

Rayner, Heather L.

From: Terner, Laura M.
Sent: Wednesday, June 19, 2013 4:40 PM
To: Rayner, Heather L.
Cc: Matiisen, Heather; Younggren, Jeffrey
Subject: Communications Tower into GPS

Hi Heather,

Please value communications tower at invoice value \$65,592.33.

Thanks!

Laura M. Terner

*Capital Analyst, Bighorn Business Unit
Encana Corporation
403.645.3761*

Take a closer look: www.encana.com

Please note some Encana offices are closed the first and third Friday of each month.

PURCHASE ORDER



Purchase Order Number: PO41714
Purchase Order Date: 14 Aug 12
Order Revision / Date: 0
Ordered By: Pam Sword

SELLER

Spartech Manufacturing Ltd. (270900)
301 27 St SE
Calgary AB T2A 7V2
Canada

ATTN: Rob Pupulin 403-695-2879

SHIP TO

Facilities Canadian Deep Basin
AB
Canada

SEND INVOICE TO

Encana Corporation
150 9 Ave SW
PO Box 2850
Calgary AB T2P 2S5
Canada

ATTN: Garnet Tremere 403-645-4225

INCOTERMS: .
PAYMENT TERMS: Net 30 Days
CURRENCY: CAD
AFIE NUMBER HEADER:

PLEASE REFERENCE OUR PURCHASE ORDER NUMBER ON ALL INVOICES, PACKING SLIPS, AND ANY DOCUMENTS REFERENCING THIS ORDER.

BUYER/CONTACT: Pam Sword PHONE: 403 645-7591

FAX: E-MAIL: Pam.Sword@EnCana.com

SHIPPING INSTRUCTIONS:

Contact Mark Bornyk at Encana Logistics & Commodities Desk 403-645-2622 to arrange shipping to 08-11-060-03 W6M.

LINE	ITEM #	DESCRIPTION	QTY	UOM	UNIT PRICE	EXTENDED PRICE	DATE REQUIRED	REF. #
<p>CONTACTS: garnet.tremere@encana.com (Technical) pam.sword@encana.com (Commercial) Pupulin.Rob@spartechmanufacturing.com (Vendor)</p> <p>----- Scope of Supply; Vendor is to supply (1) Communication Tower Building (Spartech Quote Number PN30302-REV3) for the Resthaven Facility as laid out in the attached Encana Communication Work Scope.</p> <p>----- Delivery Instruction: Contact Mark Bornyk at Encana Logistics and Commodities Desk 403-645-2622 to arrange shipping to 08-11-060-03 W6M site. Delivery Date: October 17, 2012 Delivery Point: 08-11-060-03 W6M Attention: Garnet Tremere</p> <p>----- Invoicing Instructions:</p>								

PURCHASE ORDER



Purchase Order Number: PO41714
 Purchase Order Date: 14 Aug 12
 Order Revision / Date: 0
 Ordered By: Pam Sword

LINE	ITEM #	DESCRIPTION	QTY	UOM	UNIT PRICE	EXTENDED PRICE	DATE REQUIRED	REF. #
1. AFE:12167977 2. Account code:8755.322 3. Please send all invoices to the technical contact listed above. 4. All invoices must reference this Purchase Order. 5. The Contractor shall use Encana's Electronic Invoicing System to submit all invoices. If Contractor is not registered with Encana E-Invoicing system please submit a paper invoice. =====								
1.000		COMMUNICATION TOWER BUILDING AFE/CC.Major.Minor: 50716.2804.020 Cost Center: CDBBU CAPITAL EQUIP INVENTORY	1.00	EA	64,142.3300	64,142.33	17 Oct 12	
2.000		BASEBOARD HEATER AFE/CC.Major.Minor: 50716.2804.020 Cost Center: CDBBU CAPITAL EQUIP INVENTORY	1.00	EA	1,450.0000	1,450.00	17 Oct 12	
TOTAL						65,592.33		

SELLER HAS READ AND AGREES TO BE BOUND BY THE PURCHASE ORDER INCLUDING ENCANA'S TERMS AND CONDITIONS. The Purchase Order shall become a binding agreement upon the Seller signing and returning a written acceptance of the Purchase Order or upon the Seller otherwise acknowledging acceptance of the Purchase Order or commencing performance of the Purchase Order, whichever occurs first. **NOTWITHSTANDING THE FOREGOING, THE TERMS AND CONDITIONS OF ANY MASTER AGREEMENT SIGNED BY SELLER AND ENCANA SHALL TAKE PRECEDENCE OVER THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER.**

ENCANA
 NAME: _____
 SIGNATURE: _____
 DATE: _____

SELLER ACCEPTANCE (PLEASE RETURN A SIGNED COPY)
 NAME: _____
 SIGNATURE: _____
 DATE: _____



Spartech Manufacturing
 132, 4152-27 Street N.E.
 Calgary, Alberta
 T1Y 7J8
 (403) 273-5775
 www.spartechmanufacturing.com

Our Quote Number PN30302-REV3

Jul/20/2012

ENCANA CORPORATION
 150 - 9 Avenue SW, PO Box 2850
 Calgary, Alberta T2P 2S5

Attn: Mr. Garnet Tremere

RE COMMUNICATION TOWER
 RESTHAVEN FACILITY

Dear Sir:

Thank you for the invitation to submit a quotation on the above referenced project.
 Spartech Manufacturing Ltd. would be pleased to provide the following :

Item	Qty	Description	Unit Price
1	1	COMMUNICATION TOWER BLDG	\$64,142.33

Quoted Net Total \$64,142.33

Please note that the above assembly will be built as per the attached Bill(s) of Material and subject to the attached Terms & Conditions.

If any additional information is required please contact me by phone at (403) 695-2879 or by fax at (403) 207-0656.

Regards,
SPARTECH MANUFACTURING

Rob Pupulin, P. Eng.

cc: Spartech Tech. Sales - Brian Pollmuller, Ph. (403) 695-2651





COMMUNICATION TOWER BLDG

Qty.	Mfg Part ID	Part Description	Part Specifications
BUILDING & SKID			
1	MB-SERVICES-BUILDING/SKID	SKID & BLDG 2438 W X 3048 DP X 2896 EAVE(MM) / 8' W X 10' DP X 9.5' EAVE	PER DESCRIPTION IN PROPOSAL NOTES
HVAC			
1	MB-SERVICES-HVAC SYSTEM	HVAC UNIT WALL-MOUNTED 2 TONS COOLING / 15KW HEAT 208 OR 460/3/60 POWER	PER DESCRIPTION IN PROPOSAL NOTES
ELECTRICAL			
1	MB-SERVICES-ELECTRICIAL	ELECTRICAL MATERIALS AND LABOUR	PER DESCRIPTION IN PROPOSAL NOTES
1	AS-SERVICE-CSA	ELECTRICAL APPROVAL - GENERAL PURPOSE AREA (ETL)	
FREE-ISSUED ITEMS, INSTALLED BY OTHERS OR FIELD			
1	CUSTOMER SUPPLIED	IT RACKS / CONTROL RACKS / SERVER CABINETS SUPPLIED & INSTALLED BY OTHERS	
ENGINEERING & DRAWINGS			
1	CUSTOMER SUPPLIED	ENGINEERING & DRAWINGS BY OTHERS	
MISCELLANEOUS			
Lot	MISC TAGGING	MATERIAL	
Lot	MISC WIRING	MATERIAL	
Lot	MISC MOUNTING	MATERIAL	
Lot	MISC ENGRAVING	MATERIAL	



Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Pricing Notes

1. Supply, install and wire Qty. 2,1500W 120V baseboard heaters ... \$1,450 total.
(The HVAC system does not include any baseboard heaters.)

General Technical Notes

1. Deliverables include:
 - Building with electrical “infrastructure” installed and wired.
2. Scope of work is as follows:

Description	Encana	Spartech
Design and generate IFC drawings.	X	
Supply materials.		X
Supply free-issue items as noted in BOM or in notes below.	X	
Install free-issue items as noted in BOM or in notes below.	X	
Manufacture & perform QA test.		X
Redline drawings.		X
Stage at Spartech’s facility.	N/A	N/A

3. Area classification is General Purpose.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Detailed Technical Notes

Building & Skid

Building

Building 2438mmW x 3048mmDP x 2896mm Low Eave (8'0" Wide x 10'0" DP x 9'6" Low Eave), Shed Style Self-Framing Structure (1:12 Slope)

- 22 Ga. Pre Painted Walls and Roof (Stock Colour)
- Pre Painted Flashings and Trim (Stock Colour)
- Encana colours (tan, and dark and metro brown) are considered stock colours.
- 24 Ga. Fluted White Aluminum Liner
- R12 (3") Standard Batt Insulation in the Walls and R35 (9") Standard Batt Insulation in the Roof
- 6 Mil. Poly Vapor Barrier
- Qty. 1, 16 Ga. 3'0" x 7'0" R12 Polyurethane Single Door c/w 16 Ga. Welded Single Door Frame, Hydraulic Closer, 24" x 24" Double Glazed IWG Glass Window, 44TP Von Duprin Panic Hardware, Interior Kick Plate, Weather Stripping, Sweeps and Threshold
- Qty. 1, 10'0" Full Length Eaves Trough c/w Downspout and Elbow
- Qty. 1, 10'0" Long Continuous Ice Rakes
- Qty. 2, 16 Ga. Vertical Wall Support Channels for the Customer Supplied HVAC Unit
- Qty. 2, Framed Openings for the Supply and Return Grills of the Customer Supplied HVAC Unit
- 2" Containment Ring Flashings Included
- P. Eng Drawings and Certificate of Design and Manufacturing Conformance with the NBC 2010 Included

