



**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC  
11 Laurier St./ 11 rue, Laurier  
Place du Portage, Phase III  
Core 0A1 / Noyau 0A1  
Gatineau, Québec K1A 0S5  
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL**  
**DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

<b>Title - Sujet</b> ASSET METALS FREE SOLVENT WET BENCH	
<b>Solicitation No. - N° de l'invitation</b> 31184-130448/A	<b>Date</b> 2013-08-14
<b>Client Reference No. - N° de référence du client</b> 31184-130448	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$PV-915-63293	
<b>File No. - N° de dossier</b> pv915.31184-130448	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2013-09-24</b>	
<b>Time Zone</b> Fuseau horaire Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Gosselin, Monique	<b>Buyer Id - Id de l'acheteur</b> pv915
<b>Telephone No. - N° de téléphone</b> (819) 956-3803 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> National Research Council Canada Bldg M-50 1200 Montreal Road Ottawa, Ontario K1A 0R6	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Scientific, Medical and Photographic Division / Division de  
l'équipement scientifique, des produits photographiques et  
pharmaceutiques  
11 Laurier St./ 11 rue, Laurier  
6B1, Place du Portage  
Gatineau, Québec K1A 0S5

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM	Destination	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	METALS FREE SOLVENT WET BENCH IN ACCORDANCE WITH ALL THE MANDATORY SPECIFICATIONS DETAILED IN ANNEX A.	Total		1	Lot	\$		XXXXXXXXXXXX		
2	III V ACID WET BENCH IN ACCORDANCE WITH ALL THE MANDATORY SPECIFICATIONS DETAILED IN ANNEX A-1.	Total		1	Lot	\$		XXXXXXXXXXXX		

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## PART 1 - GENERAL INFORMATION

### 1. Security Requirement

There is no security requirement associated with this bid solicitation..

### 2. Requirement

The requirement is detailed under the "Line Item Detail".

### 3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

## PART 2 - BIDDER INSTRUCTIONS

### 1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete:           sixty (60) days  
Insert:             ninety (90) days

#### 1.1 SACC Manual Clauses

B1000T	Condition of Material	2007-11-30
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### 2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

### 3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

### 4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of Ontario, Canada.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

## PART 3 - BID PREPARATION INSTRUCTIONS

### 1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I:        Technical Bid (two (2) copies)  
Section II:       Financial Bid (one (1) copy)  
Section III:      Certifications (one (1) copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

## 1.1 Section I: Technical Bid

The following applies to the Requirement and bidders must provide the following information in the bid where applicable:

### 1.1.1 On-site Commissioning (item 1only)

On-site commissioning and demonstration of the Metal Free Solvent Wet Bench fire suppression system must be provided.

### 1.1.2 Training

On-site training for the Metal Free Solvent Wet Bench fire suppression must be provided for up to five (5) equipment techs. All costs associated with the on-site training must be included in the price.

On-site training will take place at time of commissioning.

### 1.1.3 Product(s) Offered

The Bidder must indicate the make and model number of the products offered (identify specific components which make up the system):

Name of Manufacturer: \_\_\_\_\_

Model/Part Number: \_\_\_\_\_

Literature attached: Yes (\_\_\_\_) No (\_\_\_\_)

### 1.1.4 Point of Manufacture/Shipping

The Bidder must state the point of manufacture/shipping of goods:

Location: \_\_\_\_\_

Postal Code: \_\_\_\_\_



2. ABILITY TO MEET THE TECHNICAL REQUIREMENT (MANDATORY):

a) For Items Defined by Specifications:

The bidder is requested to cross reference the mandatory technical criteria contained herein to their supporting technical documentation.

b) Provision of Supporting Technical Documentation:

Supporting technical documentation for the stores offered must be provided with the bid at time of bid closing.

Technical brochures or technical data MUST be provided to verify compliancy to the technical mandatory specifications.

3. COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS REQUEST FOR PROPOSAL (MANDATORY)

4. Please note that the requirements of the Federal Contractors Program for Employment Equity may apply - (see Part 5).

5. Bidders must demonstrate their wet bench manufacturing capabilities are of the highest standard by identifying at least one (1) site where Clean Room Wet Benches were supplied and the Wet Benches at the identified site(s) were subsequently successfully CSA certified or certified in according with the province of Ontario's Electrical code. Proof of Certification must be supplied with the bid response..

