarbons in the sample.

Project ID: Wiggins Level II 12-027-042
Job ID: 23962

Sample#: 23962-006
Sample ID: WMW-5A
Matrix: Water
Sampled: 4/28/12 11:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
naphthalene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
2-methylnaphthalene	18	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
acenaphthylene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
acenaphthene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
dibenzofuran	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
fluorene	3.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
phenanthrene	6.1	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
anthracene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
fluoranthene	11	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
pyrene	12	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
benzo(a)anthracene	4.3	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
chrysene	4.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
benzo(b)fluoranthene	5.1	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
benzo(k)fluoranthene	7.0	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
benzo(a)pyrene	6.5	1.0	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
indeno(1,2,3-cd)pyrene	3.6	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
dibenzo(a,h)anthracene	< 2.5	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
benzo(g,h,i)perylene	3.4	2.5	ug/L	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	46	43-116	%	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D
o-terphenyl SUR	37	33-141	%	5	AJD	5/3/12	5156	5/4/12	16:16	SW3510C8270D

Note: Dilution was required due to the presence of hydrocarbons in the sample.

Project ID: Wiggins Level II 12-027-042
Job ID: 23962

Sample#: 23962-001
Sample ID: WMW-1
Matrix: Water
Sampled: 4/28/12 9:02

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	5/3/12	5155	5/7/12	19:06	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**77**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:06	SW3510C8015B
o-terphenyl SUR	**90**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:06	SW3510C8015B

Sample#: 23962-002
Sample ID: WMW-2
Matrix: Water
Sampled: 4/28/12 9:25

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	5/3/12	5155	5/7/12	19:23	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**76**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:23	SW3510C8015B
o-terphenyl SUR	**90**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:23	SW3510C8015B

Sample#: 23962-003
Sample ID: WMW-3
Matrix: Water
Sampled: 4/28/12 10:03

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	5/3/12	5155	5/7/12	19:39	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**78**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:39	SW3510C8015B
o-terphenyl SUR	**91**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	19:39	SW3510C8015B

Sample#: 23962-004
Sample ID: WMW-4
Matrix: Water
Sampled: 4/28/12 10:46

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Analysis Batch	Analysis Date	Analysis Time	Reference
Diesel Range Organics (DRO) C10-C28	< 200	200	ug/L	1	JLZ	5/3/12	5155	5/7/12	23:46	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**65**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	23:46	SW3510C8015B
o-terphenyl SUR	**77**	40-140	%	1	JLZ	5/3/12	5155	5/7/12	23:46	SW3510C8015B

Project ID: Wiggins Level II 12-027-042
Job ID: 23962

Sample#: 23962-005
Sample ID: WMW-5
Matrix: Water
Sampled: 4/28/12 11:04

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**110000**	10000	ug/L	50	JLZ	5/3/12	5155	5/15/12	14:59	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**DOR**	40-140	%	50	JLZ	5/3/12	5155	5/15/12	14:59	SW3510C8015B
o-terphenyl SUR	**DOR**	40-140	%	50	JLZ	5/3/12	5155	5/15/12	14:59	SW3510C8015B

DOR = Diluted out of range.

Sample#: 23962-006
Sample ID: WMW-5A
Matrix: Water
Sampled: 4/28/12 11:08

Parameter	Result	Quant Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Diesel Range Organics (DRO) C10-C28	**140000**	10000	ug/L	50	JLZ	5/3/12	5155	5/15/12	15:15	SW3510C8015B
Surrogate Recovery		**Limits**								
2-fluorobiphenyl SUR	**DOR**	40-140	%	50	JLZ	5/3/12	5155	5/15/12	15:15	SW3510C8015B
o-terphenyl SUR	**DOR**	40-140	%	50	JLZ	5/3/12	5155	5/15/12	15:15	SW3510C8015B

DOR = Diluted out of range.

APPENDIX I. REFERENCES

REFFERENCES

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APPENDIX J – SITE HEALTH AND SAFETY PLAN

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SITE SPECIFIC HEALTH & SAFETY PLAN

Level II Site Investigation
Former Wiggins Hanger Site
Manchester- Boston Regional Airport
7 Green Drive
Manchester, New Hampshire

Prepared by:
The Smart Associates, *Environmental Consultants, Inc.*
72 North Main Street
Concord, New Hampshire 03301
Contact: Glenn R. Smart, P.G.

April 3, 2012

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SITE SPECIFIC HEALTH AND SAFETY PLAN
FORMER WIGGINS HANGAR SITE
MANCHESTER–BOSTON REGIONAL AIRPORT
LONDINDERRY, NEW HAMPSHIRE

Section 1. Scope and Purpose

This site specific Health and Safety Plan (HASP) has been prepared by The Smart Associates, Environmental Consultants, Inc. (TSA) pursuant to the requirements of OSHA regulations found at 29 CFR 1910 and 29 CFR 1926 for field work associated with the conduct of a New Hampshire Department of Environmental Services (NHDES) Level II Site Investigation at the former Wiggins Airways Hangar #2 site (the site). The site is located at Manchester-Boston Regional Airport (the Airport) at 7 Green Drive (Figure 1) in Londonderry, New Hampshire, and formerly served as fuel farm for the Airport

The purpose of this HASP is to provide an outline of the policies, practices, procedures, and controls to be used on-site to assure a safe place to work for all on-site personnel. A copy of the HASP will be available for all affected personnel to review at the site.

The scope of this HASP covers proposed work in proximity to a former fuel farm at which aviation and motor vehicle fuels were stored in underground storage tanks (USTs) and aboveground storage tanks (ASTs)

Section 2. Project Description

The proposed project includes the installation and sampling of five groundwater monitoring wells as part of a Level II Site Investigation requested by the NHDES in a letter from Charles Berube dated February 14, 2012. The request was made following the NHDES's review of a Tank Closure Report submitted to the NHDES on January 12, 2012.

The former fuel farm consisted of consisted of fourteen registered USTs and two previously unregistered USTs (see Figures 2 & 3 and Table 1) including:

- Four 10,000-gallons tanks fuel tanks, and two 50,000-gallon fuel tanks, located west of Hangar #2;
- A 2000-gallon waste oil tank and a 6,000-gallon #2 heating oil tank located east of Hangar #2;
- A 500-gallon waste oil tank and a 10,000-gallon #2 heating oil tank located between Hangars #1 and #2;
- Four 10,000-gallon fuel tanks located north of Hangar #1; and
- The two unregistered tanks with unknown contents, a 6,000-gallon tank and a 2,000-gallon tank.

All work completed during this phase of the project will be conducted within the fenced, partially paved area to the west of Hangar #2.

Section 3. Site Specific Conditions

Chemical Exposure

The principle health and safety concern is the potential exposure of on-site personnel to volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbon compounds (PAHs) in soil and groundwater, and to a lesser extent, volatilized VOCs in the breath zone. Potential pathways of exposure include: ingestion, absorption, and inhalation. Based upon the concentrations of VOCs and PAHs detected on-site to date, it is unlikely that any serious worker exposure will occur through any of the three potential exposure routes.

Table 2 lists the chemical compounds previously detected on-site and the highest concentrations of each compound in soils and groundwater detected. Also included in Table 2 are the permissible exposure limits (PEL) for each VOC previously found on-site. PEL's are time-weighted average concentrations that must not be exceeded in the worker's breathing zone during any 8-hour shift of a 40-hour workweek. Since none of the concentrations of the various VOCs detected on-site in the groundwater exceeded the PEL's, it is unlikely that volatilization of these compounds would occur in high enough concentrations to exceed their respective PEL's in the proposed project work area. This fact not withstanding, the Site Safety Officer (SSO) will monitor the work place breathing zone to detect elevate concentrations of VOCs (see Section 4)

Atmospheric Conditions

Workers exposed to extreme temperatures are at risk of suffering potentially life-threatening situations. No extreme weather conditions are expected during the execution of project field work; however the SSO will monitor atmospheric conditions during periods for evidence of cold-related and heat-related issues.

Biological Hazards

Since the proposed work will be conducted in the early in an area devoid of vegetation, no biological hazards resulting from exposure to vegetation such as poison ivy (*toxicodendron radicans*) and/or poison sumac (*toxicodrndron vernix*), or disease-carrying insect such as mosquitoes or ticks is likely to occur.

Confined Space Entry

No confined entry activities described in safety regulations found at 29 CFR 1929 are expected to be required during the course of this project.

Hygiene and Decontamination
All site personnel should observe good hygiene practices, including washing all body parts that come in contact with soil and/or groundwater with soap and water, no eating or drinking while conducting site operations, etc.

Section 4. Organizational Work Plan
The drilling subcontractor will designate an individual to serve as the General Supervisor who will have the responsibility and authority to direct all hazardous waste operations.

The TSA project manager will serve as the SSO, and will have overall responsibility for implementing the portions of this HASP that fall within the jurisdiction of environmental safety concerns. The SSO will confirm that all on-site personnel are apprised of current site conditions and that they understand the elements of the HASP before any fieldwork is initiated. He will confirm that fieldwork is conducted in a manner consistent with this HASP and with the requirements detailed in OSHA regulations found at 29 CFR 1926 and 29 CFR 1910.

Unless otherwise specified, all on-site personnel will be required to dress in OSHA Level "D" (29 CFR 1910-120 Appendix B). The elements of Level "D" include: coveralls or work clothes, work boots or shoes with steel shanks and toes, and hard hats.

Project sampling personnel will wear chemically-resistant gloves and splash protection, as necessary, when collecting soil and/or groundwater samples for screening purposes.

Prior to the start of drilling activities in the area covered by this HASP, the SSO will conduct a pre-entry briefing with all personnel expected to work on-site to discuss the requirements of the HASP answer any questions that personnel may have regarding the information and policies set forth in the HASP. All on-site personnel will be required to sign the attached sheet (see Appendix C), certifying that they have read and understand the elements of the HASP.

Whenever any work involving drilling, sampling, or well construction is being conducted within the subject site, the SSO will be on site to periodically monitor air quality within the worker's breathing zone with a properly calibrated PID. Environmental testing by consultants has, to date, found no concentrations of VOCs or other contaminants that would pose a respiratory hazard to individuals working within the proposed project site. However, in order to protect the health and safety of on-site workers air quality within the breath zone of the workers will be monitored as described above and sustained PID readings of 10 ppm above background or more will be used as a threshold above which work may not continue without further site characterization.

The SSO will collect representative samples from split-spoon samples recovered during the drilling activities and use appropriate field screening techniques to assess the samples for the presence of VOCs.

If the results of field screening indicate that permissible exposure limits have been, or have the potential be, exceeded, or indicate the presence of contaminated soil or groundwater, the SSO will immediately curtail all on-site work until further site characterization confirms that it is safe to return to site activities. TSA will conduct such tests as may be necessary to fully characterize the air, soil, and/or groundwater quality prior to resumption of work on-site.

The SSO will exercise appropriate professional judgment with respect to notifying the NHDES Hazardous Material Response Team and/or the EPA National Response Center, as necessary.

Section 6. Emergency Response

Medical Emergency

In the case of an incident requiring medical attention, local ambulance service is provided the Airport Communications Center should be contacted at (603) 624-6349. If the Communications Center is not immediately available, emergency services can be reached by dialing 911. The nearest hospital trauma center is Elliott Hospital, located approximately 5 miles north of the site off Auburn Street (see maps and directions in Appendix).

Emergency Telephone Numbers

Project General Supervisor (Joe Garvey)	(603) 668-6016
Project Site Safety Officer (Glenn Smart)	(603) 491-2680
Airport Contact (John Hagopian)	(603) 396-3545
Airport Communication Center	(603) 624-6349
Fire or medical emergency	911
Local ambulance service	911
NHDES Hazardous Material Response Team	(603) 271-3899
NH State Police	(800) 346-4009
Hospital – Elliott Hospital	(603) 663-1111
New Hampshire Poison Control Center	(800) 652-8236
National Response Center	(800) 424-8802

APPENDIX A. MSDS SHEETS

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AVGAS

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Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Material Name	:	**AVGAS 100LL**
Recommended Uses	:	Low lead content aviation gasoline fuel for piston engined aircraft
Other names	:	GASOLINE
Product Code	:	002D0717
Manufacturer/Supplier	:	**The Shell Company of Australia Limited** (ABN 46 004 610 459) 8 Redfern Road Hawthorn East Victoria 3123 Australia
Telephone	:	+61 (0)3 9666 5444
Fax	:	+61 (0)3 8823 4800
Emergency Telephone Number	:	1800 651 818 (within Australia only) +61 3 9663 2130 (International)

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE. DANGEROUS GOODS.
Classified as hazardous according to the criteria of NOHSC, and as Dangerous Goods according to the Australian Dangerous Goods Code.

Symbol(s)	:	F+ Extremely flammable. T Toxic. N Dangerous for the environment.
R-phrase(s)	:	R45 May cause cancer. R46 May cause heritable genetic damage. R63 Possible risk of harm to the unborn child. R65 Harmful: may cause lung damage if swallowed. R67 Vapours may cause drowsiness and dizziness. R38 Irritating to skin. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R12 Extremely flammable. R33 Danger of cumulative effects.
S-phrase(s)	:	S2 Keep out of reach of children. S29 Do not empty into drains. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53 Avoid exposure. Obtain special instructions before use. S61 Avoid release to the environment. Refer to special instructions/Safety data sheets. S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Health Hazards	:	Harmful by inhalation. Vapours may cause drowsiness and

		dizziness. Slightly irritating to respiratory system. Harmful in contact with skin. Irritating to skin. Moderately irritating to eyes. Harmful if swallowed. Harmful: may cause lung damage if swallowed. Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Blood-forming organs. Peripheral nervous system. May cause heritable genetic damage. Possible risk of harm to the unborn child. Danger of cumulative effects. A component or components of this material may cause cancer. This product contains benzene which may cause leukaemia (AML acute myelogenous leukaemia).
Signs and Symptoms	:	Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Eye irritation signs and symptoms may include a burning sensation and a temporary redness of the eye. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Damage to blood-forming organs may be evidenced by: a) fatigue and anaemia (RBC), b) decreased resistance to infection, and/or excessive bruising and bleeding (platelet effect). Peripheral nerve damage may be evidenced by impairment of motor function (incoordination, unsteady walk, or muscle weakness in the extremities, and/or loss of sensation in the arms and legs). Auditory system effects may include temporary hearing loss and/or ringing in the ears.
Aggravated Medical Condition	:	Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Blood-forming organs. Peripheral nervous system. Skin.
Safety Hazards	:	Extremely flammable. Electrostatic charges may be generated during handling. Electrostatic discharge may cause fire. Liquid evaporates quickly and can ignite leading to a flash fire, or an explosion in a confined space.
Environmental Hazards	:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment.
Additional Information	:	This product contains tetraethyl lead which may accumulate in the human body. There are indications from human epidemiological studies that excessive prenatal exposure to tetraethyl lead may cause developmental and neurobehavioural effects in children. This product is intended for use in closed systems only.
SUSDP Schedule	:	S6

3. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation description	:	Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon

numbers predominantly in the C4 to C12 range. Includes benzene at 0.1 - 5% v/v. Contains lead alkyl anti-knock additives. Maximum lead concentration: 0.56 g/l. Maximum tetraethyl lead content is 0.125% w/w. May also contain several additives at <0.1% v/v each. This product is dyed for grade identification.

Hazardous Components

Chemical Identity	CAS	EINECS	Symbol(s)	R-phrase(s)	Conc.
Gasoline, low boiling point naphtha	86290-81-5	289-220-8	F+, Xi, T, Xn, N	R12; R38; R45; R46; R63; R65; R67; R51/53	99.00 - 100.00 %
Tetraethyl lead	78-00-2	201-075-4	T+, N	R26/27/28; R61; R62; R33; R50/53	0.00 - 0.125 %

Additional Information : Contains Benzene, CAS # 71-43-2. Contains Toluene, CAS # 108-88-3. Contains Ethylbenzene, CAS # 100-41-4. Contains n-Hexane, CAS # 110-54-3. Contains Xylene (Mixed Isomers), CAS # 1330-20-7. Contains Naphthalene, CAS # 91-20-3. Contains Cyclo-hexane, CAS# 110-82-7. Contains Tri-methyl-benzene (all isomers), CAS# 25551-13-7. Dyes and markers can be used to indicate tax status and prevent fraud. Refer to chapter 16 for full text of EC R-phrases.

4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Skin Contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye Contact : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist, transport to the nearest medical facility for additional treatment.

Ingestion : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101 °F (37 °C), shortness of breath, chest congestion or continued coughing or wheezing.

Advice to Physician : The concentration of lead alkyl compounds present is not significant in the context of treating acute poisoning unless the person had excessive and prolonged exposure to the material. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Specific Hazards	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water.
Suitable Extinguishing Media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	:	Do not use water in a jet.
Protective Equipment for Firefighters	:	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.
Additional Advice	:	Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel. Ventilate contaminated area thoroughly. If contamination of sites occurs remediation may require specialist advice. Take precautionary measures against static discharges. Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Observe all relevant local and international regulations.

Protective measures	:	Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths. Do not breathe fumes, vapour. Take measures to minimise the effects on groundwater. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Clean Up Methods	:	For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely.

		Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Additional Advice	:	Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

7. HANDLING AND STORAGE

General Precautions	:	Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Prevent spillages. Turn off all battery operated portable electronic devices (examples include: cellular phones, pagers and CD players) before operating gasoline pump. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier. Do not use as a cleaning solvent or other non-motor fuel uses. Maintenance and Fuelling Activities - Avoid inhalation of vapours and contact with skin.
Handling	:	When using do not eat or drink. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Never siphon by mouth. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid exposure. Obtain special instructions before use.
Storage	:	Drum and small container storage: Keep containers closed when not in use. Drums should be stacked to a maximum of 3 high. Use properly labelled and closeable containers. Packaged product must be kept tightly closed and stored in a diked (bunded) well-ventilated area, away from, ignition sources and other sources of heat. Take suitable precautions when opening sealed containers, as pressure can build up during storage. Tank storage: Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.
Product Transfer	:	Electrostatic charges may be generated during pumping.

Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<= 1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. During aircraft re-fueling and all other operations extreme care must be taken to avoid any source of ignition from igniting vapour. When filling tanks there is always a danger of static discharge leading to explosion. This is particularly hazardous when switch loading tanks. Product transfer may give rise to light hydrocarbon vapour in the headspace of tanks. This vapour may explode if there is a source of ignition such as static discharge. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care.

Recommended Materials : For containers, or container linings use mild steel, stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product. For container linings, use amine-adduct cured epoxy paint. For seals and gaskets use: graphite, PTFE, Viton A, Viton B.

Unsuitable Materials : Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene.; However, some may be suitable for glove materials.

Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers. Gasoline containers must not be used for storage of other products.

Additional Information : Ensure that all local regulations regarding handling and storage facilities are followed. In the interests of air safety, aviation fuels are subject to strict quality requirements and product integrity is of paramount importance. For one source of information on international standards for the quality assurance of aviation fuels, see www.jointinspectiongroup.org.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Tetraethyl lead	AU OEL	TWA		0.1 mg/m3	as Pb

Material Safety Data Sheet

	AU OEL	SKIN_DES			Can be absorbed through the skin. as Pb
1,3,5-Trimethyl benzene	AU OEL	TWA	25 ppm	123 mg/m3	
Ethylbenzene	AU OEL	TWA	100 ppm	434 mg/m3	
	AU OEL	STEL	125 ppm	543 mg/m3	
n-Hexane	AU OEL	TWA	20 ppm	72 mg/m3	
Benzene	AU OEL	TWA	1 ppm	3.2 mg/m3	
		TWA	0.5 ppm	1.6 mg/m3	
		STEL	2.5 ppm	8 mg/m3	
Toluene	AU OEL	TWA	50 ppm	191 mg/m3	
	AU OEL	STEL	150 ppm	574 mg/m3	
	AU OEL	SKIN_DES			Can be absorbed through the skin.
Xylene	AU OEL	TWA	80 ppm	350 mg/m3	
	AU OEL	STEL	150 ppm	655 mg/m3	
Cyclohexane	AU OEL	TWA	100 ppm	350 mg/m3	
	AU OEL	STEL	300 ppm	1,050 mg/m3	
Naphthalene	AU OEL	TWA	10 ppm	52 mg/m3	
	AU OEL	STEL	15 ppm	79 mg/m3	

Additional Information : Skin notation means that significant exposure can also occur by absorption of liquid through the skin and of vapour through the eyes or mucous membranes.
SHELL IS is the Shell Internal Standard.

Material	**Source**	**Hazard Designation**
Benzene	AU OEL	Confirmed human carcinogen.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended. Eye washes and showers for emergency use.

Personal Protective Equipment : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. AS/NZS 1337: Eye protectors for industrial applications. AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. AS/NZS 1715: Selection, use and maintenance of respiratory protective devices. AS/NZS 1716: Respiratory protective devices.

Respiratory Protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific

		conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations.
Hand Protection	:	Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes.) For incidental contact/splash protection Neoprene, PVC gloves may be suitable.
Eye Protection	:	Chemical splash goggles (chemical monogoggles).
Protective Clothing	:	Chemical resistant gloves/gauntlets, boots, and apron (where risk of splashing).
Monitoring Methods	:	Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Environmental Exposure Controls	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Blue. Clear, bright liquid.
Odour	:	Hydrocarbon
pH	:	Data not available
Initial Boiling Point and Boiling Range	:	25 - 170 °C / 77 - 338 °F
Freezing/melting point	:	Data not available
Flash point	:	< -40 °C / -40 °F
Lower / upper Flammability or Explosion limits	:	Data not available
Auto-ignition temperature	:	> 250 °C / 482 °F
Vapour pressure	:	380 - 490 hPa at 37.8 °C / 100.0 °F
Specific gravity	:	Data not available
Density	:	Typical 0.700 g/cm3 at 15 °C / 59 °F
Solubility in other solvents	:	Data not available
n-octanol/water partition coefficient (log Pow)	:	2 - 7
Kinematic viscosity	:	0.5 - 0.75 mm2/s at 40 °C / 104 °F
Vapour density (air=1)	:	Data not available

10. STABILITY AND REACTIVITY

Stability	:	Stable under normal conditions of use.
Conditions to Avoid	:	Avoid heat, sparks, open flames and other ignition sources.
Materials to Avoid	:	Strong oxidising agents.
Hazardous Decomposition Products	:	Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	:	Information given is based on product data, a knowledge of the components and the toxicology of similar products.
Acute Oral Toxicity	:	Low toxicity:LD50 >2000 mg/kg, Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
Acute Dermal Toxicity	:	Low toxicity:LD50 >2000 mg/kg, Rabbit
Acute Inhalation Toxicity	:	Low toxicity: LC50 >5 mg/l / 4 h, Rat High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
Skin Irritation	:	Irritating to skin.
Eye Irritation	:	Moderately irritating to eyes (but insufficient to classify).
Respiratory Irritation	:	Based on human experience, breathing of vapours or mists may cause a temporary burning sensation to nose, throat and lungs.
Sensitisation	:	Not a skin sensitiser.
Repeated Dose Toxicity	:	Kidney: caused kidney effects in male rats which are not considered relevant to humans Blood-forming organs: repeated exposure affects the bone marrow. (Benzene) Peripheral nervous system: repeated exposure causes peripheral neuropathy in animals. (n-Hexane)
Mutagenicity	:	May cause heritable genetic damage. (Benzene) Mutagenicity studies on gasoline and gasoline blending streams have shown predominantly negative results.
Carcinogenicity	:	Known human carcinogen. (Benzene) May cause leukaemia (AML - acute myelogenous leukemia). (Benzene) Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans.
Reproductive and Developmental Toxicity	:	Causes foetotoxicity at doses which are maternally toxic. (Toluene) Causes adverse effects on the foetus based on animal studies. (Toluene) Many case studies involving abuse during pregnancy indicate that toluene can cause birth defects, growth retardation and

		learning difficulties. (Toluene) This product contains tetraethyl lead which may cause harm to the unborn child. Exposure to tetraethyl lead is associated with developmental effects which include reduced birth weight, reduced gestational age and neurobehavioral effects.
Additional Information	:	Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest. Prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss. (Toluene) Abuse of vapours has been associated with organ damage and death. (Toluene) Myelodysplastic syndrome (MDS) was observed in individuals exposed to very high levels (50 ppm to 300 ppm range) of benzene over a long period of time in the workplace. The relevance of these results to lower levels of exposure is not known. (Benzene)

12. ECOLOGICAL INFORMATION

Fuels are typically made from blending several refinery streams. Ecotoxicological studies have been carried out on a variety of hydrocarbon blends and streams but not those containing additives. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity	:	Toxic:LL/EL/IL50 1-10 mg/l(to aquatic organisms)(LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Mobility	:	Floats on water. Evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate groundwater. Contains volatile constituents.
Persistence/degradability	:	Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. The volatile constituents will oxidize rapidly by photochemical reactions in air.
Bioaccumulation	:	Contains constituents with the potential to bioaccumulate.
Other Adverse Effects	:	Films formed on water may affect oxygen transfer and damage organisms.

13. DISPOSAL CONSIDERATIONS

Material Disposal	:	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment,

		in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.
Container Disposal	:	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not, puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer. Do not pollute the soil, water or environment with the waste container.
Local Legislation	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. TRANSPORT INFORMATION

ADG

UN number	1203
Proper shipping name	GASOLINE
Class	3
Packing group	II
Hazchem Code	3YE

IMDG

Identification number	UN 1203
Proper shipping name	PETROL
Technical name	(leaded)
Class / Division	3
Packing group	II
Marine pollutant:	Yes

IATA (Country variations may apply)

UN No.	:	1203
Proper shipping name	:	Gasoline
Technical name	:	(leaded)
Class / Division	:	3
Packing group	:	II

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

SUSDP Schedule	:	S6
AICS	:	All components are listed or exempt
Other Information	:	National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011] List of Designated Hazardous

Substances [NOHSC:10005]. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008]. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]. Australian Dangerous Goods Code. Standard Uniform Scheduling of Drugs and Poisons.

National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011] List of Designated Hazardous Substances [NOHSC:10005]. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008]. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]. Australian Dangerous Goods Code. Standard Uniform Scheduling of Drugs and Poisons.

16. OTHER INFORMATION

Additional information : This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.

R-phrase(s)

R12	Extremely flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
R33	Danger of cumulative effects.
R38	Irritating to skin.
R45	May cause cancer.
R46	May cause heritable genetic damage.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R61	May cause harm to the unborn child.
R62	Possible risk of impaired fertility.
R63	Possible risk of harm to the unborn child.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.

MSDS Version Number : 1.0

MSDS Effective Date : 19.03.2010

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation :

Uses and Restrictions : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.
Not to be used as a fuel for automotive vehicles.

Material Safety Data Sheet

This product is not to be used as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.

MSDS Distribution : The information in this document should be made available to all who may handle the product.

Disclaimer : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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JET A – JET FUEL

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Sprague
PUT OUR ENERGY TO WORK FOR YOU
Two International Drive, Suite 200, Portsmouth, NH 03801
Tel (603) 431-1000 FAX (603) 430-7290
An Axel Johnson, Inc. Company

MATERIAL SAFETY DATA SHEET

JET A AVIATION FUEL

Revised 2/98; 10/12/00; 07/22/02; 06/05; 1/06

SECTION 1 - MATERIAL IDENTIFICATION

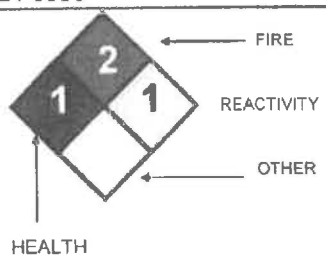
PRODUCT / CHEMICAL NAME	JET A, AVIATION FUEL
PRODUCT / CHEMICAL SYNONYMS	AVIATION TURBINE FUEL, JET A, JP-5, JET FUEL, K - 1, KEROSENE
CHEMICAL FAMILY / FORMULA	ALIPHATIC AND AROMATIC HYDROCARBONS / VARIABLE
MATERIAL USE OR OCCURRENCE	

24 HOUR EMERGENCY INFORMATION

Sprague: 603-431-1000
Chemtrec: 800-424-9300

HMIS / NFPA HAZARD RATING

4=EXTREME
3=SERIOUS
2=MODERATE
1=SLIGHT
0=MINIMAL



SECTION 2 - INGREDIENTS

COMPONENT	%	C.A.S. NO.	OSHA PEL	OSHA STEL	ACGIH TLV	OTHER
KEROSENE A complex mixture of petroleum hydrocarbons (may contain fused polycyclic hydrocarbons as benzene solubles).	>99	08-008-206	5 mg/M^3 (mineral oil mist)		5 mg/M^3	
Polycyclic Hydrocarbons	<1	08-007-452	0.2 mg/M^3 (benzene solubles as coal tar pitch volatiles).		0.2 mg/M^3	

SECTION 3 - PHYSICAL DATA

BOILING POINT:	350°-550°F (177°-288°C)	**% VOLATILITY BY VOLUME:**	Greater than 50%
VAPOR PRESSURE (mm Hg):	1	**VAPOR DENSITY (AIR = 1):**	6
SPECIFIC GRAVITY (H20 = 1):	0.80 @15°C	**SOLUBILITY IN WATER:**	Slight

EVAPORATION RATE (n-butyl acetate = 1): None Determined.

