**MUSE Basis of Estimate**

**Element WBS #4**

I. General Information

Task Name: Straw tube assembly

Unique ID Number

Date of Estimate: March 19, 2014 (last update)

Estimate Generator: G. Ron, R. Ransome

Cost Category:

 X M&S

 SWF

Comments: See item 1307.4537v1.pdf in BOE directory for description of PANDA

Vendor Quote Number if Applicable: Quotes for straws, gas components, wire in BOE directory

Drawing Reference Number or Attachment:

Costing Method: Cost based on PANDA experience and quotes

Total Task Cost: $371,194

Total Contingency: $146,307

II. Cost Estimate Breakdown

Cost of each element, along with justification

Assume $1.3 = 1 Euro, and $1.65= 1 GBP (British Pound)

Straws – 2445 GBP/1000 + 845 packing. 4000 straws.

 Total Cost 10625 GPB = $17,531.

Wire – 4 km, 1728 Euro = $2246

Buy hardware for 3500 straws. Costs from PANDA construction.

Pins, springs, ABS 44 Euro/straw = 154,000 Euro = $200,200

Decoupling caps 2 Euro/straw = 7000 Euro = $9100

PCB 8 Euro/straw = 28,000 Euro = $36,400

Plumbing 5 Euro/straw = 17,500 Euro = $22,750

Total hardware $268,450

Component cost per straw is $76.7, $93.5 with taxes.

Total Cost for Straws $288,047

taxes – 22% $63,370

Total with taxes $351,417

III. Contingency and risk analysis

1000 extra straws and wire for straws is being bought outright to avoid cost and delay for a small quantity. This is a 33% excess.

500 extra components bought for other components that cannot be bought in small quantities and a reasonable price. This a 16% excess.

The contingency estimate is 17%. In addition, because all prices are in Euro/GPB, we include an additional 10% for currency fluctuations. Giving a contingency of $94,882.

To account for possible difficulties in construction with higher than expected waste, we include a contingency for 500 additional components, equal to $46,750, plus 10% for currency fluctuations, for a total of $51,425.

The total contingency is $146,307.