**Reference in Contractors Proposal:** \_\_\_\_\_

6. The Bidder must have at least 10 yrs experience in the manufacturing of wet benches for Class 100/1000 (ISO Class 5/6) clean room application.

**Reference in Contractors Proposal:** \_\_\_\_\_

7. The Bidder must have a manufactured a minimum of twenty (20) similar benches for service in the semiconductor/microelectronics industries.

**Reference in Contractors Proposal:** \_\_\_\_\_

8. The Bidder must have a minimum of five (5) Acid Processing benches currently in service utilizing similar chemistries in a clean room environment.

**Reference in Contractors Proposal:** \_\_\_\_\_

- 
9. The Bidder must have a minimum of five (5) Solvent Processing benches currently in service utilizing similar chemistries in a clean room environment.

**Reference in Contractors Proposal:** \_\_\_\_\_

10. The Bidders must provide company/organization names, addresses and contact person(s) (with both telephone numbers and/or e-mail addresses) for a minimum of ten (10) instances (5 for Acid Benches and 5 for Solvent benches) where the Bidder has supplied same/similar Acid and Solvent Processing Wet Benches as referenced in the this bid. The equipment referenced must be currently in operation. The user list references will be used to make inquiries about the performance of the bidder's equipment; the quality of the Wet Bench (including components provided), and the after sales service provided by the bidder to their clients. All bidders must provide the required information at the bid closing date.

**Reference in Contractors Proposal:** \_\_\_\_\_

1.1.1 Mandatory Technical Criteria

See Annex A - Mandatory Specifications for the metal free solvent wet bench and Annex A-1 - Mandatory Specifications for the III-V acid wet bench

**1.2 Financial Evaluation**

The lowest evaluated price will be established using the following criteria:

- a) prices will be evaluated in Canadian Funds including excise taxes, Canadian Customs Duty (if applicable) and applicable taxes excluded. For evaluation purposes, bids received in a foreign currency will be converted to Canadian funds using the appropriate rate of exchange using the rate quoted by the Bank of Canada as being in effect on date of bid closing.
- b) prices will be evaluated on a DDP Ottawa, Ontario.

**2. Basis of Selection**

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest aggregate evaluated price will be recommended for award of a contract.

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## PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract.

The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications, to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### 1. **Mandatory Certifications Required Precedent to Contract Award**

#### 1.1 **Code of Conduct and Certifications - Related documentation**

- 1.1.1 By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

### 2. **Additional Certifications Required with the Bid**

Bidders must submit the following duly completed certifications with their bid.

#### 2.1 **Federal Contractors Program for Employment Equity - Bid Certification**

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.hrsdc.gc.ca/eng/labour/index.shtml)" list (<http://www.hrsdc.gc.ca/eng/labour/index.shtml>) available from [Human Resources and Skills Development Canada \(HRSDC\) - Labour's website](#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

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## PART 6 - RESULTING CONTRACT CLAUSES

### 1. Security Requirement

There is no security requirement applicable to this contract.

### 2. Requirement

#### 2.1 Requirement

The Contractor must provide the items detailed under the Line Item Detail.

#### 2.2 Fire Suppression Commissioning (item 1 only)

On-site commissioning and demonstration of the Metal Free Solvent Wet Bench fire suppression system must be provided. NRC will have 14 days to install benches and verify bench functionality prior to acceptance.

#### 2.3 Manuals

The following Schematics/Manuals must be provided for each item:

2.3.1 Electrical drawings

2.3.2 P & ID drawings

2.3.3 3 party component listing

2.3.4 Source code and all password(s)

2.3.5 One Operational manual (English only)

2.3.6 One Maintenance / Troubleshooting manual (including procedures) - (English only)

2.3.7 Manuals may be hard or soft copies

#### 2.4 Training (item 1 only)

On-site training for the Metal Free Solvent Wet Bench fire suppression must be provided for up to five (5) equipment techs.

On-site training will take place at time of commissioning.

#### 2.5 Shop Drawing

The Contractor must provide shop drawings including a dimensioned drawings and facilities connection specification to NRC for approval prior to manufacturing each wet bench.