APPEARANCE & ODOR: Colorless, liquid. Fuel oil odor.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 101° - 162°F (38° - 72°C) (Tag Closed Cup) | AUTOIGNITION TEMP: 410°F (210°C)

FLAMMABILITY LIMITS IN AIR (% BY VOL.) LEL: 0.7 UEL: 5.0

EXTINGUISHING MEDIUM:
Foam, carbon dioxide, dry chemical, halon, and water fog

SPECIAL FIRE FIGHTING PROCEDURES:
Use supplied-air breathing equipment for enclosed areas. Cool exposed containers with water spray. Continue water spray until entire container contents are cool. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of storage tank due to fire (subject to the fire chief's directions).

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Do not mix or store with strong oxidants. Do not store or pour near sources of ignition. Do not pressurize, cut, heat, weld, or expose to sources of ignition. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.

SECTION 5 - HEALTH DATA

TOXICOLOGICAL TEST DATA:	No data available	RESULTS
	ACUTE HEALTH EFFECTS	CHRONIC HEALTH EFFECTS
INHALATION	Central nervous system depressant. May cause headaches and irritation to the nose, throat, and lungs.	No data available
INGESTION	May cause irritation and burning of the gastrointestinal tract (mouth, throat, and stomach). May cause nausea, vomiting, diarrhea, and restlessness.	No data available
SKIN CONTACT	May cause irritation, drying, and cracking of the skin. May cause dermatitis.	Dermatitis
EYE CONTACT	Irritation of the eye	No data available

FIRST AID PROCEDURES

INHALATION: Remove from vapor to fresh air. If breathing has stopped give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Qualified personnel should perform administration of oxygen. Get medical attention immediately.

INGESTION: DO NOT INDUCE VOMITING or give anything by mouth to an unconscious person. When vomiting occurs, keep persons head lower than head to prevent pulmonary aspiration. Get medical attention immediately.

SKIN CONTACT: Remove jet fuel soaked clothing. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

EYE CONTACT: Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

TOXICOLOGICAL DATA	Kerosene generally contains benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International agency for Research on Cancer and the Occupational Safety and Health Administration. Benzene may produce blood changes that include reduced platelets, red blood cells, and white blood cells; also aplastic anemia, and acute nonlymphatic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms. Health effects attributable to benzene aren't known to occur in humans exposed to kerosene. Kerosene has caused kidney injury in male rats only. No comparable health hazard for kidney disease is known to occur in humans. An epidemiological study or workers exposed to two isomers of trimethylbenzene had symptoms of nervousness, tension and anxiety, and asthmatic bronchitis. In addition, after inhalation of 60 ppm measured as hydrocarbon vapor, the works' peripheral blood showed a tendency to hypochromic anemia and a deviation from normal in the coagulability of the blood. Exposure of pregnant rats during gestation to toluene at levels of 250 ppm and higher produces some maternal toxicity and feto toxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm. Behavioral signs of hearing loss were observed in rats exposed to toluene sub chronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

SECTION 6 - REACTIVITY DATA	
STABILITY:	Stable under normal temperatures and pressures.
HAZARDOUS POLYMERIZATION:	Hazardous polymerization has not been known to occur under normal temperatures and pressures.
CONDITIONS TO AVOID:	May be ignited by heat, sparks, or flame. Vapors may travel to a source of ignition and flash back. Vapor explosion hazard indoors, outdoors, or in sewers.
INCOMPATIBLES:	May explode or react violently when exposed to oxidizing materials.
TYPICAL DECOMPOSITION PRODUCTS:	Carbon monoxide, oxides of nitrogen, and hydrocarbons.

SECTION 7 - SPECIAL PROTECTION		
RESPIRATORY PROTECTION:		Use with adequate ventilation. For large spills or when completing work in confined spaces, use a mask with an organic vapor cartridge or positive pressure air supplied (SCBA) unit.
VENTILATION	LOCAL EXHAUST: MECHANICAL (General):	Indoors: Lab hood recommended. Outdoors: Work upwind. Recommended for use in enclosed or semi-enclosed work areas.
EYE PROTECTION:		Splash goggles or shields with safety glasses
PROTECTIVE GLOVES:		Neoprene, PVC
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:		Employee must wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SECTION 8 - SPECIAL PRECAUTIONS	
PRECAUTIONS FOR SAFE HANDLING AND STORAGE:	Avoid excessive inhalation or skin contact. Isolate from sources of ignition.
SPILL AND LEAK PROCEDURES:	Shut off ignition sources (no smoking, shut off flames or flares in hazard area). Isolate hazard area and restrict entry. If properly trained, proceed with the following measures: 1. For small spills, take up with sand or other absorbent material and place into containers for later disposal; and. 2. For large spills, dike far ahead of spill to prevent entrance into watercourses and/or ground water. Observe local, state, and federal governmental regulations.
WASTE DISPOSAL METHOD	1. Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a flash point below 140 F, it would be ignitable hazardous waste (waste code number D001). Refer to latest EPA or state regulations regarding proper disposal. 2. Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a TCLP benzene concentration greater than 0.5 PPM, it would be considered a toxic waste (waste code number D018). Refer to latest EPA or state regulations regarding proper disposal.

SECTION 9 - DOT HAZARDOUS MATERIAL INFORMATION

PROPER SHIPPING NAME: FUEL, AVIATION, TURBINE ENGINE		**LABEL:** FLAMMABLE LIQUID	**REQUIRED PLACARDING:** FLAMMABLE / 1863
HAZARD CLASS: CLASS 3 (Flammable liquid)	**PACKING GROUP (P.G.):** III	**N.A/U.N. NUMBER:** UN 1863	
HAZARDOUS SUBSTANCE / RQ: NOT AVAILABLE		**SHIPPING DESCRIPTION:** FUEL, AVIATION, TURBINE ENGINE, 3 (Flammable liquid), UN 1863, PG III	

NOTE:
This product may be reclassed as a combustible liquid when shipped domestically, by land only. If reclassed as a combustible liquid, this product is unregulated by DOT when shipped in non-bulk quantities.

SECTION 10 - EPA SARA TITLE III INFORMATION

SECTION 311/312 HAZARD CLASSIFICATION:	**ACUTE:** YES		**CHRONIC:** YES
	FIRE: YES	**PRESSURE:** NO	**REACTIVE:** NO

SECTION 11 - REMARKS

None

SECTION 12 - ADDITIONAL REGULATORY DATA

REPORTABLE COMPONENTS: FEDERAL EPA	%	SARA RQ	CERCLA RQ	RCRA NO.
KEROSENE	100	----	----	
* Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a flash point below 140 F, it would be considered ignitable hazardous waste (waste code number D001) with a SARA / CERCLA RQ of 100 pounds.				D001*
** Under EPA RCRA (40 CFR 261.21), if this product becomes a waste material intended for disposal and has a TCLP benzene concentration greater than 0.5 PPM, it would be considered a toxic waste (waste code number D018) with a SARA / CERCLA RQ of 10 pounds.				D018**

The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for his particular purposes.

APPENDIX B. SIGN-OFF SHEET

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By signing this sheet I hereby acknowledge that I have read the attached site specific Health and Safety Plan and understand the elements therein as they pertain to the tasks assigned to me on this project.

Signature	**Date**

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APPENDIX C. FIGURES

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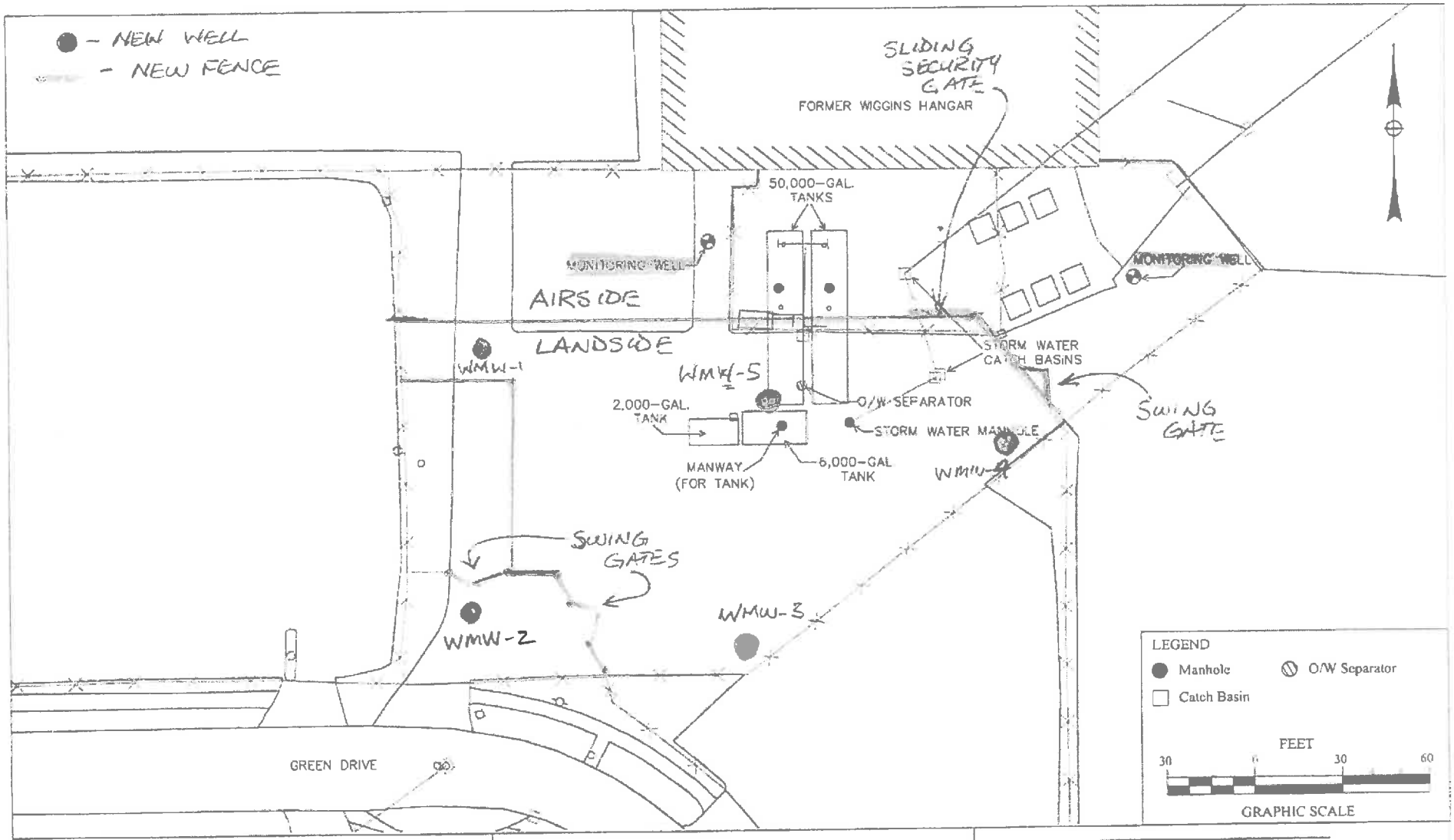
Manchester-Boston
REGIONAL AIRPORT

Figure 1
Site Location Map

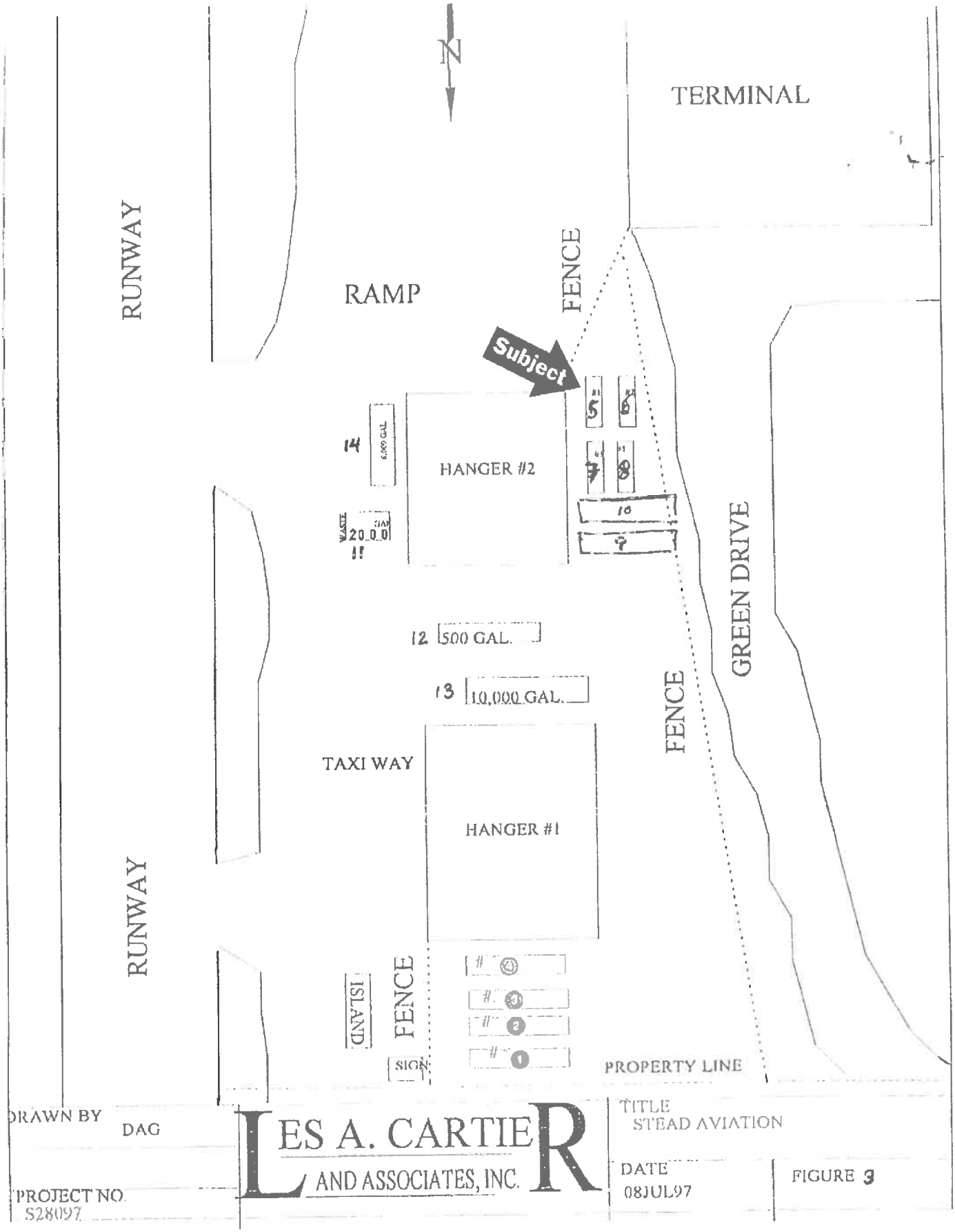
The Smart Associates
Environmental Consultants, Inc.



Manchester-Boston REGIONAL AIRPORT

FIGURE 2: SITE PLAN

The Smart Associates
Environmental Consultants, Inc



DRAWN BY DAG

LES A. CARTIER AND ASSOCIATES, INC.

TITLE
STEAD AVIATION

PROJECT NO.
S28097

DATE
08JUL97

FIGURE 3

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APPENDIX D. TABLES

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Table 1. Former Wiggins Fuel Farm USTs

NHDES UST Facility #0111100 Information				
Tank #	**Size (gallons)**	**Use**	**Temporary Closure Date**	**Permanent Closure Date**
Tank Farm #1 – Located North of Hangar #1				
1	10,000	Avgas	09/02/93	06/16/97
2	10,000	Jet Fuel	09/02/93	06/16/97
3	10,000	Gasoline	09/02/93	06/16/97
4	10,000	Jet Fuel	09/02/93	06/16/97
Tank Farm # 2 – Located West of Hangar #2				
5	10,000	Jet Fuel	N/A	06/23/97
6	10,000	Jet Fuel	N/A	06/23/97
7	10,000	Jet Fuel	N/A	06/23/97
8	10,000	Jet Fuel	N/A	06/23/97
9	50,000	Jet Fuel	05/13/04	11/24/11
10	50,000	Jet Fuel	05/13/04	11/24/11
15	6,000[2]	Unknown	N/A	10/06/11
16	2,000[3]	Unknown	N/A	10/06/11
Miscellaneous Tanks – Located East of Hangar #2				
11	2,000	Waste Oil	N/A	06/27/97
14	6,000	#2 Oil	N/A	06/27/97
Miscellaneous Tanks – Located Between Hangars # & #2				
12	500	Waste Oil	N/A	06/27/97
13	10,000	#2 Oil	N/A	06/27/97
NHDES AST Facility #970710A Information				
3	12,000	Gasoline	N/A	04/05/04
4	12,000	Jet Fuel	N/A	04/05/04
5	12,000	Avgas	N/A	04/05/04

Table 2a. Maximum Concentrations of VOCs in Site Soil & Water Samples

Compound	PEL (ppm)	Highest Concentration in Site Soil (ppm)	Highest Concentration in Site Groundwater (ppm)
Benzene	1.0	2.1	0.006
Ethybenzene	100	6.0	0.055
Isopropylbenzene	50	3.9	0.003
p-Isopropyltoluene	50	4.4	ND
Napthalene	10	8.8	0.07
Toluene	200	20.0	0.013
1,2,4-Trimethylbenzene	25	31.0	0.12
1,3,5-Trimethylbenzene	25	14.0	0.051
o-Xylene	100	13.0	0.097
m,p-Xylene	100	20.0	0.067
4-isopropyltoluene	50	3.9	0.013
Acetone	250	ND	1.5

Table 2b. Maximum Concentrations of PAHs in Site Soil & Water Samples

Compound	PEL (mg/m^3)	Highest Concentration in Site Soil (ppm)	Highest Concentration in Site Groundwater (ppm)
Acenaphthylene	0.128	1.3	0.007
Phenanthrene	0.2	4.4	0.011
Pyrene	0.2	7.7	0.029
Chrysene	0.2	3.1	0.011
Benzo(b)fluoranthene	0.2	2.9	0.017
Benzo(a)pyrene	0.2	3.2	0.014

PEL – Permissible Exposure Limit not to be exceeded during any 8-hour work shift of a 40-hour workweek.
ND – None detected
ppm – Parts per million

APPENDIX E. EMERGENCY MAPS AND DIRECTIONS

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DIRECTIONS TO TRAUMA CENTER – ELIOTT HOSPITAL

From 7 Green Drive to Eliott Way

Turn right out of parking lot onto **Green Drive**

At the end of **Green Drive** turn left onto **Ammon Drive – 0.3 miles**

At the end of **Ammon Drive**, turn right onto **Airport Road – 0.6 miles**

At the round-about, stay right on **Airport Road**.

At the first set of lights, turn right on **North Perimeter Road – 0.5 miles**

Follow **North Perimeter Road** to the end and at the lights, continue straight of **South Willow Street – 1.8 miles**

Take first right on **Huse Street – 0.3 miles**

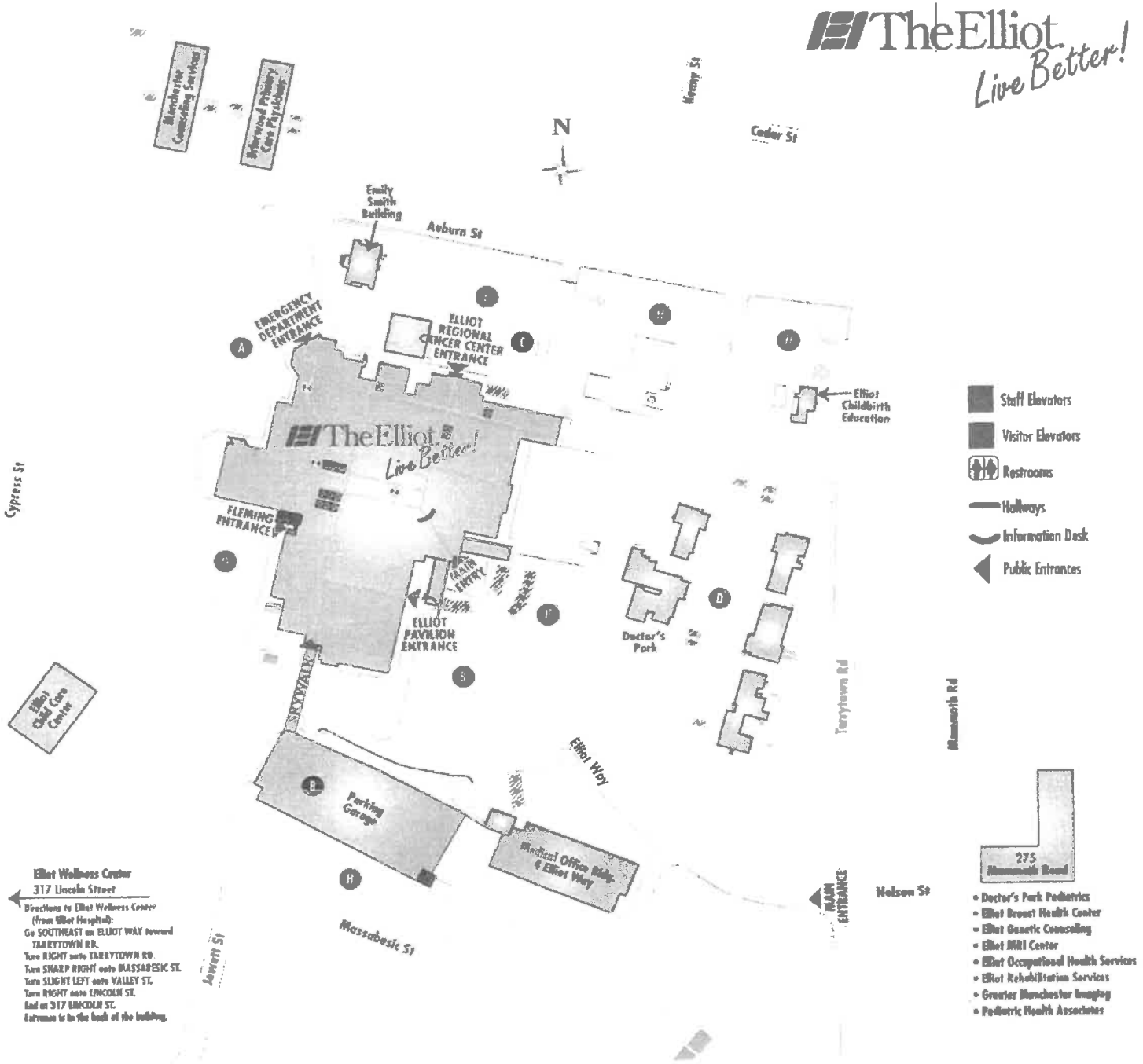
Turn left on **South Mammoth Road – 1.8 miles**

Turn left on **Massabesic Street – 0.5 miles**

Turn right of **Tarrytown Road – 0.1 miles**

Turn left on **Auburn Street – 0.3 miles**

Turn left on into the **Eliott Hospital,** proceed to emergency department entrance


TheElliot
Live Better!
Manchester Counseling Services
Maternal Primary Care Physicians
Emily Smith Building
Auburn St
Cedar St
Kenny St
N
EMERGENCY DEPARTMENT ENTRANCE
ELLIOT REGIONAL CANCER CENTER ENTRANCE
Elliot Childbirth Education
Cypress St
FLEMING ENTRANCE
MAIN ENTRY
ELLIOT PAVILION ENTRANCE
Doctor's Park
Elliot Child Care Center
SKYWALK
Elliot Way
Parking Garage
Medical Office Bldg. 6 Elliot Way
Terrytown Rd
Mammoth Rd
Nelson St
MAIN ENTRANCE
Massabesic St
Jewett St
Staff Elevators
Visitor Elevators
Restrooms
Hallways
Information Desk
Public Entrances
275 Mammoth Road
• Doctor's Park Pediatrics
• Elliot Breast Health Center
• Elliot Genetic Counseling
• Elliot MRI Center
• Elliot Occupational Health Services
• Elliot Rehabilitation Services
• Greater Manchester Imaging
• Pediatric Health Associates
Elliot Wellness Center
317 Lincoln Street
Directions to Elliot Wellness Center
(from Elliot Hospital):
Go SOUTHEAST on ELLIOT WAY toward TARRYTOWN RD.
Turn RIGHT onto TARRYTOWN RD.
Turn SHARP RIGHT onto MASSABESIC ST.
Turn SLIGHT LEFT onto VALLEY ST.
Turn RIGHT onto LINCOLN ST.
End at 317 LINCOLN ST.
Entrance is in the back of the building.

DIRECTIONS and PARKING

Valet Parking for visitors and outpatients, weekdays 8 a.m. to 4:00 p.m.
Valet parking is provided by Curbside Valet Services.

From Downtown Manchester:

From Elm Street, take Valley Street East. Take a left onto Tarrytown Road. From Tarrytown Road, turn left onto Elliot Way.

To the Emergency Department, continue straight on Tarrytown Road. Take a left onto Auburn Street. Turn left into the Emergency entrance. Parking is available on the left.

From the Manchester Airport

From Manchester airport, turn right onto Goffs Falls Road. Goffs Falls Road becomes Huse Road. At the end of Huse Road, take a left at the lights onto South Mammoth Road. Turn left onto Massabesic Street. Turn right onto Tarrytown Road at the intersection. Elliot Hospital/Elliot Way is the first road on the left.

From the North

Take Interstate 93 South, bear right after the Hooksett tollbooth to remain on Interstate 93. Take Exit 8 (Wellington Road) off I-93. At the end of the exit ramp (traffic light), take a right. At the next set of traffic lights, take a left onto Mammoth Road. You will pass the Derryfield Country Club on your left. Proceed through two sets of traffic lights. Take your next right onto Nelson Street. Elliot Hospital is directly across the street.

From the South (Derry/Salem/Londonderry area)

Take Interstate 93 North, South of Manchester, the highway divides (93 & 293). Stay on 93 and then take Exit #6 (Candia Road). Turn left at the first set of traffic lights. Stay on Candia Road about 1 mile and take a right at the next set of traffic lights onto Mammoth Road. Go straight at next set of traffic lights turn left onto Nelson Street and follow it to the end. Elliot Hospital is directly across the street.

From Massachusetts and Southern NH

In Massachusetts, take Route 3 North. Route 3 becomes the Everett Turnpike at the NH state line. Take first exit after tollbooth (Route 101 East/293). Stay on 101 East, which merges onto 93 North. Continue approximately 1/2 mile to Exit #6 (Candia Road). Take a left at the first set of traffic lights. Stay on Candia Road about 1 mile and take a right at the next set of traffic lights onto Mammoth Road. Go straight at next set of traffic lights, turn left onto Nelson Street, and follow it to the end. Elliot Hospital is directly across the street.

From the West

Take 101 East to 293 South. Turn onto I-93 North to Exit #6 (Candia Road). Take a left at the first set of traffic lights. Stay on Candia Road about 1 mile and take a right at the next set of traffic lights onto Mammoth Road. Go straight at next set of traffic lights, turn left onto Nelson Street, and follow it to the end. Elliot Hospital is directly across the street.

From the East

Take 101 West. Bear right onto I-93 North to Exit #8 (Wellington Road). Bear right at end of exit. Go straight through two sets of traffic lights. Take left at second set of traffic lights, onto Mammoth Road. Continue through two more sets of traffic lights. Take next right onto Nelson Street, and follow it to the end. Elliot Hospital is directly across the street.

To Emergency Department

At intersection of Nelson Street and Tarrytown Road turn right. Take left onto Auburn Street. Turn left into Emergency entrance. Parking is available on the left.

The Elliot
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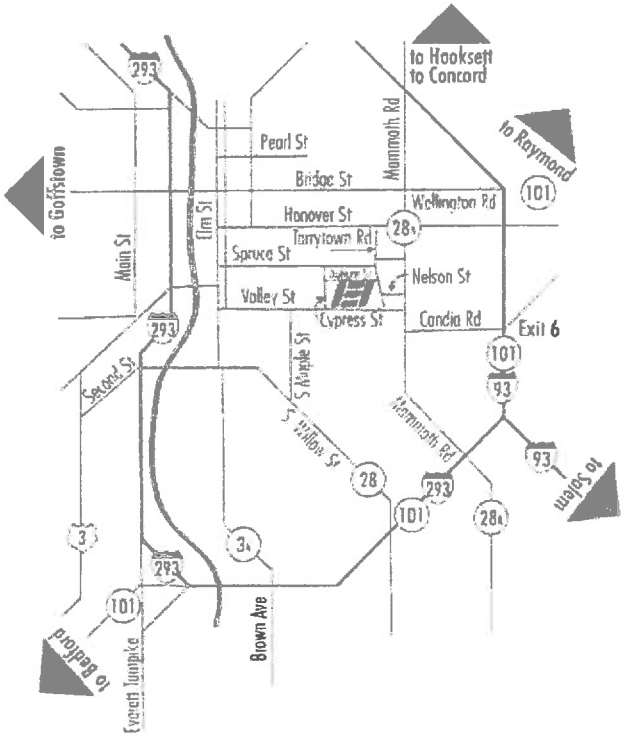
DESTINATION	FLOOR
Admissions	First
Cardiology Services	First
Center for Wound Care & Hyperbaric Medicine	First
Chapel	First
Diabetes & Nutrition Services	First
Dunkin' Donuts	First
E-Store	First
Emergency Department	First
Endoscopy Center	First
Gift Shop	First
Human Resources	First
Library	First
The Max K. Wilfcher Urology Center	First
Outpatient Lab	First
Pain Management Center	First
Patient Accounts	First
Pulmonary and Cardiac Rehabilitation	First
Radiology	First
Regional Cancer Center	First
Skywalk to Parking Garage	First
Social Work/Case Management	First
Volunteer Resources	First
Pediatric/Adolescent Unit	Third
Pathways Psychiatric Intensive Care Unit	Fourth
Use elevator next to the Max K. Wilfcher Urology Center	
Cardiac Intermediate Care Unit (CICU)	Fifth
Folkways	Fifth
Newborn Intensive Care Unit (NICU)	Fifth
Non-Invasive Cardiology	Fifth
The Spa Within	Fifth
Fitch Unit	Sixth
Geropsychiatric Unit	Sixth
Palliative Care	Sixth
[illegible]	Seventh
Fuller Unit	Eighth
Cafeteria	Ground
Conference Center	Ground
Medical Records	Ground
Purchasing	Ground
Administration	Second
Cardiovascular Health	Second
Center for Sleep Evaluation	Second
Elliot 1-Day Surgery	Second
Intensive Care Unit (ICU)	Second
Neurophysiology/EEG	Second
Oral Maxillofacial Surgery	Second
Pacemaker Clinic	Second
Post Anesthesia Care Unit (PACU)	Second
Respiratory Care	Second
Surgery	Second
Surgical Day Care (SDC)	Second
Toys 'R' Us Play Area and Boise Business Center	Second
Labor and Delivery	Third
Maternity Center	Third

PARKING

- A Emergency Parking
- B Visitor and Patient Parking
- C Cancer Center Parking
- D Patient Parking – Medical Offices
- E Physician Parking
- F Parking Garage (Free)
- G Special Permit Parking
- H Employee Parking



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APPENDIX K – SITE INVESTIGATION REPORT CHECK LIST

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Department of Environmental Services
Contaminated Site Management
Site Investigation Report Check List

The objective of this document is to improve the quality of the Site Investigation Report and limit Supplemental Site Investigations, submitted under New Hampshire Code of Administrative Rules Env-Or 600 *Contaminated Site Management*. Quality reports are fundamental to reducing DES review time and backlog, and will lead to faster remediation and site closures.

It is recommended that this check list be submitted with all Site Investigation Reports. All items must be checked. For items that are not applicable, "**N/A**" is to be checked and provide an explanation in the comments column. If you have questions as to the applicability of any items, please contact DES staff. Check "**Yes**" only if the report adequately documents the required information and include in the comments field the page number where the item can be found in the report. Failure to provide adequate information required by Env-Or 600, will result in department disapproval of the Site Investigation Report.

Site Number: **199707010**

Site Name: **Former Wiggins Airways Fuel Farm**

Site Address: **7 Green Drive**

Site City/Town: **Londonderry, NH**

Report Title: **Level II Site Investigation**

Report Date: **June 14, 2012**

Consultant Company: **The Smart Associates, Environmental Consultants, Inc.**

Licensed Professional: **Glenn R. Smart, P.G. NH # 00168**

SITE INVESTIGATION REPORT CRITERIA	YES	N/A	COMMENTS	DES USE ONLY Adequate	DES USE ONLY Inadequate
1. PROFESSIONAL REGISTRATION a. Professional Geologist or Engineer Seal (Env-Or 606.03(c))	X	☐		☐	☐
2. REPORT COVER SHEET AND DATA SUMMARY FORM a. Completed Cover Sheet. b. Completed Data Summary For Technical Reports	X X	☐ ☐		☐ ☐	☐ ☐

SITE INVESTIGATION REPORT CRITERIA	YES	N/A	COMMENTS	DES USE ONLY Adequate	Inadequate
3. SITE BACKGROUND AND HISTORY (Env-Or 606.04)					
a. Site ID#, ownership, operations and use. (Env-Or 606.04(a, b, c & d))	X	☐		☐	☐
b. Color copy of a USGS map, 7-1/2 minute, showing site location. (Env-Or 606.04(l))	X	☐		☐	☐
c. Description of current/historical, known/potential, contamination sources (Env-Or 606.04(g))	X	☐		☐	☐
i. UST, AST, pumps, piping and appurtenances.	X	☐		☐	☐
ii. Dry wells, floor drains, septic systems & UIC features (with discharge locations).	☐	X		☐	☐
iii. Site reconnaissance summary (e.g., areas of stained soil, or stressed or dead vegetation).	X	☐		☐	☐
iv. Storage areas for chemicals and waste products.	X	☐		☐	☐
v. Chemical usage and disposal history.	☐	X		☐	☐
d. Description of all known discharges (Env-Or 606.04(h)):	X	☐		☐	☐
i. Date, location and estimated quantity discharge.	☐	X		☐	☐
ii. Response actions completed and estimated quantity recovered.	☐	X		☐	☐
iii. List of response action reports submitted to the DES.	☐	X		☐	☐
e. List and brief summary of all governmental records reviewed (Env-Or 606.04(k)):	X	☐		☐	☐
f. Sanborn and aerial photo review summary (Env-Or 606.04(e and f)).	X	☐	Aerial photographs only	☐	☐
4. SITE PLAN (Env-Wm 606.04(m))					
a. A title, legend and true north arrow (Env-Or 606.04(m)(1)).	X	☐		☐	☐
b. Drawn to scale with a graphic scale bar (Env-Or 606.04(m)(2)).	X	☐		☐	☐
c. Source/creator of the plan (Env-Or 606.04(m)(3)).	X	☐		☐	☐
d. Location, elevation and datum of a permanent recoverable bench mark.	X	☐		☐	☐
e. Surface topography using spot elevations, contours or noted changes in slope (Env-Or 606.04(m)(5)).	X	☐		☐	☐
f. Complete site property boundaries (Env-Or 606.04(m)(6)).	X	☐		☐	☐
g. Site Features (Env-Or 606.04(m)(7, 8 and 10)).	☐	☐		☐	☐
i. Known or possible contamination sources past and present.	X	☐		☐	☐
ii. Tanks, dispensers, buildings, paved, wooded and landscaped areas.	X	☐		☐	☐
iii. Underground and aboveground utilities.	X	☐		☐	☐
h. Public and environmental receptors, Env-Or 606.04(m)(10), including:	☐	☐		☐	☐
i. Surface water bodies.	☐	X		☐	☐
ii. Water supply wells.	☐	X		☐	☐
iii. Drainage swales.	☐	X		☐	☐
iv. Buildings with basemen.	☐	X		☐	☐

SITE INVESTIGATION REPORT CRITERIA	YES	N/A	COMMENTS	DES USE ONLY Adequate	Inadequate
5. SITE & REGIONAL HYDROGEOLOGY (Env-Or 606.05 and .06)					
a. Description of stratigraphy, lithology, hydrology & contaminant flow	X	☐		☐	☐
i. Unit textural descriptions.	X	☐		☐	☐
ii. Unit thicknesses and elevations.	X	☐		☐	☐
iii. Depositional environment (i.e. fill, till, stratified drift, weathered bedrock, etc.).	X	☐		☐	☐
iv. Hydraulic conductivity, seepage velocity & slug testing.	X	☐		☐	☐
v. Heterogeneity/isotropy.	☐	X		☐	☐
vi. Vertical and horizontal gradients.	X	☐		☐	☐
vii. Preferential migration pathways (geologic and anthropogenic).	☐	X		☐	☐
viii. Groundwater resource/use.	☐	X		☐	☐
b. Geologic cross-sections (Env-Or 606.06(d).	X	☐		☐	☐
c. Potentiometric surface map w/ gw flow direction (Env-Or 606.06(f)).	X	☐		☐	☐
6. DATA PRESENTATION					
a. Groundwater and soil summary tables	☐	☐		☐	☐
i. Groundwater Elevation Table (Env-Or 606.06(e)).	X	☐		☐	☐
ii Historical/Current Groundwater Analyses Data Table (Env-Or 606.05(e and f)).	X	☐		☐	☐
iii. Surface Water, Residential Air & Water Data, if applicable (Env-Or 606.05(e and f)).	☐	X		☐	☐
iv. Soil sampling results table (Env-Or 606.05(e and f)).	X	☐		☐	☐
7. CONCEPTUAL MODEL – GROUNDWATER CONTAMINATION (Env-Or 606.07)					
a. Description of dissolved phase groundwater plume transport mechanisms, migration pathways and degradation pathways (Env-Or 606.07(a)).	☐	☐	Contamination limited to one well	☐	☐
b. Description of known or suspected sources of the contaminants detected in the groundwater (i.e., soil contamination, free product, waste storage areas, AST/UST systems, unreported discharges, etc.) (Env-Or 606.07(a)).	X	☐		☐	☐
c. Groundwater contaminant concentration contours on the site plan and geologic cross-section(s) depicting lateral and vertical extent of representative contaminants exceeding standards.(Env-Or 606.07(b)(1 and 3)).	☐	X	Contamination limited to one well	☐	☐
d. Discussion of contaminants that are considered outliers or have no identified source. Provide data to substantiate off-site source claims.	☐	X		☐	☐
e. Estimate of the mass of contaminated groundwater exceeding cleanup standards (Env-Or 606.07(c)).	☐	☐		☐	☐
f. Potential receptor map identifying and locating receptors within 1,000' and list of water supply wells (Env-Or 606.07(d and e).	X	☐		☐	☐

SITE INVESTIGATION REPORT CRITERIA	YES	N/A	COMMENTS	DES USE ONLY Adequate	Inadequate
8. CONCEPTUAL MODEL – SOIL CONTAMINATION					
a. Soil contaminant concentration contours on the site plan and geologic cross-section(s) depicting the lateral and vertical extent of representative contaminants exceeding cleanup standards (Env-Or 606.07(b)(2)).	☐	X	Contamination limited to one well	☐	☐
b. The estimated mass/volume of contaminated soil exceeding cleanup standards (not required if a source area is not present) Env-Or 606.07(c).	☐	X		☐	☐
9. CONCEPTUAL MODEL – INDOOR VAPOR INTRUSION					
a. Identify, describe and explain potential pathways for indoor vapor intrusion, identify any GW-2 exceedences, soil vapor monitoring or indoor air screening results (PID/FID meter readings), and provide recommendations for additional vapor intrusion study. (Env-Or 606.07(a).	☐	X		☐	☐
b. If pathway is complete and vapor intrusion is identified, provide indoor air monitoring results with comparison to standards and proposed abatement measures. (Env-Or 606.09(b) and 606.08(c).	☐	☐		☐	☐
10. REMEDIAL ALTERNATIVES AND RECOMMENDATIONS The Site Investigation Report must include either a, b, c or d and, if AGQS is exceeded, a GMZ depiction:					
a. Closure recommended: Describe how site conditions meet closure requirements.	☐	☐		☐	☐
b. Recommendations for additional investigations and/or initial response actions: This shall include the steps necessary to finalize the groundwater management zone boundary and delineate source areas. Show all proposed explorations and sampling locations on a site plan (Env-Or 606.08(c).	☐	☐		☐	☐
c. Provide a preliminary screening of remedial alternatives: Including a description of the recommended remedial action and steps necessary to implement the recommended remedial action (Env-Or 606.08(a).	X	☐		☐	☐
d. Interim response actions or presumptive remedy (Env-Or 606.08(c).					
e. Preliminary GMZ boundary depiction (Env-Or 606.07(f)).	X	☐		☐	☐
	☐	☐		☐	☐

SITE INVESTIGATION REPORT CRITERIA	YES	N/A	COMMENTS	DES USE ONLY Adequate	Inadequate
11. APPENDICES (Env-Or 606.09)					
a. Color photographs of key features (Env-Or 606.09(a)).	X	☐		☐	☐
b. Description of field procedures for installing wells and sampling including sample preservation (Env-Or 606.09(b)).	X	☐		☐	☐
c. Field screening data (Env-Or 606.09(c)).	X	☐		☐	☐
d. Boring logs with PID results and monitoring well construction details (Env-Or 606.09(d)).	X	☐		☐	☐
e. Analytical data including chain of custody and holding times (Env-Or 606.09(e)).	X	☐		☐	☐
f. Detailed calculations (Env-Or 606.09(f)).	☐	☐		☐	☐
g. Water Well Board Completion Report Prepared by Licensed Technical Driller (HB 459).	X	☐		☐	☐

DES USE ONLY
Overall Report: ☐ **Approved** ☐ **Disapproved**

Approval Decision Comments:

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TECHNICAL SPECIFICATIONS
CARGO SITE PREPARATION AND HANGARS 6 & 7 BUILDING DEMOLITION

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TECHNICAL SPECIFICATIONS
CARGO SITE PREPARATIONS AND HANGARS 6 & 7 BUILDING DEMOLITION
TABLE OF CONTENTS

Latest Revision: FAA Standard Specifications taken from AC 150/5370-10H dated 12/21/2018

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ITEM G-001
SPECIAL WORK REQUIREMENTS

GENERAL

001-1.1 General. The purpose of these requirements is to ensure that the contract work does not damage private property or create any hazard to aircraft operations, and to bring to the Contractor's attention special coordination that the Contractor should be aware of that may be unique to airfield construction or unique to the Owner's Facility. It is Contractor's responsibility to conduct all work in strict accordance with the requirements set forth herein and to fully cooperate with the Resident Project Representative (RPR) in every way necessary to fulfill the purposes of these requirements as set forth above.

001-1.2 Work Limitations. All work shall be performed during the hours of **7 AM to 5 PM Monday through Friday**. Work on weekends is permitted with prior authorization and shall be requested to the RPR 72 hours in advance. Work may not be allowed on specific days as determined by the RPR and/or the Owner. Such days will not count towards exhausted contract time.

The following specification sections and regulations further define how work must be executed.

- General Provisions Section 80-04 Limitation of Operations
- General Provisions Section 80-04.1 Operational Safety on Airport During Construction
- FAA Advisory Circular 150/5370-2 (latest revision) "Operational Safey on Airports during Construction"
- The Construction Safety and Phasing Plans
- Airport Security and Compliance Requirements

001-1.3 Prior Notification. In accordance with Section 100-04 *Project Progress Schedule* of the General Provisions, the Contractor shall provide an overall project schedule prior to the pre-construction meeting. This schedule shall be updated during the project as specified.

In addition, the Contractor shall coordinate with the RPR and Owner and submit a detailed written weekly schedule of work that provides the work task by specification number for each day of the following week. The weekly schedule shall be submitted each week for the duration of the project, a minimum of 3-days prior to the week covered by the schedule.

In accordance with Section 80-04 of the General Provisions, the Contractor shall notify the RPR at least 48 hours in advance of the time he intends to start work or begin work in a new work area. It should be noted by the Contractor that 48 hours is the minimum time required by the Owner to issue a proper Notice to Airmen (NOTAM) of the pending construction activities. The Contractor's weekly construction schedules will also provide advance notice. The RPR and/or Owner may disallow work in areas not included in the weekly schedule and for which the required 48-hours advance notice is not provided. Such instance shall not be a valid claim for delays. Prior to the beginning of work each day, the Contractor's Site Superintendent shall meet with the RPR to discuss the day's work schedule. The Contractor must notify the RPR at least 24-hours in advance of any items that will require acceptance testing. 72-hours' notice must be provided for testing on Mondays or testing the day immediately following a Holiday.

001-1.4 Operational Safety. Work performed under this contract will require safety and phasing in accordance with FAA regulations defined in Section 80-04.1 *Operational Safety on Airports During Construction* of the General Provisions. The Contractor shall take all precautions necessary to ensure the safety of operating aircraft, as well as his/her own equipment and personnel.

001-1.5 Coordination. The Contractor must coordinate all operations with the RPR and/or Owner. The

RPR or Owner will handle coordination with the Federal Aviation Administration, Air Traffic Control Tower, and Tenants.

001-1.6 Regulations. All work shall be performed in accordance with FAA Advisory Circular 150/5370-2 (latest revision), "*Operational Safety on Airports during Construction*".

001-1.7 Construction Safety and Phasing Plans (CSPP). In addition, all work shall be performed in accordance with the Construction Safety and Phasing Plans as shown in the Contract Documents. The plans have been prepared by the Owner and Engineer. It outlines the site-specific requirements for safely performing the work to be in accordance with AC 150/5370-2 (latest revision) *"Operational Safey on Airports during Construction"*. The Contractor shall review, in detail, the Construction Safety and Phasing Plans. However, a formal FAA Construction Safety and Phasing (CSPP) has not been prepared since the project is located Landside with only a relocation of the secured perimeter fence to maintain the site as a Landside activity.

001-1.8 Contractor's Safety Plan Compliance (SPCD)/Site Safety Plan. A formal FAA Safety Plan Compliance Document (SPCD) will not be required for the project. However, a generic Site Safety Plan will be required to be submitted by the Contractor and the Contractor will be required to comply with all applicable requirements outlined in FAA Advisory Circular 150/5370-2 (latest revision) *"Operational Safey on Airports during Construction"*.

The Site Safety Plan shall be will be submitted to include all requirements of this specification, shall be submitted to the Engineer for review prior to the Pre-Construction Meeting. The Site Safety Plan must be reviewed and approved by the Engineer and Owner prior to issuance of the notice-to-proceed.

The Contractor shall designate an individual as the Site Safety officer (SSO). The SSO may be the Contractor's Site Superintendent who is responsible for day to day operations on the site. The SSO shall be on site daily and work on a daily basis to implement and enforce the CSPP and SPCD. The SSO shall conduct daily inspections. Among other items, the daily inspections shall include inspection of the barricades, lights, site signage, closure markers and protection of all airfield areas. When necessary, the SSO will work with the RPR and Owner on safety related items.

001-1.9 Barricades. The Contractor shall place and maintain construction barricades to clearly define and close work areas to aircraft operations. The barricades are shown in the safety and phasing plans. Barricades shall be placed as shown or as directed by the RPR and/or Owner. Barricades shall meet the minimum requirement of FAA AC 150/5370-2 (latest revision). Refer to details in the contract documents. All temporary lights and barricades shall be weighted against jet blasts (100 mph). The barricades shall be supplied by the Contractor. The Contractor will maintain ownership of the barricades at the completion of the project. Reference Section 70-08 *Barricades, Warning Signs, and Hazard Markings* of the General Provisions for further requirements.

001-1.10 Runway and Taxiway Closure Markers. The Contractor shall transport, place, and maintain runway and taxiway closure markers to clearly define surfaces closed to aircraft operations. The Runway Closure and Taxiway Closure Markers shall be supplied by the Owner, as required. If applicable, the required markers are shown in the Contract Drawings. Markers shall be placed as shown or as directed by the RPR and/or Owner. Closure Markers shall meet the minimum requirement of FAA AC 150/5370-2 (latest revision). The method and procedure for securing the markers from dislodging must be approved by the Owner and RPR. Refer to marker details in the contract documents.

001-1.11 Height Restrictions. No equipment will be allowed to penetrate the Runway approach surfaces and transitions defined in 49 CFR Part 77 when the runway is active. Tall equipment, such as cranes or boom trucks, will be required to have a flag attached to the highest point. Additionally, during periods of

darkness or reduced visibility a red light at the highest point shall also be required.

001-1.12 Marking of Vehicles and Equipment. Each motorized vehicle operating on the airport shall be equipped with an amber flashing light when working within the secure perimeter fence. All equipment must have a 3-foot square flag consisting of international orange and white squares not less than one foot square displayed in full view above the vehicle. Equipment must also have an amber flashing light when operated during periods of limited visibility including darkness, fog, and rain. When not in use, all equipment shall be returned to the designated staging area and lowered to the maximum extent possible. All Contractor and subcontractor vehicles shall have the company identification plainly visible on both sides of the vehicle in order to identify the vehicle.

001-1.13 Setback Requirements. No construction operations shall be carried on within 129.5 feet from the centerline of any active taxiway or within 250 feet of the centerline of any active runway unless prior approval has been obtained and such actions are included in the phasing plans. The distances above represent the Taxiway Object Free Area and the Runway Object Free Area respectively.

001-1.14 Protection of Restricted Areas. The Contractor shall stake and permanently mark on the ground with a readily recognizable marking (football field marking, flagging, cones, or similar material) the restriction lines adjacent to the work area so that workmen can readily recognize the limitations. The restricted areas are defined in the phasing plans and contract drawings.

001-1.15 Trenches and Excavations. The Contractor will not be permitted to leave any trenches or other excavations open at night, on weekends or at other times when the Contractor is not on the site, except as approved by the RPR. Open trenches must be clearly defined, confined to the work area(s), and completely surrounded with construction barricades. In addition, no excavations exceeding three inches (3") in depth shall be left open within the object free areas while the runway, taxiways, or aprons, are in use. All excavations in paved areas must be backfilled and the pavement repaired and properly cured prior to the area being opened to traffic.

001-1.16 Grading of Temporary Conditions. The following applies when runways or taxiways must be re-opened. The Contractor shall ensure that the work area within the safety areas of the runways, taxiways and aprons are graded away from the pavements at a maximum slope of 5% and shall be left in such condition that it will drain readily and effectively and will not pose a hazard to aircraft. No piles of soil shall be left unspread, no drops or projections in excess of three inches, no sharp changes in grade will be permitted, and the surface shall be thoroughly compacted.

001-1.17 Radio Control and Communication. At a minimum, the Contractor shall have two-way communications between the superintendent, escorts, and gate guards to coordinate access to and from the work site. No FAA or airport frequency shall be used for this purpose.

When work areas are adjacent to, within, or require traversing active movement areas (such as taxiways and the runway) the Contractor shall have on site at all times at least two radios capable of monitoring the airport ground frequency (121.9). The radio shall be capable of reliable two-way communications from any location on the airport. The Contractor shall, before the start of construction, test his/her radio(s) with the appropriate agencies to demonstrate the capabilities and to demonstrate the performance of the operator and the equipment. Only MHT Operations will communicate directly with the ATCT. The Contractor shall operate these radios, at his/her expense

001-1.18 Flagpersons. The Contractor shall provide flagpersons, or uniformed officers, at locations where the haul routes enter public streets or highways from airport property in accordance with the applicable local requirements. Additionally, the Contractor shall provide flag persons whenever the service road is

restricted to one lane of traffic.

001-1.19 Owner Provided Escorts. The Owner will provide escorts throughout the duration of construction as required. Contractor to coordinate schedule of activities at least one weak in advance so that the Owner can schedule escorts.

001-1.20 Contractor Provided Escorts. Not required for this project.

001-1.21 Haul Routes. When public highways must be used for haul routes, it will become the Contractors responsibility to obtain the proper permits needed for this function and to obey all rules and regulations pertinent to the public highways.

Haul routes on the airport are shown on the contract drawings and the safety plans. The Contractors vehicles and equipment shall operate within the limits of the indicated haul route.

The Contractor's personnel and vehicles will not have access to the entire airport, but shall be limited to the designated work area(s), staging area(s), and haul route(s).

All paved haul roads or access roads shall be kept clean at all times to prevent the accumulation of dirt and mud and the generation of dust by sweeping, washing or other methods as directed by the Airport. Unpaved haul roads, if any, shall be maintained by blading and filling when directed by the Airport and dust shall be controlled at all times.

All paved haul roads disturbed shall be restored to their original condition or better before the contract will be considered complete. All restoration and dust control on haul roads shall be at the Contractors expense.

All non-paved areas on the airport which are disturbed by the Contractors operations shall be scarified or otherwise loosened to a depth not less than five inches (5"). Clods shall be broken and the top three inches (3") of soil shall be worked into a satisfactory seedbed by disking, or by use of cultipackers, rollers, drags, harrows, or other appropriate means. This area shall be seeded, fertilized and mulched.

001-1.22 Security and Contractor Provided Gate Guards. The Contractor shall comply with all airport security requirements as directed by the Owner. The Contractor's personnel, equipment, materials and deliveries shall be subject to security checks prior to or while on airport property. Any delays incurred due to security inspections shall not be a valid claim for delays.

The Contractor is responsible for maintaining controlled access to the airfield via any and all project access gates. The Contractor must provide an Owner approved security gate guard during all work hours when working within the secured perimeter fence. Gate guards are required to have an Airport issued SIDA badge. The Contractor shall only allow access to personnel directly working on the project. The access gate will be opened and closed by a MHT Airport Operations Specialist.

Personal Owned Vehicles (POV) are not permitted on the Airfield. The Contractor shall provide safe and adequate transportation to and from the area where POV s are parked and the work area(s).

001-1.23 Disposal of Surplus and Unsuitable Materials. All surplus and unsuitable materials not identified to be retained by the Owner, whether suitable or unsuitable, shall be legally disposed of by the Contractor off airport property. No separate measurement or payment will be made for the handling, hauling or disposal, but rather shall be incidental to the item that generated that material.

001-1.24 Storm Water Management. The Contractor is responsible for managing all storm water for the duration of the project including all diversion and dewatering of the site. The Contractor is also responsible for repairing all damage caused by storm water. All costs associated with the storm water management shall be incidental to the overall project. The Contractor shall follow all U. S. Environmental Protection Agency

and N.H. Department of Environmental Service regulations.

001-1.25 U. S. EPA National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Stormwater Discharges during Construction. The Contractor shall refer to Section C-102 *Temporary Air and Water Pollution, Soil Erosion, And Siltation Control* for additional information concerning the notification requirements to be covered under the US Environmental Protection Agency (EPA) NPDES Construction General Permit for Stormwater Discharges during Construction and the preparation of a Storm Water Pollution Prevention Plan (SWPPP).

001-1.26 Storage of Materials and Equipment. The area for storing materials and parking/servicing equipment is shown in the contract drawings. The Contractor will be required to return all equipment to the appropriate Contractor's staging area at the end of work, each day, unless otherwise approved.

Equipment shall be parked in the designated area when not in use.

The Contractor shall provide all necessary temporary fencing and gates to protect materials and equipment from pilferage. The Owner is not responsible for any vandalized equipment or materials stored on the property.

Any area occupied or utilized by the Contractor shall be maintained in a clean and orderly condition satisfactory to the Owner. At the completion of the project, all Contractors' facilities shall be removed promptly and in a workman like manner and the area left clean and free of all debris or surplus material. The Contractor is responsible for restoring to original condition any areas used for the Contractor's operation at no additional cost to the Owner.

001-1.27 Maintenance of the Construction Site. The Contractor shall keep the construction site free of paper, boxes, and other debris that could be blown onto the runways, taxiways, and/or aprons.

All airport pavements shall be kept clear and clean at all times. All rocks, mud, and other debris carried on to the airport pavement by the Contractor's equipment must be report to the RPR or Airport Operations. Airport Operations will then close the affected area to air traffic and the Contractor will immediately sweep the area to the satisfaction of Airport Operations.

The Contractor shall have access to the equipment for the application of water to control dust within the construction site and on haul roads. The equipment shall be equipped with a shut-off control valve which can be operated from the cab by the operator. The Contractor shall apply water for dust control as necessary to prevent dust from the construction site and/or haul roads from being a hazard to aircraft and from being a nuisance to the public as direct by the RPR. All water shall be supplied by the Contractor.

The Contractor shall maintain at the job site at all times while the construction under this contract is in progress a self-propelled, self-contained vacuum sweeper with rotating brooms and with a 4-cubic yard capacity approved by the RPR. The sweeper shall operate as necessary to keep active aircraft pavements, access roads and the work areas clean. At the close of each day's work, all active aircraft pavements and airport paved roads used or dirtied by the Contractor shall again be swept.

The Contractor shall also be responsible for supplying any other equipment as may be necessary to clean all areas that are contaminated as a result of his/her operations to the complete satisfaction of the RPR and the Owner.

Trucks loaded in the construction area shall have loads trimmed as necessary to ensure that no particles, stones, or debris will fall off and that no legal load limits are exceeded.

The Contractor shall be particularly careful not to track foreign material onto pavements outside of the work area(s) (e.g., tack-coat, rocks, etc). The Contractor shall be responsible for removing foreign materials from vehicle tires prior to the vehicle leaving its work area.

001-1.28 Maintenance of the Existing Airfield Lighting, if necessary. All existing airfield lighting systems required to safely operate aircraft shall be operational each night and during inclement weather throughout the construction period.

It shall be the responsibility of the Contractor to check the operation of the existing lights each day, to notify the RPR and the Owner of any problems and make any repairs necessary due to his/her operation.

The Contractor shall furnish and install all materials necessary to provide temporary lighting and make any temporary connections to keep the existing airfield lighting operational until the new lighting fixtures, cables, etc. can be installed.

001-1.29 Smoking. Absolutely no smoking will be permitted within the Airport Operations Area (AOA). Any Contractor violating this rule shall be asked to leave the premises.

001-1.30 Employee Identification Badges. Full-time competent and responsible employees of the Contractor, such as superintendents and foremen, shall obtain an Airport SIDA badge. Additionally, employees who will be onsite for more than two continuous weeks shall obtain an Airport SIDA badge. The SIDA badge requires finger printing screening and a criminal history check. The badge application process may take up to fourteen (14) days, the Contractor shall plan accordingly.

The Contractor shall have a minimum of 1/2 (50%) of on-site workers, including sub-contractors, submit to the badging process, unless otherwise approved by MHT Operations Management. Badged individuals must display their Airport issued badges on their outermost garment at all times while on the airfield.

Refer to the Construction Safety and Phasing Plans in the Contract Documents and Supplemental Provision documents for more information and costs associated with obtaining badges. The costs associated with security access badges are the responsibility of the Contractor and shall not be paid for by the Owner.

At all times while on the airfield, non-badged workers must be:
1. Within 100 feet of a badged worker
2. Within visual contact of a badged worker
3. Able to respond to the requests of a badged worker
4. Able to command the attention of a badged worker.

Any non-badged workers will not be allowed on the airfield without valid picture identification acceptable to the TSA (current and valid driver's license, passport, etc.), and shall remain with a badged worker or Airport escort at all times.

The Contractor shall provide the Owner with a list of employees on the job site and their badge number. The list shall include subcontractors and employees. The list shall be updated and submitted weekly.

Upon completion of the contract the Contractor shall turn all the badges in to the Owner for disposal.

001-1.31 Record Documents. The Contractor shall provide all Final Project Documentation as specified throughout the projects specifications and summarized in FAA General Provisions Section 90 *Measurement and Payment* paragraph 90-11 *Contractor Final Project Documentation*. The Record Drawings shall also include digital submission if outlined the project specification sections of the Contract Documents.

MATERIALS

001-2.1 Materials. Prior to ordering, the Contractor shall submit shop drawings to the RPR for all materials to be used on the project. The submittals and shop drawings shall include a manufacturer's certification that each product meets the specified standard(s), when applicable. Materials not reviewed and approved prior to any installation for the project are subject to having the Contractor remove the unacceptable

materials and replaced with approved materials at no additional expense to the Owner.

METHOD OF MEASUREMENT

001-3.1 Mobilization. Mobilization shall be measured in accordance with Item C-105 *Mobilization* lump sum item.

001-3.2 Safety and Phasing. Safety and Phasing items are outlined throughout the Contract Documents, especially on the Plans and in Section M-200 *Maintenance and Protection of Traffic*. The items may include: Contractor provided barricades, cones, construction signs, maintenance of the construction site, sweeping, application of water for dust control and clean-up of stockpiles on pavements, flaggers, radios (as necessary), training, badging, badging fees, preparation of required schedules, lockout/tagout of circuits, and all requirements of the project safety and phasing plans. It shall also include all work associated with the Owner provided barricades. Assembly, transport, placement, repositioning, maintaining, disassembly and removal of all safety and phasing items shall not be measured separately but rather shall be considered incidental to the item. All Safety and Phasing materials and work will not be measured separately and shall be incidental to the lump sum item for the requirements outlined in Section M-200 *Maintenance and Protection of Traffic*.

001-3.3 Contractor's Safety Plan Compliance Document (SPCD)/Site Safety Plan. Although a FAA SPCD is not required, the Contactor's preparation and submission of the generic Site Safey Plan will not be measured separately and shall be incidental to the lump sum item for the requirements outlined in Section M-200 *Maintenance and Protection of Traffic*.

001-3.4 Safety Barricades, Warning Signs, and Hazard Markings. Safety barricades, warning signs, and hazard markings will not be separately measured and shall be incidental to the lump sum item as outlined in Item M-200 *Maintenance and Protection of Traffic*.

001-3.5 Gate Guard - Allowance. Measurement for this allowance will be as outlined in Item M-100 *Gate Guard Allowance Item.*

BASIS OF PAYMENT

001-4.1 Mobilization. Mobilization will be paid for in accordance with the Item C-105 Moblization lump sum item.

001-4.2 Safety and Phasing. Payment for all Safety and Phasing materials and work will not be paid for separately and will be incidental to Lump Sum item item as outlined in Item M-200 *Maintenance and Protection of Traffic.* Payment thereof shall constitute full compensation for all labor, preparation, materials, equipment, expenses and incidentals. Payment shall be made after review and upon acceptance of the document by the Owner and in accordance with the requirements in Item M-200 *Maintenance and Protection of Traffic* Basis of Payment.

001-4.3 Safety Plan Compliance Document (SPCD)/Site Safety Plan. Payment for the preparing, furnishing materials and implementing the the generic Site Safety Plan will not be paid for separately and will be incidental to Lump Sum item item as outlined in Item M-200 *Maintenance and Protection of Traffic.* Payment thereof shall constitute full compensation for all labor, preparation, materials, equipment, expenses and incidentals. Payment shall be made after review and upon acceptance of the document by the Owner and in accordance with the requirements in Item M-200 *Maintenance and Protection of Traffic* Basis of Payment.

001-4.4 Safety Barricades, Warning Signs, and Hazard Marking. Safety barricades, warning signs, and hazard marking will not be paid for separately and will be incidental to the Lump Sum item as outlined in Item M-200 *Maintenance and Protection of Traffic.* Payment thereof shall constitute full compensation for all labor, preparation, materials, equipment, expenses and incidentals. Payment shall be made after review and upon acceptance of the materials by the Owner and in accordance with the requirements in Item M-200 *Maintenance and Protection of Traffic* Basis of Payment.

001-4.5 Gate Guard - Allowance. Payment for this allowance will be paid as outlined in Item M-100 *Allowance Items.*

Payment shall be made under:

Refer to the individual item descriptions from this Section for measurement and payment as referenced above. These referenced items from this section are to be measured and paid under other referenced item sections of the Contract. Any other items, not identified under the Method of Measurement and Basis of Payment as outlined above, shall be considered incidental to the overall project and will not be measured or paid for separately.

END OF ITEM G-001

ITEM B-100
HAZARDOUS MATERIALS ABATEMENT

DESCRIPTION

100-1.1 The scope of Hazardous Materials abatement work includes the furnishing of all labor, materials, facilities, equipment, services, employee training, testing, permits, notifications, and agreements necessary to perform the work required to abate, remove, handle, transport and dispose of asbestos containing materials (ACMs) existing in, on, and around the building components and systems specified to be demolished, renovated, or otherwise affected as part of the overall demolition project.

The Contractor shall be responsible for the abatement of ACMs noted in the report entitled "*Hazardous Materials Survey – 5 & 7A Green Drive*" prepared by The Lawson Group dated April 26, 2021. A copy of the report is included within the Supplemental Provisions for reference to complete the abatement for the project and to accommodate the work of other trades / contracts prior to the building demolition. The Contractor shall coordinate all activities, scheduling, worker occupancies, air monitoring, etc. with the Owner's Representatives and hazardous materials abatement subcontractor. No other contractors shall perform work within the control area(s) during abatement activities.

For clarification, Hangar Building #7 is located at 5 Green Drive, while Hangar Building #6 is located at 7 Green Drive since regulatory agencies using the report recognize locations by street address. While the referenced survey report uses the street address location, the site plans and other documentation in the Contract Documents use the record information available using the building numbering designation.

Based on the referenced survey report above, the hazardous materials encountered at the site were ACMs. The survey did not encounter any lead-based paints or polychlorinated biphenyls (PCBs) at the site. However, some potentially hazardous materials were discovered, such as fluorescent lighting, mercury thermostat switches and an abandoned heating fuel tank. These potentially hazardous materials will need to be removed, recycled or properly disposed prior to any demolition work to be performed as part of the project by the Contractor.

The Contractor shall be responsible for all notifications, documentation's, reports, manifests, receipts, etc. required prior to, during, and following the work. It is the intent of this project to remove all asbestos-containing materials (ACMs) within the areas noted in the work area in accordance with all applicable regulations. The Contractor shall confine work within the limits as indicated and perform abatement work without contamination of adjacent areas. The Contractor shall verify all work and conditions and adhere to the project schedule. Material quantities shown in the referenced project are estimated and it is the Contractor's responsibility to verify quantities and working conditions for bidding purposes.

The Contractor shall provide access, support, and protection to all authorized visitors and inspectors. The Contractor shall restrict access to regulated work areas to those personnel with appropriate training and personal protective equipment.

The Contractor shall file all required notifications and shall obtain and pay for all permits and fees associated with work under this Section.

100-1.2 SUBMITTALS AND NOTICES

100-1.2.1 SUBMITTALS AND NOTICES PRIOR TO ABATEMENT

Not less than five (5) working days prior to the scheduled starting date the Contractor shall submit two (2) copies of the following documents to the Owner or Owner's Designated Representative for approval. No work will be allowed to start until these documents have been reviewed and approved.

A. Certificates of Insurance: Provide proof of insurance to cover abatement operations, see insurance requirements in the specification.

B. Asbestos Abatement Plan Work Plan – Submit a written site-specific work plan by a qualified person outlining the safety precautions, work procedures and construction sequencing to be used for abatement of hazardous and non-hazardous materials as referenced in the project specifications. Include method of area preparation, removal techniques, personal protective equipment, employee and equipment decontamination, engineering controls and locations, site restrictions, temporary utility services, personnel hygiene, staging and break room facilities. Reference sections of the specification in work plan. The work plans shall also include:
   - Hazard Communication Program which complies with 29 CFR 1910.1200.
   - Emergency Procedures Plan that describes the work site layout, location of emergency exits, and emergency procedures. This Plan shall be prominently posted in the clean change area. All persons entering the work area shall read and sign the procedures to acknowledge receipt and understanding of the plan.
   - Proposed independent licensed Asbestos Project Monitory. Include name, address, telephone number and certifications.
   - Proposed waste disposal facility and waste transporter. Include name, address, telephone number and operating permits.

C. Health and Safety Plan (HASP) that meets the requirements of 29 CFR 1926.35 and applicable OSHA regulations. The HASP shall identify the Contractor's Site Safety Officer responsible for site health and safety and the Contractor's Competent Person during abatement operations.
   - Respiratory Protection Program which complies with ANSI 288.2-1980, OSHA 29 CFR 1910 and 1926.

D. A copy of the written notification prepared and sent by the Contractor and received at least ten (10) working days prior to the beginning of any work on ACMs by the State of New Hampshire, Department of Environmental Services (NHDES), Air Resources Division/Compliance Bureau, Asbestos Management and Control Program.

E. Satisfactory proof that all written asbestos removal and demolition (if applicable) notifications have been provided to the EPA and New Hampshire Department of Environmental Services in accordance with Title 40 CFR Part 61 Subparts A & M, National Emission Standards for Hazardous Air Pollutants, U.S. EPA.

F. Proof that all required Federal, State and/or local permits, the proposed ACM/Hazardous Materials disposal site locations, and arrangements for transportation and disposal of materials and supplies have been obtained. Provide names and qualifications of each contractor and facility that will be transporting and disposing of the Asbestos, Lead, and other Hazardous Wastes associated with this project.

G. Documentation indicating that all employees have had the appropriate abatement training and are New Hampshire certified asbestos workers / supervisors. Workers shall be familiar with the hazards of asbestos exposure, use and fitting of respirators, protective dress, use of showers, entry and exit from work areas, and all aspects of work procedures and protective measures. Workers shall also be trained in accordance with all OSHA regulations pertaining to additional Hazardous

Materials as outlined in the specifications, such as Lead etc. Proof of training will be required for those handling each type of identified materials.
  - Documentation indicating that all employees to be working on the project have received medical examinations and have successfully passed a fit test for the types respirators to be worn.
  - Names and qualifications of Laboratory(s) to be utilized for the analysis of OSHA required Personnel samples.

H. Documentation as outlined in paragraph 100-3.7 of this specification.

100-1.2.2 SUBMITTALS AND NOTICES DURING ABATEMENT

A. An updated project schedule as necessary, or when requested by the Owner or Owner's Representative.

B. The results of personnel exposure monitoring.

100-1.2.3 SUBMITTALS AND NOTICES AFTER ABATEMENT

A. Copies of disposal receipts, manifests, and bills of lading signed by the operator of the disposal facility demonstrating that the ACM removed from the project has been disposed of properly.

B. Copies of on-site job logs, notifications, permits, accident reports, personnel exposure air monitoring results, and notices of non-compliance or other violations issued by governmental authorities.

C. Upon completion of the abatement, provide a certification letter the facility is free of hazardous materials as specified in paragraph 100-3.15 of this specification.

100-1.3 CODES, REGULATIONS AND STANDARDS

100-1.3.1 All work under this contract shall be performed in strict accordance with all applicable Federal, State and Local regulations, standards, and codes governing asbestos and other hazardous materials handling, removal, and abatement. All applicable codes, regulations, and standards are adopted by reference into this specification.

100-1.3.2 The most recent edition of any relevant regulation, standard, document, code or policy statement shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirement(s) shall be utilized.

100-1.3.3 Copies of all standards, regulations, codes and other applicable documents, including this specification shall be provided by the Contractor to be available at the work site.

100-1.4 QUALITY ASSURANCE

Compliance with Regulatory Agencies: Contractor shall adhere to all requirements of the following regulations, codes, and standards as the minimum:

A. U.S. EPA National Emission Standard for Hazardous Air Pollutants (NESHAPS): 40 CFR 61, Subpart M.

B. U.S. EPA Asbestos Hazardous Emergency Response Act (AHERA): 40 CFR 763, Subpart E.

C. U.S. Department of Labor, OSHA General Industry Standards; 29 CFR 1910.1001

D. U.S. Department of Labor, OSHA Asbestos Regulations for Respiratory Protection; 29 CFR 1910.134

E. U.S. Department of Labor, OSHA Asbestos Regulations for Hazard Communication; 29 CFR 1910.1200

F. U.S. Department of Labor, OSHA Specifications for Accident Prevention (Signs & Tags); 29 CFR 1910.245

G. U.S. Department of Labor, OSHA Asbestos Regulations for the Construction Industry; 29 CFR 1926

H. American National Standards Institute, ANSI 2288.2-9 Practices for Respiratory Protections

I. American National Standards Institute, ANSI 29.2 1979 Fundamentals Governing the Design and Operation of Local Exhaust Systems

J. New Hampshire Revised Statute Annotated RSA 141-E Asbestos Management and Control

K. New Hampshire Department of Environmental Services, regulations pertaining to air quality and solid waste management, particularly Env-A 1800 Asbestos Management and Control and Env-SW 2100 Management and Control of Asbestos Disposal Sites Not Operating after July 10, 1981

L. Training / Certification: Proof of qualification, training, and current certification shall be provided to the Owner's Representative:
   1. Asbestos Abatement Project Supervisor: Shall be certified per the New Hampshire Department of Environmental Services Env-A 1810.14 and NH RSA 141-E:4, I for asbestos work and as the competent person as defined by OSHA in 29 CFR 1926, as part of this project and shall be present at job site during all work.
   2. Other Personnel: All personnel engaged in asbestos removal activities shall, as a minimum, be trained as an "Asbestos Worker" as per the New Hampshire Department of Environmental Services Env-A 1810.15 and NH RSA 141-E:4, I for asbestos work and have been properly notified and trained in compliance with their respective job assignments as part of this project.

M. All local ordinances, regulations or rules pertaining to asbestos, including its storage, transportation and disposal.

The Contractor shall retain an independent licensed Asbestos Project Monitor to perform air monitoring and notify the Contractor and Owner when airborne fiber levels measured outside the work area enclosures or at the boundary of regulated areas exceed 0.010 f/cc or established background levels.

The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to all aspects of the abatement project. The Contractor is responsible for providing and maintaining training, accreditation, medical exams, medical records, and personal protective equipment as required by applicable Federal, State and Local regulations. The Contractor shall hold the Owner and Engineer harmless for any failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of the Contractor, Contractor's employees, or subcontractors of the Contractor.

100-1.5 SITE SECURITY AND SPECIAL CONSIDERATIONS. The work site is located within an active and secure airport facility. As such, all hazardous materials abatement and related work must be

performed at a time and in a manner to prevent disruption to airport operations. The Owner shall retain the right to remove any employee(s) of the Contractor or its subcontractors as necessary to ensure site security.

100-1.6 AUTHORITY TO STOP WORK. The Owner has the authority to stop the work at any time it determines that conditions are not within the specifications or applicable regulations. The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the Owner and Engineer. Standby time required to resolve violations shall be at the Contractor's expense.

As noted under paragraph 100-3.3 Air Testing and Quality Assurance Monitoring, an independent licensed Asbestos Project Monitor with the Third-Party Consulting Monitoring Firm shall be retained by the Contractor to perform air monitoring and notify the Contractor and Owner when airborne fiber levels measured outside the abatement area enclosures or at the boundary of regulated areas exceed 0.010 f/cc or established background levels. If an exceedance occurs, the Contractor shall stop work, determine the cause of the elevated fiber levels, and implement corrective actions.

Stop work orders may be issued for, but not limited to the following:

1. Breaks/breeches in barriers.
2. Loss of negative air (0.02 inches of water column - minimum negative pressure to be maintained).
3. ACM Fiber concentrations outside the work area which exceed 0.010 f/cc.
4. If the Contractor disregards laws or regulations of any regulatory or governing body having jurisdiction or non-compliance with these project specifications.
5. If the Contractor’s work presents a risk to the building, building occupants, airport operations, the general public or the environment as determined by the Owner or Owner’s Representative.

MATERIALS

100-2.1 The Contractor shall supply all materials and equipment required to perform the hazardous materials (asbestos containing materials) abatement in accordance with the Contractor's approved site-specific Asbestos Abatement Plan and these specifications.

100-2.2 All temporary facilities, equipment, and materials must adhere to and meet EPA, OSHA, and NIOSH regulations, as well as any other Federal, state, and local regulations.

CONSTRUCTION METHODS

100-3.1 GENERAL REQUIREMENTS. STRICT ADHERENCE TO THE REQUIREMENTS PRESENTED IN THIS DOCUMENT ARE OBLIGATORY.

Contractors shall carefully examine the content accordingly. The Owner’s Representative and independent Third-Party Consulting Monitoring Firm will strictly monitor requirements concerning worker health and safety throughout the project. Many of the health and safety related specifications indicated in this document exceed those outlined by federal and state regulatory agencies whose regulations are to be considered as the minimum standard.

This work shall be conducted by persons who are knowledgeable, qualified, and experienced in the removal, treatment, handling, and disposal of asbestos-containing materials and the subsequent cleaning of the environment. The Contractor shall comply with all applicable Federal, state, and local regulations that mandate work practices and shall perform the work within the specified time frame.

The Contractor shall supply all labor, materials, staging, rigging, shoring, fall protection, confined space protection, equipment, services and incidentals which are necessary or required to perform and complete the work in accordance with all applicable governmental regulatory requirements, the site-specific Asbestos Abatement Plan, and these specifications. The work includes, but is not limited to, abatement of the ACM listed in the Hazardous Materials Report, or identified by subsequent testing performed by the Contractor.

100-3.2 SPECIAL WORK SITE REQUIREMENTS.

The Contractor shall be responsible for the following items in order to accomplish the work:

A. The Contractor shall provide temporary utilities and facilities as required herein or as necessary to carry out the work. Except as otherwise noted, all costs associated with establishing temporary utilities and facilities shall be the responsibility of the Contractor and shall be included within the Contractor's bid price. Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work. Relocate, modify and extend services, utilities and facilities as required to accommodate all the work of the project.

B. Contractor shall be responsible for providing all necessary electricity.

C. Existing available water sources may be used by the Contractor from locations approved by the Owner, as necessary to perform the work.

D. Wastewater, if generated by the Contractor, shall be collected, filtered and discharged to an on-site wastewater disposal location approved by the Owner. Floor drains shall not be used for wastewater disposal unless approved by the Owner.

E. Contractor shall be responsible for making all necessary connections and disconnections for all phases of the project.

F. Movement of all debris, moveable furniture, stored items, or other materials, as necessary, to gain safe and adequate access to all asbestos and other hazardous materials to be removed as part of this project.

G. Asbestos-containing flooring materials may be present under existing fixed furniture, fixed cabinets, casework, equipment, or other. If these fixed items are to remain in place during demolition, contractor shall trim flooring materials even with the base perimeter of said fixed items. Flooring materials under the fixed items can remain in place during demolition.

H. The abatement subcontractor shall be responsible for removal of all un-attached furniture, cabinets, casework, equipment, or other to gain access to and remove all asbestos containing floor tile or other flooring material under said items.

I. All asbestos-containing flooring mastic can remain in place during demolition.

J. The Contractor shall be responsible for providing necessary equipment and making all necessary connections and disconnections to water and electrical utility sources during all phases of the project without damaging utilities.

K. The Contractor is responsible for performing all OSHA required air monitoring of employee

personnel. Monitoring shall include thirty (30) minute excursion air sampling and eight (8) hour time weighted average (TWA) in the employees breathing zone. All personal monitoring and analyses shall be conducted according to OSHA requirements.

100-3.3 AIR TESTING AND QUALITY ASSURANCE MONITORING.

The Contractor's Supervisor shall perform the following functions:

A. Monitor the set-up of the work area enclosure at least once per shift and ensure its integrity.

B. Control entry and exit into the regulated work area and or enclosure.

C. Ensure that workers / employees are adequately trained in the use of engineering controls, proper work practices, proper personal protective equipment, and in decontamination procedures.

D. Check for rips and tears in work suits, and insure that they are mended immediately or replaced. If possible, eliminate or correct cause of rip or tear.

E. Conduct required air sampling as per OSHA 1926.1101 and as described herein. Monitoring will include personnel samples from the breathing zone of a worker(s) to accurately determine the employees' 8-hour TWA (Time Weighted Average in relation to the PEL (Permissible Exposure Limit) for asbestos and in relation to the Maximum Use Concentration of asbestos for the type of respiratory protection used. The Supervisor shall also monitor the employees' 30-minute Excursion Limit concentration. The Contractor may choose to hire an independent third-party consultant to perform the required OSHA sampling.

F. Employee personnel samples will be taken using pumps whose flow rates can be determined to an accuracy of +5% at a minimum of 2 liters per minute.

G. Sampling and analysis methods will be as per NIOSH PCM 7400 Method.

H. Air sample results will be available to the Owner within 72 hours.

I. All costs for required OSHA air monitoring will be borne by the Contractor.

Contractor's Independent Third-Party Consulting Monitoring Firm shall include the following:

A. For all asbestos abatement work, the Contractor shall contract with an Owner approved Consulting Monitoring Firm having a licensed Asbestos Project Monitor and affiliated with a fully accredited testing laboratory that specializes in performing air sampling, monitoring, and inspections. The Consulting Monitoring Firm shall perform environmental air sampling during work operations and ensure the Contractor does not contaminate adjacent areas while performing the work. All final clearance air samples shall be analyzed by Transmission Electron Microscopy (TEM).

B. The Consulting Monitoring Firm will be responsible for certifying the project was completed in accordance with all US OSHA, US EPA and NHDES standards and regulations.

C. The Contractor shall fully cooperate with the Consulting Monitoring Firm and all others responsible for testing and inspecting the work.

D. Representatives of the Consulting Monitoring Firm shall have access to the work areas at all

times. The Contractor shall provide facilities for such access in order for the Consulting Monitoring Firm to properly perform its function.

100-3.4 WORKER PROTECTION. The Contractor shall ensure that respiratory protection is selected and provided to workers in accordance with applicable regulations. Respiratory protection shall meet or exceed requirements in current OSHA and including 29 CFR 1926.1101 and 453 CMR 6.00, New Hampshire DES regulations, and other Federal, State, and Local regulations. All personnel performing work covered under this Section require the following:

A. Personal Protective Equipment (PPE): All workers, supervisory personnel and miscellaneous persons coming in contact with asbestos contaminated material and/or entering the contaminated work area shall wear Personal Protective Equipment. The Contractor shall provide all required equipment.
   1. Respirators: The Contractor shall be responsible for the selection of respirators for his personnel per OSHA Regulations and shall be responsible for respirator selection for AUTHORIZED ENTRIES. All workers and supervisory personnel shall be required to wear personally issued and identified respiratory equipment. All personnel shall be instructed and made knowledgeable in the operation of any and all respiratory equipment employed.
   2. Respirator Accessories: Contractor shall provide a sufficient quantity of filters approved for asbestos respirators so that workers can change filters during the workday. Filters shall not be used any longer than one day. Respirators shall be stored in the change room at the job site and shall be totally protected from exposure to asbestos fibers prior to their use.
   3. Special Clothing: The Contractor shall provide all workers with disposable coveralls, fullbody equal to SAFEGUARD by Kimberly-Clark, with head cover. Workers will be required to wear all of the above-mentioned protective clothing where applicable while in the work area or other contaminated areas.

B. Medical Examination: In compliance with OSHA requirements, the Contractor shall provide a prehiring and annual medical examination for each worker assigned to a work task under this project.
   1. Examinations shall include, minimally, a posterior and anterior chest x-ray, pulmonary function tests (FVC and FEV), general health history and required OSHA questionnaire.
   2. Records of these examinations shall be maintained by the Contractor for each worker along with a statement of training, education and understanding. Furnish a copy of these records for each employee to the Environment Consultant.

100-3.5 DECONTAMINATION. All personnel, materials and equipment leaving the asbestos contaminated work area must be decontaminated and must pass through a Decontamination Facility (Enclosure System) before entering a "clean" or uncontaminated area.

A. Decontamination Enclosure Systems: A series of connected rooms with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment whereby workers and/or materials progress through each area without re-entering any previous area. These systems must be constructed and/or placed by the Contractor prior to any abatement work.

B. Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical edge of the

doorway. Two curtained doorways spaced a minimum of 3 feet apart from each other are considered an airlock.

C. Clean Room: Part of the workers decontamination system, an uncontaminated area with curtained doorways to Shower Room and outside, containing storage facilities for worker street clothing and uncontaminated protective clothing, towels and other uncontaminated items and protective equipment. Except for emergency exits, this shall be the only entry/exit for the work.

D. Shower Room: A room with air-locks to the Equipment Room and the Clean Room, containing at least one shower for each eight (8) workers and/or approved visitors, a hose for cleaning equipment, waste containers or other items removed from the work area. The Contractor shall maintain potable hot and cold running water, suitably arranged for complete showering during decontamination, soap and towels and shall be responsible for hygienic conditions in Shower Room.

E. Equipment Room: A room with air locks to the work area and the Shower Room, large enough for workers to remove and dispose of contaminated protective clothing and for storage of any contaminated Contractor equipment and/or clothing.

F. Equipment Decontamination Enclosure System: A decontamination enclosure system for materials and equipment, typically consisting of a designated section of the work area, a washroom, a contaminated holding area, and an uncontaminated holding area.

G. Contaminated Holding Area: A chamber between the contaminated work area and the Washroom, large enough to allow storage of contaminated materials before being processed prior to removal from the building, in the Equipment Decontamination Enclosure System. The holding area comprises an air lock.

H. Uncontaminated Holding Area: A chamber between the Washroom and an uncontaminated area, large enough to allow storage of contaminated materials before shipment to the disposal site, in the Equipment Decontamination Enclosure System. The Holding Area comprises an air lock.

I. Cleaning and Maintenance: A HEPA filtered vacuum and/or wet mopping/cleaning hose will be used daily or more frequently if needed to prevent dust accumulation in the Decontamination Facility. All plastic barriers shall be inspected for damage and repaired immediately.

J. Disposal of Wastewater: All water from the Shower and the cleaning hose will be collected, pumped through a two stage filter (first stage 20 micron, second stage 5 micron) and drained to conventional plumbing; or collected in drums and disposed of as contaminated material at the disposal site.

100-3.6 MATERIALS AND EQUIPMENT

GENERAL. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.

MATERIAL STANDARDS. The following materials are required for the work specified in this Section.

A. Plastic Sheeting: Of 6-mil thickness unless otherwise specified, in sizes to minimize the

frequency of joints.

B. Tape and Adhesive: Capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under dry and wet conditions, including use of amended water.

C. Surfactant: (Wetting Agent) shall consist of 50% polyoxyethylene ether and 50% of (polyoxyethylene) (poly-glycol) ether, or equivalent and shall be mixed with water to provide a concentration of one ounce surfactant to 5 gallons of water) or according to manufacturer's recommendations.

D. Plastic Containment Bags: 6-mil with caution labels in accordance with OSHA 1910.1200 (f) (2) or 1926.1101 (k) (2) (iii). Impermeable Fiber Containers shall be constructed of heavy-duty fiber, plastic or metal with seal-able lids. Each container shall have a plastic bag liner of 6-mil thickness and shall have an applied label in compliance with OSHA 1910.1200 (f) (2) or 1926.1101 (k) (2) (iii). Impermeable fiber containers are to be used for disposal of contaminated objects with sharp edges.

E. Encapsulant Sealer: Where required shall be one of the following, or approved equal (All encapsulants must be approved in accordance with EPA evaluations):
- SK 13
- Cable Coating No. 22P
- Asbestite 2000
- Protektor 32-22
- Dust-Set Asbestos Encapsulant

EQUIPMENT STANDARDS. The following equipment is required for the work specified in this Section:

A. Air Purifying Filtration Units: Each shall be a portable air handling unit with a filtration system capable of retaining asbestos fibers with a minimum of two pre-filters and having final capability of achieving retainage of a minimum of 99.97% of asbestos fibers greater than 0.3 microns in length. (HEPA filtration system) Recommended Standards:
- HOG 2000 (2000 CFM) by Control Resources, Inc.
- Micro-trap (1700 CFM) by Asbestos Control Technology.
- Sterilaire HEPA 3000 (3000 CFM) by Mateson Chemical Corp.

100-3.7 DOCUMENTATION.
The Contractor shall obtain and maintain a record of the following required certifications, receipts and records:

A. Verification of the following information shall be provided by the Contractor to the Owner's Representative prior to commencement work:
1. Landfill: Provide approved landfill site certifications for the type(s) of waste to be disposed.
2. Equipment: Provide OSHA and NIOSH certification of approval and manufacturer name of respirators, testing equipment, vacuums and negative air units.
3. Waste Manifests: Waste Manifests shall be provided for disposal of asbestos material at approved dumpsites, including quantity of disposed materials, date and authorized landfill representative's signatures.
4. Daily Log: Including a record of daily accomplishments, name, date, entering and leaving

time of all workers entering the work areas, visitor name, date and reason for work area visit, air testing, and work related incidents.

5. Record keeping: The Contractor shall maintain records of any personal or environmental monitoring required by OSHA and/or these specifications. These records shall be maintained for a period of at least 30 years and shall be made available upon request to authorized representatives of OSHA and NIOSH.

100-3.8 GENERAL PREPARATION. The Contractor shall proceed with the following preparations before any construction begins or before any materials and equipment are moved to the site.

A. Prior to Construction: Contractor and Owner's representatives will meet at the work site to:

1. Jointly inspect existing conditions.
2. Inspect availability of building utility services (water, power, sewage etc.).
3. Determine all equipment and other movable items to be saved, disposed of, or removed from work area, if any, and location of temporary storage space.
4. Locate isolation barriers and decontamination facilities.
5. Determine location of waste roll-off or other container(s).
6. Determine areas of access and limits of access for abatement and related personnel at the airport facility.

B. Warning Signage: Contractor shall post warning signs at designated work area entrances stating the hazards of asbestos exposure. All EPA and OSHA required signs will be posted by the Contractor and he shall be responsible for warning and notification of all on-site personnel in accordance with the guidelines and regulations issued by these federal agencies. Unauthorized persons shall not be permitted to enter these areas until the project is completed and declared clean in accordance with these specifications.

100-3.9 WORK AREA PREPARATION. All of the following preparations to the containment areas must be made before any abatement work proceeds.

A. General:

1. Provide temporary heating, lighting, ventilation, etc. as required in areas of asbestos removal operations.

2. Security: During the work, the building shall be secured with locks controlled by the Contractor who is responsible for security of the areas involved. The Owner's Representatives shall be provided with keys for access.

3. Emergency and fire exits from the work areas shall be established and demarcated by the Contractor prior to start of work and all workers shall be instructed as to their location and use. All emergency exits from the work areas to the exterior of the building shall remain unlocked and free of obstacles during any hours of occupation of the building by any personnel or visitors.

4. Negative Air Pressure: The Contractor shall provide HEPA filtered portable air handling units to establish negative pressure within each containment area. Negative air pressure is required for all areas of friable asbestos removal. Four (4) air changes shall be required per hour as a minimum. All exhaust air shall pass through HEPA filter system before being discharged into the atmosphere. Exhaust shall be ducted to the exterior of the buildings whenever feasible.

- An approved negative pressure/air movement atmosphere shall be created in the active work areas using HEPA-filtered air movement units.
- Air shall be drawn from clean areas through the decontamination and active work areas, HEPA-filtered and exhausted through air movement units to the exterior of the building. Replace filters in accordance with manufacturer's instructions.
- Air movement shall be of sufficient quantity to ensure a minimum of four (4) air changes per hour and system must be sufficient to maintain a minimum pressure differential of -0.02 inches of water between the containment area and the adjacent areas a minimum of −0.02 column inches of water pressure differential, as evidenced by manometric measurements (29 CFR 1926.1101) using calibrated equipment provided by the Contractor.
- The active work area shall be kept under negative pressure throughout the period of its use.
- Air movement shall be directed away from employees performing asbestos work within the enclosure, and toward a HEPA filtration or a collection device.
- The exhaust system(s) will run twenty-four (24) hours/day until final clearance is obtained and will be maintained in accordance with ANSI Z9.2 and the manufacturer's directions.

5. Establishment of Containment Area: Airtight barriers shall be constructed around any area in which asbestos materials are to be disturbed, or may be disturbed, through abatement activities such as removal, encapsulation spray processes, cleaning processes, etc. to provide containment of any possible air contamination which may occur. Doorways, cased openings, corridors, etc., where required or indicated by the owner's representative, shall be sealed with 6-mil poly. Edges at floor, walls and ceiling shall be sealed airtight.

    a. Plasticizing Requirements (Gross Removal of Friable Materials): All surfaces shall be prepared as follows:
        - Critical Barriers: Windows, doors, ducts, grilles, louvers, diffusers, vents, pipe or any similar openings shall all be sealed off with two layers of 6-mil polyethylene.
        - Floors (when applicable): Two layers of 6-mil polyethylene, turned up 16" at wall.
        - Walls: Complete wall coverage is not required: Following removal of friable asbestos materials, wet wipe and HEPA vacuum walls in vicinity of removed materials.
        - Windows: For all windows on the first floor, contractor shall place at least one layer of six mil opaque polyethylene over the bottom of said window to a minimum height of eight (8) feet from the floor.
        - Ceilings: Not Applicable (wet wipe and HEPA vacuum as necessary).
        - Joints: Glued and taped airtight.

    b. Plasticizing Requirements (Gross Removal of Non-Friable Flooring Materials): All areas shall be prepared as follows:
        - Critical Barriers: Windows, doors, ducts, grilles, louvers, diffusers, vents, pipe or conduit opening, caulk-sealed penetrations or any similar openings shall all be sealed off with one (1) layer 6-mil polyethylene.
        - Joints: Glued and taped airtight.

    c. Plasticizing Requirements (Glovebag Removal): Area shall be regulated and isolated with Barrier Tape.
        - Critical Barriers: Windows, doors, ducts, grilles, louvers, diffusers, vents, pipe or conduit opening, caulk-sealed penetrations or any similar openings shall all be sealed

off with one (1) layer of 6-mil polyethylene.

- Floors: Drop cloth below Glovebag Removal Areas.

d. Decontamination Facility: The decontamination facility shall be in place prior to abatement. All doorways shall be fully covered with two or more sheets of 6-mil polyethylene, overlapped and suspended from ceiling to floor. Other types of decontamination facilities or materials of construction may be acceptable, if approved by the Third-Party Independent Consulting Monitor Firm prior to implementation.

e. Warning Signs and Labels

- The Contractor shall furnish and place warning signs at all approaches to asbestos control areas. Locate warning signs at such a distance that personnel may read the warning sign and take all necessary protective actions required before entering the area. Warning signs shall be in place for the duration of the work and until final clearance is obtained. The Contractor shall furnish and attach caution labels to all disposal containers holding asbestos materials, scrap waste, debris and other products contaminated with asbestos. Provide signs and labels conforming to 29 CFR 1926.1101.

100-3.10 GENERAL PERSONNEL SAFETY PROCEDURES. All procedures contained within this section shall be followed by any person entering the Containment Area (the contaminated work space):

Methods of Operation: The following procedures are to protect all personnel entering and exiting the Containment Areas and to prevent the possible infiltration of contaminated air from the Containment Areas, into the "clean" or unrestricted areas:

A. Access: The Contractor shall restrict access to the work area to only those employees or other Authorized Entrants previously approved for entry.

B. Entrance Procedures: All workers and authorized visitors shall, upon entering the job site, remove street clothes in the Clean Room, dress in protective clothing and don respirators with new filters. Personnel will then pass through the decontamination shower room and then enter the Equipment Room to put on any additional equipment and/or clothing stored in the Equipment Room.

C. Exit Procedures: All persons leaving the work area shall remove all gross contamination in work area; then enter the Equipment Room to remove all clothing except respirators; shall proceed unclothed to the showers, still wearing the respirator; shall clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves; remove filters, wet them and dispose of filters in the container provided for this purpose; and wash and rinse the inside of the respirator.

D. Restrictions: Worker shall not eat, drink, smoke, and chew tobacco or gum while in the work areas. For any of these activities, the workers shall follow standard exit procedures (see above). After showering, workers shall dress in new, clean disposable coveralls to eat, smoke or drink. This new disposable outfit may be worn to re-enter the work area.

E. Required Clothing and Equipment: All persons entering the work area shall wear the disposable coveralls, head cover and footwear, and an approved respirator.

F. Contaminated Materials: All materials, equipment, or scaffolding that leave the contaminated work area must pass through the Equipment Decontamination Enclosure and shall be thoroughly

HEPA vacuumed and/or washed in the Washroom before being removed to the Uncontaminated Holding Area, or any other non-contaminated space. Workers from the contaminated work area may not pass through the Equipment Decontamination Enclosure to any uncontaminated area; a worker from the Uncontaminated Holding Area at the Washroom must receive any material passing through the Enclosure. Quantities of contaminated materials may be stored in the Contaminated Holding Area before passing through the Washroom to the Uncontaminated Holding Area.

G. Contaminated Water: All water from the shower, the cleaning hose, and all other contaminated waters shall be collected, pumped through a two stage filter (first stage 20 micron, second stage 5 micron) and drained to conventional plumbing. Any unfiltered contaminated wastewater shall be collected in drums or added to asbestos waste and disposed of as contaminated material at the disposal site.

H. Maintenance of Work Area and Decontamination Enclosures: During all removal and cleaning procedures in the containment area the Contractor shall comply with the following procedures:
   1. Inspection: The superintendent or foreman shall visually inspect all plastic barriers and decontamination enclosures at least once each work period.
   2. Air Pressure: Negative air pressure units / system shall be inspected regularly to ensure it is working adequately.
   3. Damage: Contractor shall immediately repair any tears or leaks found in any of the containment barriers. Failure to do so will be sufficient cause for the Owner's Project Manager or Owner's Representative to stop all operations until repairs are made.
   4. Cleaning: A HEPA filtered vacuum will be used at least once every shift, or more frequently if needed, to prevent dust accumulation in the Decontamination Facility.

100-3.11 PRE-CLEANING AND ABATEMENT OF ASBESTOS CONTAINING MATERIAL. The Contractor shall comply with the following guidelines for abatement procedures of all asbestos containing materials. These guidelines are set to minimize airborne asbestos levels in the Containment Area and the chance of contamination of personnel and areas outside the containment area during removal of asbestos containing material. If the Contractor encounters any problems with the following guidelines, he shall contact the Environmental Consultant for approval of any change in procedure.

A. Pre-Cleaning of Contaminated Area
   Pre-Cleaning of the building shall consist of moving sufficient amounts of non-asbestos and non-hazardous debris/materials in the building to areas or locations where there are no asbestos abatement or other hazardous materials removal scheduled. Sufficient amounts is defined as amounts sufficient to provide the Contractor with safe and efficient access to the asbestos or other hazardous materials to be removed. Once moved, said materials can be left in place during demolition

B. General Abatement: The Contractor shall comply with the following materials and methods:
   1. Amended water spray shall be used to wet asbestos containing material to substrate and a continuous mist shall be used on the work surface to reduce fiber release. The Contractor shall use a mist type spray head to minimize amount of water required and to reduce direct spray disturbance of asbestos material.
   2. Material shall be removed in small sections using scrapers, suitable tools, glovebags, etc. All material shall be removed from floor while still wet and shall not be allowed to build up.
   3. Asbestos material shall not be allowed to fall more than 10'-0".
   4. Double 6 mil plastic bags shall be used to line collecting drums (if drums are utilized).
   5. At least two workers shall be present in the work area during asbestos removal procedures.

6. A Certified Supervisor shall be on site during all work activities.
7. As a minimum, all visible contaminated debris shall be removed and deposited and sealed in disposal containers at the end of each work day.
8. The negative air pressure air filtering system shall be in effect during all hours, including nonwork hours, of the entire removal process.
9. Methods of Encapsulation: All encapsulants shall be applied in strict accordance with the manufacturer's recommendations.

100-3.12 FINAL CLEANING AND PREPARATIONS. The following procedures are required to decontaminate and reduce the airborne asbestos levels for all Containment Areas and prepare them for general occupation, without need for personnel protective measures.

General Clean up: The Contractor shall perform a series of wet cleanings, followed by a period of nonactivity to allow contaminants suspended in the air to settle, as indicated in the following procedures.

A. Cleaning:
   1. All previously specified personnel safety procedures must be followed and the negative pressure system shall continue to remain in operation.
   2. After asbestos materials have been removed, all substrate shall be wetted and nylon brushed to remove residual accumulated material. Substrate shall be free of all visible material and residue. HEPA vacuum thoroughly all areas containing dust and debris and areas difficult to wet clean before proceeding with wet cleaning.
   3. Wet clean, with mop, sponge, cloths, etc. all surfaces including ceilings, walls, floors, shelving, etc. Workers shall thoroughly rinse the cleaning materials with uncontaminated water and replace cleaning water as necessary. The Contractor shall also thoroughly inspect and clean behind all areas where barriers become dislodged and possible contamination would occur, but not be easily detected.
   4. Remove top plastic barrier, if applicable, leaving critical barriers in place and wet clean all surfaces in work area or contaminated area.

B. Final Inspection: After the area has been visually inspected and found to be clear of suspect asbestos-containing dust and debris, remove plastic and tape seals from doors, windows, vents, final containment barriers, etc. and provide wet cleaning of these surfaces. Clearance air sampling will be performed by a Third-Party Consultant prior to removal of final barriers.

100-3.13 - OBSERVATION AND INSPECTION.
The Contractor shall make the site available to regulatory observers and the Owner’s Representatives. Any instance of non-compliance will be reported in writing to the Contractor. The Contractor shall stop all operations, if directed by the Owner’s Representative, until corrective action is taken.

Compliance: The Contractor shall comply immediately with any other directives made by the Owner’s Representative with any portion of the contract documents. The Owner’s Representative has the authority to discontinue work if reported deficiencies are not corrected in a timely manner.

100-3.14 - WASTE HANDLING, STORAGE AND DISPOSAL.
Contaminated waste materials shall be handled, stored, and transported in a covered vehicle and disposed of as specified in this section and in compliance with all federal, state and local regulations.

Definition: Asbestos wastes include building materials, insulation, disposable clothing and protective equipment, tape and plastic sheeting, vacuum filters, exhaust system, or any miscellaneous equipment not fully cleaned by vacuuming followed by washing.

Containers: Utilize two 6 mil polyethylene bags for a total thickness of 12 mils, add impermeable fiber containers as an overwrap for sharp objects, and large components such as fire doors can be wrapped with 2layers of 6 mil plastic, then labeled and placed in the waste trailer. The Contractor shall count or otherwise measure the volume of each filled container and maintain a written record of such. All Waste Containers shall be leak proof.

Labels: Such containers shall be labeled in permanent letters as follows:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

ADDITIONALLY, CONTAINERS SHALL BE LABELED WITH THE NAME OF THE WASTE GENERATOR AND THE LOCATION AT WHICH THE WASTE WAS GENERATED.

Bagged waste shall be kept damp. When bag is full, it shall be securely sealed with tape. Solid waste containers are to be temporarily stored in a pre-designated area until they are ready to leave the site. They must be properly labeled and lockable.

Container Cleaning: Before they are taken from the isolation work area, all waste containers must be cleaned and decontaminated with a HEPA-filtered vacuum followed by water methods in the Shower Room.

Disposal Site: Use only landfills approved by EPA or NHDES for the disposal of asbestos containing materials. Verify approval status prior to materials shipment.

Waste Transport: Once a truckload of containers has accumulated, the Contractor shall arrange for transportation in a covered vehicle directly to the approved disposal site making no stops except for fuel, if necessary. No off-site temporary storage will be allowed.

Regulations: The Contractor must comply fully with all current regulations regarding asbestos waste transportation and disposal, including those of the U.S. Department of Transportation and the EPA.

Transport Trucks: Mark vehicles used to transport asbestos containing material and during the loading and unloading of the waste so that the signs are visible. Format for signs to mark vehicles shall be in compliance with 29 CFR 1910.145 (d) (4) and 61.149 (d) (iii).

Contractor Responsibility: The Contractor shall be responsible for completing and/or obtaining all required legal forms and other manifests. Original forms shall be sent to the Owner.

Fees: All disposal fees, packaging, hauling and record keeping costs will be paid for by the Contractor and shall be included in the Project Item amount in the Base Bid. No separate payment will be made for these services.

100-3.15 CONFIRMATORY TESTING/AIR MONITORING AND CERTIFICATION

A. Confirmatory testing shall be conducted by a licensed Asbestos Project Monitor as defined under 453 CMR 6.00 and 6.10(4)(g) who and outlined above in paragraph 100-1.2.1 and herein:
   1. Collects air and bulk samples and performs visual inspections for the purpose of determining asbestos project completion.

2. Collects environmental asbestos air samples to assess present or future potential for exposure to airborne asbestos.

B. The Asbestos Project Monitor shall conduct a post-abatement visual inspection and collect final air clearance samples. If the abatement area does not pass the visual inspector or final air clearance sampling requirements, the Contractor shall re-clean the abatement area at the Contractor's expense, until the area is in compliance and to the satisfaction of the Asbestos Project Monitor.

C. The Asbestos Project Monitor shall conduct a post-abatement visual inspection and collect final air clearance samples. If the abatement area does not pass the visual inspector or final air clearance sampling requirements, the Contractor shall re-clean the abatement area at the Contractor's expense, until the area is in compliance and to the satisfaction of the Asbestos Project Monitor.

D. Upon completion of the asbestos abatement work, the Contractor shall provide a certification letter that the building demolition site is free of asbestos containing materials.

METHOD OF MEASUREMENT

100-4.1 No direct measurement will be made for the quantity of hazardous materials removed. Payment for Building Hazardous Materials Abatement and Remediation shall be at a lump sum for all materials removed in accordance with the plans and specifications, as well as all monitoring, testing, notifications/permits, documentation, transporting, disposal, cleaning, certifications, and all incidentals required for the abatement and remediation.

BASIS OF PAYMENT

100-5.1 Payment shall be made at the contract lump sum price for Building Hazardous Materials Abatement and Remediation. This price shall be full compensation for furnishing all materials, labor, equipment, tools, monitoring, testing, notifications/permits, documentation, transporting, disposal services, cleaning, certifications, and all incidentals required for the abatement and remediation to complete the work.

Payment will be made under:

Item B-100-5.1 – Hangar Building #6 Hazardous Materials Abatement and Remediation – per lump sum

Item B-100-5.2 – Hangar Building #7 Hazardous Materials Abatement and Remediation – per lump sum

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ITEM B-200
BUILDING DEMOLITION

DESCRIPTION

200-1.1 This work shall consist of the removal and disposal of the airfield hangar building, associated structures, underground storage tanks, and appurtenances with the restoration of the area including backfilling of resulting trenches, holes, pits, and miscellaneous appurtenance removals.

This work shall also consist of the demolition and disposals of the waste materials for the existing traffic control gates and islands.

This work shall also consist of the dumpster/compactor relocation which includes installing a new concrete pad, relocating an existing chain link fence slide gate, installing a new access drive to the new dumpster/compactor location, and the associated electrical feed for the dumpster/compactor pad from the Terminal Building using an existing electrical panel and a portion of existing conduit. The electrical work for this item of the project will be installed on a performance-based specification with a detailed submittal from the Contractor outlining the work to be performed which is to be in conformance with all local, state and federal regulation and the National Electric Code, including but not limited to: verification of the electrical layout with the associated conduits, device, breaker, and conductor sizing.

MATERIALS

200-2.1 The Contractor shall supply all materials and equipment required to perform the building demolition in accordance with these specifications and all Federal, state and local regulations.

200-2.2 All temporary facilities, equipment, and materials to perform the building demolition must adhere to and/or meet EPA, OSHA, and NIOSH regulations, as well as all other Federal, state, and local regulations.

200-2.3 GRANULAR GRAVEL BORROW MATERIAL. The supplemental granular gravel borrow material necessary for the backfill for building demolition to obtain finish grades similar to the existing finish grade. The granular gravel borrow material shall conform to the New Hampshire Department of Transportation Standard Specifications §209 Granular Backfill using Item 209.4 Granular Backfill (Gravel). Granular backfill (gravel) shall consist of a mixture of stones or rock fragments and particles with 95 to 100 percent passing the 3" sieve and 25 to 70 percent passing the No. 4 sieve.

200-2.4 BASE COURSE MATERIAL. The base course material necessary for the base course for any new or modified access road/drive shall use the materials and installation requirements of the New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications. The base course material shall conform to the requirements of the NHDOT Standard Specifications §304 Base Course Materials, using either 304.3 Crushed Gravel or 304.4 Crushed Stone (fine).

200-2.5 HOT MIX ASPHALT MATERIAL. The hot mix asphalt materials necessary for any new or modified access road/drive shall use the materials and installation requirements of the New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications §401 Plant Mix Pavements – General and §403 Hot Bituminous Pavement. The hot mix asphalt materials shall supplied by NHDOT certified supplier and conform to the requirements of a NHDOT approved Job Mix Formulas for **1/2" wearing course mix** pavement.

200-2.6 CONCRETE PAD MATERIAL. The Portland Cement Concrete materials necessary for the new dumpster/compactor relocation concrete pad shall use the materials and installation requirements of the New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications §520 Portland Cement Concrete. The Portland Cement Concrete materials shall a ready-mix product supplied by NHDOT certified supplier and conform to the requirements of a NHDOT approved Job Mix Formulas for **Class AA (minimum 4000 psi compressive strength)**.

CONSTRUCTION METHODS

200-3.1 GENERAL REQUIREMENTS. The Contractor shall conduct all demolition operations in a safe, legal, and responsible manner and shall ensure that any equipment, material, or method used shall be safe for the workers and the public. All laws, rules, regulations, and local building codes shall be followed. Local building code shall mean a code enacted or adopted by competent local officials or bodies at least as stringent in its requirements as the "New Hampshire State Fire Prevention and Building Codes" and its associated reference standards. The Contractor is responsible to secure all permits for demolition and disposal of the waste materials from the structures.

200-3.2 UTILITES. The Contractor shall protect power, water and other utility lines during demolition. **At least seventy-two (72) hours (not including weekends and Holidays) in advance** of the commencement date of the demolition, the Contractor shall notify all operators who have underground or overhead facilities at or near the proposed demolition area through the one-call notification system **(Dig Safe System – MA/ME/NH/RI/VT - Dial 811 or www.digsafe.com)**. In addition, the Contractor shall request a Pre-Demolition Conference with all operators who have underground or overhead facilities at or near the proposed demolition area. If such utility lines cannot be protected in place, the Contractor shall temporarily relocate the utility lines, as necessary, and protect these utilities prior to undertaking any demolition work that might affect these utility lines.

Before any structure or building served with, or having utilities thereon, is demolished all telephone, cable, electric, gas, water, or any other service shall be shut off and terminated at the location and by a method approved by the utility suppliers. Contractor will be required to supply written confirmation from the utility the shut-off/termination has been completed and approved by the utility supplier.

The limits of all interior building utility and services removals within five (5) feet from the exterior face of the existing facility are considered to be part of the building demolition, unless otherwise indicated on the demolition plans or otherwise stated in the specifications. Other site utility removals outside of these limits shall be as defined in the specification Item M-300 *Utility Removals*.

200-3.3 HAZARDOUS MATERIALS. The buildings to be demolished have been identified as having hazardous materials. Refer to the *Hazardous Materials Survey – 5&7A Green Drive Report* prepared by The Lawson Group located in the Supplemental Provisions for Asbestos Containing Materials (ACM) and other potentially hazardous materials information. All asbestos, hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous materials in the building, or on the property, shall be removed and disposed of or otherwise remediated in accordance with all applicable rules, regulations and laws concerning handling and disposal of Hazardous Materials or Hazardous Wastes. The Contractor shall also perform all the notifications, site preparation, containment, removals and operations in accordance with applicable codes, laws and regulations.

200-3.4 DUST CONTROL. Provisions shall be made at every demolition site to control the quantity of dust resulting from demolition operations by wetting the debris and the immediate work area with water or other appropriate spraying agents or by means acceptable to the Owner's representative.

200-3.5 DOMESTIC SEWAGE FACILITIES. Sewer service piping, septic tanks, leaching basins, cesspools and other similar facilities associated with the building being demolished, or those facilities that will be abandoned as part of the project, shall be pumped free of septage or sewage and abandoned in place, unless otherwise noted in Item M-300 *Utility Removals*. Septage recovered from the pumping operation shall be handled, transported, and disposed of in accordance with New Hampshire Department of Environmental Services regulations. If applicable, any septage required to be removed shall be considered as part of the building demolition.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies controlling the sewage facilities.

200-3.6 DOMESTIC WATER FACILITIES. All domestic water services on the parcel shall be removed to the water service valve as shown on the project plans or directed by the Owner's representative. It should be noted that a future project may require the future use of any service, so sufficient care should be taken to protect any service from undue damage. The removal of any water service line or appurtenances shall be backfilled in lifts of compacted suitable material.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies controlling the water facilities.

200-3.7 OTHER BUILDING UTILITIES SERVICE FACILITIES. The Contractor shall be responsible for coordinating and making appropriate notifications to the appropriate utility supply companies for the removal of all other service facilities to the building being demolished. The limits of the work being performed by the utility company for the removal and/or decommissioning of the service facilities will be determined by the utility supplying company, while the Contractor shall be responsible for removing the remaining service facilities to the satisfaction of the utility supply company and Owner's representative, even if outside the limits for building utility removals as outlined in paragraph 200-3.2.

200-3.8 BUILDING AND FOUNDATIONS. The Contractor shall demolish and remove the existing building and all materials within the limits of the building, including the existing concrete floor slab and foundation. The demolition work shall also include any concrete pads or access structures adjacent to the buildings and these concrete pads/access structure materials shall be considered part of the building demolition. All demolished building materials shall be broken into manageable sections or pieces for transporting and properly disposed off-site at the Contractor's expense. After the removal of the building and foundations and concrete pads/access structures, the excavated area shall be backfilled and compacted, as described herein, using existing in-situ granular material and any required supplemental granular gravel borrow material as required to restore the grade to the adjacent grade.

200-3.9 HANGAR BUILDING #6 UNDERGROUND STORAGE TANK (UST) REMOVAL. As shown on the plans and further described in the Supplemental Provisions under *Hangar #6 Tank Closure Reports*, there are two (2) existing 50,0000-gallon underground storage tanks (USTs) located near Hangar Building #6 that have been environmentally closed and approved by the State of New Hampshire Department of Environmental Services (NHDES). NHDES has made a determination that the closures for this USTs are deemed to not require any further action. However, the previous closures of these fuel storage tanks only had a portion of the top of the tanks removed with the interior of the tanks were filled with a granular backfill (refer to the photos in the Supplemental Provisions) and abandoned in place. For the future development of the site, the remaining steel tank structures will be required to be removed and the materials properly disposed off the site as part of this project. After the removal of the remaining USTs structure and any associated appurtenances, the excavated area shall be backfilled and compacted, as described herein, using the existing in-situ granular material and any required supplemental granular gravel borrow material.

200-3.10 DEMOLITION OF TRAFFIC CONTROL GATES AND ISLANDS. The Contractor shall remove and salvage to the Owner, the existing access control gates and operator at two (2) locations as shown on the Plans, including but not limited to: decommissioning and removal of the power and control cables to the remote panel, removal of all associated conduits within the limits of the roadway, capping of the conduits for conduit to remain, and all of the associated incidentals for the removal of the control gates. The work shall also include the demolition and removal of the concrete island pad and adjacent pavement areas required for the removal of the conduits. Any demolished materials shall be broken into manageable sections or pieces for transporting and be properly disposed off-site at the Contractor's expense.

After the removal of the access control gates, associated concrete islands and conduits, the disturbed areas shall be excavated, backfilled and compacted to the restoration limits determined by the Resident Project Representative. The individual payment restoration items are specified and identified in Section M-500 *Temporary Access Road* (i.e. unclassified excavation, base course and pavement materials). The limits of the disturbed area restoration shall have clean saw-cut asphalt pavement edges and shall be restored in accordance with the materials shown on the details in the Plans.

200-3.11 DUMPSTER/COMPACTOR RELOCATION CONCRETE PAD AND MODIFICATIONS. The Contractor shall install a new concrete pad for the relocation of the dumpster/compactor location. The dimensions and materials for the concrete pad shall be as outlined herein and as shown on the Plans. The final location shall be as approved by the Engineer.

The new access drive to the new dumpster/compactor concrete pad shall be installed to the Plan limits and in accordance with the details as shown on the Plans. The Contractor shall remove the existing slide gate from the existing dumpster/compactor area and shall re-use this gate for the new location. All work necessary for installing this gate within the existing chain-link security fence shall be performed. The exact location of the concrete pad and new gate will be field verified with the Engineer prior to any work.

There shall be a new electrical feed from the existing Electrical Room 1357 in the Terminal Building (shown schematically on the Plans) to the new concrete dumpster/compactor pad as shown on the Plans and as outlined herein. The electrical work shall be performed by an Electrician licensed in the State of New Hampshire and the electrical work shall be installed as a performance-based specification with a submittal needing approval from the Engineer and Owner (acting as the Authority Having Jurisdiction since a municipally owned agency). The materials and installation specifications shall be in conformance with the National Electric Code and all local, state and federal regulations. As part of the performance-based specification, the Contractor shall verify all layout, types of materials, and sizing of materials as part of the submittal. The Contractor shall also coordinate with the Owner & Engineer for all layout, connections, and loading requirements for the preparation of the submittal.

Based on preliminary investigations based on existing conditions (which need to be verified by the Contractor) for the routing and the equipment to be powered, the following layout and materials are anticipated: (A) The power feed shall from an existing 480 Volt, 3-phase panel in the Electrical Room having available capacity for the new circuits; (B) Installation requires (2) new 480 Volt 3-phase circuits, a 30 Amp 3-pole breaker and a 20 Amp3-pole breaker to be provided and installed by the Contractor; (C) Installation of a new Indoor/Outdoor Schedule 80 PVC conduit provided and installed by the Contractor from the interior Electric Room to an existing building exterior PVC junction box to be re-used; (D) Re-use of an existing 3" PVC conduit from this exterior junction box to an existing handhole near the Security Gate 28 operator equipment; (E) Installation of a new Indoor/Outdoor Schedule 80 PVC conduit to be provided and installed by the Contractor from the handhole to the concrete pad; (F) Installation of Contractor-provided new pedestal-mounted junction box/disconnect at the new dumpster/compactor

concrete pad to be provided and installed by the Contractor; and (G) Installation of new cabling (anticipated to be #8 AWG wires, but requires verification) from the existing Electrical Room panel to the new junction box/disconnect. It is anticipated the dumpster/compactor supplier will provide the operator equipment for the dumpster/compactor.

Refer to the Plans for the installation details for the concrete pad and electrical work.

200-3.12 DEMOLITION OF EXISITNG FENCE. The Contractor shall remove all existing fencing and their foundations as shown on the Demotion Plan and properly dispose of all fencing materials. For Measurement and Payment for the fencing to be removed, refer to Section F-162 *Chain Link Fence*. All payment for the removal of the fence shall also include the backfilling of the foundation holes as part of the fence removal unit price.

200-3.13 DISPOSAL OF MATERIALS. Disposal of all materials shall be in accordance with all federal, state, and local laws, rules, and regulations; any provision found elsewhere in the Contract Documents; and most specifically in New Hampshire Department of Transportation Standard Specifications §202 Removal of Structures and Obstructions; New Hampshire RSA 149-M Solid Waste Management; and New Hampshire Department of Environmental Services Division of Waste Management rules and regulations and shall be subject to the approval of the Owner's representative. Contractor shall provide to the Owner a disposal plan at least fifteen (15) days prior to removal of demolition debris from the site. Disposal plan shall identify the location of disposal, license and/or permit number of the disposal facility or facilities. Delivery tickets from the location of disposal indicating date, time, and weight of debris disposed at the facility shall be provided to the Owner.

200-3.14 RESTORATION. All areas disturbed by the demolition and removal work included in this specification shall be restored to a gravel surface condition using the supplemental granular gravel borrow material for the building demolition that will permit a stabilized surface for use by Airport maintenance, unless otherwise designated on the plans. Other demolition disturbed locations shall be restored as shown on the Plans. All disturbed areas shall be compacted as described within this specification and graded to match the existing finished grades in the area, unless otherwise shown on the Plans. No additional payment will be made for restoration of surfaces and shall be considered as part of the Lump Sum items, unless specifically noted for payment on the Plans or within the specifications.

200-3.15 COMPACTION. Compaction of the disturbed in-situ granular material and any granular gravel borrow material used for restoration of the building demolition shall be to at least 90% Standard Proctor Density of the material. The Contractor shall be responsible for all sampling and testing of granular gravel borrow material for conformance with the compaction requirements.

For the compaction of any driveway or roadway base course materials, the compaction shall be to at least 95% Standard Proctor Density of the material. The Contractor shall be responsible for all sampling and testing of base course material for conformance with the compaction requirements.

METHOD OF MEASUREMENT

200-4.1 BUILDING DEMOLITION AND REMOVAL. No direct measurement will be made for the Building Demolition and Removal. Measurement for payment for Building Demolition and Removal shall be at a Lump sum for the designated Building and contents, associated structures, miscellaneous appurtenances, and all incidentals as required for a complete building demolition.

200-4.2 HANGAR #6 BUILDING USTs REMOVAL. No direct measurement will be made for the Hangar #6 Building UST Removal. Measurement for payment for Hangar Building#6 UST Removal shall

be at a Lump sum for existing underground storage tanks, associated structures, miscellaneous appurtenances, and incidentals as required for a complete UST removal.

200-4.3 DEMOLITION OF TRAFFIC CONTROL GATES AND ISLANDS. No direct measurements will be made for the Demolition of Traffic Control Gates and Islands. Measurement for payment for Demolition of Traffic Control Gates and Islands shall be at a Lump sum for the removal and salvage to the Owner for the two (2) locations of the access control gates and accessories; removal and disposal of the access control gate raised islands and all miscellaneous appurtenances; and all incidentals as required for the completion of the Demolition of Traffic Control Gates and Islands.

200-4.4 DUMPSTER/COMPACTOR CONCRETE PAD RELOCATION AND MODIFICATIONS. No direct measurement will be made for the Dumpster/Compactor Concrete Pad Relocation and Modifications, including the existing chain link fence modifications. Measurement for payment for the Dumpster/Compactor Concrete Pad Relocation and Modifications shall be at a Lump sum for the installation of the new concrete pad with all associated materials and work; installation of the new pavement and base course for the access drive from Green Drive to the concrete pad; salvage and re-use of the existing slide gate materials and installation of this slide gate for access to the new concrete pad with all associated miscellaneous fencing materials and work to retrofit the gate into the existing security fence; installation and connection of the new electrical feed from the Terminal Building Electrical Room to the new concrete pad with all associated materials and work; and all incidentals as required for the completion of the Dumpster/Compactor Concrete Pad Relocation and Modifications to allow for proper operations of the dumpsters/compactors.

BASIS OF PAYMENT

200-5.1 BUILDING DEMOLITION AND REMOVAL. Payment shall be made at the contract lump sum price for Building Demolition and Removal. This price shall be full compensation for furnishing all materials and removals including the cost of all labor, materials and equipment, tools, securing permits, waste removal and disposal, water used for dust control, gravel borrow material, utility modifications, grading, compaction and incidentals necessary to satisfactorily complete the work.

200-5.2 HANGAR #6 BUILDING USTs REMOVAL. Payment shall be made at the contract lump sum price for Hangar Building #6 USTs Removal. This price shall be full compensation for furnishing all materials including the cost of all labor, materials and equipment, tools, securing permits, waste removal and disposal and/or recycling, water used for dust control, gravel borrow material, grading, compaction and incidentals necessary to satisfactorily complete the work.

200-5.3 DEMOLITION OF TRAFFIC CONTROL GATES AND ISLANDS. Payment shall be made at the contract lump sum price for Demolition of Traffic Control Gates and Islands for the two (2) locations. This price shall be full compensation for furnishing all materials for the demolition including the cost of all labor, materials and equipment, tools, waste removal and disposal, water used for dust control, and all incidentals necessary to satisfactorily complete the work.

200-5.4 DUMPSTER/COMPACTOR CONCRETE PAD RELOCATION AND MODIFICATIONS. Payment shall be made at the contract lump sum price for Dumpster/Compactor Concrete Pad Relocation and Modifications. This price shall be full compensation for furnishing all materials and removals including the cost of all labor, materials and equipment, tools, salvage materials, waste removal and disposal, water used for dust control, electrical feed to the concrete pad, access drive restoration materials, grading, compaction and incidentals necessary to satisfactorily complete the work.

Payment will be made under:

Item B-200-5.1 Hangar Building #6 Demolition and Removal – per lump sum

Item B-200-5.2 Hangar Building #7 Demolition and Removal – per lump sum

Item B-200-5.3 Hangar Building #6 USTs Removal – per lump sum

Item B-200-5.4 Demolition of Traffic Control Gates and Islands (2 Locations) – per lump sum

Item B-200-5.5 Dumpster/Compactor Relocation Concrete Pad and Modifications – per lump sum

END OF ITEM B-200

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ITEM B-300
SOIL MANAGEMENT

DESCRIPTION

300-1.1 GENERAL PROVISIONS

A. Examine all Drawings and Sections of the Specifications for requirements provisions affecting the work of this Section and all local, state and federal regulations relating to the soil management.

CONSTRUCTION METHODS

300-2.1 WORK INCLUDED

A. This Section specifies the management of excavated soil during construction activities and identifies procedures for soil evaluation, handling, backfilling, and off-site disposal.

B. The Contractor shall retain an independent qualified Environmental Consultant to perform soil monitoring and documentation and to notify the Contractor, Engineer and Airport when soil contamination levels measured exceed the limits for on-site re-use.

The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to all aspects of the soil management for the project. The Contractor is responsible for providing and maintaining training, accreditation, medical exams, medical records, and all personal protective equipment as required by applicable Federal, State and Local regulations. The Contractor shall hold the Owner and Engineer harmless for any failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of the Contractor, Contractor's employees, or subcontractors of the Contractor.

C. Contractor shall prepare the following under the guidance of a qualified Environmental Consultant:

1. A Notice of Intent (NOI) for a Construction General Permit (CGP) to be filed with the US Environmental Protection Agency (US EPA) **is not required for this project**. Refer to Project Item C-102 for additional information.

2. A Project-Specific Construction Storm Water Pollution Prevention Plan (SWPPP) **will not be required** as noted in Project Item C-102 *Temporary Air and Water Pollution, Soil Erosion, And Siltation Control*, but refer to this item for additional information.

D. Even though US EPA CGP coverage is not required, construction activities and soil excavation shall be in accordance with the US EPA Construction General Permit and with the implementation of all necessary Best Management Practices (BMPs) for soil erosion and sedimentation.

E. Backfill or reuse soils shall be in specific on-airport locations identified by the Engineer. All excess and Potentially Contaminated soils shall be classified by the Environmental Consultant. Soil that is found to be unsuitable for reuse at the Airport shall be transported offsite at an New Hampshire Department of Environmental Services (NHDES) approved facility by the Contractor and in accordance with this Project Item.

F. The Engineer shall be notified immediately if Potentially Contaminated Soil is encountered (soil has visual or olfactory evidence of contamination) during the conduct of this work.

G. Potentially Contaminated Soil shall be segregated and transported to a designated paved area on the Airport as directed by the Environmental Consultant. All stockpiled soil shall be staked with project number and specific origin of material. The Contractor will conduct confirmatory soil testing to determine soil classification and how it is to be disposed of. All soils shall be shipped off-site for disposal at an NHDES-approved off-site receiving facility using a Material Shipping Record or Bill of Lading. The Airport will sign the manifests as Generator.

300-2.2 RELATED WORK

A. Item B-100 – *Hazardous Materials Abatement*

B. Item B-200 – *Building Demolition*

C. Item C-102 – *Temporary Air and Water Pollution, Soil Erosion, And Siltation Control*

300-2.3 SUBMITTALS

The following submittals shall be transmitted for review and approval by the Engineer and Airport:

A. The name and qualifications of a professional Environmental Consultant (EC) who shall develop a project-specific Off-Site Soil Management Plan:

Submit certifications, qualifications, and experience of the EC having professional experience preparing Soil Management Plans.

B. Although a Construction SWPPP will not be prepared for this project, the Contractor is still required to perform all work in accordance with US EPA guidelines and providing Best Management Practices (BMPs) for the installation, maintenance and inspection of soil erosion and sedimentation controls to minimize pollutants in storm water runoff. **NOTE: Coverage under the US EPA CGP is not required for this project. However, BMPs are still required and shall be reviewed by the Environmental Consultant prior to any work being performed.**

C. If an active Construction General Permit (CGP) for Stormwater is required, it shall be submitted at a minimum of two (2) weeks before excavation is scheduled to begin. If applicable, a Notice of Intent shall be completed and filed with the US EPA to obtain authorization to discharge storm water under the EPA Construction General Permit (CGP). Refer to US EPA's web page (www.epa.gov/npdes/npdes-stormwater-program) for program guidance, instructions for filing eNOI and additional information. **NOTE: Coverage under the US EPA CGP is not required for this project.**

D. Copy of the US EPA Construction General Permit shall be transmitted to the Engineer and Airport upon receipt. Said permit shall be displayed on-site in the Contractor's trailer. **NOTE: Not Applicable for this Project.**

E. Proposed off-site disposal/reuse/recycling facilities of excess soil for the following categories:

a. Soil reuse at Unlined Landfills: Soil shall meet the requirements of New Hampshire Department of Environmental Services (NHDES) regulations for Allowable Concentrations for Unlined Landfills.

b. Soil reuse at Lined Landfills: Soil shall meet the requirements of NHDES regulations for Lined Landfills.

c. Soil recycling at an asphalt batch recycling facility (MCP regulated soils). Soil may contain contaminant concentrations meeting the allowable contaminant levels specified in the receiving facility's permit.

F. Proposed list of off-site disposal/reuse/recycling facilities shall include:

a. Facility name, owner, address, phone number, and contact name.

b. Certification of operating permit and compliance status.

c. Material acceptance criteria.

H. Within seven (7) days after transport off site, submit completed Material Shipping Record, Bill of Lading Log Sheets or Hazardous Waste Manifests signed by the transporter and receiving location to the Engineer. Include copies of receiving facility's weight slips.

I. Submit completed a typical Recycled Materials Monthly Report to the Engineer.

300-2.4 RESPONSIBILITY OF THE CONTRACTOR

A. Contractor shall adhere to State and Federal regulations, Specifications, and recognized standard practices related to soil management and storm water pollution prevention.

B. Soil excavation and management activities shall not adversely or otherwise affect any Airport operations.

MANCHESTER-BOSTON REGIONAL AIRPORT (MHT) IS NOT RESPONSIBLE AT ANY TIME FOR THE CONTRACTOR'S VIOLATION OF PERTINENT STATE OR FEDERAL REGULATIONS OR ENDANGERMENT OF LABORERS, PASSERS-BY OR ANY OTHERS.

300-2.5 EXCAVATION AND SEGREGATION OF SOILS

A. Soil segregation during excavation shall be performed when visual and olfactory evidence of discoloration and odor exists.

B. Contractor shall notify the Engineer immediately if Potentially Contaminated Soil has been encountered.

C. If visual or olfactory evidence of contamination is encountered during excavation, Potentially Contaminated Soil shall be segregated from uncontaminated soil. The Contractor shall mobilize its Environmental Consultant to assist with this effort if determined to be necessary.

D. Potentially Contaminated Soil shall be transported immediately to the Excess Material Temporary Storage Area (site to be determined by the Contractor and approved by MHT) once approved by the Environmental Consultant and the Engineer.

300-2.6 MANAGEMENT AND DISPOSAL OF EXCAVATED SOIL

A. Excavation and soil handling shall be performed in a manner that eliminates mixing Potentially

Contaminated Soil with uncontaminated soil. Co-mingled soils generated by the Contractor's careless or unauthorized procedures for excavation or soil handling shall be disposed of at the sole expense of the Contractor. Re-handling of soil pending receipt of screening results, if necessary, shall be incidental to the work.

B. On-site management of excess excavation:

1. Contractor shall transport all excess soils to the Excess Material Temporary Storage Area located on airport. The Contractor's Environmental Consultant will sample all stockpiles to determine off-site disposal options (i.e. Unlined Landfill; Lined Landfill; Asphalt Batch Receiving Facility).

C. Off-site management of contaminated soil:

Based on the sampling and analyses of the soil, soil that is found to be unsuitable for reuse at the Airport or is excess excavate shall be transported by the Contractor to an NHDES-approved disposal/reuse/recycling facility.

A representative for Contractor's Environmental Consultant will sign the shipping documents and the MHT representative will sign as the Generator as required.

D. Transfer of materials from the excavation shall be conducted in such a manner as to prevent the spread of Potentially Contaminated Soil or other excavated materials across the construction site and other areas of the airport.

E. Miscellaneous Debris - The Contractor shall mobilize necessary equipment to remove miscellaneous debris from excavated soil (mechanical screening or manual picking). The Contractor shall stockpile these materials in Airport-designated areas at the project site. The Contractor shall dispose of these materials, including potentially contaminated debris. Refuse, coal ash, cinders, glass, wood and other "non-chemical" waste products as regulated by the NHDES shall be disposed/recycled by the contractor in accordance with NHDES regulations.

EXECUTION

300-3.1 GENERAL REQUIREMENTS

A. The Contractor shall implement and provide documentation as outlined in the project-specific Soil Management Plan prepared by the Environmental Consultant and as required by NHDES regulations.

METHOD OF MEASUREMENT

300-4.1. Measurement for the Soil Management Plan shall be at the contract Lum Sum rate for the development and approval of the project-specific Soil Management Plan in accordance with the plans and specifications, and all incidentals required for the development and approval of the Plan. The measurement for the time by the Environmental Consultant for the development and approval of the Soil Management Plan shall be included within the lump sum amount.

300-4.1.1 No separate measurement for payment will be made for the development or implementation of additional project-specific Best Management Practices as required by the project and will only be measured as outlined in Item C-102 *Temporary Air and Water Pollution, Soil Erosion, And Siltation Control*. As noted in in Item C-102, the preparation and submission of a Project-Specific Construction

Storm Water Pollution Prevention Plan (SWPPP) or a Notice of Intent to the US EPA under the Construction General Permit is not required.

300-4.2. Measurement for the Environmental Consultant shall be at an hourly rate for the on-site testing and removal of the soil materials and follow up disposal documentation in accordance with the plans and specifications. The measurement shall include, but not limited to: monitoring, testing, notifications/permits, documentation, certifications, and all incidentals required for the removal and disposal of the regulated soils. The measurement for the time by the Environmental Consultant for the development and approval of the Soil Management Plan shall be included within the lump sum amount for the Soil Management Plan.

300-4.2.1 No separate measurement or payment will be made for visual or olfactory observations as soil is being excavated.

300-4.3 Measurement for offsite disposal of soils shall be made per ton of Soil Reuse at Unlined Landfills, Soil Reuse at Lined Landfills, or Soil Recycling at Asphalt Batch Recycling Facility, actually disposed as directed by the Environmental Consultant and as approved by the Engineer. No separate measurement will be made for hauling, permits, disposal fees, or any incidentals for the off-site disposal of the regulated soil. Excavation of the soils materials in their original location shall be note be measured separately and inclusive to the off-site disposal cost.

300-4.3.1 No separate measurement for payment will be made for handling, stockpiling, soil segregation, backfilling, or compacting excavated soils. All costs in connection therewith are incidental to the items of work to which they pertain.

300-4.3.2 Excavation for the Contractor's convenience will not be measured for payment.

300-4.3.3 Re-excavation and/or re-handling of soil will not be separately measured for payment; it is incidental to the work to which it pertains.

300-4.3.4 No separate measurement or payment will be made for the transport of soil to the Excess Material Temporary Storage Area for temporary stockpiling while awaiting analytical results for soil characterization.

BASIS OF PAYMENT

300-5.1. Payment will be made at the contract lump sum price for the development and approval of the Soil Management Plan by the Environmental Consultant. The Lump Sum Price is all inclusive for the development and approval of a project-specific Soil Management Plan as approved by the Engineer and Owner.

300-5.2 Payment will be made at the contract hourly unit price for the Environmental Consultant. The hourly unit shall be for only the implementation of the project-specific Soil Management Plan, including but not limited to: monitoring, soil testing and determination, disposal documentation, disposal tracking and reports, and all incidental items regarding the removal and disposal of the regulated soils.

300-5.3. Payment will be made at the contract unit price per ton of soil actually removed and legally disposed offsite as documented by the receiving facility's weight slips. The Unit Price is all inclusive including loading, transporting and legally disposing of the soils and all associated administrative costs to coordinate and implement this effort. Costs associated with excavation shall be paid for as part of this item.

Payment will be made under:

ITEM	DESCRIPTION	UNIT
Item B-300-5.1	Project-Specific Soil Management Plan	per Lump Sum
Item B-300-5.2	Environmental Consultant	per Hour
Item B-300-5.3A	Soil Reuse at Unlined Landfill	per Ton
Item B-300-5.3B	Soil Reuse at Lined Landfill	per Ton
Item B-300-5.3C	Soil Recycling at Asphalt Batch Plant	per Ton

END OF PROJECT ITEM B-300

ITEM M-100
GATE GUARD ALLOWANCE

CONTRACT DOCUMENTS

100-0.1 This section of these Specifications is a part of the Contract Documents as defined in the General Provisions. All applicable parts of the balance of the Contract Documents are equally as binding for this section as for all other sections.

a. All Allowances, if noted on the Bid Form, shall be included in the Base Bid and shall be carried by the Contractor, unless specifically noted to be carried by a subcontractor.

b. The Contractor shall cause the work covered by these Allowances to be performed for such amounts and by such persons as the Owner may direct but he will not be required to employ persons against whom he makes a reasonable objection.

c. If the cost, when determined, is more than or less than the Allowance, the Contract Sum shall be adjusted accordingly by Change Order, and if allowable herein, will include additional or reduced handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the Contractor from any increase over or decrease from the original Allowance.

d. Refer to related Drawings and Specifications for additional information regarding Work to be included as part of Allowances.

DESCRIPTION

100-1.1 Under this item, the Contractor shall coordinate with Manchester-Boston Regional Airport and their gate guard security company to provide gate guards for the project under the allowance provided by this specification. The Contractor shall coordinate with the gate guard security company with regard to scheduling the gate guards and when the gate guards will be required to be performing their duties.

MATERIALS

100-2.1 Not Used.

CONSTRUCTION DETAILS

100-3.1 Not Used.

METHOD OF MEASUREMENT

100-4.1 Measurement for the allowance for gate guards will be based on the actual time worked by the gate guard and any allowable associated costs. The exact amount of reimbursement to the gate guard security company will be indicated on the Gate Guard Security Company's invoice and will be the basis of measurement for the allowance without any additional mark-up by the Contractor. There shall be no separate measurement for the Contractor's cost to coordinate and administer the scheduling of the gate guards and it shall be considered incidental to the overall project.

BASIS OF PAYMENT

100-5.1 The amount paid to the Contractor shall be the exact amount indicated on the Contractor's invoice from the gate guard security company without mark-up. There shall be no separate payment to the Contractor to coordinate and administer the scheduling of the gate guards and these costs are considered incidental to the overall project.

Payment will be made under:

Project Item M-100-1	Allowance – Gate Guards	**$2,000 - Allowance**

END OF ITEM M-100

ITEM M-200
MAINTENANCE AND PROTECTION OF TRAFFIC

CONTRACT DOCUMENTS

200-0.1 This section of these Specifications is a part of the Contract Documents as defined in the General Provisions. All applicable parts of the balance of the Contract Documents are equally as binding for this section as for all other sections.

DESCRIPTION

200-1.1 GENERAL. This work shall consist of maintaining aircraft and vehicular traffic and protecting the public from damage to person and property within the limits of and for the duration of the Contract.

The Contractor shall comply with all guidelines regarding construction safety set forth in FAA Advisory Circular 150/5370-2 (latest revision), *Operational Safety on Airports During Construction* and Supplemental Provisions.

The following items are specifically included without limiting the generality implied by these Specifications and the Contract Drawings.

- Security Badging for Employees, including all badging fees – Refer to item G-001 *Special Work Requirements* and the *Supplemental Provisions* for guidance.
- Preparation of a General Site Safety Plan with submission to the Engineer and Airport for review and implementation
- Providing qualified flag persons, as required, at the locations shown on the plans, required by the local traffic control officials or permits, or as directed by the Owner's representative to minimize any transportation of demolition materials off the site.
- Preparation and submission of written Red-Line Record Documentation (i.e. swing ties to terminated utilities, etc.) to the Engineer and Airport prior to project closeout
- Staged or phased construction, as necessary for the project
- Off-peak construction periods, including both day and night shift work, if applicable.
- Temporary construction lighting for night shift construction periods, if applicable.
- Contacting DIG-SAFE® (811 or www.digsafe.com) prior to any demolition work. Refer to Item B-200 *Building Demolition* for additional details.
- The Contractor shall be responsible for locating, verifications and marking of existing underground utilities (including but not limited to: power, communications/telephone/cable, water, sewer, drainage, natural gas) within the project work areas.
- Installation, maintenance and removal of temporary barricades, warning signs, and hazard markings. Contractor to furnish all required temporary barricades, warning signs, and hazard markings. All temporary barricades, warning signs and hazard markings for the project which will remain the property of the Contractor at the completion of the project.
- Installation, maintenance, and removal of any off-site traffic safety signage necessary for the hauling activities

- Dust control for the demolition and hauling activities
- Cleaning and maintenance of all areas within construction limits and haul routes or areas disturbed by the Contractor's operation via vacuum sweeper trucks.
- Restoration of all surfaces disturbed because of the Contractor's Operations, which are not otherwise paid for under a specific item.

METHOD OF MEASUREMENT

200-2.1 Payment for maintenance and protection of traffic will be made on a lump sum basis. The lump sum shall include all items required to satisfy this Specification.

BASIS OF PAYMENT

200-3.1 The lump sum price bid for maintenance and protection of traffic shall include all equipment, materials, and labor necessary to adequately and safely maintain and protect traffic. Progress payments will be made for this item in proportion to the total amount of contract work completed, less any deductions for unsatisfactory maintenance and protection of traffic.

In the event the contract completion date is extended, no additional payment will be made for maintenance and protection of traffic.

No payment will be made under maintenance and protection of traffic for each calendar day during which there are substantial deficiencies in compliance with the Specification requirements of any subsection of this Section as determined by the Engineer. The amount of such calendar day non-payment will be determined by dividing the lump sum amount bid for maintenance and protection of traffic by the number of calendar days between the date the Contractor commences work and the date of completion as designated in this proposal, without regard to any extension of time.

If the Contractor fails to maintain and protect traffic adequately and safely for a period of four (4) hours, the Owner shall correct the adverse conditions by any means it deems appropriate and shall deduct the cost of the corrective work from any monies due the Contractor. The cost of this work shall be in addition to the liquidated damages and non-payment for maintenance and protection of traffic listed above.

However, where major non-conformance with the requirement of this Specification is noted by the Engineer and prompt Contractor compliance is deemed not to be obtainable, all contract work may be stopped by direct order of the Engineer regardless of whether corrections are made by the Owner as stated in the paragraph above.

Payment will be made under:

Project Item M-200-1 Maintenance and Protection of Traffic - per Lump Sum

END OF SECTION M-200

ITEM M-300
SITE UTILITY REMOVALS

DESCRIPTION

200-1.1 This work shall consist of the removal and disposal of existing site utilities with associated structures and appurtenances as shown on the plans or as directed by the Owner's representative. The utility removal shall also include the restoration of the disturbance for the removals including backfilling of resulting trenches, holes, and pits, as well as the proper disposal of the utility waste materials and appurtenances.

MATERIALS

100-2.1 The Contractor shall supply all materials and equipment required to perform the removal of the utilities in accordance with these specifications and all Federal, state and local regulations and the respective utility suppliers.

100-2.2 All temporary facilities, equipment, and materials to perform the utility removals must adhere to and/or meet EPA, OSHA, and NIOSH regulations, as well as all other Federal, state, and local regulations.

100-2.3 GRANULAR BACKFILL MATERIAL. It is assumed supplemental backfill material will be necessary for the utility removals. The backfill material shall conform to the New Hampshire Department of Transportation Standard Specifications §209 Granular Backfill using Item 209.4 Granular Backfill (Gravel). Granular backfill (gravel) shall consist of a mixture of stones or rock fragments and particles with 95 to 100 percent passing the 3" sieve and 25 to 70 percent passing the No. 4 sieve.

CONSTRUCTION METHODS

200-3.1 GENERAL REQUIREMENTS. The Contractor shall conduct all utility removal operations in a safe, legal, and responsible manner and shall ensure that any equipment, material, or method used shall be safe for the workers and the public. All laws, rules, regulations, utility supplier requirements, and local building codes shall be followed. Local building code shall mean a code enacted or adopted by competent local officials or bodies at least as stringent in its requirements as the "New Hampshire State Fire Prevention and Building Codes" and its associated reference standards. The Contractor is responsible to secure all permits for utility removals, coordinate with all utility owners, and to properly dispose of the waste materials from the removal of pipe materials, structures and appurtenances.

200-3.2 UTILITES. The Contractor shall protect all utility lines to remain during the removal of any adjacent utilities. **At least seventy-two (72) hours (not including weekends and Holidays) in advance** of the commencement date of the utility removals, the Contractor shall notify all operators who have underground or overhead facilities at or near the proposed building demolition and utility removal areas through the one-call notification system **(Dig Safe System – MA/ME/NH/RI/VT - Dial 811 or www.digsafe.com)**. In addition, the Contractor shall contact all utility owners and request a Pre-Demolition Conference with all operators having underground or overhead facilities at or near the proposed demolition and utility removal area.

Before any structure, or building served with/or having utilities thereon, is to be demolished, all telephone, cable, electric, gas, sewer, water, or any other service shall be shut off and terminated at the location and using a method approved by the utility suppliers. Contractor will be required to supply

written confirmation from the utility the shut-off/termination has been completed and approved by the utility supplier.

The limits of utility removal associated as part of the building demolition shall be five (5) feet from the exterior of the existing facility, as specified in Item B-200 *Building Demolition*. All other utility removals shall be as outlined within this specification, unless otherwise shown on the demolition plans or directed by the Owner's representative.

200-3.3 PROTECTION OF EXISTING FACILITES AND UTILITIES TO REMAIN. As noted above, the Contractor shall be responsible for any provisions necessary to protect utilities and any site facilities which will remain after the demolition work from any utility removal operations using means acceptable to the utility owner and the Owner's representative. If such utility lines cannot be protected in place, the Contractor shall temporarily relocate the utility lines, as necessary, in coordination with the utility owner to protect these utilities prior to undertaking any demolition and/or removal work that might affect these utility lines. There shall be no additional cost to the Owner for any coordination and necessary protection provisions or temporary relocation of facilities or utilities.

200-3.4 DUST CONTROL. Provisions shall be made at every demolition area on the site to control the quantity of dust resulting from demolition and utility removal operations by wetting the immediate work area with water, or other appropriate spraying agents, or by means acceptable to the Owner's representative. The Contractor shall also perform sweeping operations to keep any paved surface clean from vehicle tire tracking from the work zone. There shall be no additional cost to the Owner for any dust control for the utility removals.

200-3.5 SITE DRAINAGE FACILITIES. Drainage pipes (including roof drains), drainage manholes, drainage catch basins, and other drainage facilities associated with the limits of the building being demolished shall be removed to the limits shown on the plans, unless otherwise directed by the Owner's representative, and have the end of any drainage line to remain in place to be capped. The capped pipe shall have a 4"x4" wooden witness post installed at the end of the pipe and have the location identified using swing ties, if possible, or using Global Position System (GPS) coordinates. The removal of any drainage line or structures shall be backfilled in lifts of compacted suitable material.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility owners (MHT Maintenance) controlling the drainage facilities for the shutdown of the drainage facilities prior to any removal work.

200-3.6 DOMESTIC SEWAGE FACILITIES. Sewer service pipes, sewer main pipes, sewer manholes and other sewer facilities associated with the building being demolished shall be removed to the limits shown on the plans, unless otherwise directed by the Owner's representative, and have the end of any sewer line to remain in place to be capped. The capped pipe shall have a 4"x4" wooden witness post installed at the end of the pipe and have the location identified using swing ties, if possible, or using Global Position System (GPS) coordinates. Although not anticipated, all sewer facilities, including any abandoned pipe, shall be pumped free of septage or sewage and the waste material properly disposed as part of the utility removal. Any septage recovered from the pumping operation shall be handled, transported, and disposed of in accordance with New Hampshire Department of Environmental Services regulations. The removal of any sewer line or appurtenances shall be backfilled in lifts of compacted suitable material.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies (Town of Londonderry Public Works) controlling the sewage facilities for the shutdown of the sewer facilities prior to any removal work.

200-3.7 DOMESTIC WATER FACILITIES. All domestic water services on the parcel shall be removed to the location shown on the project plans, unless otherwise directed by the Owner's representative, and have the end of any water line to remain in place to be capped. The capped pipe shall have a 4"x4" wooden witness post installed at the end of the pipe and have the location identified using swing ties, if possible, or using Global Position System (GPS) coordinates. It should be noted that a future project may require the future use of any service, so sufficient care should be taken to protect any service from undue damage when removing and capping the existing facilities. The removal of any water service line or appurtenances shall be backfilled in lifts of compacted suitable material.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies (Manchester Water Works) controlling the water facilities for the shutdown of the service line prior to any removal work.

200-3.8 ELECTRIC SUPPLY FACILITIES. All electrical supply building service wires and conduits shall be removed to the limits as shown on the plans, or as directed by the utility supplier. The removal of any underground electric supply conduit shall be backfilled in lifts of compacted suitable material. The removal of any aerial electrical supply facilities shall be disconnected and removed to the transformer or last utility pole to remain in service and all associated service wiring from the disconnection location shall be removed in accordance with the utility owner's requirements. The decommissioning will involve the removal of any utility poles that will no longer be required due to the decommissioning.

The exact removal limits of building and/or site lighting service shutoff/decommissioning/removal work performed by the Contractor and limits of work performed by the electric supplier shall be coordinated with the electrical supplier.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies (Eversource) controlling the electric supply facilities prior to any removal work for the shutdown/decommissioning of the electric supply service.

200-3.9 TELECOMMUNICATION FACILITIES, IF REQUIRED. If required, all telecommunication facilities shall be removed to the limits as indicated on the plans, or as directed by the utility supplier. The removal of any underground telecommunications conduit shall be backfilled in lifts of compacted suitable material. The removal of any aerial telecommunication facilities shall be removed to the utility pole and be abandoned in accordance with the utility owner's requirements.

The exact removal limits of work performed by the Contractor and limits of work performed by the telecommunication facilities owner shall be coordinated with the telecommunication facilities owner.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies and owners (Consolidated Communications, Comcast, & MHT Information Technology Office) controlling the telecommunication facilities prior to any removal work.

200-3.10 NATRUAL GAS SERVICE FACILITIES, IF REQUIRED. If required, natural gas service facilities shall be removed to the limits as shown on the plans, or as directed by the utility supplier. The removal of any underground natural gas facilities shall be backfilled in lifts of compacted suitable material.

The exact removal limits of work performed by the Contractor and limits of work performed by the natural gas supplier shall be coordinated with the natural gas supplier.

The Contractor shall be responsible for making appropriate notifications to the appropriate utility companies and owners (Liberty Utilities) controlling the natural gas facilities prior to any removal work for the shutdown of the natural gas service.

200-3.11 DISPOSAL OF MATERIALS. Disposal of all materials shall be in accordance with all federal, state, and local laws, rules, and regulations; any provision found elsewhere in the Contract Documents; and most specifically in New Hampshire Department of Transportation Standard Specifications §202 Removal of Structures and Obstructions; New Hampshire RSA 149-M Solid Waste Management; and New Hampshire Department of Environmental Services Division of Waste Management rules and regulations and shall be subject to the approval of the Owner's representative. Contractor shall provide to the Owner a disposal plan at least fifteen (15) days prior to removal of demolition debris from the site. Disposal plan shall identify the location of disposal, license and/or permit number of the disposal facility or facilities. Delivery tickets from the location of disposal indicating date, time, and weight of debris disposed at the facility shall be provided to the Owner.

200-3.12 BACKFILL AND RESTORATION. All areas disturbed by the utility removal work included in this specification shall be backfilled using the existing trench materials and supplemented with clean granular material as necessary and providing at least twelve inches (12") of clean bank run gravel material on the surface. The disturbed area shall be restored to a gravel surface condition that will allow for a stabilized surface for use by Airport maintenance, unless otherwise designated on the plans. The disturbed area backfill shall be compacted as noted within these specifications. The surface shall be graded to match the existing adjacent grades. No additional payment will be made for restoration of surfaces, unless the plans note that the finish grade shall have a finished pavement surface constructed. If required at specified locations on the plans, payment for the required restoration items will be made under the various items noted in accordance with a detail for the typical finished pavement section.

200-3.13 COMPACTION. Compaction of the in-situ material disturbed by the utility removals and any granular gravel borrow material used for restoration shall be to at least 90% Standard Proctor Density of the material. The Contractor shall be responsible for all testing of in-situ and granular gravel borrow material for compaction requirements.

METHOD OF MEASUREMENT

200-4.1 UTILITY REMOVAL AND BACKFILL. Measurement shall be made for the removal of each type of utility line or structure at the units as outlined herein. There will be no separate measurement for any associated structures and/or miscellaneous appurtenances indicated on the plans as being removed, capping and "witness stakes" required for the removal, or for the supplemental backfill material required to restore the trench, hole or pit, or other incidental items.

BASIS OF PAYMENT

200-5.1 UTILITY REMOVAL AND BACKFILL Payment shall be made at the unit price for removal of each type of utility line or structure for the units as outlined herein. This price shall be full compensation for the utility removals and for furnishing all labor, materials and equipment, tools, coordination with the respective utility suppliers, excavation, removed utility waste materials and proper disposal, water used for dust control, supplemental gravel borrow material, temporary utility modifications, compaction, grading to the adjacent existing finished grades, and all incidentals necessary to satisfactorily complete the work.

Payment will be made under:

Item M-300-5.1 Drainage Pipe Removal (all sizes) – per linear foot

Item M-300-5.2 Drainage Structure Removal (all types and depths) – per each

Item M-300-5.3 Sewer Pipe Removal (all sizes) – per linear foot

Item M-300-5.4 Sewer Structure Removal (all types and depths) – per each

Item M-300-5.5 Water Pipe Removal (All Copper Services) – per linear foot

Item M-300-5.6 Water Pipe Removal (All Ductile Iron/Cast Iron) – per linear foot **– Not Used**

Item M-300-5.7 Hangar Building #6 Electrical Service and On-Site Shutoff/Decommissioning– per lump sum

Item M-300-5.8 Hangar Building #7 Electrical Service and On-Site Shutoff/Decommissioning – per lump sum

Item M-300-5.9 Site Lighting Electrical Service and On-Site Shutoff/Decommissioning – per lump sum

END OF ITEM M-300

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ITEM M-400
MODIFIED RECLAIMED BASE COURSE

DESCRIPTION

400-1.1 GENERAL. The work shall consist of producing a stabilized base course through the recycling of the existing pavement structure with a depth of acceptable existing base/sub-base material. This combination of pavement and base/sub-base material is to be uniformly crushed, pulverized and blended with additional supplemental crushed aggregate material, as necessary, to meet the specified gradation. The material shall be processed and blended in place with additional supplemental material as necessary to make the reclaimed base material to be in accordance with the required gradation. After the proper gradation has been achieved and approved, the reclaimed base material shall be graded and compacted to the lines and grades shown on the Contract Documents or otherwise directed by the Engineer.

MATERIALS

400-2.1 GENERAL. Material shall meet the requirements of the 2016 New Hampshire Department of Transportation (NHDOT) Standard Specifications for Road and Bridge Construction, or latest edition, using subsection 306 Reclaimed Stabilized Base Course and as modified within this specification.

The reclaimed base material shall consist of the existing pavement blended with the underlying "in situ" base and possibly subbase gravel and/or additional supplemental aggregate stone as required. The material shall be free of loam, clay, and deleterious materials such as brick, reinforcing steel, wood, paper, plaster, lathing, and building rubble, etcetera.

Reclaimed pavement material shall be processed by mechanical means and blended to form a homogeneous material. The equipment for producing the crushed material shall be of adequate size and have sufficient adjustments to produce the desired materials. Any blended materials that are stockpiled for more than 3 months shall be reworked to a uniform material and retested prior to use. However, the Engineer may require additional testing any time the materials appear excessively hard, wet and/or segregated. The processed materials shall be stockpiled in such a manner as to minimize segregation of particle sizes. Any reclaimed pavement borrow material shall come from approved sources and stockpiles. The amount of combined asphalt pavement shall not exceed 50% by volume as determined by visual inspection, and/or by laboratory tests required by the Engineer.

a. Gradation Requirements. The gradation of the final mixture shall fall within the range indicated in Table 1, when tested in accordance with ASTM C 117 and C 136. The final gradation shall be continuously well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on an adjacent sieve or vice versa.

TABLE 1. REQUIREMENTS FOR GRADATION OF RECLAIMED BASE COURSE MATERIAL (AS MODIFIED TO USE AS BASE COURSE MATERIAL)

	Allowable Range
Sieve Size	Percentage Passing by Weight
3 inch	100
1-1/2 inch	80 – 100
3/4 inch	55 – 90
No. 4	40 - 70
No. 200	0 – 10

The portion of the materials passing the No. 40 sieve shall have a liquid limit not greater than 25 and a plasticity index of not greater than 6. The liquid limits shall be determined by AASHTO T90.

The Contractor shall verify the reclaimed material meets the proper gradation with laboratory gradations as outlined within these Specifications and receive approval from the Engineer for the use of the recycled material prior to any placement of the material. **It is unknown whether supplemental crushed aggregate material will be necessary** to meet the gradation requirements, **the Contractor shall verify based on field sampling and testing**. A quantity of supplemental aggregate has been allocated to allow for varying field conditions.

400-2.2 SUPPLEMENTAL AGGREGATE MATERIAL. Aggregate for Crushed Stone for Blending, used to correct gradation deficiencies, shall conform to the requirements of NHDOT Standard Specifications Subsection 304.2.1.1 and the requirements of Section 703, Table 703-1 – Required Grading, Grading Course Aggregates #467 for 1-1/2" stone, as applicable. The supplemental aggregate material shall be approved by the Engineer prior to use.

The supplemental aggregate materials shall consist of hard, durable particles or fragments of stone or gravel. Materials that break up when alternately frozen and thawed or wetted and dried shall not be used for aggregate base course materials. Fine particles shall consist of natural or processed sand. The materials shall be free of harmful amounts of organic material. Unless otherwise specified, the percent wear of base course material shall not exceed 50 percent as determined by AASHTO T 96, Grading A.

The crushed stone shall be reasonably free from clay, loam or deleterious material and not more than 1.0% of satisfactory material passing a No. 200 sieve will be allowed to adhere to the crushed stone. Where crushed stone is to be used for surfacing, this requirement shall be not more than 0.5% of satisfactory material passing a No. 200 sieve.

The stone shall be uniformly blended according to the grading requirements for the respective stone sizes shown on the following Table:

TABLE 2. (NHDOT Table 703-1) Required Grading, Graded Coarse Aggregate (Percent Passing by Weight)

	ASTM #467
Sieve Size	**#4 to 1 ½ in**
2 in	100
1 ½ in	95-100
¾ in	35-70
3/8 in	10-30
No. 4	0-5

400-2.3 SAMPLING AND PRETESTING. The Contractor will take and analyze the existing "in-situ" material data in the Contract Documents, verify the estimate the depth to be recycled as shown on the plans and provide the following information in the bid proposal for each:

1. The estimated depth of existing asphalt pavement material to be recycled.
2. The estimated aggregate gradation of the material after recycling.
3. The estimated size and quantity of additional crushed aggregate to be used.

The information supplied in the Contract Documents is intended to be an indication of the existing conditions and in no way releases the Contractor from the responsibility of fulfilling the requirements of

this specification during the project. Any gradation deficiencies in the existing materials, as indicated by the Construction Document data, or additional test pits during construction, shall be corrected by blending the aggregate material into the mixture. The Contractor shall prepare a job mix formula for the recycled material and the supplemental crushed aggregate (as required) and submit to the Engineer for approval. After the blending of the materials using the job mix formula, the Contractor shall submit gradations and receive approval prior to the placement of the recycled stabilized base material.

CONSTRUCTION METHODS

400-3.1 GENERAL. Reclaiming operations shall not be permitted when the existing pavement or sub-base contains frost, when the sub-base is excessively wet as determined by the Engineer, nor when the air or surface temperature is below 40°F. Prior to the start of reclaiming operations, the Contractor shall locate and protect existing drainage and utility structures and underground pipes, culverts, conduits and other appurtenances. The limit of each sequence of the reclamation process shall be as outlined in the phasing of the project, unless otherwise directed by the Engineer in order that the placing of pavement structure will be completed before beginning the next sequence of reclamation work.

400-3.2 EQUIPMENT. The reclaimed stabilized base shall be processed, using approved reclaimers. Equipment such as a milling machine or a rock crushing plant will not be permitted. Reclaiming equipment shall be equipped with a gauge to show depth of material being processed. The recycling equipment shall have a positive depth control to ensure a uniform depth of processing. This equipment shall have the ability to process the complete design depth specified into a homogeneous mass.

Failure to meet gradation requirements or an insufficient production rate may be considered cause for rejection of the equipment, the construction methods, or both. Failure to meet gradation requirements due to improper equipment or construction methods, shall not constitute a reason for any additional compensation for the import and blending of any aggregate to meet the deficiencies.

At least one vibratory roller shall be used on each reclaimed surface, and shall have a compacting width of not less than five feet. Each roller shall have a gross weight of not less than fifteen tons. Approved equipment shall be maintained in satisfactory working condition at all times.

400-3.2 STRUCTURE REMOVAL & ADJUSTMENTS. Any existing structures shown on the plans to be removed (i.e. catch basin frame/grate, manhole frame/cover, valve box, etc.) shall be performed prior to the reclamation process as applicable and considered to be incidental to the work. All existing drainage and other utility structures are to be located and referenced with witness stakes prior to the reclamation process. If the existing structure configuration or utility casting allows, the existing castings and structure adjustment materials (i.e. bricks) are to be removed and have a steel plate installed. The steel plate shall be placed over the structure opening to allow for a minimum depth **six inches (6") below the bottom of the proposed reclaimed base course** (i.e. or estimated to be least **eighteen inches (18")** for this project). The voids remaining after the structure casting and adjustment materials have been removed are to be filled with a suitable material as determined by the Engineer. **If determined by the Engineer to not be feasible to lower the structure casting to allow for a sufficient depth below the reclaimed base course, as noted above, due to the existing structure configuration, the Contractor shall perform the reclamation work around the existing structure.** The reclaiming operation shall not begin until: (1) all existing structures to be removed have been removed; (2) all allowable structures have been lowered as stated above: and (3) all structures not feasible to be lowered have been clearly identified and referenced for the Contractor to perform the reclamation work around the structure. It shall be the Contractor's responsibility to maintain any drainage to be properly functioning in the areas under construction, including up to the time when the final system is to be put into use. In addition, any negligence by the Contractor for not properly protecting any structure and casting remaining in place during the reclamation process, the Contractor shall repair the

structure and/or replace the casting at no additional cost to the Owner. All structures allowed to be lowered for the reclamation process and worked around will be reset to the finish grade elevation after the reclamation process. All of these costs will be considered incidental to the reclamation process.

400-3.3 ESTIMATED RECLAIM DESIGN DEPTH AND MATERIAL BLENDING. The Contractor shall review the existing site conditions, with additional sampling and testing to determine material blending, to verify the assumptions herein and make their own conclusions for the prosecution of the reclamation work. In order to obtain a good mixture, it is anticipated there shall be **at least two (2) passes** of the reclamation equipment for the area to be reclaimed, whether supplemental aggregate is added or not. Any supplemental crushed aggregate shall be applied after the first pass and reblended with the reclaimed material from the first pass.

It is anticipated that there will be at least **TEN inches (10") – TWELVE inches (12") depth of available Reclaimed Base Material, prior to the additional of any potential Supplemental Crushed Aggregate Material required**. However, it is the Contractor shall verify this reclamation depth estimate as part of the sampling and testing to determine the amount, if any, of the supplemental crushed aggregate material. It is anticipated the **entire Reclaimed Base Material depth, with any supplemental crushed aggregate added, shall be remain in place**, reshaped and compacted for use as base material for any new bituminous pavement to be installed in a future project..

400-3.4 RECLAIMING OPERATIONS. Prior to the start of reclamation operations, the existing pavement shall be swept with a power sweeper to remove all trash, sand, dirt, organic matter, and other undesirable material, to the satisfaction of the Engineer. Care shall be exercised to save all pavement for reclaiming if trenches are constructed prior to processing.

The existing pavement shall be pulverized together with the underlying base and possibly subbase course material. The pulverizing operation shall blend the existing pavement and base course into a homogeneous mass, using the bitumen contained in the pavement as a stabilizer. When supplemental crushed aggregate is necessary to meet the finished gradation, the supplemental crushed aggregate shall be applied to the reclaimed surface for a second pass and re-blended with the previously reclaimed material from the first pass.

The Contractor shall perform a sieve analysis of the reclaimed material for every 5,000 square yards of material processed, or as often as conditions may require as determined by the Engineer, to veriy the final gradation has been achieved. These verification test results shall be made available to the Engineer as soon as possible to allow for the compaction of the reclaimed base material.

400-3.5 COMPACTION AND DUST CONTROL. The reclaimed material shall be fine graded, rolled, and compacted to approximately the pre-existing grades as indicated on the Contract Drawings or as directed by the Engineer. The reclaimed base course shall be tested for compaction, smoothness, and accuracy of grade in accordance with the applicable provisions of these specifications.

Quality Control of the reclaimed base material placement and compaction is the responsibility of the Contractor. The required density for Quality Assurance shall be measured by a Nuclear Density Gauge supplied by an Independent Testing Company selected and retained by the Contractor with the testing witnessed by the Engineer. All Nuclear Density Gauge Testing shall be performed in conformance with ASTM D 6938 "*Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) (latest revision)*" using the Direct Transmission Method.

If any portions of the work are found to be unacceptable by the Engineer based on this Quality Assurance testing, such portions shall be reprocessed (as necessary), re-graded, and re-compacted until the required smoothness and accuracy are obtained at no additional cost to the Owner.

Water may be added during fine grading to improve workability. Additional water shall be applied prior to compaction and may require mixing to blend with reclaimed material to ensure adequate compaction

At the end of each day's progress, the Contractor shall apply water for dust control, unless otherwise directed by the Engineer. At other times when necessary, water for dust control shall be applied as directed by the Engineer. A grader, roller, and water truck/wagon shall be maintained on the project site during the reclamation process. The Contractor shall submit to the Engineer, in writing, a 24-hour availability telephone number for any emergency maintenance dictated by the weather conditions or as determined by the Engineer, for repair, compaction, and dust control.

400-3.6 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY. Aggregate base course shall be accepted for density on a lot basis. A lot will consist of approximately 2,500 square yards.

Each lot shall be divided into two equal sublots. One test shall be made for each sublot. Sampling locations will be determined by the Engineer on a random basis in accordance with statistical procedures contained in ASTM D 3665.

Each lot will be accepted for density when the field density is **ninety percent (90%) of the maximum density** of laboratory specimens prepared from samples of the reclaimed material on the jobsite. The specimens shall be compacted and tested in accordance with **ASTM D 698/AASHTO T99, (Standard Method)**.

The in-place field density may also be determined in accordance with ASTM D 1556 (Sand Cone Method) or ASTM D 2167 (Rubber Balloon Method) at the discretion of the Contractor. If the specified density is not attained, the entire lot shall be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached.

400-3.7 SURFACE TOLERANCES. Not Used.

400-3.8 THICKNESS CONTROL. Not Used.

400-3.9 PROTECTION. Work on the base course shall not be accomplished during freezing temperatures, nor when the subgrade is wet. When the aggregates contain frozen materials or when the underlying course is frozen, the construction shall be stopped.

Hauling equipment may be routed over completed portions of the base course, provided no damage results and provided that such equipment is routed over the full width of the base course to avoid rutting or uneven compaction. However, the Engineer in charge shall have full and specific authority to stop all hauling over completed or partially completed base course when, in his/her opinion, such hauling is causing damage. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at his/her own expense.

400-3.10 MAINTENANCE. Following the completion of the reclaimed base course, the Contractor shall perform all maintenance work necessary to keep the base course in a condition satisfactory for priming. After priming, the surface shall be kept clean and free from foreign material. The base course shall be properly drained at all times. If cleaning is necessary, or if the prime coat becomes disturbed, any work or restitution necessary shall be performed at the expense of the Contractor.

Before preparations begin for the application of a surface treatment or for a surface course, the base course shall be allowed to partially dry until the average moisture content of the full depth of base is less than 80% of the optimum moisture of the base mixture. The drying shall not continue to the extent that the surface of the base becomes dusty with consequent loss of binder. If during the curing period the surface of the base dries too fast, it shall be kept moist by sprinkling until such time as the prime coat is applied as directed.

The Contractor shall remove all survey and grade hubs from the base courses prior to placing any bituminous surface course.

METHOD OF MEASUREMENT

400-4.1 Reclaimed Base Course shall be measured in-place by the Square Yard to the limits specified on the Contract Drawings, or as directed by the Engineer. No deductions will be made for the area of surface utility structures or as otherwise noted on the Contract Drawings. Although not anticipated, the removal of existing small structures (i.e. castings, etc.) necessary for the processing of the reclaimed base material will not be measured and will be considered incidental to this Item. Also as necessary, the lowering and the plating of existing structures or the protecting of existing structures necessary for the processing of the reclaimed base material will not be measured and will be considered incidental to this Item. In addition, the resetting of the structure frames and grates/covers to the final grade shall also be considered incidental.

400-4.2 Supplemental Aggregate Material, as noted above for providing additional volume and/or correcting gradation deficiencies, shall be measured per ton, as verified from truck receipts from calibrated weight scales at the aggregate sources. It is unknown whether supplemental aggregae material is to be used for the Reclaimed Base Material. However, the Contractor shall have the final responsibility for determining the proper amount of reclaimed material requiring blending based on the actual site conditions.

BASIS OF PAYMENT

400-5.1 The accepted quantity of **Reclaimed Base Course**, as measured above, shall be paid for at the contract unit price bid per Square Yard. The unit price bid shall include full compensation for all labor, tools, equipment, materials, and all incidental work necessary to complete the work as specified. This unit price shall include all compensation for crushing, pulverizing, blending with supplemental aggregate, sampling and testing, removal and handling, on-site hauling, temporary stockpiling, spreading and placing, grading, compacting, any incurred costs resulting from the Contractor's decision to process off site and not in place, and any incidental costs associated preparing reclaimed base course material.

