

**New Folder Name** Fabrication Process

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L160-T930007-00-B

**CBI**

**CBI Company Ltd**

TRANSMITTING ON OMNIFAX @661  
VERIFY NUMBER IS: 713 896 3710

TELEFAX

8900 Fairbanks North Houston Road  
P.O. Box 41146  
Houston, Texas 77241-1146  
713 466 7661  
713 466 8218 FAX

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DATE: Nov. 5, 1993

TO: LARRY JONES  
CALTEX

FAX NO. (818) 304-9834

FROM: KEV FLESSAS

REF: L.I.G.O. PROJECT

LARRY - NO E-MAIL CONNECTION POSSIBLE, WE'LL HAVE TO LIVE WITH  
FACSIMILE COMMUNICATIONS.

SAMPLE VIEWGRAPHS FOR SPREAD SHEET MANUFACTURING CONSIDERATIONS

WOULD LIKE YOUR COMMENTS. I CAN SHOW IT THIS WAY  
OR WITH THE SPREAD SHEET COMPARISON.

GIVE ME A CALL @ (713) 896-5491.

THANKS,

KEV

FAX CC TO: MARTY TELLALIAN  
CBITS-PLAINFIELD, NOE 'C'

**FABRICATION PROCESS**

**SPIRAL TUBE MANUFACTURING**  
**CONSIDERATIONS**

**LOCATION**

**COST**

**PRODUCTION**

**QUALITY CONTROL**

## **SPIRAL TUBE MANUFACTURING**

### **LOCATION**

**MULTIPLE SUPPLIERS: CBI HAS SURVEYED FOUR POTENTIAL SUPPLIERS AND DETERMINED THAT THERE ARE TWO POTENTIALLY QUALIFIED SUPPLIERS , NOTHWEST PIPE (NWP) AND TUBETECH.**

**GEOGRAPHICALLY NEAR EACH SITE: NWP IS LOCATED IN PORTLAND OREGON, NEAR THE HANFORD SITE, TUBETECH IS LOCATED IN SANFORD, FLORIDA, THE NEAREST SUPPLIER TO THE LIVINGSTON SITE.**

**CLEAR TRUCK ROUTE: BOTH FACILITIES ARE LOCATED AMENABLE TO INTERSTATE AND STATE HIGHWAY SYSTEMS. NO OBSTACLES TO OVER LENGTH SHIPMENTS**

## **SPIRAL TUBE MANUFACTURING COSTS**

**COMPETITIVE PRICING: TWO SUPPLIERS WILL BID ON THE TUBES, WITH SUPPLY FOR ONE AND/OR BOTH SITES AND THE QUALIFICATION TEST. USE OF ONE SUPPLIER FOR THE QUALIFICATION TEST SHOULD NOT PRECLUDE USE OF THE OTHER FOR THE OPTION.**

**INITIAL SET UP: NWP - MUST DO EXTENSIVE CONVERSION TO STAINLESS ENVIRONMENT AND APPLICATION, HIGH SET UP CHARGE TUBETECH - CAN PRODUCE AS IS, BUT STRIP WIDTH IS LIMITED.**

**SPECIAL EQUIPMENT: NONE FOR TUBE MANUFACTURE, SPECIAL ON LINE WELD EVALUATION EQUIPMENT MUST BE DEVELOPED.**

**PRODUCTION: NWP - 2 TUBES PER SHIFT PROJECTED, TUBETECH, 1 1/2**

**FREIGHT: TRUCK SHIPMENT, 4 TUBES @ 65' TO THE TRAILER**

**SPIRAL TUBE MANUFACTURING**

**PRODUCTION**

**EXPERIENCE IN TUBE SIZE RANGE: NWP, NO EXPERIENCE,  
TUBE TECH, WITHIN STANDARD PRODUCT RANGE, EACH ASKED TO  
PRODUCE PREQUALIFICATION SECTION, 20' LONG**

**EQUIPMENT CAPABILITY: NWP CAN UTILIZE 48" STRIP, TUBE TECH IS  
PRESENTLY LIMITED TO 16", BUT EVALUATING 24"**

**WELDING PROCESS: PREFERRED PROCESS, 2-PASS TIG, AUTOGENOUS  
INSIDE, WITH FILLER OUTSIDE**

**CLEANLINESS: EXTRA CARE REQUIRED @ NWP**

**SCHEDULE: NO PROBLEM WITH SUFFICIENT LEAD TIME**

**FINANCIAL STABILITY: D & B, NWP - FAIR, TUBE TECH - GOOD**

## ***SPIRAL TUBE MANUFACTURING***

# **QUALITY CONTROL**

**WELD QUALITY:** WELD QUALITY IS OF PRIME IMPORTANCE, VISUAL INSPECTION IS PRESENT METHOD, EXPLORING VERSIONS OF EDDY CURRENT AND REAL TIME IMAGING. PREFERENCE IS ON LINE PROCESS.

**TOLERANCES:** SHOULD NOT BE A PROBLEM WITH EITHER SUPPLIER, STRAIGHTNESS AND CIRCUMFERENCE CONTROL ARE WITH THE EQUIPMENT CAPABILITY, BOTH ARE VERY OPERATOR DEPENDENT.

**INSPECTION:** PROCEDURES WILL BE DEVELOPED FOR INSPECTION IN SUPPLIERS FACILITY ADDRESSING DIMENSIONAL CONTROL AND VISUAL WELD INSPECTION

**DOCUMENTATION:** EACH TUBE TO BE UNIQUELY IDENTIFIED WITH MATERIAL TRACEABILITY.