### 3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 3.1 General Conditions

2010A (2013-04-25) General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 4. Term of Contract

#### 4.1 Delivery Date

All the deliverables must be received on or before \_\_\_\_\_ **(to be filled in only at contract award)**.

### 5. Authorities

#### 5.1 Contracting Authority

The Contracting Authority for the Contract is:

Monique Gosselin  
Public Works and Government Services Canada  
Acquisitions Branch  
Commercial Consumer Products Directorate  
11 Laurier Street, 6A2, Phase III  
Place du Portage, Gatineau, Quebec, K1A 0S5  
Telephone: (819) 956-3803  
Facsimile: (819) 956-3814  
E-mail address: monique.gosselin@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 **Technical Authority (to be filled in only at contract award)**

The Technical Authority for the Contract is:

Name: \_\_\_\_\_  
 Telephone: (\_\_\_\_) \_\_\_\_\_  
 Facsimile: (\_\_\_\_) \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 **NRC Procurement Authority (to be filled in only at contract award)**

The NRC Procurement Authority for the Contract is:

Name: \_\_\_\_\_  
 Telephone: (\_\_\_\_) \_\_\_\_\_  
 Facsimile: (\_\_\_\_) \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

The NRC Procurement Authority is responsible for the NRC contract management and for the authorization of all work against this contract.

5.4 **Accounts Payable Contact: (to be filled in only at contract award)**

Name: \_\_\_\_\_  
 Telephone: (\_\_\_\_) \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

5.5 **Contractor's Representative (fill in)**

The telephone number of the person responsible for:

**General enquiries**  
 Name: \_\_\_\_\_  
 Telephone No. \_\_\_\_\_  
 Facsimile No. \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

**Delivery Follow-up**  
 Name: \_\_\_\_\_  
 Telephone No. \_\_\_\_\_  
 Facsimile No. \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

## 6. Payment

### 6.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm lot prices, as specified in contract for a cost of \$ \_\_\_\_\_ **(to be filled in only at contract award)**. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.2 SACC Manual Clauses

H1000C	Single Payment	2008-05-12
H1001C	Multiple Payment	2008-05-12

## 7. Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
  - (a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
  - (b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.
  - (c) Invoices and order confirmations can be sent via e-mail to:  
  
frontdeskm-22@nrc.gc.ca
  - (d) To facilitate the payment process, it is important that the Contractor quote the contract number on all the invoices, shipping bills and packing slips. Failure to do so will delay payment and the date used for calculating interest on overdue accounts.

## 8. Certifications

### 8.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

## 9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of Ontario, Canada.

## 10. Priority of Documents

If there is a discrepancy between the wordings of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) 2010A (2013-04-25) General Conditions - Goods (Medium Complexity);
- (c) Annex A, Mandatory Specifications for the metal free solvent wet bench;
- (d) Annex A-1, Mandatory Specifications for the III-V acid wet bench;
- (e) the Contractor's bid dated (to be filled in at contract award).

## 11. SACC Manual clause

B1501C	Electrical Equipment	2006-06-16
A9068C	Government Site Regulations	2010-01-11
A2000C	Foreign Nationals (Canadian Contractor)	2006-06-16
A2001C	Foreign Nationals (Foreign Contractor)	2006-06-16

## 12. Shipping Instructions - Delivery at Destination

1. Goods must be consigned to the destination specified in the Contract and delivered:  
  
Delivered Duty Paid (DDP) (Ottawa, Ontario) Incoterms 2000 for shipments from a commercial contractor.
2. The Contractor will be responsible for all delivery charges, administration, costs and risk of transport and customs clearance, including the payment of customs duties and taxes.

**ANNEX A**

**MANDATORY SPECIFICATIONS FOR THE METAL FREE SOLVENT WET BENCH**

**Vendors must cross reference the mandatory technical criteria in a concise format by using page, paragraph(s) & sub-paragraphs as applicable to their supporting technical documentation.**

**Note:** All facility final connections will be the responsibility of NRC

**1.0 Metal Free Solvent Wet Bench**

**1.1** The metal free solvent wet bench must be Class 100/1000 (ISO 5/6) clean room suitable design;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.2** The cabinet and working deck must be fully exhausted;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.3** The overall cabinet dimension must be not greater than 36"D x 72" W x 72" H with a dimension variation of minus 0.125”;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.4** The metal free solvent wet bench must be exhausted (pulled) towards the back of the bench resulting in a minimum of 100fpm face velocity measured at the front opening of the bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.5** The metal free solvent wet bench must be 304/316 grade polished stainless steel construction with no.8 bright finish;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.6** The chassis must be equipped with heavy duty casters with recessed leveling feet;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.7** The metal free solvent wet bench must have a drained secondary containment sump ( under tanks);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.8** The metal free solvent wet bench working deck must have the following:

1.8.1 6 temperature controlled heated baths;

1.8.2 2 dumps/rinsers

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.9** The metal free solvent wet bench process and rinse tanks must be sized to accommodate one(1) 100mm x quantity 25 wafer cassette (Entegris A72-40);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.10** The metal free solvent wet bench must have de-ionized water spray guns on each side of bench (see para 6 - Solvent Bench Layout)

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.11** The metal free solvent wet bench must have nitrogen spray guns on each side of bench (see para 6 - Solvent Bench Layout);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.12** Two(2) waste streams must be directed separately: a) Solvent pots to an in-house solvent collection system via 0.5" SS connection; b) Bench waste water to in-house water waste line;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.13** The wet Bench must be CSA certified or valid Field Evaluation Marks for Ontario Electrical Code;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.14** Each facility service must serve as a single point of entry to the machine.

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.0 Wet Bench Materials**

**2.1** The water piping must be constructed of polypropylene headers with PFA distribution tubing. Flaretek fittings are mandatory for all connections;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.2** The solvent plumbing must be constructed of stainless steel tubing and stainless steel valves;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.3** The shelf and frame must be 304/316 grade stainless steel with no.8 bright finish;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.4** The nitrogen distribution must be 316 Stainless steel tubing and/or PFA tubing. Swagelok fittings for facilities connections;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.5** The CDA distribution must be polyethylene tubing (red). Swagelok fittings for all connections;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.6** The process chemistry tanks must be constructed of electro-polished 316 stainless steel;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.7** The solvent waste plumbing must be 304 stainless steel;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.8** The dump/rinser tank must be natural polypropylene;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.9** The wiring must be teflon coated wire meeting all Ontario, Canada electrical standards.

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.0 Electrical**

**3.1** The bench must be fully CSA compliant or have certification markings demonstrating compliance with the Ontario Electrical Safety Code;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.2** All electrical control components must be located in a separate enclosure within the bench above the work deck for prominent visibility and access;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.3** The solvent bench must be a 24VDC control voltage;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.4 All wiring must be Teflon coated of appropriate gauge;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.5 The master EPO mushroom button must be located on front panel and must shutdown the entire bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.6 The exhaust monitor must be interlocked to machine power;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.7 All maintenance panels interlocked with machine power-switches must be "pull-to-cheat" style to allow servicing when required;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.8 All servicing of Wet bench must be via service panels located at the front of the bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.9 Waste collection interlock input must disable solvent pot drains when collection system is full;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.10 The main power disconnect must be capable of lock-out;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.11 All control logic must be PLC based;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.12 Electrical cabinet must be nitrogen purged;

**Reference in Contractors Proposal:** \_\_\_\_\_

3.13 Electrical areas of heated pots must be nitrogen purged.

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.0 Operator Control Panel**

**4.1** The operator control panel must have six(6) process pot temperature controllers with displays ;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.2** The operator control panel must have adjustable temperature set points;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.3** The operator control panel must have an EPO mushroom button prominently located;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.4** The operator control panel must have interlock status lights for the waste collection system, the door panels, the leak detection and the alarms;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.5** The operator control panel must have a Dump/Rinser programmable controller display.