Although not anticipated, the removal of any existing small structures (i.e. castings, etc.) necessary for the processing of the reclaimed base material will be considered incidental to this Item and no additional compensation will be allowed. Also as necessary, the lowering and plating of existing structures or the protecting of existing structures necessary for the processing of the reclaimed base material will be considered incidental to this Item and no additional compensation will be allowed. In addition, the resetting of the structures to the final grade after the reclamation process shall be considered incidental to this item.

Any equipment, materials or controls relating to the grading and compacting of all of the reclaimed base material shall also be considered incidental to the work. Water for dust control and compaction shall be considered incidental to the work. Calcium chloride for dust control is not allowed.

400-5.2 The accepted quantity of **Supplemental Aggregate Material** for providing added volume and/or correcting gradation deficiencies shall be paid for at the contract unit price per ton. The unit price bid shall include full compensation for all labor, equipment, materials, and all incidental work necessary to provide

the material for blending to the site. The cost for blending this supplemental aggregate material with the reclaimed material will be paid as part of the Reclaim Pavement item noted above under 400-5.1.

Payment will be made under:

Item M-400-5.1	Reclaimed Base Course -- per square yard
Item M-500-5.2	Supplemental Aggregate Material -- per ton

END OF SECTION M-400

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ITEM M-500
TEMPORARY ACCESS ROAD

DESCRIPTION

500-1.1 This work shall consist of the installation of a temporary access road for future phases of the overall project to realign the existing Green Drive from the northerly side of the Project Limits through the existing parking area to interconnect back into Green Drive (near the "cut-through" drive from Green Drive to the Airport Loop Road) and continue to access the Terminal Building Loading Dock. As part of the new temporary realignment, the Terminal Building delivery vehicle parking location will also be relocated to the existing parking area located on the southerly side of the "cut-through" drive from Green Drive to the Airport Loop Road as shown on the Plans. The temporary access road installation shall include: unclassified excavation to allow for the transition from existing Green Drive at both interconnection locations to the proposed temporary realignment through the existing parking lot; providing the necessary roadway geometry grading and subgrade preparation; installation of base course, hot mix asphalt pavement, and pavement markings; and providing and installing concrete jersey barrier delineators along the westerly side of the temporary access road.

This work shall also provide for the measurement and payment. as described in Section B-200 *Building Demolition*, for the individual restoration items (i.e. unclassified excavation, base course, and hot mix asphalt pavement materials) relating to the Demolition of Traffic Control Gates and Islands.

MATERIALS

500-2.1 The Contractor shall supply all materials and equipment required to perform the temporary access road in accordance with these specifications and all Federal, state and local regulations. Material shall meet the requirements of the 2016 New Hampshire Department of Transportation (NHDOT) Standard Specifications for Road and Bridge Construction, or latest edition, and as modified within this specification.

500-2.2 All temporary facilities, equipment, and materials to perform the temporary access road installation must adhere to and/or meet all Federal, state, and local regulations.

500-2.3 BASE COURSE MATERIAL. The base course material necessary for the base course for any new or modified access road/drive shall use the materials and installation requirements of the New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications. The base course material shall conform to the requirements of the NHDOT Standard Specifications §304 Base Course Materials, using **either 304.3 Crushed Gravel or 304.4 Crushed Stone (fine)**.

500-2.4 HOT MIX ASPHALT MATERIAL. The hot mix asphalt materials necessary for any new or modified access road/drive shall use the materials and installation requirements of the New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications §401 Plant Mix Pavements – General and §403 Hot Bituminous Pavement. The hot mix asphalt materials shall be supplied by NHDOT certified supplier and conform to the requirements of a NHDOT approved Job Mix Formula for **1/2" wearing course mix pavement**. All tack coat material required shall be an emulsified asphalt as specified in ASTM D3628 as an asphalt application for tack coat appropriate to local conditions (including Type RS-1).

500-2.5 PAVEMENT MARKING MATERIALS.

A. **Paint**. Paint shall be waterborne in accordance with the requirements of this paragraph. Paint

colors shall comply with Federal Standard No. 595.

Waterborne. Paint shall meet the requirements of Federal Specification TT-P-1952F, Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

B. **Glass Beads**. Not Required for temporary installation.

Table 500-1 Federal Standard Colors

Paint Color	Fed Std. No 595 Color Number
White	37925
Yellow	33538 or 33655
Black (if specified)	37038

Table 500-2 Paint Type and Application Rates

Paint		Glass Beads	
Type	Application Rate Maximum	Type I, Gradation A Minimum	Type III Minimum
Waterborne Type I or II	115 ft^2/gal	Not Required	Not Required

500-2.6 JERSEY BARRIER MATERIALS. Standard New Jersey-shaped barriers shall be a portable barrier having a minimum height of 32 inches and minimum length of 8 feet. The portable barrier shall be constructed of either:

a. Precast concrete materials conforming to ASTM C 825 – Standard Specification for Precast Concrete Barriers and NHDOT §606 paragraph 3.7.3 Precast Barriers.
b. UV resistant polyethylene plastic (colored orange) that will be required to be weight ballasted (water or other acceptable materials).

CONSTRUCTION METHODS

500-3.1 GENERAL REQUIREMENTS. The Contractor shall conduct all construction operations in a safe, legal, and responsible manner and shall ensure that any equipment, material, or method used shall be safe for the workers and the public. All laws, rules, regulations, and local codes shall be followed.

500-3.2 UTILITES. Refer to Sections B-200 *Building Demolition* and M-300 *Utility Removals* for adjacent utility locations with associated work and for any other utility requirements.

500-3.3 HAZARDOUS MATERIALS. Although no hazardous materials are anticipated to be encountered for the temporary access road installation, refer to Section B-300 *Soil Management* for any requirements if these material are encountered during the progression of the work.

500-3.4 DUST CONTROL. Provisions shall be made at the site to control the quantity of dust resulting from any construction operations by wetting the immediate work area with water or other appropriate spraying agents or by means acceptable to the Owner's representative.

500-3.5 UNCLASSIFIED EXCAVATION. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and Resident Project Representative (RPR) shall agree that the original ground lines are the original topographic mapping as referenced in the Contract Documents or the RPR shall agree to any adjustments are to be made to the original ground lines.

In computing volumes of excavation, the average end area method will be used. Where it is impracticable to measure material by the cross-section method due to irregular, isolated deposits, acceptable methods to the Resident Project Representative involving three-dimensional measurement may be used. When measurement of materials in vehicles by the Resident Project Representative is permitted, the quantity will be determined as 80 percent of the loose volume.

Unsuitable material shall consist of any saturated or unsaturated natural or man-made material such as, but not limited to, stumps, vegetation, demolition debris and structures encountered during the work that the Engineer determines to be unsuitable for roadway foundation material. Unsuitable material shall be treated as unclassified excavation for removal and disposal, while the refill shall be performed using the base course material or other suitable material acceptable to the Resident Project Representative.

500-3.6 DISPOSAL OF UNCLASSIFIED EXCAVATION AND OTHER MATERIALS. Disposal of all unclassified excavation and other materials shall be in accordance with all federal, state, and local laws, rules, and regulations and any provision found elsewhere in the Contract Documents.

500-3.7 ROADWAY GRADING. The temporary access road will be used as the relocated access road to the Terminal Building Loading Dock area during future phases of the overall project. Since the access roadway installation is temporary and will be replaced in a future phase of the overall project, the proposed finished roadway profile grade will be based upon a field determined layout as directed by the Resident Project Representative, in conjunction with the Contractor, to allow for acceptable vertical grade transitions along the profile for the existing site conditions. The proposed transverse grading may not be a typical crown section and shall match to the existing site conditions grades to allow for proper drainage to existing drainage structures and not cause any ponding. Any transitional transverse side slope grading to the existing site grading shall also be field determined and shall not exceed a 6 Horizontal:1 Vertical ratio.

500-3.8 BASE COURSE MATERIAL. The placing of the base course material shall be performed as follows:

A. The subgrade shall be shaped to the required elevation at a depth to match the proposed finish grade and maintained in a smooth condition free of holes and ruts. If the hauling equipment causes ruts in the subgrade, the equipment shall be operated only on the course being placed, behind the spreading equipment.
B. Care shall be taken to avoid segregation during placement. Base course material shall be dumped on the course being placed and spread at once onto the previously placed layer. If spreading equipment is not available, dumping for placement will not be permitted. Any segregation that occurs shall be remedied or the materials removed and replaced at no additional cost to the Owner.
C. The Contractor's method of operation shall be such that oversized stones will not be delivered to the project.
D. To prevent segregation of crushed aggregate during spreading and to assist in obtaining the required density of the mixture, water may be added to the crushed aggregate prior to performing

the grading operations. The course shall be maintained in the moist condition during grading operations.

E. The base course material shall be spread in the amount necessary for proper consolidation and shall be shaped true to grade and cross-section by means of power graders or other approved equipment.

500-3.9 SUBGRADE AND BASE COURSE MATERIAL COMPACTION. The density of the subgrade and crushed stone base courses shall be determined by AASHTO T 310/ASTM D6938 (Nuclear Methods). Compaction of the disturbed in-situ granular subgrade material and any roadway base course materials used for the temporary access road installation shall be to at least 95% Standard Proctor Density (AASHTO T 99/ASTM D698) of the material. The Contractor shall be responsible for all sampling and testing of all materials for conformance with the compaction requirements.

500-3.10 HOT MIX ASPHALT. The placing of the hot mix asphalt material shall be performed as follows:

A. **Weather limitations.** The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than 45°. The temperature requirements may be waived by the Resident Project Representative, if requested; however, all other requirements including compaction shall be met.

B. **Asphalt Plant.** The mixing plant shall conform to the requirements of New Hampshire Department of Transportation (NHDOT) Standard Specifications Standard Specifications §401 paragraph 3.1 Mixing Plants.

C. **Weighing and Hauling – General**. The Contractor shall provide an approved automatic printer system that prints the weights of the material delivered, provided the system is used in conjunction with an approved automatic batching and mixing control system. Such weights shall be evidenced by a weight slip for each load.

Weight slips shall include the following for batch plants with automatic proportioning equipment:

(a) Tare weight of aggregate weigh box.
(b) Tare weight of asphalt binder weigh bucket.
(c) Accumulative weights as batched for each aggregate (total of last aggregate will be aggregate total).
(d) Weight of asphalt binder.
(e) Accumulated total weight of batch.

Each weight slip will show a consecutive load number and shall include an accumulative total of material delivered for each day

D. **Hauling equipment.** Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the Resident Project Representative. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

E. **Asphalt pavers.** Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width of ten (10) feet.

F. **Rollers.** The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

G. **Placement Method Requirements** All courses shall be spread and finished to the required thickness by approved, self-contained, self-propelled spreading and finishing machines (pavers). Pavers shall be provided with an adjustable, activated screed and shall be capable of spreading the mixtures with a finish that is smooth, true to the required cross-section, uniform in density and texture, and free from hollows, tears, gouges, corrugations, and other irregularities. Broadcasting behind the paver shall be held to a minimum. Pavers shall be capable of spreading and finishing courses of the required thicknesses and lane widths. Horizontally oscillating strike-off assemblies will not be approved.

The activated screed shall be of the vibrating or tamping bar type or a combination of both and shall operate without tearing, shoving, or gouging the mixture. The activated portion of the screed shall extend the full width of the mixture being placed in the traveled way and other areas with sufficient width to accommodate a paver. In other locations as permitted such as narrow shoulders, tapers, and areas adjacent to curbs, non-activated extensions to the screed will be allowed. The paver shall be equipped with a screed heater. The screed heater shall be used when starting a cold machine and for maintaining a suitable screed temperature when needed.

The paver hopper gates shall be adjusted to pass the correct amount of mix to the spreading screws so that the screws operate more or less continuously. The height of material shall be maintained at a constant level in front of the screed, to a point where approximately half of the auger shall be visible at all times.

When required by the Resident Project Representative, pavers shall be equipped with the following automatic screed controls for each paver:

1. Two 24 ft ski type devices or floating beams.
2. Two grade sensors.
3. Two short skis (joint matchers).
4. Slope sensing control for transverse slope. The sensors for either or both sides of the paver shall be capable of sensing grade from an outside reference line or from the surface using a ski type device and shall be capable of sensing transverse slope of the screed. The sensors shall provide automatic signals that operate the screed to maintain the desired grade and transverse slope. Pavers shall not be used until the automatic controls have been checked and approved by the Engineer.

The use of automatic grade and slope controls shall be required on all pavers.

Whenever a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually for the remainder of the normal working day on which the breakdown or malfunction occurred. This method of operation must meet all other specifications.

On projects or parts of projects where the Resident Project Representative deems that the use of automatic controls are impracticable, some or all of the automatic grade controls listed above may

be waived.

The forward speed of the paver shall be adjusted to the rate of the supply of materials so that the paver operates without having to make stops except for emergencies. If the Resident Project Representative determines that the paving operations result in excessive stopping of the paver, the Resident Project Representative may suspend all paving operations until the Contractor makes arrangements to synchronize the rate of paving with the rate of delivery of materials.

H. **Laydown, placing, and finishing.** Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat before new asphalt material is placed against existing asphalt material, including butt joints. The tack coat shall be considered incidental to the placement of the hot mix asphalt material.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope unless shown otherwise on the laydown plan as accepted by the Resident Project Representative. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 10 feet, except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

As applicable, the longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot; however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The Resident Project Representative (RPR) may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness originally placed. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

I. **Compaction of asphalt mixture.** After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed**.**

The minimum mat density compaction requirement shall be 91% of maximum theoretical density as determined in accordance with AASHTO T 209 from plant Quality Control Testing. The field density verifications methods shall be performed by the Contractor using acceptable Quality Control methods with witnessing by the Resident Project Representative. Cores will not be required for in-place densities.

J. **Joints.** The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which are have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F (80°C); or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. An asphalt tack coat or other product approved by the Resident Project Representative shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

K. **Sawcutting.** All sawcutting necessary for the installation shall be considered as incidental and shall not receive any separate payment.

500-3.11 PAVEMENT MARKINGS. The placing of the pavement markings shall be performed as follows:

A. **Equipment.** Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine (if required), and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

B. **Preparation of surfaces.** Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminates that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the Resident Project Representative. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

C. **Layout of markings.** The proposed markings shall be laid out in advance of the paint application. If required, include the locations of markings to receive glass beads as shown on the Plans. The layout shall have the following widths:

Line Type	Width - inch
Centerlines	4
Edgelines	4
Stop Lines	12
Crosswalk Lines (if applicable)	6
Parking Space Markings (if applicable)	4

D. **Placement.** Longitudinal lines placed on tangent roadway segments shall be straight and true. Longitudinal lines placed on curves shall be continuous smoothly curved lines consistent with roadway alignment. All pavement markings placed shall meet the tolerance limits shown on the plans.

E. **Protection and cleanup.** After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from traffic, excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. Damage to any markings as a result of damage shall be repaired by the Contractor at no cost to the Owner.

The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the Resident Project Representative. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

500-3.12 RESTORATION OF DISTURBED AREAS. All areas disturbed by the temporary access road installation work included in this specification shall be restored to its existing surface condition using the same materials, unless otherwise designated on the plans. The disturbed locations shall be restored as shown on the Plans. All disturbed areas shall be compacted as described within this specification and graded to match the existing finished grades in the area, unless otherwise shown on the Plans. No additional payment will be made for restoration of surfaces and shall be considered as incidental to all other line items, unless specifically noted for payment on the Plans or within the specifications.

500-3.13 JERSEY BARRIERS. Install jersey barriers as shown on the Plans, unless otherwise directed by the Resident Project Representative. The layout of the jersey barriers alignment shall have approximately five (5) feet between the ends of each jersey barriers.

METHOD OF MEASUREMENT

500-4.1 UNCLASSIFIED EXCAVATION. Unclassified Excavation shall be measured by the cubic yard. The quantity of Unclassified Excavation to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed by the Resident Project Representative.

500-4.2 BASE COURSE MATERIAL. The quantity of Base Course Material shall be measured by the number of cubic yards of material actually constructed and accepted by the Resident Project Representative as complying with the plans and specifications. Base materials shall not be included in any other excavation quantities. Measurement shall not include the quantity of materials installed without authorization beyond normal removal limits, or the quantity of material used for purposes other than those directed by the Resident Project Representative.

500-4.3 HOT MIX ASPHALT. Hot mix asphalt mix pavement shall be measured by the number of tons of asphalt pavement used in the accepted work by the Resident Project Representative. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

500-4.4 PAVEMENT MARKINGS. The quantity of markings shall be paid for shall be measured by the number of square feet of painting**.**

500-4.5 JERSEY BARRIERS. Jersey barriers will be measured by the number of each barrier installed as a completed unit, in place, ready for use, and accepted by the Resident Project Representative.

BASIS OF PAYMENT

500-5.1 UNCLASSIFIED EXCAVATION. Unclassified Excavation payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

500-5.2 BASE COURSE MATERIAL. Base Course Material payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials and for all operations, hauling, placing, and compacting of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item..

500-5.3 HOT MIX ASPHALT. Payment for the hot mix asphalt pavement meeting all acceptance criteria as specified in paragraph 500-3.10 I. shall be made at the contract unit price per ton for asphalt. The price shall be compensation for furnishing all materials, for all preparation, mixing, sawcuting of existing pavements, tack coat materials, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

500-5.4 PAVMENT MARKINGS. Payment for markings shall be made at the contract price for the number of square feet of painting.

500-5.5 JERSEY BARRIERS. Payment will be made at the Contract unit price for each complete Jersey Barrier installed by the Contractor and accepted by the Resident Project Representative. This payment will be full compensation for furnishing all materials and for all preparation, layout, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

Item M-500-5.1 Unclassified Excavation – per cubic yard

Item M-500-5.2 Base Course Material – per cubic yard

Item M-500-5.3 Hot Mix Asphalt (NHDOT 403 – ½" Wearing Course) – per Ton

Item M-500-5.4 Pavement Markings – per Linear Foot

Item M-500-5.5 Jersey Barrier –per Each

END OF ITEM M-500

ITEM C-102
TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

DESCRIPTION

102-1. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 Installation, maintenance and removal of silt fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of

silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

102-3.4 Installation, maintenance and removal of other soil erosion and siltation control materials and devices. All other standard commercial grade materials and devices shall be installed in accordance with the manufacturer's recommendations and all applicable federal, state or local regulations. The installation of the other soil erosion and siltation control materials and devices shall be approved by the RPR before being incorporated into the project.

102-3.5 Stormwater Prevention Pollution Plan. A customized Storm Water Pollution Prevention Plan (SWPPP) **will not be required** for the project.

However, the Contractor shall identify Best Management Practices (BMPs) to be implemented during construction in addition to the minimum requirements shown in the Contract Documents and for any stockpile, material storage, or staging locations, as necessary. BMPs are designed to minimize potential contamination of stormwater as a result of contact with soil stockpiles, materials, equipment and vehicles. All BMPs shall also be considered for temporary stockpile or storage locations not immediately on the project site, but used for the project.

A Notice of Intent (NOI) to the U.S. Environmental Protection Agency (EPA) for coverage under the Construction General Permit (CGP) for Stormwater Discharge from Construction Sites as part of the USEPA NPDES program **will not be required** for the project.

METHOD OF MEASUREMENT

102-4.1 Temporary erosion and pollution control work required will be performed as scheduled or directed by the RPR. Completed and accepted work will be measured as follows:

a. Installation and removal of inlet protection filter bags will be measured by the each.

b. Installation and removal of erosion control log will be measured by the linear foot (meter).

102-4.2 Any incidental BMPs for stockpiles, material storage, or staging locations as needed by the Contractor shall not be measured separately and shall be considered incidental to the overall project.

102-4.3 Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

102-4.4 The Storm Water Pollution Prevention Plan (SWPPP) and submission of the USEPA NPDES CGP Notice of Intent are not required for the project.

BASIS OF PAYMENT

102-5.1 Accepted quantities of temporary water pollution, soil erosion, and siltation control work ordered by the RPR and measured as provided in paragraph 102-4.1 will be paid for under:

Item C-102-5.1 Installation and removal of inlet protection filter bags per each

Item C-102-5.2 Installation and removal of erosion control logs per linear feet (meter)

Where other directed work falls within the specifications for a work item that has a contract price, the units

of work shall be measured and paid for at the contract unit price bid for the various items.

Any incidental BMPs needed by the Contractor for stockpiles, material storage, or staging locations shall not be paid for separately and shall be considered incidental to the overall project.

Temporary control features not covered by contract items that are ordered by the RPR will be paid for in accordance with Section 90, paragraph 90-05 *Payment for Extra Work*.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

ITEM C-105
MOBILIZATION

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to **five (5)** percent of the total project cost.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. With first pay request, 25%.

b. When 25% or more of the original contract is earned, an additional 25%.

c. When 50% or more of the original contract is earned, an additional 40%.

d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation,* the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105-1 Mobilization (Limit 5%) per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF SECTION C-105

ITEM F-162
CHAIN-LINK FENCE

DESCRIPTION

162-1.1 This item shall consist of furnishing and erecting a chain-link fence in accordance with these specifications, the details shown on the plans, and in conformity with the lines and grades shown on the plans or established by the RPR.

MATERIALS

162-2.1 Fabric. The fabric shall be woven with a 9-gauge galvanized steel wire in a 2-inch (50 mm) mesh and shall meet the requirements of ASTM A392, Class 2.

162-2.2 Barbed wire. Barbed wire shall be 2-strand 12-1/2 gauge zinc-coated wire with 4-point barbs and shall conform to the requirements of ASTM A121, Class 3, Chain Link Fence Grade.

162-2.3 Posts, rails, and braces. Line posts, rails, and braces shall conform to the requirements of ASTM F1043 or ASTM F1083 as follows:

- Galvanized tubular steel pipe shall conform to the requirements of Group IA, (Schedule 40) coatings conforming to Type A, or Group IC (High Strength Pipe), External coating Type B, and internal coating Type B or D.
- Roll Formed Steel Shapes (C-Sections) shall conform to the requirements of Group IIA, and be galvanized in accordance with the requirements of ASTM F1043, Type A.

Posts, rails, and braces, with the exception of galvanized steel conforming to ASTM F1043 or ASTM F1083, Group 1A, Type A, or aluminum alloy, shall demonstrate the ability to withstand testing in salt spray in accordance with ASTM B117 as follows:

External: 1,000 hours with a maximum of 5% red rust.

Internal: 650 hours with a maximum of 5% red rust.

The dimensions of the posts, rails, and braces shall be in accordance with Tables I through VI of Federal Specification RR-F-191/3.

162-2.4 Gates. Gate frames shall consist of galvanized steel pipe and shall conform to the specifications for the same material under paragraph 162-2.3. The fabric shall be of the same type material as used in the fence.

162-2.5 Wire ties and tension wires. Wire ties for use in conjunction with a given type of fabric shall be of the same material and coating weight identified with the fabric type. Tension wire shall be 7-gauge marcelled steel wire with the same coating as the fabric type and shall conform to ASTM A824.

All material shall conform to Federal Specification RR-F-191/4.

162-2.6 Miscellaneous fittings and hardware. Miscellaneous steel fittings and hardware for use with zinc-coated steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with fabric posts, and wires of the quality specified herein. All steel fittings and hardware shall be protected with a zinc coating applied in conformance with ASTM A153. Barbed wire support arms shall withstand a load of 250 pounds (113 kg) applied vertically to the outermost end of the arm.

162-2.7 Concrete. Concrete shall have a minimum 28-day compressive strength of 3000 psi (2670 kPa).

162-2.8 Marking. Each roll of fabric shall carry a tag showing the kind of base metal (steel, aluminum, or

aluminum alloy number), kind of coating, the gauge of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal (steel, aluminum, or aluminum alloy number), and kind of coating.

CONSTRUCTION METHODS

162-3.1 General. The fence shall be constructed in accordance with the details on the plans and as specified here using new materials. All work shall be performed in a workmanlike manner satisfactory to the RPR. The RPR shall establish and mark the property line or fence line for the work. The Contractor shall span the opening below the fence with barbed wire at all locations where it is not practical to conform the fence to the general contour of the ground surface because of natural or manmade features such as drainage ditches. The new fence shall be permanently tied to the terminals of existing fences as shown on the plans. The Contractor shall stake down the woven wire fence at several points between posts as shown on the plans.

The Contractor shall arrange the work so that construction of the new fence will immediately follow the removal of existing fences. The length of unfenced section at any time shall not exceed 300 feet (90 m). The work shall progress in this manner and at the close of the working day the newly constructed fence shall be tied to the existing fence.

162-3.2 Clearing fence line. Clearing shall consist of the removal of all stumps, brush, rocks, trees, or other obstructions that will interfere with proper construction of the fence. Stumps within the cleared area of the fence shall be grubbed or excavated. The bottom of the fence shall be placed a uniform distance above ground, as specified in the plans. When shown on the plans or as directed by the RPR, the existing fences which interfere with the new fence location shall be removed by the Contractor as a part of the construction work unless such removal is listed as a separate item in the bid schedule. All holes remaining after post and stump removal shall be refilled with suitable soil, gravel, or other suitable material and compacted with tampers.

The cost of removing and disposing of the material shall not constitute a pay item and shall be considered incidental to fence construction.

162-3.3 Installing posts. All posts shall be set in concrete at the required dimension and depth and at the spacing shown on the plans.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within seven (7) days after the individual post footing is completed.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches (50 mm) larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches (300 mm). After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation.

162-3.4 Installing top rails. The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion.

162-3.5 Installing braces. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

162-3.6 Installing fabric. The wire fabric shall be firmly attached to the posts and braced as shown on the plans. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall

generally follow the contour of the ground, with the bottom of the fence fabric no less than one inch (25 mm) or more than 4 inches (100 mm) from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 6 inches (150 mm) or less.

162-3.7 Electrical grounds. Electrical grounds shall be constructed at 500 feet (150 m) intervals. The ground shall be accomplished with a copper clad rod 8 feet (2.4 m) long and a minimum of 5/8 inches (16 mm) in diameter driven vertically until the top is 6 inches (150 mm) below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. Installation of ground rods shall not constitute a pay item and shall be considered incidental to fence construction. The Contractor shall comply with FAA-STD-019, Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment, paragraph 4.2.3.8, Lightning Protection for Fences and Gates, when fencing is adjacent to FAA facilities.

162-3.8 Cleaning up. The Contractor shall remove from the vicinity of the completed work all tools, buildings, equipment, etc., used during construction. All disturbed areas causing an uneven finished surface (including any fence removals and excavated foundations) shall have the disturbed area refilled with a granular backfill material.

METHOD OF MEASUREMENT

162-4.1 Chain-link fence will be measured for payment by the linear foot (meter). Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings.

162-4.2 Gates will be measured as complete units.

162-4.3 Chain-link fence removal will be measured for payment by the linear foot (meter). Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings and regardless of the fence height.

BASIS OF PAYMENT

162-5.1 Payment for chain-link fence will be made at the contract unit price per linear foot (meter).

162-5.2 Payment for vehicle or pedestrian gates will be made at the contract unit price for each gate.

162-5.3 Payment for chain-link fence removal will be made at the contract unit price per linear foot (meter).

The price shall be full compensation for furnishing all materials, and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item F-162-5.1a	10-ft Chain-Link Security Fence - per linear foot
Item F-162-5.1b	8-ft Chain-Link Site Fence - per linear foot
Item F-162-5.2a	Vehicle Gates (25’ wide opening) – per each
Item F-162-5.2b	Pedestrian Gates – **Not Used**
Item F-162-5.3	Chain-Link Fence Removal - per linear foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are

referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A121	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392	Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A491	Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A824	Standard Specification for Metallic-Coated Steel Marcelled Tension Wire for Use with Chain Link Fence
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM F668	Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and other Organic Polymer Coated Steel Chain-Link Fence Fabric
ASTM F1043	Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework
ASTM F1083	Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F1183	Standard Specification for Aluminum Alloy Chain Link Fence Fabric
ASTM F1345	Standard Specification for Zinc 5% Aluminum-Mischmetal Alloy Coated Steel Chain-Link Fence Fabric
ASTM G152	Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
ASTM G155	Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

Federal Specifications (FED SPEC)

FED SPEC RR-F-191/3	Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces)
FED SPEC RR-F-191/4	Fencing, Wire and Post, Metal (Chain-Link Fence Accessories)

FAA Standard

FAA-STD-019	Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment

FAA Orders

5300.38	AIP Handbook

END OF ITEM F-162