
PROJECT PLAN AND COST ESTIMATE

Deliverable E

Client – Canadian Nuclear Laboratories

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GNG1103-F

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Project Task Plan:

Task Description	Estimated Duration (Days)	Owner
Gather materials	5	everyone
Construct extending pneumatic body	1	everyone
Test pneumatic body and record results	1	Fahad
Adapt body if failing tests	1	Fahad
Create prototype for drilling and collection	2	everyone
Test drilling and collection, and record results	1	Dante
Adapt drilling and collection if failing tests	1	Dante
Update BOM and target specifications	1	Fahad, Dante
Create complete prototype (body and drilling) without complete feedback system	2	everyone
Test complete prototype and record results	1	Aymeric
Adapt complete prototype to pass tests	1	Aymeric
Fully implement feedback system	2	everyone
Test feedback system and record results	1	Connor
Adapt feedback System to record results	1	Connor
Update BOM and target specifications	1	Aymeric, Connor
Get feedback on final prototype	2	everyone
Create User manual and guide	1	everyone
Create final presentation and pitch	4	everyone

List Of Equipment Needed:

- 3D printer
- SolidWorks
- Laser Cutter
- InkScape

- Hand Tools

Prototyping and Test Plans:

Test Number	Probable Critical Issue	Test Objective (why)	Test description (what)	Stop Criterion
1	Body can move up and down the tube	Testing for performance, Distance Travelled In how much time (feet/sec)	Extending the contraption to 15 feet and contracting it. Seeing how much weight it can push and pull	Body manages to push and pull the weight of the drilling mechanism
2	Controlled Drilling Mechanism	Performance, Management, Distance drilled (inches)	Drill into a material and test to see if device can make holes the same size consistently	Drilled hole sizes are consistent within the past 3 attempts
3	Collection Mechanism	Performance, Management, Amount of material collected (mg)	Drill a consistent hole into a material that will turn into powder, and measure how much the collection system collected in mg	The collected amount is consistent within 7 mg in the past 3 attempts
4	Test functionality of Fail Safe Mechanism	Risk Management	Removing the contraption from a tube utilizing the failsafe mechanism	Failsafe mechanism functions properly, used by multiple different people
5	Testing if entire contraption works when assembled	Performance, Distance travelled (feet) Speed (feet/second) Hole size (inches) Material collected (mg)	Run through an entire material extraction process with the assembled complete prototype	When results equal results from tests 1,2 and 3
6	Feedback system test	Management,	Run through a material	There is a clear feedback for

		Risk management	extraction process simulation	when the prototype finishes extending, drilling and retracting
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Project Risks:

Risks	Contingency plan
Prototype failing severely	<ul style="list-style-type: none"> - Change Implementation of the section - Or in extreme cases redesign the section entirely - Update Project Task Plan and timetable to account for added prototyping
Team Members not contributing	<ul style="list-style-type: none"> - Have a team reflection regarding the unfinished task - Align expectations with the group - Potentially meet with PM or TA - Provide support for teammate - Update Project Task Plan and timetable

BOM excel sheet:

[BOM - group 15](#)

Prototype Sketch:

