MSD Project Risk Assessment

ID	Risk Item	Effect	Cause	Likelihood	Severity	Importance	Action to Minimize Risk	Owner	Contingency Plan
	Describe the risk briefly	*What is the effect on any or all of the project deliverables if the cause actually happens?*	*What are the possible cause(s) of this risk?*			*L*S*	*What action(s) will you take (and by when) to prevent, reduce the impact of, or transfer the risk of this occurring?*	*Who is responsible for following through on mitigation?*	
1	Inaccurate Data	Useless machine and data	Contamination, inaccurate puffing profile, miscalibrated sensors.	3	3	9	Keeping the purpose of this machine in mind when making all decisions.	Chris	Calibrate machine with test cigarettes or determine the source of the inaccurate data
2	Contamination	Faulty data, equipment destruction, lab hazards	Leaks in tubing, faulty seals, backflow, improper sterilization	2	3	6	Insuring proper seal, checking from pressure drop, use of hand-held smoke detector	Matt	Disclaim that data may be faulty and pursue methods of improving

3	Fragile equipment failure	Faulty data, no data, expensive to replace, injury during removal	Transportation, recklessness, proximity to heat source, pump vibration	2	3	6	Use of Proper Protective Equipment, insulate fragile equipment	Matt	Salvage parts and rebuild ASAP
4	Inaccurate flow calculation	Machine can not reproduce expected experimental data	Inappropriate circuitry for thermo-couple and/or references source and sensor	2	2	4	Test multiple times before implementation. Ask professor for expertise with Thermo-couples	Gideon	Determine alternatives to try and produce accurate readings
5	System catching on fire	Destruction of unit	Misuse of Lighting method, Pump overheating, electrical short, cigarette ash	1	3	3	Have a fire extinguisher in room, proper use of lighting method	Megan	Salvage parts and rebuild ASAP
6	Over bearing of cart	Destruction of system, loss of mobility,	Weight exceeds cart tolerance, caster wheels failure, cart handle failure	1	3	3	Follow cart specified FOS	Chris	Salvage parts and rebuild ASAP
7	Cart instability	Fragile equipment might break, flow performance	Improper distribution of equipment	1	3	3	Measure and proper distribution of equipment	Chris	Salvage parts and rebuild ASAP

8	Power failure	No data, uncontrolled cigarette burn, no user interface	Power grid failure, breaker trip, computer unplugged from wall	3	1	3	Secure power cord	Megan	Plug back into wall
9	Over budget	An angry Hanzlik and customer	Unforeseen costs	3	1	3	Use cheaper options	Chris	Talk with customer about increasing budget
10	Human injury due to machining parts	Dead team member	Machine eating team member	1	3	3	Use proper protection and become educated with local experts	Eric	Go to the hospital
11	Damaging machine due to machining parts	Mad machinists and increased expenses	Uneducated use of machine	2	1	2	Ask experts for assistance before machining	Megan	Inform technicians in lab
12	Machining faulty parts	Increased expenses and schedule delayed	Not checking proper dimensions	3	1	3	Ask experts for assistance before machining	Chris	Rework and machine ASAP

13	Smoke containment failure	Fire alarm goes off, health concerns	Improper sealing, poor ventilation, improper use of system	2	1	2	Use of hand-held smoke detector, proper ventilation, proper sealant, possible time delay for opening door	Eric	Increase lab ventilation
14	Faulty wiring	Faulty data, no data, noisy data, equipment failure, electrical shorts	Improper coating, improper wire gauge, burn out near heat source, improper grounding	2	1	2	Double check against schematic	Gideon	Salvage parts and rebuild ASAP
15	Collision of moving parts	Damaged equipment, pinch hazards, technician injury	Improper programming, faulty sensors, power surge	2	1	2	Manually test system	Jose	Salvage parts and rebuild ASAP
16	Pump failure	No flow, experimental failure, expensive to replace	Loss of power, improper filtering, over use, incorrect gauging, improper set up	1	1	1	Proper filtration, proper cleaning, proper cooling	Eric	Troubleshoot problem then salvage parts and rebuild ASAP

Likelihood scale	Severity scale
1 - This cause is unlikely to happen	1 - The impact on the project is very minor. We will still meet deliverables on time and within budget, but it will cause extra work
2 - This cause could conceivably happen	2 - The impact on the project is noticeable. We will deliver reduced functionality, go over budget, or fail to meet some of our Engineering Specifications.
3 - This cause is very likely to happen	3 - The impact on the project is severe. We will not be able to deliver, or what we deliver will not meet the customer's needs.

"Importance Score" (Likelihood x Severity) – use this to guide your preference for a risk management strategy	
Prevent	Action will be taken to prevent the cause(s) from occurring in the first place.
Reduce	Action will be taken to reduce the likelihood of the cause and/or the severity of the effect on the project, should the cause occur
Transfer	Action will be taken to transfer the risk to something else. Insurance is an example of this. You purchase an insurance policy that contractually binds an insurance company to pay for your loss in the event of accident. This transfers the financial consequences of the accident to someone else. Your car is still a wreck, of course.
Accept	Low importance risks may not justify any action at all. If they happen, you simply accept the consequences.