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.0 Process Tanks - Six(6) heated**

**5.1** Tanks must be sized for one (1) 100mm x quantity 25 wafer cassette;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.2** Tanks must be constructed of 316L electro-polished stainless steel;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.3** Tanks must be bottomed drained with a pneumatic operated drain valve;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.4** Tanks must have six(6) heated non-recirculating tanks which are of a double wall insulated construction and are a nitrogen purgeable;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.5** During processing, tank temperatures must be maintained at +/- 1 degree;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.6** The tank temperature range must be from ambient to 85°C;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.7** The tank must have secondary "overtemp" controllers with independent temperature probes interlocking to the heaters;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.8** Tanks must have mica strip heaters externally mounted to the tanks for heating purposes;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.9** Tanks must drain to a solvent waste collection system(external in-house system);

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.10** Tanks must have dual low level indicators for all heated tanks;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.11** Each Tank must have tight fitting lid. All deck solvent tank openings must have a continuous deck drip stop around each solvent tank opening;

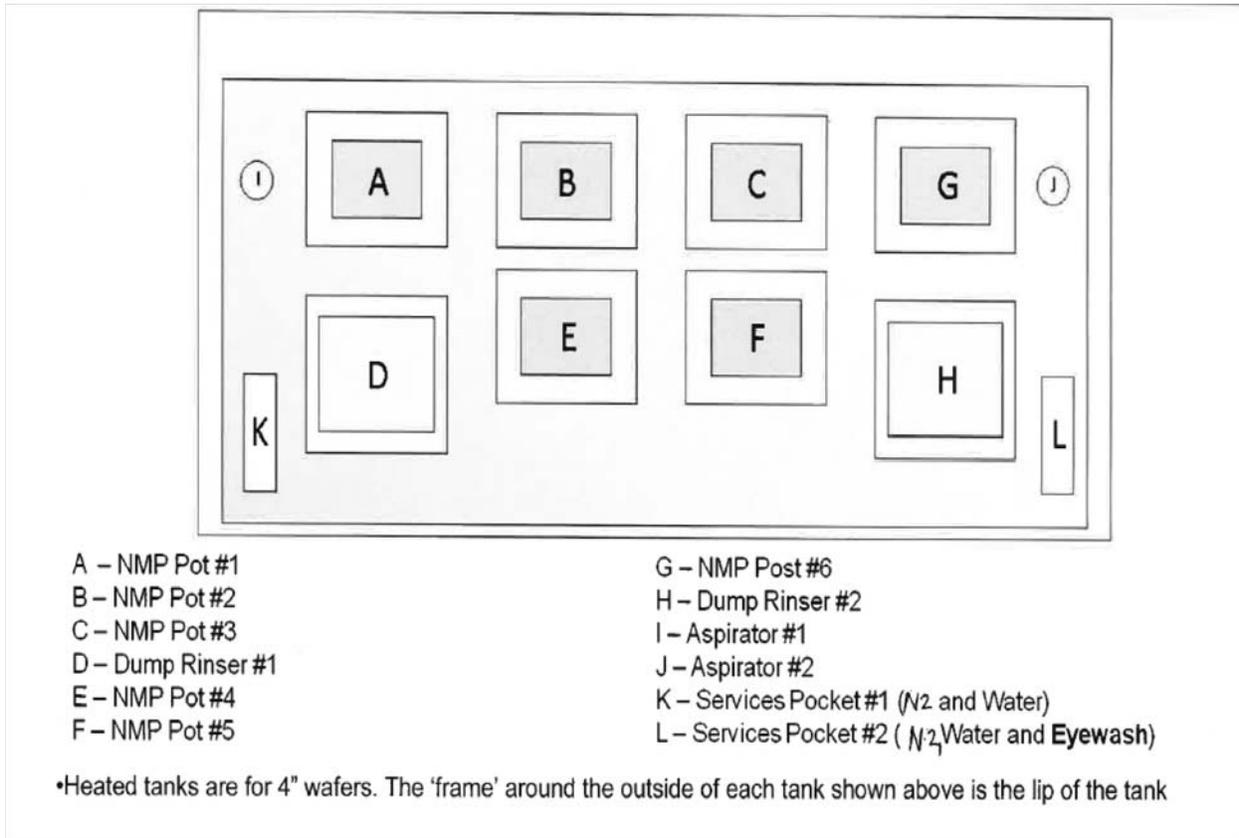
**Reference in Contractors Proposal:** \_\_\_\_\_

**5.12** All valves and fittings must be Swagelok™.

**Reference in Contractors Proposal:** \_\_\_\_\_

## 6.0 Solvent Bench Layout

The required Solvent Processing Bench Layout is below.



## 7.0 Process Tank Contamination Mitigation

7.1 All process tanks must be configured in such a way as to limit the amount of potential contaminants;

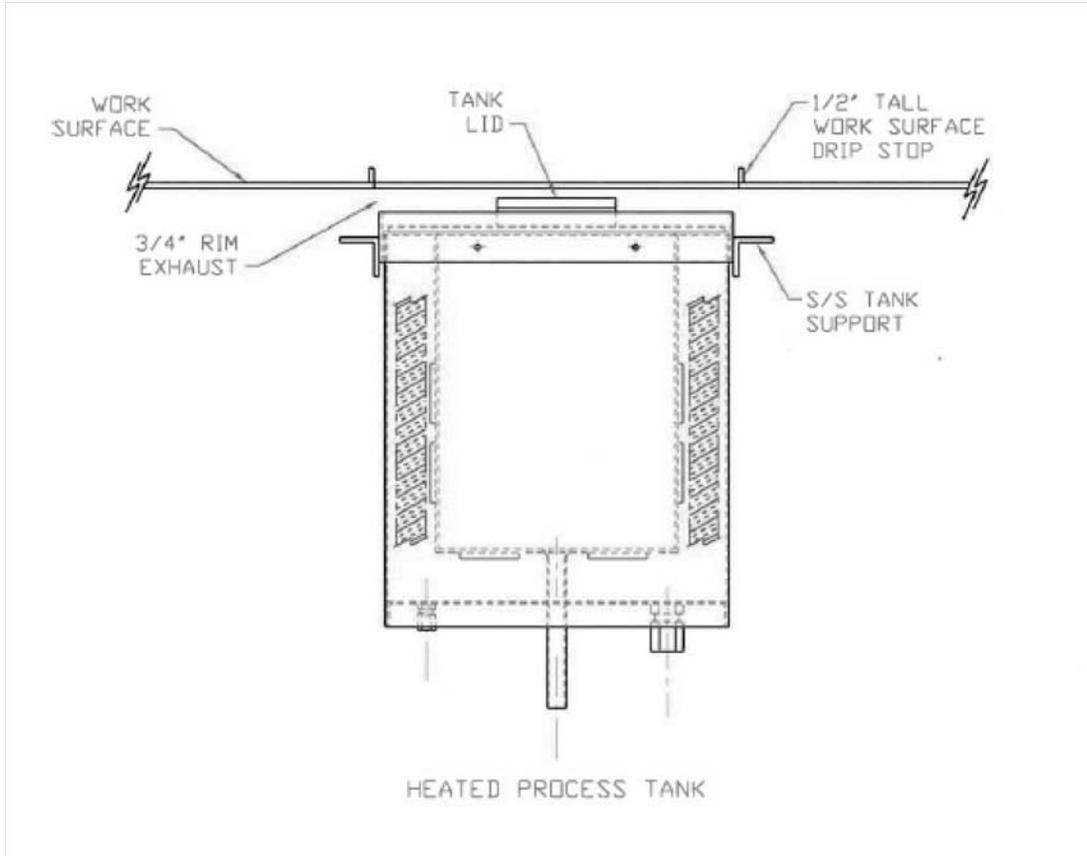
Reference in Contractors Proposal: \_\_\_\_\_

7.2 Decks must have continuous lips or drip stops to prevent deck contaminants from spilling or dripping into the process tanks;

Reference in Contractors Proposal: \_\_\_\_\_

7.3 All process tanks must have removable lids.

Reference in Contractors Proposal: \_\_\_\_\_



**8.0 Dump/Rinser Station**

**8.1** The dump/rinser station must be capable of handling one (1) 100mm wafer cassette;

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.2** The dump/rinser station must be in natural polypropylene construction;

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.3** Tank must have side wall spray nozzles (both sides) and come with a bottom-fill feature;

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.4** Spray and fill pressure must be adjustable via valves;

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.5** All DI water tubing must be PFA construction with Flaretek fittings;

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.6** Water must drain into a separate collection basin. Waste solvent to Solvent collection System;

**Reference in Contractors Proposal:** \_\_\_\_\_

**9.0 Interlock LED Display**

**9.1** The interlock LED Display must have but not be limited to the following features:

- 9.1.1 Low nitrogen;
- 9.1.2 CDA present;
- 9.1.3 Low exhaust;
- 9.1.4 Tank low liquid level;
- 9.1.5 Waste collection status;
- 9.1.6 door panel interlocks;
- 9.1.7 Main power;
- 9.1.8 24vdc power;
- 9.1.9 Fire suppression system activated.

