

Supply and Services / Approvisionnement et Services
 Canada / Canada

CLAIM FOR PROGRESS PAYMENT
 RÉCLAMATION DE PAIEMENT PARTIEL

USE SUPPLEMENTARY CLAIM FORM DSS-MAS 1112 AS REQUIRED TO RECORD DETAIL
 AU BESOIN, INSCRIRE LES DÉTAILS SUR LA FORMULE DE RÉCLAMATION SUPPLÉMENTAIRE DSS-MAS 1112

CONTRACTOR - ENTREPRENEUR Arjay Engineering Ltd.	CLAIM NO. - N° DE LA RÉCLAMATION	DATE 20/1/70
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ADDRESS - ADRESSE
 2495 Haines Road, Mississauga, Ontario L4Y 1Y7

Development of a void fraction meter for measurement of gas holdup at high temperature and pressure

FILE NO. - N° DU DOSSIER 06SQ.23440-9-9155	SERIAL - SÉRIE 23440-9-9155/01-SQ	FFC - FORMULE - CÉPHN 234-131-000000-501202-	CONTRACT PRICE - PRIX DU CONTRAT \$49,693.00
		0433	(\$37,270.00-Crown's Share)

CONTRACTOR'S REPORT OF PROGRESS IF MORE SPACE IS REQUIRED PLEASE USE SEPARATE SHEETS
 RAPPORT RENDU DES TRAVAUX PAR L'ENTREPRENEUR USE SERVIR, AU BESOIN, D'UNE AUTRE FEUILLE

Discussions were initiated to form a work plan and basic probe design. This included a visit to the University of Waterloo to view the test facilities. Decision was made to proceed with an integral probe assembly with multi-sensors sheathed in teflon. Co-axial cable was used as the probe capacitance wire to eliminate cross-interference from other probes. Initially a miniature version was constructed to verify assembly technique and operation. Due to installation restrictions at the University of Waterloo, the 15' probe had to be constructed in a flexible manner with rigidity clamps to be placed on the probe during installation. At this point, the probe is at the finalized Task 2 stage. It is being shipped to the University of Waterloo for operations testing under simulated conditions. During the university testing, Arjay will be investigating further, the high temperature and high pressure manufacturing requirements of the final probe assembly. The program is presently on schedule and within budget.



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USE SUPPLEMENTARY CLAIM FORM DSS-MAS 1112 AS REQUIRED TO RECORD DETAIL
AU BESOIN, INSCRIRE LES DÉTAILS SUR LA FORMULE DE RÉCLAMATION SUPPLÉMENTAIRE DSS-MAS 1112

CONTRACTOR - ENTREPRENEUR Arjay Engineering Ltd	CLAIM NO. - N° DE LA RÉCLAMATION	DATE Apr 28 90
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ADDRESS - ADRESSE

2495 Haines Road, Mississauga, Ontario L4Y 1Y7

Development of a void fraction meter for measurement of gas holdup at high temperature and pressure.

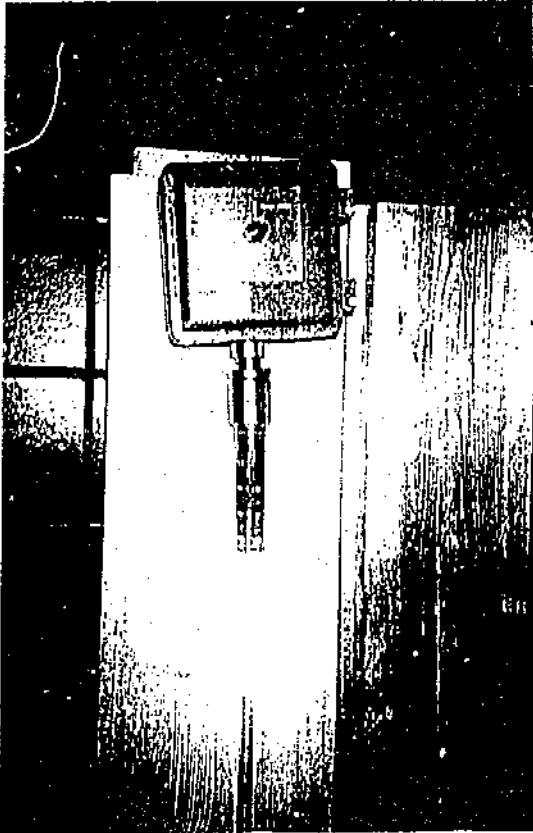
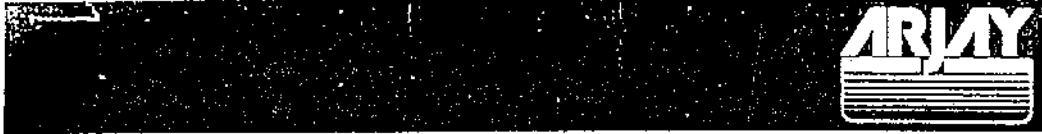
FILE NO. - N° DU DOSSIER 06SQ.23440-9-9155	SERIAL - SÉRIE 23440-9-9155/01-8Q	P.C. - CONTRACT - CÉLÉB 234-131-000000-50120	CONTRACT PRICE - PRIX DU CONTRAT 2- \$49,693.00
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CONTRACTOR'S REPORT OF PROGRESS IF MORE SPACE IS REQUIRED PLEASE USE SEPARATE SHEET (LE COMPTE RENDU DES TRAVAUX PAR L'ENTREPRENEUR (SE SERVIR, AU BESOIN, D'UNE AUTRE FEUILLE))

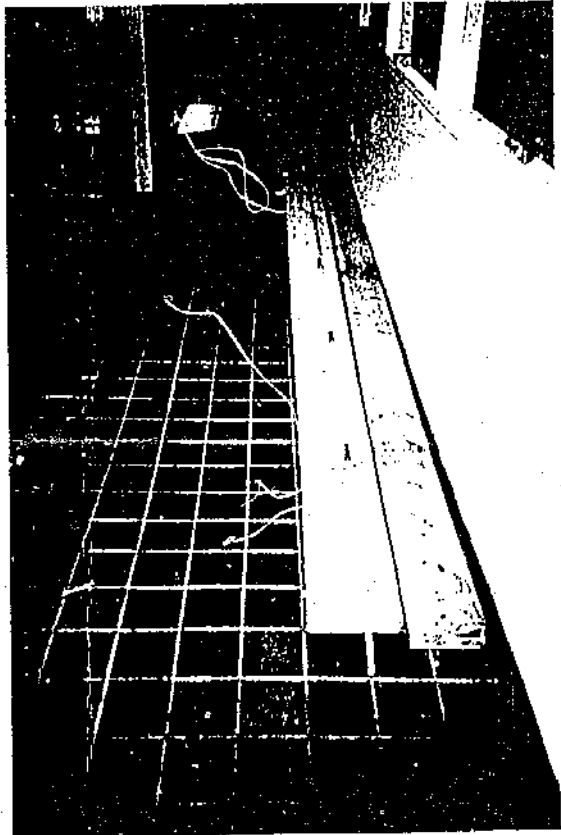
0433

(\$37,270.00-CROWN'S SHARE)

The initial probe failed construction tests to determine the strength of the co-axial cable and the handling that would be endured during the process simulation test. The probe was redesigned to accept a larger gauge co-axial cable. To provide greater rigidity to the probe, PVC clamps were made to bind the sections of the during installation. At the probe head, an electronic terminal block consisting of permanent and variable capacitors was assembled to equal out the capacitance of each probe section. The probe shipped to the University of Waterloo on April 23/90 is awaiting installation in the glass tube chamber. While tests are being performed on this probe by U of W staff, Arjay will be sourcing materials and designing the high temperature, high pressure system. The project is behind schedule by approximately 2 months but is currently within budget. (see attached copies of photos)



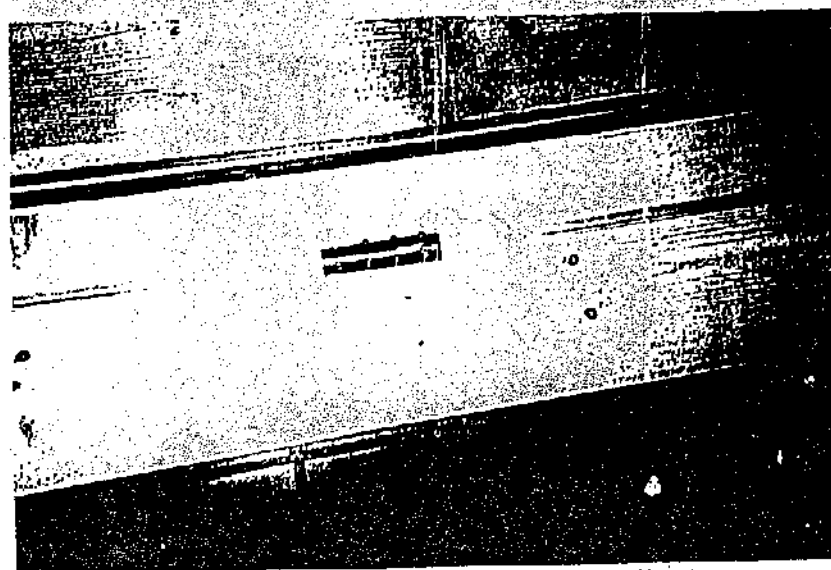
The probe head has an adjustment knob to manually select the probe section to be monitored.



A view showing the 5 sections of the probe with clamping device between each



The junction box at the probe head contains electronics to equalize the capacitance at each probe.



The clamp between each probe provides rigidity and hence, accuracy, in the actual vessel.