Skid

2438mmW x 3048mmDP (8'0" Wide x 10'0" DP) Structural Steel Skid c/w

- ¼" Checker Plate Flooring
- 2" Containment Ring Included for the Perimeter of the Skid
- Main Beam Runners Extended at 1'0" at all Four (4) Corners to Provide Lifting Capability (Extension is length-wise, not width-wise.)
- SP7 Surface Preparation (Bush Blast in Lieu of Wheel Clean) c/w One (1) Coat of Zinc Chromate Primer and One (1) Coat of Marine Enamel Top Coat
- R28 (4") Spray Insulation Applied to the Underside of the Skid c/w Class One Fire Retardant Spray Foam (Towerthon IS NOT Included)

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Other for Building/Skid

Also included are:

- Building AB schedules.
- Qty. 1, framed opening (Up to 1500mm x 1500mm / 5'0" x 5'0") for a fan, louvre, HVAC cut-out or cable tray cut-out.

Engineering & Drawings for Building/Skid

Included are:

- P. Eng Drawings and Certificate of Design and Manufacturing Conformance with the NBC (National Building Code) 2010 are included.
- Building ABC schedules.
- All buildings are designed and certified under CSA A660-10.

Approximate Building/Skid Weight (Without Electrical Equipment & HVAC)

- 3200 kg / 7000 lbs

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

HVAC

HVAC Unit Scope of Supply

- BARD wall mount Heat/cool
- Model WA24
- 208 or 460/3/60 general electric clarification power
- Nominal 2 tons cooling 12KW heating
- Supply/return grilles (no distribution supply ducting provided)
- Heat/cool stat
- Economizer (to set pressurization air)
- 2" pleated filter @ 30% efficiency
- J Control Module (includes low ambient cooling)

Mechanical Engineering for HVAC

- Heat/Cool calculations
- ABC Schedules
- NO layout drawing - this single unit can be shown on your electrical drawings

HVAC Commissioning

- In Calgary only

HVAC Exclusions

- Heresite coated coils on HVAC unit
- Any auxiliary unit heaters or exhaust fans or relief louvre
- Spare parts

HVAC Notes

- One year warranty labour on HVAC unit is available as an option. Please contact us if this is a requirement.

Approximate HVAC Weight

- 181 kg / 400 lbs

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Electrical Materials and Labour

Electrical work will be compliant with the General Purpose area classification. EMT conduit will be used for wiring work.

Electrical Scope of Supply

- Supply, installation and wiring of Qty. 1 - 70W HPS wall pack c/w integral photocell.
- Supply, installation and wiring of Qty. 2 - 2Lamp 4' industrial strip fixtures.
- Supply, installation and wiring of Qty. 1 - 30kVA 480- 120/208V NEMA 3R transformer.
- Supply, installation and wiring of Qty. 3 - duplex receptacles.
- Supply, installation and wiring of Qty. 1 - 1-pole light switch
- Supply, installation and wiring of Qty. 1 - 30CCT 120/208V 3Ph NEMA3R/12 distribution panel c/w:
 - Qty. 11 - 1P15A breakers
 - Qty. 4 - 1P30A breakers
- Supply, installation and wiring of Qty. 1 - junction box for the termination of the door contact feeds.
- Supply, installation and wiring of Qty. 1 - door contacts.
- Wiring of the HVAC thermostat to the HVAC.

Electrical Exclusions

- Owner-supplied equipment will be field-installed and wired by Others.
- The 480V feeder to the HVAC will be supplied, installed and terminated by Others.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Delivery Considerations

1. Delivery is approximately 12 weeks after receipt of purchase order, based on the following timelines.
 - a. Drawing generation for building/skid and HVAC: 2 weeks.
 - b. Customer approval: 2 weeks.
 - c. Building/skid fabrication: 4 weeks ARAD (After Receipt of Approved Drawings).
 - d. Building erection on the skid: 1 week.
 - e. HVAC delivery: 6 weeks (in parallel with the building/skid activity).
 - f. Electrical Work: 2 weeks.
 - g. Total amount of time required: 12 weeks (Includes critical path items - a, b, e, f.)
2. Delivery will require confirmation after award or at award date.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Documentation Notes

1. The Spartech standard package will include the following documents only.
 - Redlines.
 - Electrical approval – e.g. CSA (if applicable)
 - Datasheets as received from the original manufacturer.
2. All project documentation will be provided in softcopy format – e.g. CDs or electronic files as attachments to an email or as a zip file via FTP or other file transfer utility.
3. Custom or special documentation requirements are extra – e.g. hardcopy binders, special tabs, write-ups etc.
4. Documentation for approval will be submitted only in softcopy format in PDF format. One revision cycle is included. Additional revision cycles are extra. Final documentation will be submitted in softcopy format unless Customer has purchased the hardcopy option.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Terms & Conditions of Sale

1. Any resulting order will be in accordance with Spartech Manufacturing Terms & Conditions. Please refer to our website at <http://www.spartechmanufacturing.com/terms.aspx>
2. Unless noted, prices are quoted in Canadian dollars. Taxes are not included and applicable GST will be charged at current rates.
3. Terms of payment are as follows:
 - For domestic shipments: Net 30 days, on approved credit (OAC).
 - For international shipments: Payments must be received prior to shipment, either via wire transfer or other certified means.
4. For orders greater than \$100K, progress payments shall apply as follows.
 - 30% upon order acknowledgment
 - 30% upon receipt of major materials
 - 30% upon completion of fabrication and ready for customer inspection
 - 10% upon submission of documentation
5. Panels shall be invoiced upon ready for shipment. If extended customer staging/testing or extended storage is required, they shall be invoiced upon ready for customer acceptance testing or being placed into storage.
6. Multiple panel fabrication may be split shipped and invoiced based upon project duration.
7. Freight: Ex Works Spartech, Calgary. Freight billed at cost.
8. Delivery is estimated based on material availability and subject to shop load at time of order, as well as timely receipt of IFC drawings, wire tagging lists and free-issue material. Actual schedule to be formulated at time of award and receipt of all customer supplied material and documentation.
9. Our bid is valid for 30 days from the date of quotation.
10. Prices herein specified are applicable to the quantities as covered by this quotation. Any change in quantity or elimination of one or more items may require a revision to the prices quoted. Only items and quantities on the attached bill of material have been quoted.
11. Panel will bear electrical approval for the area classification noted above provided that all free-issue material is certified to Canadian standards. All cost associated with obtaining special inspection approval on customer-supplied material will be the responsibility of the purchaser. CSA will only be applicable for panels that contain wiring.
12. Warranty: Spartech Manufacturing will assume responsibility only for components and workmanship supplied by same. Component warranty shall consist of the standard 12-month warranty as supplied by the component manufacturer. Ex Works Spartech, Calgary.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

13. All material supplied on a free-issue basis must be sent prepaid to Spartech Manufacturing and must be tagged with the customer purchase order number and/or the Spartech work order number.
14. Interim storage fees shall be applied if the fabrication schedule is delayed beyond 2 weeks due to missing customer supplied material, drawings, wire tagging lists, delayed customer inspection, delayed shipping release etc. An updated project delivery schedule will be supplied upon receipt of material and based on current shop loading.
15. Customer to supply all drawings for panel fabrication.
16. No software, programming or commissioning services have been included in this proposal.
17. Schedule milestones: All customer-approved design documentation, drawings and free-issued material must be received upon agreed-upon milestone to permit the commencement of manufacturing on the scheduled date. Delays in obtaining customer-supplied materials and/or drawings may result in delay of schedule or express delivery charges.
18. Restocking charges will apply on cancelled/returned orders.
19. Manual and data sheets will be supplied only as received from the component manufacturer of the supplied material. If additional documentation is required (usually defined in the Vendor Data Requirements (VDR), charges shall apply for additional documentation such as CAD Drawings, Part Data sheets, Installation Manuals, Spare Parts lists, QA/QC manuals, Inspection & Test Plans, Material Traceability Report's (MTR), Positive Material Identification (PMI) and Manufacturers Record Book's/CD's (MRB).
20. All work will be performed in accordance with Spartech Manufacturing standard practice and materials.
21. Prices include standard packing material; bubble wrap and cardboard. Wooden crating is available at extra cost.
22. Storage fees may apply to equipment left at our facility past the intended ship date. Extended storage may be billed separately and may also include a finance charge of 1% per month on outstanding balances.
23. Price includes staging space for 2 weeks after panel completion.
24. Spartech Manufacturing's standard QA/QC check includes; point to point wire verification, pressure testing (if applicable), DC power check of lights, fans and switches, to the buyers supplied drawings. Additional factory acceptance testing, programming/simulations are not supplied by Spartech with the standard quotation.
25. Full staging and testing facilities are available. Spartech Manufacturing would be pleased to provide a complete staging and testing proposal if required.

PO Box 2850
Calgary, Alta T2P 2S5

EnCana Purchase Order

Phone: (403) 645-2000
Fax: (403) 645-3400

Seller: Galvanic Applied Sciences Inc.
7000 Fisher Road SE
Calgary, AB
Canada T2H 0W3

Phone: (403) 252-8470
Fax: (403) 255-6287

PO No.: 380700-002
This number must appear on all correspondence.

Rev. No.: 0 **Cumulative**
Rev. Date: 08/02/2011

Page 1 of 4

Attention: Ryan Fahl

Ship To: HOLD FOR WRITTEN INSTRUCTIONS
FROM TARTAN ENGINEERING LTD.

Invoice To: EnCana
c/o Tartan Engineering Ltd. operating as PSN
via: "OpenInvoice" Billing System
for information call, (403)645-3113
Attn: Nova Lee

Initial Order Date 08/02/2011	Scheduled Delivery 15/03/2011	1st Vendor Dwa Due Date	Shipping Point: Calgary	Shipping Terms or Incoterm Status: FCA	Invoice Payment Terms: Net 30 Days
End Use:	Route VIA: TBA	Project Title: 10-08 to 10-71-8 W6 Jumper Line Location: 10-08-71-8 W6		Seller's Quotation Reference: Q-2011.01.24RF	

Please furnish goods and/or services described below subject to the terms and conditions of this purchase order and all attachments

Item#	Quantity	Description	Unit Price	Total
"Confirmation Only" 10-8 to 10-10-71-8 W6 Jumper Line PLCG Gas Chromatograph				
1	1.00 Each	PLGC II Natural Gas Chromatograph/ Component Analyzer 11144250 3760-322 AB 7J 7J27 M Class 1 Div 1 Group CD - 3 min analysis for H2S Tag Item: AIT-001 Scheduled Delivery: 15/03/2011 PT # GCCP-D1	CAD 18,500.00	18,500.00
2	1.00 Each	Low Pressure Single Stream Sample System 11144250 3760-322 AB 7J 7J27 M C/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max sample inlet 250 psi, Max Helium inlet 250 psi, Max calibration inlet 100 psi Tag Item: AIT-001 Scheduled Delivery: 15/03/2011 PT# LPSS	2,536.00	2,536.00
3	1.00 Each	Guardian Liquid Eliminator Membrane 11144250 3760-322 AB 7J 7J27 M with integrated Automatic Liquid Shut-off. 316SS Construction. WP 1000psi (complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete)	1,375.00	1,375.00

Verbal Order Placed: Delivery: Six Weeks Required Before: March 15, 2011	Total Value This Purchase Order: 61,890.00 (All Taxes Extra)	Direct All Corresp. to: Lendy Perez Phone: (403) 716-6102 Fax: (403) 232-8298
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VENDOR/ SELLER ACKNOWLEDGMENT Please sign and return to 'Invoice To' address above PER _____ Date: _____ <p style="text-align: center;">Ryan Fahl</p>	PER _____ <p style="text-align: center;">Rob Beckner Authorized Representative of Purchaser</p> PER _____ <p style="text-align: center;">Dan White/Levie Mendioro/CC</p>
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Item#	Quantity	Description	Unit Price	Total
4	1.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT# ALG</p> <p>Back Panel Standard 11144250 3760-322 AB 7J 7J27 M</p> <p>Steel painted backpan 27" x 33"</p>	365.00	365.00
5	1.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT # BP</p> <p>Genie Membrane Probe Regulator 11144250 3760-322 AB 7J 7J27 M</p> <p>(Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. consult factory.</p>	2,200.00	2,200.00
6	2.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT #PGEN</p> <p>GO CYL-20 Dual Stage SS Bottle Regulator 11144250 3760-322 AB 7J 7J27 M</p> <p>includes in/out gauges & CGA fitting</p>	1,338.00	2,676.00
7	1.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT #CYL2</p> <p>Helium UHP w/ Cylinder 11144250 3760-322 AB 7J 7J27 M</p>	893.00	893.00
8	1.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT #HEGAS</p> <p>Calibration Gas (1 part mix) w/ Cylinder 11144250 3760-322 AB 7J 7J27 M</p>	2,100.00	2,100.00
9	1.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>PT # GCGAS</p> <p>Crating 11144250 3760-322 AB 7J 7J27 M</p>	300.00	300.00
10	2.00 Each	<p>Tag Item: AIT-001 Scheduled Delivery: 15/03/2011</p> <p>Data Manuals 11144250 3760-322 AB 7J 7J27 M</p> <p>Any drawings or data manuals for AIT-001/AIT-002 provided are to be sent to the following:</p>	0.00	0.00

Item#	Quantity	Description	Unit Price	Total
		<p>Tag Item: AIT-001</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>Encana c/o PSN #700, 110-12th Ave SW Calgary, AB T2R 0G7 Attn: Procurement (403) 234-6300</p>		
11	1.00 Each	<p>PLGC II Natural Gas Chromatograph/ Component Analyzer</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>Class 1 Div 1 Group CD - 3 min analysis for H2S</p> <p>Tag Item: AIT-002</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>PT # GCCP-D1</p>	18,500.00	18,500.00
12	1.00 Each	<p>Low Pressure Single Stream Sample System</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>C/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max sample inlet 250 psi, Max Helium inlet 250 psi, Max calibration inlet 100 psi</p> <p>Tag Item: AIT-002</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>PT# LPSS</p>	2,536.00	2,536.00
13	1.00 Each	<p>Guardian Liquid Eliminator Membrane</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>with integrated Automatic Liquid Shut-off. 316SS Construction. WP 1000psi (complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete)</p> <p>Tag Item: AIT-002</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>PT# ALG</p>	1,375.00	1,375.00
14	1.00 Each	<p>Back Panel Standard</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>Steel painted backpan 27" x 33"</p> <p>Tag Item: AIT-002</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>PT # BP</p>	365.00	365.00
15	1.00 Each	<p>Genie Membrane Probe Regulator</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>(Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. consult factory.</p> <p>Tag Item: AIT-002</p> <p style="text-align: right;">Scheduled Delivery: 15/03/2011</p> <p>PT #PGEN</p>	2,200.00	2,200.00
16	2.00 Each	<p>GO CYL-20 Dual Stage SS Bottle Regulator</p> <p style="text-align: right;">11144250 3760-322 AB 7J 7J27 M</p> <p>includes in/out gauges & CGA fitting</p> <p>Tag Item: AIT-002</p>	1,338.00	2,676.00

Item#	Quantity	Description	Unit Price	Total
17	1.00 Each	PT #CYL2 Helium UHP w/ Cylinder 11144250 3760-322 AB 7J 7J27 M Tag Item: AIT-002 Scheduled Delivery: 15/03/2011	893.00	893.00
18	1.00 Each	PT #HEGAS Calibration Gas (1 part mix) w/ Cylinder 11144250 3760-322 AB 7J 7J27 M Tag Item: AIT-002 Scheduled Delivery: 15/03/2011	2,100.00	2,100.00
19	1.00 Each	PT # GCGAS Crating 11144250 3760-322 AB 7J 7J27 M Tag Item: AIT-002 Scheduled Delivery: 15/03/2011	300.00	300.00
20	1.00 EACH	INSTRUMENT ENCLOSURES 11144250 3760-322 AB 7J 7J27 M Interconnect Drawings and Calibration Certificate as per Q-2011.01.24.RF Scheduled Delivery: 15/03/2011	0.00	0.00
			Sub Total	61,890.00
			Value Added Tax (VAT/ GST)	3,713.40
			State/ Province Tax	
			Grand Total	65,603.40



Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
Phone (403) 234-6300
Facsimile (403) 232-8298
www.psnworld.com

Procurement Service Requisition

Cover Sheet

Client: <u>EnCana</u>	Project No: <u>380700</u>
Project Name: <u>10-8 to 10-10 Jumper</u>	RFP/RFQ No: <u>380700-002 PO</u>
Location: <u>10-08-71-08-WGM</u>	AFE No: _____

1. REQUEST FOR: RFP - Request for Proposal P.O. - Purchase Order
 RFQ - Request for Quotation P.O. REVISION to existing PO # _____
REQUEST ORIGINATOR: Dan White CLIENT PO# or SAP# (if knowr _____)

2. GENERAL DESCRIPTION: 2 x PLGC II Gas Chromatograph

3. RFP/RFQ CLOSE DATE: _____ TECHNICAL CONTACT: Dan White
Phone #: 403-234-6387
REQ'D DELIVERY DATE: 15-Mar-11 COMMERCIAL CONTACT: Nova Gillis
Phone #: 403-234-6396

4. FOB: _____ SHIP TO ADDRESS: TBD
SHIP ATTN: _____

5. LIST OF APPLICABLE DOCUMENTS:
FP#/RFQ#/Quote#: Q-2011.01.24.RF
Datasheet#: AIT-001 Rev 0, AIT-002 Rev 0
Specifications: _____
Spec deviation: _____
Drawings: Manuals, Interconnect Drawings, Calibration Certificate,
Other: _____
Inspection Level Level 0 - No Quality Surveillance. Expedite Delivery Only