**Reference in Contractors Proposal:** \_\_\_\_\_

**10.0 Waste Collection Drain Interlock**

**10.1** Tank draining must be interlocked with "waste collection FULL" signal (external in-house) to prevent overflowing waste tank;

**Reference in Contractors Proposal:** \_\_\_\_\_

**10.2** The tank must have an acoustic alarm to identify a full waste collection tank;

**Reference in Contractors Proposal:** \_\_\_\_\_

**10.3** Tank will not drain if temperature is too high (User Settable);

**Reference in Contractors Proposal:** \_\_\_\_\_

**10.4** All solvent waste lines must be in stainless steel with Swagelok fittings;

**Reference in Contractors Proposal:** \_\_\_\_\_

**10.5** NMP/PRS must be drained via a dedicated ½" or ¾" OD stainless steel tube

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.0 Fire Suppression**

**11.1** The fire suppression system/feature must have two separate outputs to building management system for fire or fault;

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.2** Fire suppression must be interlocked to tool main power;

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.3** The fire alarm must provide both a visual and an acoustic alert;

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.4** The fire suppression must be capable of manual discharge;

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.5** Fire/spark detectors must be IR or heat trace where IR are not suitable;

**Reference in Contractors Proposal:** \_\_\_\_\_

**11.6** System must be supportable and tested in situ;

**Reference in Contractors Proposal:** \_\_\_\_\_

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**ANNEX A-1**

**MANDATORY SPECIFICATIONS FOR THE III-V ACID WET BENCH**

**Vendors must cross reference the mandatory technical criteria in a concise format by using page, paragraph(s) & sub-paragraphs as applicable to their supporting technical documentation.**

**Note:** All facility final connections will be the responsibility of NRC

**1.0 III-V Acid Wet Bench**

**1.1** The III-V Acid Wet Bench must be Class 100/1000 (ISO 5/6) clean room suitable design;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.2** The III-V Acid Wet Bench cabinet and working deck must be fully exhausted;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.3** The III-V Acid Wet Bench overall cabinet dimension must be no greater than 36"D x 96" W x 78" H with a dimension variation of minus 0.125";

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.4** The 111\_V Acid Wet Bench must be exhausted (pulled) to the back of the bench to obtain a minimum of 100fpm face velocity measured at the front opening of the bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.5** The III-V Acid Wet Bench must be constructed of FM 4910/Polypro material;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.6** The III-V Acid Wet Bench chassis must be equipped with heavy duty casters with recessed leveling feet;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.7** The III-V Acid Wet Bench must have a drained secondary containment sump (under tanks);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.8** Working deck must include but not be limited to the following:

- 1.8.1 7 ambient temperature natural polypropylene baths;
- 1.8.2 1 ambient temperature PFA bath;
- 1.8.3 2 fully programmable dump rinsers;
- 1.8.4 1 utility sink with goose neck

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.9** Process and rinse tanks must each be sized to accommodate one(1) 100mm x quantity 25 wafer cassette (Entegris A72-40);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.10** The III-V Acid Wet Bench must have de-ionized water spray guns on each side of bench (see para 8.0);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.11** The III-V Acid Wet Bench must have nitrogen spray guns on each side of bench (see para 8.0);

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.12** The III-V Acid Wet Bench must have two(2) 10:1 aspirators at the rear of the bench ;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.13** The III-V Acid Wet Bench must have one(1) eyewash spray nozzle;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.14** The III-V Acid Wet Bench must be CSA certified or valid Field Evaluation Marks for Ontario Electrical Code;

**Reference in Contractors Proposal:** \_\_\_\_\_

**1.15** Each facility service must serve as a single point of entry to the machine.

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.0 Wet Bench Materials**

**2.1** The III-V Acid Wet Bench water piping must be constructed of polypropylene headers with PFA distribution tubing. Flaretek fittings are mandatory for all connections;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.2** The III-V Acid Wet Bench acid plumbing must be in PFA Teflon tubing and teflon valves;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.3** The III-V Acid Wet Bench shell and frame must be constructed of FM 4910 PVC;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.4** The III-V Acid Wet Bench nitrogen distribution must be constructed of PFA tubing;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.5** The III-V Acid Wet Bench CDA distribution tubing must be constructed of polyethylene (red);

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.6** The III-V Acid Wet Bench process chemistry tanks must be constructed of P.P. or PFA;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.7** The III-V Acid Wet Bench dump/rinser tank must be in natural polypropylene;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.8** The III-V Acid Wet Bench wiring must be in teflon coated wire meeting all Ontario, Canada electrical standards;

**Reference in Contractors Proposal:** \_\_\_\_\_

**2.9** The III-V Acid Wet Bench exhaust sash must be of clear plastic; one fixed and with two additional flip down sections; opening to fixed sash to be 19": with clear plastic flip down section closed reducing working opening to be approximately 14" vertical height.

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.0 Electrical**

**3.1** The III-V Acid Wet Bench must be fully CSA compliant or have valid Field Evaluation Marks for Ontario Electrical Code;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.2** All electrical control components will be located in a separate enclosure within the bench above the work deck for prominance and accessibility purposes;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.3** The III-V Acid Wet Bench must have a 24vdc control voltage;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.4** All wiring must be Teflon coated of appropriate gauge;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.5** The Master EPO mushroom button must be located on the front panel and must shutdown the entire bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.6** The III-V Acid Wet Bench must have an exhaust monitor interlocked to machine power;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.7** All maintenance panels interlocked with machine power-switches must be "pull-to-cheat" style to allow servicing when required;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.8** All servicing of III-V Acid Wet Bench must be through service panels located at the front of the bench;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.9** The III-V Acid Wet Bench leak detection interlock input must disable main power;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.10** Ther main power disconnect must be capable of lock-out;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.11** All control logic must be PLC based;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.12** Electrical cabinet must be nitrogen purged;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.13** The III-V Acid Wet Bench must have one (1) GFI receptacle located on the front of tool;

**Reference in Contractors Proposal:** \_\_\_\_\_

**3.14** The III-V Acid Wet Bench must have a lighting feature under the head case area;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.0 Operator Control Panel**

**4.1** The operator control panel must have eight (8) process drain valves;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.2** The operator control panel must have an EPO mushroom button prominently located;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.3** The operator control panel must have interlock status lights for the door panels, the leak detection and the alarms;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.4** The operator control panel must have two(2) Dump/Rinser programmable controller displays;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.5** The operator control panel must have a switch for lighting ;

**Reference in Contractors Proposal:** \_\_\_\_\_

**4.6** The operator control panel must have a gooseneck pneumatic valve control.

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.0 Process Tanks - Eight(8)**

**5.1** Tanks must be sized for (1) 100mm x quantity 25 wafer cassette;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.2** Tanks must be constructed of P.P. or PFA material as indicated;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.3** All tanks must be located at the rear of the bench ;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.4** Tanks must be bottomed drained using a pneumatic operated drain valve;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.5** Tanks must have eight(8) ambient non-recirculating tanks;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.6** Tanks must drain into secondary containment area;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.7** Tanks must have tight fitting PP lid decks with drip stop;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.8** All valve fittings must be Flaretec™ and/or St. Gobain;

**Reference in Contractors Proposal:** \_\_\_\_\_

**5.9** Spill containment area must have leak detection alarm with audible and visual alert interlocked with main power and tank drain operations.

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.0 Dump/Rinser Stations**

**6.1** The dump/rinser stations must be capable of handling one (1) 100mm wafer cassette;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.2** The dump/rinser stations must be of natural polypropylene construction;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.3** Tank must have side wall spray nozzles( both sides) along with bottom-fill feature;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.4** The Spray and fill pressure must be adjustable via valves;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.5** All DI water tubing must be of PFA construction with Flarettec fittings;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.6** The dump/rinser stations must have the water drain into secondary containment area;

**Reference in Contractors Proposal:** \_\_\_\_\_

**6.7** The dump rinser controllers must allow for program customization / pause program functionality.

**Reference in Contractors Proposal:** \_\_\_\_\_

**7.0 Interlock Display**

**7.1** The interlock display must have but not be limited to the following features:

- 7.1.1 Low exhaust;
- 7.1.2 Spill;
- 7.1.3 Main power.

**Reference in Contractors Proposal:** \_\_\_\_\_

**8.0 Proposed III-V Acid Bench Layout**