Procurement Service Requisition

Internal Notes

Client: EnCana
Project Name: 10-8 to 10-10 Jumper
Location: 10-08-71-08-W6M

Project No: 380100
RFP/RFQ No: 380700-002 PO
AFE No: _____

6. PREFERRED VENDOR LIST: Single Source See attached Bid List Award To

1. Galvanic Applied Sciences Address: <u>7000 Fisher Road SE</u> <u>Calgary, Alberta</u> Contact: <u>Ryan Fahl</u> Phone #: <u>403-252-8470</u> Fax #: _____ E-Mail: <u>rfahl@galvanic.com</u>	2. _____ Address: _____ _____ Contact: _____ Phone #: _____ Fax #: _____ E-Mail: _____	3. _____ Address: _____ _____ Contact: _____ Phone #: _____ Fax #: _____ E-Mail: _____
---	---	---

7. APPROVALS AND ROUTING:

	Req'd	Name		Req'd	Name
Originator	<input checked="" type="checkbox"/>	Dan White <i>DW</i>	Electrical	<input type="checkbox"/>	_____
Process	<input type="checkbox"/>	_____	Civil	<input type="checkbox"/>	_____
Mechanical	<input type="checkbox"/>	_____	Project Manager	<input checked="" type="checkbox"/>	Levie Mendioro <i>LM</i>
Inst. & Control	<input checked="" type="checkbox"/>	Dan White <i>DW</i>	Construction	<input type="checkbox"/>	_____

8. NOTES/COMMENTS:



HEAD OFFICE: 7000 Fisher Road, S.E., Calgary, Alberta, Canada T2H 0W3 PHONE: (403) 252-8470 FAX: (403) 255-6287

QUOTATION # Q-2011.01.24.RF

ATTENTION: Dan White

January 24, 2011

PSN World c/o EnCana Corp
Calgary, AB
Phone: 403 234 6300
Fax:
Email: dan.white@psnworld.com

Dan,

I am pleased to provide you with a quotation for **two (2) PLGCII Analyzers**.

The attached quote includes:

- Proposed Measurement and Analysis
- Analyzer Description and Specifications
- Analyzer Price Quote
- Terms and Conditions for Sale of Equipment

If you have any additional questions please feel free to contact me.

Yours sincerely,

Ryan Fahl
Canadian Sales Manager
Galvanic Applied Science, Inc.
Tel: 403 252 8470
Cell: 403 875 1264
Email: rfahl@galvanic.com

HOUSTON OFFICE: PHONE: (281) 477-9002 FAX: (281) 477-9004

EMAIL: info@galvanic.com
WEBSITE: www.galvanic.com

PROPOSED MEASUREMENT AND ANALYSIS

The tables below contain the information for the proposed measurement.

Instrument Tag #	Project 380700 Tags: AIT-001, AIT-002
Installation Site & Location	10-8 to 10-10 Jumper LSD:10-08-71-08-W6M
Application	Blending
Component(s) Measured	H2S
Measurement Range	0-10%
Power	24 VDC Power-75 watts start-up, 50 watts running
Electrical Classification	Class 1 Div 1
Sample System	Yes
Other Options	BP, Probes, Regulators and Cal/Carrier Gas, Liquid Shut-off

ANALYZER PRICE QUOTE AIT-001

PLGC II Natural Gas Chromatograph			Canadian CDN \$	Extended CDN \$
Analyzer Type				
✓ CCCP-D1	1	PLGC II Natural Gas Chromatograph / Component Analyzer (Class 1 Division 1 Group CD) - 3 minute analysis for H ₂ S	\$18,500	\$18,500
Sample System				
✓ LPSS	1	Low Pressure single stream sample system c/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max.sample inlet <u>250 psi</u> , Max Helium inlet <u>250 psi</u> , Max calibration inlet <u>100 psi</u> .	\$2,536	\$2,536
✓ ALG	1	The Guardian' Liquid Eliminator Membrane with integrated Automatic Liquid Shut-Off. (316SS Construction. WP 1000psi (Complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete).	\$1,375	\$1,375
Mounting and Enclosure				
✓ BP	1	Back panel Standard: Steel painted backpan 27" x 33"	\$365	\$365
Probes and Other Accessories				
✓ PGEN	1	'Genie' membrane probe regulator (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. Consult factory.	\$2,200	\$2,200
✓ CYL2	2	GO CYL-20 dual stage SS bottle regulator (includes in/out gauges & CGA fitting)	\$1,338	\$2,676
✓ HEGAS	1	Helium UHP w/ Cylinder	\$893	\$893
✓ GCGAS	1	Calibration Gas (1 part mix) w/ Cylinder	\$2,100	\$2,100
		Analyzer Total		\$30,644
	1	Crating	\$300	\$300
		Grand Total		\$30,944

ANALYZER PRICE QUOTE AIT-002

PLGC II Natural Gas Chromatograph			Canadian CDN \$	Extended CDN \$
Analyzer Type				
GCCP-D1	1	PLGC II Natural Gas Chromatograph / Component Analyzer (Class 1 Division 1 Group CD) - 3 minute analysis for H ₂ S	\$18,500	\$18,500
Sample System				
LPSS	1	Low Pressure single stream sample system c/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max. sample inlet 250 psi , Max Helium inlet 250 psi , Max calibration inlet 100 psi .	\$2,536	\$2,536
ALG	1	The Guardian' Liquid Eliminator Membrane with integrated Automatic Liquid Shut-Off. (316SS Construction, WP 1000psi (Complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete).	\$1,375	\$1,375
Mounting and Enclosure				
BP	1	Back panel Standard: Steel painted backpan 27" x 33"	\$365	\$365
Probes and Other Accessories				
PGEN	1	'Genie' membrane probe regulator (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. Consult factory.	\$2,200	\$2,200
CYL2	2	GO CYL-20 dual stage SS bottle regulator (includes in/out gauges & CGA fitting)	\$1,338	\$2,676
HEGAS	1	Helium UHP w/ Cylinder	\$893	\$893
GCGAS	1	Calibration Gas (1 part mix) w/ Cylinder	\$2,100	\$2,100
		Analyzer Total		\$30,644
	1	Crating	\$300	\$300
		Grand Total		\$30,944

The following quotation is valid for 90 days and subject to the 'Terms and Conditions for Sale of Equipment' provided herein.

Confidential Information: The prices, product specifications or other information contained in this quote are strictly confidential and are supplied on the understanding that they will be held confidentially and not disclosed to third parties without the prior written consent of Galvanic Applied Sciences, Inc

Customer Requirements: Customer is responsible for providing all facilities and services to the analyzer. For the PLGC II Natural Gas Chromatograph these responsibilities include:

- Suitable mounting and/or support for the analyzer, as per Galvanic's instructions and specifications. See analyzer operation and maintenance manual for details.
- All required tubing to / from analyzer
- Supply and installation of electrical lines
- Supply and installation of conduit and signal cable between the analyzer location and the control room and / or Customer supplied control system
- Supply and installation of heat tracing of sample line and vent line, if required
- Depending on the sample location selected for the analyzer system and / or the operating environment, weather/ sun shade protective panel, shelter or temperature controlled analyzer house

ANALYZER DESCRIPTION AND SPECIFICATIONS

Galvanic's **PLGC II Natural Gas Chromatograph** is designed to measure up to 8 streams of BTU and / or components in natural gas. Specifically the instrument is able to provide:

- Calculated Values: Heating Value/CV/BTU (GPA2172-96, 2145-03), Specific Gravity (AGA 8), Compressibility (AGA 8) and Wobble Index
- Component measurements (mol %): C1, C2, C3, iC4, nC4, iC5, nC5, C6+, C6, C7+, N₂, CO₂, CO, O₂ & H₂S

The PLGC II also has a report generating capability for providing further calculated values.

The PLGC II Natural Gas Chromatograph is *compact* and *rugged* (uses low temp TCD with no burnout on loss of carrier). It is also inexpensive to operate because the unit uses *no instrument air* and *modest amounts of both power and carrier gas*.

The standard PLGC II Natural Gas Chromatograph is equipped with sample flowmeter, auto-calibration solenoid and software, and custom application configuration. All units come standard with one (1) operation manual and serial cable. Options include sample systems and enclosures.

Specifications for a standard PLGC II Natural Gas Chromatograph are:

<p>PERFORMANCE</p> <p>Range: 0-1000 ppm to 100% for individual components</p> <p>Components: 16 maximum</p> <p>Streams: 8 plus + 1 calibration</p> <p>Response: 4 minutes for C1 to C6+ , N₂, CO₂ 5 minutes for C1 to C7+, N₂, CO₂ 3 minutes for H₂S and CO₂, depending on background composition For other measurements / times please consult factory</p> <p>Linearity: 1% for individual components</p> <p>Repeatability: ±1 BTU or 0.1%</p> <p>OPERATION PARAMETERS</p> <p>Ambient temp. -10-40° C (Optional enclosure: -40°C - 55°C)</p> <p>Humidity 0-95% non-condensing</p> <p>Power Consumption 50 watts @ 24 VDC (Nominal Operation), 75 watts @ 24 VDC (startup), 110 VAC operation (optional)</p> <p>Carrier Gas UHP helium @ 10 cc/min @ 60 PSI. Approximately 4-5 months using of 300 ft3 bottle. Hydrogen carrier option available, consult factory</p> <p>Sample Flow Rate 10 -100 PSI clean, dry gas @ 50 cc/min</p> <p>COMMUNICATIONS / INTERFACE</p> <p>Outputs 4 - relays, user selectable for alarm or fault (SPDT, 5 amps, 120 VAC) 4 - 4-20 mA (isolated), up to 24 more optional. Freely assignable to BTU, specific gravity, compressibility, component concentration or other measured or calculated value 1 - RS-232 isolated serial port 1 - RS-485 isolated serial port 1 - RS-232 non-isolated serial port Modbus communication on all ports</p> <p>Inputs: 6 - dry contacts 2 - wet contacts</p> <p>Operator Interface 248x64 LCD Screen 2 visual indicators (LED) for quick status Remote PC GUI</p>	<p>INSTRUMENT SPECIFICATIONS</p> <p>Size Class 1, Div 2 version: 14"H x 12"W x 8"D Class 1, Div 1 version: 30"H x 16"W x 9"D</p> <p>Weight Class 1, Div 2 version: 35 lbs Class 1, Div 1 version: 50 lbs</p> <p>Electrical CSA C/US Certified</p> <p>Classifications - Class 1, Div 1, Group BCD - Class 1, Div 2, Group BCD</p> <p>Temp code T3</p> <p>Columns 1-4 - 1/16" stainless steel packed column (application dependent)</p> <p>Valves 1-4 valves – Uses Valco Model DV22 10-port / Model DV22 6-port</p> <p>Detector Low Temperature TCD</p> <p>Oven Stainless steel oven using airless heat-sink. Designed to maintain consistent temperature</p> <p>Electronics Galvanic DIMAC dual processor platform utilizing 32 bit ARM7 CPU, advanced I/O processor and 6MByte flash memory. Real time clock with battery backup.</p> <p>Software Galvanic DIMAC software. DIMAC is a Windows-based, graphical user interface (GUI) software used for analyzer configuration and monitoring.</p> <p>Data Logging & Archiving Stores up to 10,000 items. User can set parameters such as time (hourly, daily, weekly, monthly, each analysis) and averages (hourly, daily, weekly, monthly and yearly, each analysis)</p> <p>Reports Can generate report of calculated values including BTU value, relative density, GPM, vapor pressure, specific gravity and liquid volume % for each component, plus other totalized readings.</p> <p>OPTIONS</p> <p>High pressure sampling system, low pressure sample system, custom sample system, and enclosure/cabinets (heated enclosure)</p>
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#700, 110 - 12 Ave. SW
 Calgary, Alberta
 PH: (403) 234-6387
 FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER
AIT-001

Rev 0 Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper Project No. 380700 AFE No. :

	Company/Dept.	REVISIONS	No	Description	BY	Chk'd	App'd	Date
Process Data By:					LM			
Data Sheet By:	I&C	22-Jan-11	A	Issued for Proposal	DW			
	I&C	01-Feb-11	0	Issued for Purchase	DW	MA		

	GENERAL	AIT-001		PROCESS		UNITS	DATA	
		1	Tag Number	AIT-001		56	Fluid	
2	Equipment No.	---		57	Fluid Phase		VAPOUR	
3	Service	10-8 to 10-10 Jumper H2S Analysis		58	Pressure @ Flow - Min	kPag	1379	
4	Line Number	P-311-DSC-4"-38H		59	- Normal	kPag	2070	
5	Line Size - Schedule	4" x Sch 80		60	- Max	kPag	3000	
6	P&ID	PS00472A		61	Return Press @ Flow - Min	kPag		
7	Sour Service	Yes		62	- Normal	kPag		
8	Design Pressure / Temperature	250 psig/ -10 to 40°C		63	- Max	kPag		
9	Area Classification	Class 1 Div 1		64	Temp @ Flow - Min	deg C	10	
10	Type	Chromatograph		65	- Normal	deg C	38	
11	Detector Type	TCD		66	- Max	deg C	50	
12	Function	H2S Analysis		67				
13	Fuel Gas	Carrier Gas	Helium	68				
14	Calibration	Range	0 - 10% H2S	69	Dew Point @ Flow	deg C		
15		Turndown	1% of full range	70	Viscosity @ Flow			
16		Gas Type	Yes(Notes 2)	71	Density @ Flow		2.91 lb/ft ³	
17	Repeatability	Accuracy	0.10%	72	Molecular Weight		19.8 lb/lbmol	
18	Response Time Max		5 min	73	Specific Heat Ratio (K)			
19	Sensitivity	Drift	---	74				
20	Output		4-20 mA	75				
21	Contacts	Input	6 dry/2 wet	76				
22		Output	4 relays	77				
23		Type	SPDT		78	Vapour Pressure		
24		Rating	5 A @ 120 VAC		79	Critical Pressure		
25	Communication		Modbus	80	Percent Solids			
26	Indication		LCD Screen	81	Particle Size			
27	Calibration		Auto Cal	82	Specific Gravity			
28	Process Connection		1/4 bulkhead swagelock tube	83				
29	Enclosure		Not WP Rated	84				
31	Power Supply	Watts	24 VDC 75 W @ 24 VDC	85	Stream Composition - Mol %	LRV	URV	
32	Cable Type			86				
33	Configuration Interface		Remote PC GUI	87				
34				88				
35	Sample Conditioning System		Yes	89				
36	Number of Streams		1	90				
37	Drawing Number		---	91				
38	Sample Switching Valves		Yes - Auto Cal	92				
39	Sample Transport Tubing		1/4" 316 SS seamless	93				
40	Sample Probe	Model #	Genie GPR-2NG	94				
41		In Conn.	3/4" NPT	95				
42		Out Conn	1/4" NPT		96			
43		Press/Temp Rating	3500 PSI / 85°C		97			
44	Insertion Length		4"					
45								
46								
47	Vapourizing Regulator		No	98	Purchase Order No.			
48	Sample Pump		No	99	Manufacturer	Galvanic Applied Science		
49	Eductor		No	100	Model No.	PLGC II		
50	Liquid Knock out /shut off		Yes	101	Vendor	Galvanic Applied Science		
51	Indicating Rotameter		Yes	102	Electrical Approval	Class 1 Div 1 Groups BCD T3		
52				103	CRN	Alberta		
53				104	Dim./ Interconnect Dwgs.	Yes		
54				105	Manuals	Yes		
55				106	Calibration Certificate	Yes		

NOTES:
 1. The Instruments and Accessories shall be supplied with 316 SS tags.
 2. 5% H2S cal Gas required



#700, 110 - 12 Ave. SW

Calgary, Alberta

PH: (403) 716-6104

FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-002

Rev 0

Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper		Project No. 380700		AFE No. :	
Company/Dept.		REVISIONS			
		Date	No	Description	BY Chk'd App'd Date
Process Data By:					LM
Data Sheet By:		I&C	18-Jan-11	A Issued for Proposal	DW
		I&C	01-Feb-11	0 Issued for Purchase	DW MS

	GENERAL		ANALYZER		SAMPLE SYSTEM		ACCESSORIES		PROCESS		UNITS		DATA	
	Item No.	Description	Value	Value	Item No.	Description	Value	Value	Item No.	Description	Value	Value	Item No.	Description
1	Tag Number	AIT-002							56	Fluid				SOUR GAS
2	Equipment No.	---							57	Fluid Phase				VAPOUR
3	Service	10-8 to 10-10 Jumper H2S Analysis							58	Pressure @ Flow - Min	kPag		1379	
4	Line Number	P-313-DSC-4"-38H							59	- Normal	kPag		2070	
5	Line Size - Schedule	4" x Sch 80							60	- Max	kPag		3000	
6	P&ID	PS00472A							61	Return Press @ Flow - Min	kPag			
7	Sour Service	Yes							62	- Normal	kPag			
8	Design Pressure / Temperature	250 psig/ -10 to 40°C							63	- Max	kPag			
9	Area Classification	Class 1 Div 1							64	Temp @ Flow - Min	deg C		10	
10	Type	Chromatograph							65	- Normal	deg C		38	
11	Detector Type	TCD							66	- Max	deg C		50	
12	Function	H2S Analysis							67					
13	Fuel Gas	Carrier Gas	---	Helium					69	Dew Point @ Flow	deg C			
14	Calibration	Range	0 - 10% H2S						70	Viscosity @ Flow				
15		Turndown	1% of full range						71	Density @ Flow				2.91 lb/ft³
16	Repeatability	Accuracy	0.10%						72	Molecular Weight				19.8 lbibmol
17		Gas Type	Yes(Note 2)						73	Specific Heat Ratio (K)				
18	Response Time Max	5 min						74						
19	Sensitivity	Drift	---						75					
20	Output	4-20 mA							76					
21	Contacts	Input	6 dry/2 wet						77					
22		Output	4 relays						78	Vapour Pressure				
23		Type	SPDT						79	Critical Pressure				
24		Rating	5 A @ 120 VAC						80	Percent Solids				
25	Communication	Modbus						81	Particle Size					
26	Indication	LCD Screen						82	Specific Gravity					
27	Calibration	Auto Cal						83						
28	Process Connection	1/4 bulkhead swagelock tube						84						
29	Enclosure	Not WP Rated						85	Stream Composition - Mol %	LRV			URV	
30	Power Supply	Watts	24 VDC	75W @ 24 VDC				86						
31	Cable Type							87						
32	Configuration Interface	Remote PC GUI						88						
33								89						
34								90						
35	Sample Conditioning System	Yes						91						
36	Number of Streams	1						92						
37	Drawing Number	---						93						
38	Sample Switching Valves	Yes - Auto Cal						94						
39	Sample Transport Tubing	1/4" 316 SS seamless						95						
40	Sample Probe	Model #	Genie GPR-2NG					96						
41		In Conn.	3/4" NPT					97						
42		Out Conn	1/4" NPT											
43		Press/Temp Rating	3500 PSI / 85°C											
44		Insertion Length	4"											
45														
46														
47	Vapourizing Regulator	No						98	Purchase Order No.					
48	Sample Pump	No						99	Manufacturer	Galvanic Applied Science				
49	Eductor	No						100	Model No.	PLGC II				
50	Liquid Knock out /shut off	Yes						101	Vendor	Galvanic Applied Science				
51	Indicating Rotameter	Yes						102	Electrical Approval	Class 1 Div 1 Groups BCD T3				
52								103	CRN	Alberta				
53								104	Dim./ Interconnect Dwgs.	Yes				
54								105	Manuals	Yes				
55								106	Calibration Certificate	Yes				

NOTES:

1. The Instruments and Accessories shall be supplied with 316 SS tags.
2. 5% H2S cal Gas required

PO Box 2850
Calgary, Alta T2P 2S5

EnCana Purchase Order

Phone: (403) 645-2000
Fax: (403) 645-3400

Seller: Galvanic Applied Sciences Inc.
7000 Fisher Road SE
Calgary, AB
Canada T2H 0W3

Phone: (403) 252-8470
Fax: (403) 255-6287

PO No.: 380700-012
This number must appear on all correspondence.

Rev. No.: 0 **Cumulative**
Rev. Date: 20/06/2011

Page 1 of 2

Attention: Ryan Fahl

Ship To: HOLD FOR WRITTEN INSTRUCTIONS
FROM PSN

Attn: -

Invoice To: EnCana
c/o Tartan Engineering Ltd. operating as PSN
via "OpenInvoice" Billing System
for information call, (403)645-3113
Attn: Encana c/o PSN

Initial Order Date 20/06/2011	Scheduled Delivery	1st Vendor Dwg Due Date	Shipping Point: Calgary, AB	Shipping Terms or Incoterm Status: FCA	Invoice Payment Terms: Net 30 Days
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End Use: To Be Advised	Route VIA: TBA	Project Title: 10-08 to 10-71-8 W6 Jumper Line Location: 10-08-71-8 W6	Seller's Quotation Reference: Q-2011.06.13.RF
---------------------------	-------------------	---	--

Please furnish goods and/or services described below subject to the terms and conditions of this purchase order and all attachments

Item#	Quantity	Description	Unit Price	Total
1	1.00 EA	<p>"Confirmation Only"</p> <p>10-8 to 10-10-71-8 W6 Jumper Line Analyzer Cabinet</p> <p>Cabinet to house qty (2) PLGCII H2S Analyzers (AIT-001/ 002) 11144250 8760.442 AB 1S 1S19 M</p> <p>Measurement and Analysis:</p> <ul style="list-style-type: none"> - Measurement Range: 0-10% - Power: 110 / 220 AC - Electrical Classification: Div 1 <p>Enclosure</p> <ul style="list-style-type: none"> - 72" x 72" x 24" NEMA 4 Powder Coated Steel Enclosure - R5 foam and heat reflective wrapping insulation <p>Electrical:</p> <ul style="list-style-type: none"> - Qty (1) Catadyne Heater 1.22 KW Model W1012 - Qty (2) NEMA 4 Junction Boxes - Qty (4) Disconnect Switches - Qty (2) 5 W/ft heat trace lines for samples - Qty (1) Net Safety H2S Detector <p>Conduit system will be rigid aluminum: Enclosure Interior: Class 1 Division 1 Group C&D Enclosure Exterior: Class 1 Division 2 Group C&D</p>	CAD 39,200.00	39,200.00

Verbal Order Placed:	Delivery: 6-8 Weeks	Required Before: August 5, 2011	Total Value This Purchase Order: 40,450.00 (All Taxes Extra)	Direct All Corresp. to: Nova Gillis
				Phone: (403) 234-6396
				Fax: (403) 232-8298

VENDOR/ SELLER ACKNOWLEDGMENT
Please sign and return to 'Invoice To' address above

PER _____
Ryan Fahl

Date: _____

PER **Rob Beckner**
Digitally signed by Rob Beckner
DN: cn=Rob Beckner, o=encana, ou=ops, email=rob.beckner@encana.com, c=CA
Date: 2011.06.21 11:31:52 -06'00'

Authorized Representative of Purchaser

PER _____
Dan White/ Damodar Singh/ Ip

Item#	Quantity	Description	Unit Price	Total
2	1.00 EA	Instrumentation: Supply and install 316 seamless SS tube and Swagelok 316 SS fittings for: - Qty (2) Sample lines - Qty (2) Calibration lines - Qty (2) Carrier lines - Qty (2) Flare vents Lighting 11144250 8760.442 AB 1S 1S19 M Supply and install Qty (1) Class 1 Div 1 150W incandescent fixture w/ switch	1,250.00	1,250.00
3	1.00 EA	Documentation 11144250 8760.442 AB 1S 1S19 M Please ship all documentation to: PSN 700, 110-12th Ave SW Calgary, AB T2R 0G7 ATTN: Procurement	0.00	0.00
			Sub Total	40,450.00
			Value Added Tax (VAT/ GST)	2,022.50
			State/ Province Tax	
			Grand Total	42,472.50



#700, 110 - 12 Ave. SW

Calgary, Alberta

PH: (403) 234-6387

FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-001

Rev 0

Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper		Project No. 380700		AFE No. :	
Company/Dept.		REVISIONS			
		Date	No	Description	BY
Process Data By:					LM
Data Sheet By:		22-Jan-11	A	Issued for Proposal	DW
		01-Feb-11	0	Issued for Purchase	DW MA

	GENERAL		ANALYZER		SAMPLE SYSTEM		ACCESSORIES	
	Tag Number	AIT-001	PROCESS	UNITS	DATA			
1	Tag Number	AIT-001	56	Fluid	SOUR GAS			
2	Equipment No.	---	57	Fluid Phase	VAPOUR			
3	Service	10-8 to 10-10 Jumper H2S Analysis	58	Pressure @ Flow - Min	1379			
4	Line Number	P-311-DSC-4"-38H	59	- Normal	2070			
5	Line Size - Schedule	4" x Sch 80	60	- Max	3000			
6	P&ID	PS00472A	61	Return Press @ Flow - Min				
7	Sour Service	Yes	62	- Normal				
8	Design Pressure / Temperature	250 psig/ -10 to 40°C	63	- Max				
9	Area Classification	Class 1 Div 1	64	Temp @ Flow - Min	10			
10	Type	Chromatograph	65	- Normal	38			
11	Detector Type	TCD	66	- Max	50			
12	Function	H2S Analysis	67					
13	Fuel Gas	Carrier Gas	68					
14		---	69	Dew Point @ Flow				
15	Calibration	Range	70	Viscosity @ Flow				
16		Turndown	71	Density @ Flow	2.91 lb/ft ³			
17	Repeatability	Accuracy	72	Molecular Weight	19.8 lb/mol			
18	Response Time Max	0.10%	73	Specific Heat Ratio (K)				
19	Sensitivity	Drift	74					
20	Output	4-20 mA	75					
21		5 min	76					
22	Contacts	Input	77					
23		Output	78	Vapour Pressure				
24		Type	79	Critical Pressure				
25		Rating	80	Percent Solids				
26	Communication	Modbus	81	Particle Size				
27	Indication	LCD Screen	82	Specific Gravity				
28	Calibration	Auto Cal	83					
29	Process Connection	1/4 bulkhead swagelock tube	84					
30	Enclosure	Not WP Rated	85	Stream Composition - Mol %	LRV	URV		
31	Power Supply	Watts	86					
32	Cable Type	24 VDC	87					
33	Configuration Interface	75 W @ 24 VDC	88					
34		Remote PC GUI	89					
35	Sample Conditioning System	Yes	90					
36	Number of Streams	1	91					
37	Drawing Number	---	92					
38	Sample Switching Valves	Yes - Auto Cal	93					
39	Sample Transport Tubing	1/4" 316 SS seamless	94					
40		Model #	95					
41	Sample Probe	In Conn.	96					
42		Out Conn	97					
43		Press/Temp Rating						
44		Insertion Length						
45		7"						
46								
47	Vapourizing Regulator	No	98	Purchase Order No.				
48	Sample Pump	No	99	Manufacturer	Galvanic Applied Science			
49	Eductor	No	100	Model No.	PLGC II			
50	Liquid Knock out /shut off	Yes	101	Vendor	Galvanic Applied Science			
51	Indicating Rotameter	Yes	102	Electrical Approval	Class 1 Div 1 Groups BCD T3			
52			103	CRN	Alberta			
53			104	Dim./ Interconnect Dwgs.	Yes			
54			105	Manuals	Yes			
55			106	Calibration Certificate	Yes			

NOTES:

1. The Instruments and Accessories shall be supplied with 316 SS tags.
2. 5% H2S cal Gas required



#700, 110 - 12 Ave. SW

Calgary, Alberta

PH: (403) 234-6387

FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-002

Rev 0

Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper		Project No. 380700		AFE No. :	
Company/Dept.		REVISIONS			
		Date	No	Description	BY
Process Data By:					LM
Data Sheet By:		I&C	18-Jan-11	A	DW
		I&C	01-Feb-11	0	DW MS

GENERAL	1 Tag Number		AIT-002		PROCESS	UNITS	DATA
	2 Equipment No.		---				
	3 Service		10-8 to 10-10 Jumper H2S Analysis		56		SOUR GAS
	4 Line Number		P-313-DSC-4"-38H		57		VAPOUR
	5 Line Size - Schedule		4" x Sch 80		58		Pressure @ Flow - Min
	6 P&ID		PS00472A		59	kPag	1379
	7 Sour Service		Yes		60		- Normal
	8 Design Pressure / Temperature		250 psig/ -10 to 40°C		61	kPag	2070
	9 Area Classification		Class 1 Div 1		62		- Max
	10 Type		Chromatograph		63	kPag	3000
	11 Detector Type		TCD		64		Return Press @ Flow - Min
	12 Function		H2S Analysis		65	kPag	- Normal
	13 Fuel Gas		Helium		66		- Max
	14 Range		0 - 10% H2S		67		Temp @ Flow - Min
	15 Calibration		1% of full range		68	deg C	10
	16 Gas Type		Yes(Note 2)		69		- Normal
	17 Repeatability Accuracy		0.10%		70	deg C	38
	18 Response Time Max		5 min		71		- Max
	19 Sensitivity		---		72	deg C	50
	20 Output		4-20 mA		73		Dew Point @ Flow
	21 Input		6 dry/2 wet		74	deg C	70
	22 Output		4 relays		75		Viscosity @ Flow
	23 Type		SPDT		76		Density @ Flow
	24 Rating		5 A @ 120 VAC		77		2.91 lb/ft³
	25 Communication		Modbus		78		Molecular Weight
	26 Indication		LCD Screen		79		19.8 lb/mol
	27 Calibration		Auto Cal		80		Specific Heat Ratio (K)
	28 Process Connection		1/4 bulkhead swagelock tube		81		
	29 Enclosure		Not WP Rated		82		
	31 Power Supply		24 VDC 75W @ 24 VDC		83		
	32 Cable Type				84		
	33 Configuration Interface		Remote PC GUI		85		
	34				86		
	35 Sample Conditioning System		Yes		87		
	36 Number of Streams		1		88		
	37 Drawing Number		---		89		
	38 Sample Switching Valves		Yes - Auto Cal		90		
	39 Sample Transport Tubing		1/4" 316 SS seamless		91		
	40 Model #		Genie GPR-2NG		92		
	41 In Conn.		3/4" NPT		93		
	42 Out Conn		1/4" NPT		94		
	43 Press/Temp Rating		3500 PSI / 85°C		95		
	44 Insertion Length		7"		96		
	45				97		
	46				PROCUREMENT		
	47 Vapourizing Regulator		No		98		
	48 Sample Pump		No		99		
	49 Eductor		No		100		
	50 Liquid Knock out /shut off		Yes		101		
	51 Indicating Rotameter		Yes		102		
	52				103		
	53				104		
	54				105		
	55				106		

NOTES:
 1. The Instruments and Accessories shall be supplied with 316 SS tags.
 2. 5% H2S cal Gas required



PSN

Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
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www.psnworld.com

Procurement Service Requisition

Cover Sheet

Client: <u>EnCana</u>	Project No: <u>380700</u>
Project Name: <u>10-8 to 10-10 Jumper</u>	RFP/RFQ No: <u>380700-012 PO</u>
Location: <u>10-08-71-08-W6M</u>	AFE No: _____

1. REQUEST FOR:

RFP - Request for Proposal P.O. - Purchase Order

RFQ - Request for Quotation P.O. REVISION to existing PO # _____

REQUEST ORIGINATOR: Dan White **CLIENT PO# or SAP#** (if known) _____

2. GENERAL DESCRIPTION: Analyzer Building

3. RFP/RFQ CLOSE DATE: _____ **TECHNICAL CONTACT:** Dan White

REQ'D DELIVERY DATE: AUG 15 /2011 Phone #: 403-234-6387

COMMERCIAL CONTACT: Nova Gillis

Phone #: 403-234-6396

4. FOB: _____ **SHIP TO ADDRESS:** TBD

SHIP ATTN: _____

5. LIST OF APPLICABLE DOCUMENTS:

FP#/RFQ#/Quote#: Q-2011.06.13.RF PSN

Datasheet#: AIT-001 Rev 1, AIT-002 Rev 1

Specifications: _____

Spec deviation: _____

Drawings: Analyzer Building layout, electrical drawings, interconnect drawings, dimensional drawings.

Other: _____

Inspection Level Level 1 - Final Inspection Only

Form No: PO.F.001 Rev/Date: C1-22-01-2010 (Previously PO.F.001) Page 1 of 2	Property of Production Services Network, Tel: +44 1224 77777 This document is uncontrolled once printed. Check the PSN Management System for the current version.
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Procurement Service Requisition

Internal Notes

Client: EnCana
Project Name: 10-8 to 10-10 Jumper
Location: 10-08-71-08-W6M

Project No: 380700
RFP/RFQ No: 380700-012 PO
AFE No: _____

6. PREFERRED VENDOR LIST: Single Source See attached Bid List Award To

1. Galvanic Applied Sciences	2.	3.
Address: <u>7000 Fisher Road SE</u>	Address: _____	Address: _____
<u>Calgary, Alberta</u>	_____	_____
Contact: <u>Ryan Fahl</u>	Contact: _____	Contact: _____
Phone #: <u>403-252-8470</u>	Phone #: _____	Phone #: _____
Fax #: _____	Fax #: _____	Fax #: _____
E-Mail: <u>rfahl@galvanic.com</u>	E-Mail: _____	E-Mail: _____

7. APPROVALS AND ROUTING:

	Req'd	Name		Req'd	Name
Originator	<input checked="" type="checkbox"/>	<u>Dan White</u> <i>DW</i>	Electrical	<input checked="" type="checkbox"/>	<u>Matt Hartwig</u> <i>MW</i>
Process	<input type="checkbox"/>	_____	Civil	<input type="checkbox"/>	_____
Mechanical	<input type="checkbox"/>	_____	Project Manager	<input checked="" type="checkbox"/>	<u>Damodar Singh</u> <i>DS</i>
Inst. & Control	<input checked="" type="checkbox"/>	<u>Dan White</u> <i>DW</i>	Construction	<input type="checkbox"/>	_____

8. NOTES/COMMENTS:

Reference AIT-001 and 002 under what PO# 002

Analzers AIT-001 and 002 have been shipped to an EnCana Specified location at EnCanas request. The analyzers are to be returned to Galvanic at Encanas expense. This is required to complete the installation of the analyzers in the cabinet and meet the purposed delivery date.

Heather - rayner @ encana - com



HEAD OFFICE: 7000 Fisher Road, S.E., Calgary, Alberta, Canada T2H 0W3 **PHONE:** (403) 252-8470 **FAX:** (403) 255-6287

QUOTATION # Q-2011.06.13.RF

ATTENTION: Dan White

June 13, 2011

PSN World c/o EnCana RFQ 380700-012

Calgary, AB

Phone: 403 234 6387

Fax:

Email: dan.white@woodgroup.com

Dan,

I am pleased to provide you with a quotation for (1) Cabinet to house (2) PLGCII H2S Analyzers.

The attached quote includes:

- Proposed Measurement and Analysis
- Analyzer Description and Specifications
- Analyzer Price Quote
- Terms and Conditions for Sale of Equipment

If you have any additional questions please feel free to contact me.

Yours sincerely,

Ryan Fahl
Canadian Sales Manager
Galvanic Applied Science, Inc.
Tel: 403 252 8470
Cell: 403 875 1264
Email: rfahl@galvanic.com

PROPOSED MEASUREMENT AND ANALYSIS

The tables below contain the information for the proposed measurement.

Instrument Tag #	10-10 Jumper
Installation Site & Location	AB
Application	Pipeline Gas
Component(s) Measured	H2S
Measurement Range	0-10%
Power	110 / 220 AC
Electrical Classification	Div2
Sample System	N/A
Other Options	N/A

ENCLOSURE PRICE QUOTE

Enclosure:

72 inch X 72 inch X 24 inch Nema 4 Powder Coated Steel Enclosure. Enclosure will be insulated with R5 foam and heat reflective wrapping.

Electrical:

- 1 – Catadyne heater 1.22 KW Model W1012 c/w gas controls and 12 Volt start jumper cables
- 2 – Nema 4 Junction boxes c/w back pan, terminal blocks & Panduit
- 4 – Disconnect switches (2 GC & 2 Heat Trace Lines)
- 2 – 5 W/ft heat trace lines for samples c/w termination and end kits
- 1 – Net safety H2S Detector c/w sensor separation

Conduit system will be rigid aluminum:

Enclosure interior: Class 1 Div 1 Group C&D

Enclosure exterior: Class 1 Div 2 Group C&D

Instrumentation:

Supply and Install tube and fittings for the following:

- 2 – Sample lines
- 2 – Calibration lines
- 2 – Carrier lines
- 2 – Flare vents

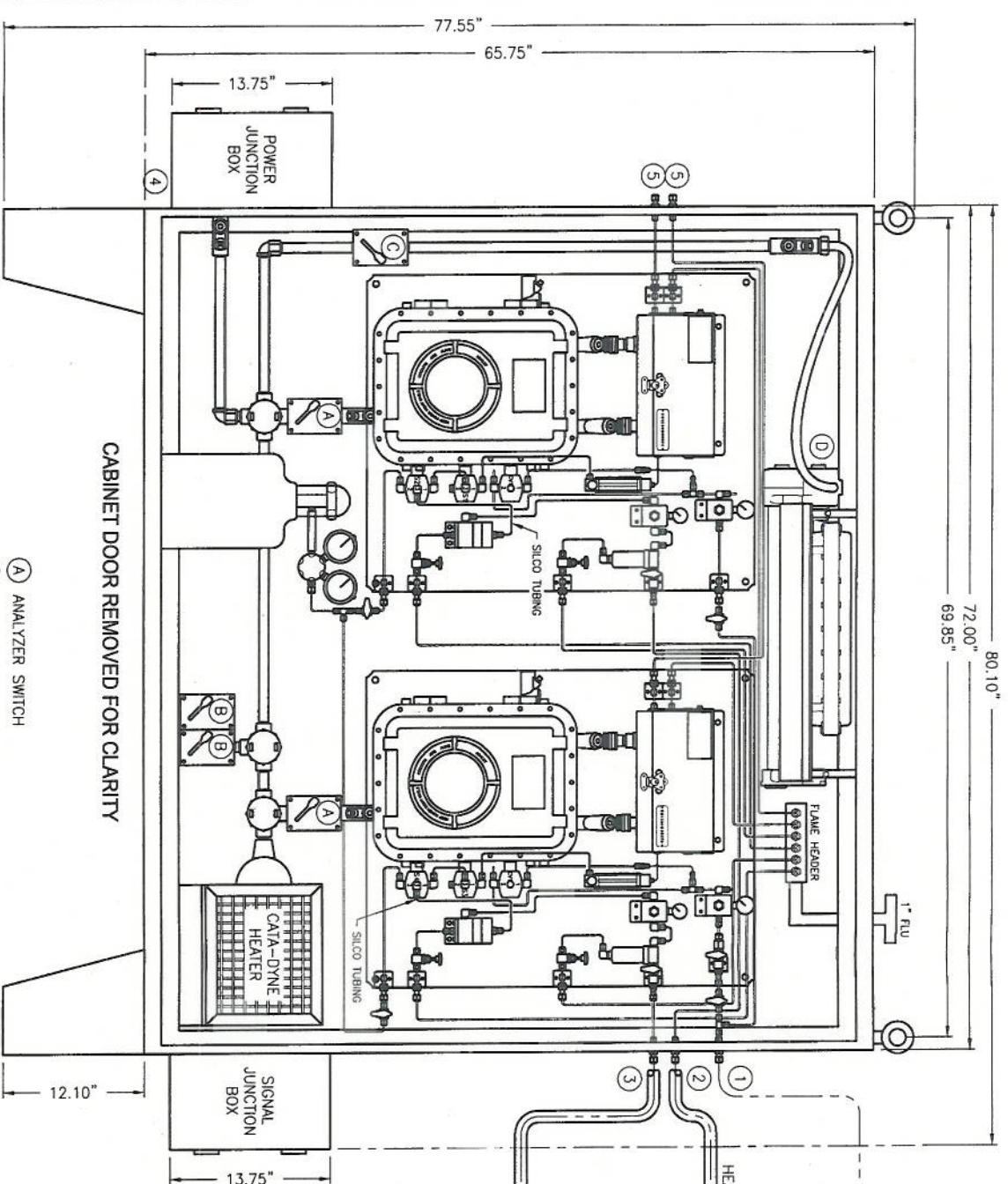
All tubing to be Seamless 316 SS and all tube fittings to be Swagelok 316 SS.

Lighting option: \$1,250.00CDN

Supply and install one Class 1 Div 1 150W incandescent fixture (EVI Series) with switch.

TOTAL: \$39,200.00CDN

Confidential Information: The prices, product specifications or other information contained in this quote are strictly confidential and are supplied on the understanding that they will be held confidentially and not disclosed to third parties without the prior written consent of Galvanic Applied Sciences, Inc

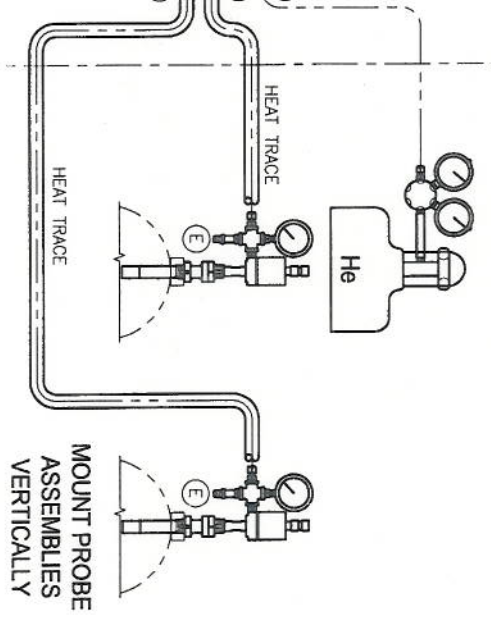


- (A) ANALYZER SWITCH
- (B) POWER TO ANALYZERS
- (C) CABINET HEATER SWITCH
- (D) LIGHT
- (E) 50LB CHECK VALVE

TOLERANCES (EXCEPT AS NOTED):
 LINEAR DIM. 2 DEC. PLACES: ± 0.03 (± 0.76mm)
 ANGLES 30°
 MACHINE FINISH (MICRO-INCH) 125

DIMENSIONS ARE IN INCHES
 DIMENSIONS () ARE METRIC

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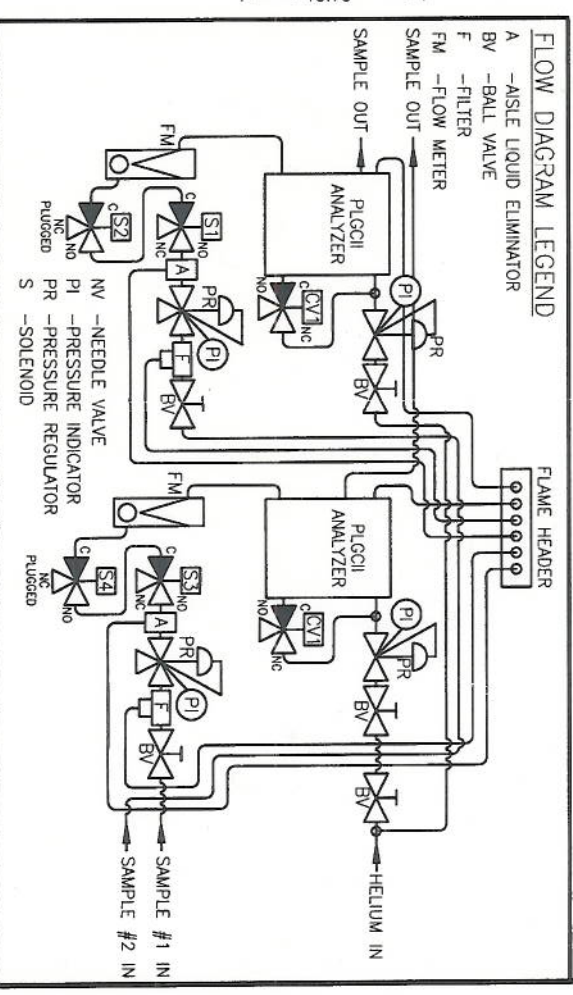


ANALYZER STANDARD OPTIONS

1	110 VAC POWER
2	HEATER 110 VAC
3	AUTO-CALIBRATION
4	CLASS 1 DIVISION 1 MAGNALIGHT FLUORESCENT

- ① 1/4" HELIUM IN
- ② 1/4" SAMPLE #1 IN SET @ 15 psig
- ③ 1/4" SAMPLE #2 IN SET @ 15 psig
- ④ POWER TO ANALYZER
- ⑤ 1/4" DETECTOR VENT

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GAUVANC APPLIED SCIENCES INC.
 7000 FERBER ROAD ST 1201 OAK
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