DEVENS ENTERPRISE COMMISSION

DEC NO. D25-015
DATE:
FEE: $150 CK 2673

DEVENS REGIONAL ENTERPRISE ZONE
PERMIT APPLICATION **LEVEL 2**

ESTIMATED COST OF CONSTRUCTION / IMPROVEMENTS _____

PPF Industrial 112 Barnum LLC

OWNER ~~PPF Industrial 112 Barnum LLC~~
ADDRESS ~~c/o Seyon Management~~ 535 Boylston St. Boston, MA 02116
CITY/STATE/ZIP _____
PHONE 802-522-9796
FAX _____
SIGNATURE

Brooke Simonds, VP Property Management
Type or print name and title

APPLICANT VulcanForms Inc.
ADDRESS 112 Barnum Road
CITY/STATE/ZIP Devens, MA 01434
PHONE 908-507-2427
FAX 908-365-1872
SIGNATURE Lawrence B. Maglin

Lawrence B. Maglin, Director HSSE
Type or print name and title

If appropriate, attach a separate sheet with the name(s), address(es), and telephone/fax numbers for the project engineer, attorney, or other "development team" personnel.

SITE / LOCATION / STREET 112 Barnum Road, Devens, MA 01434

LOT SIZE / TOTAL PARCEL / ZONING DISTRICT: In attachements

STATEMENT OF PROPOSED WORK OR ACTIVITY: Increase of storage capacity of Titanium powder on site

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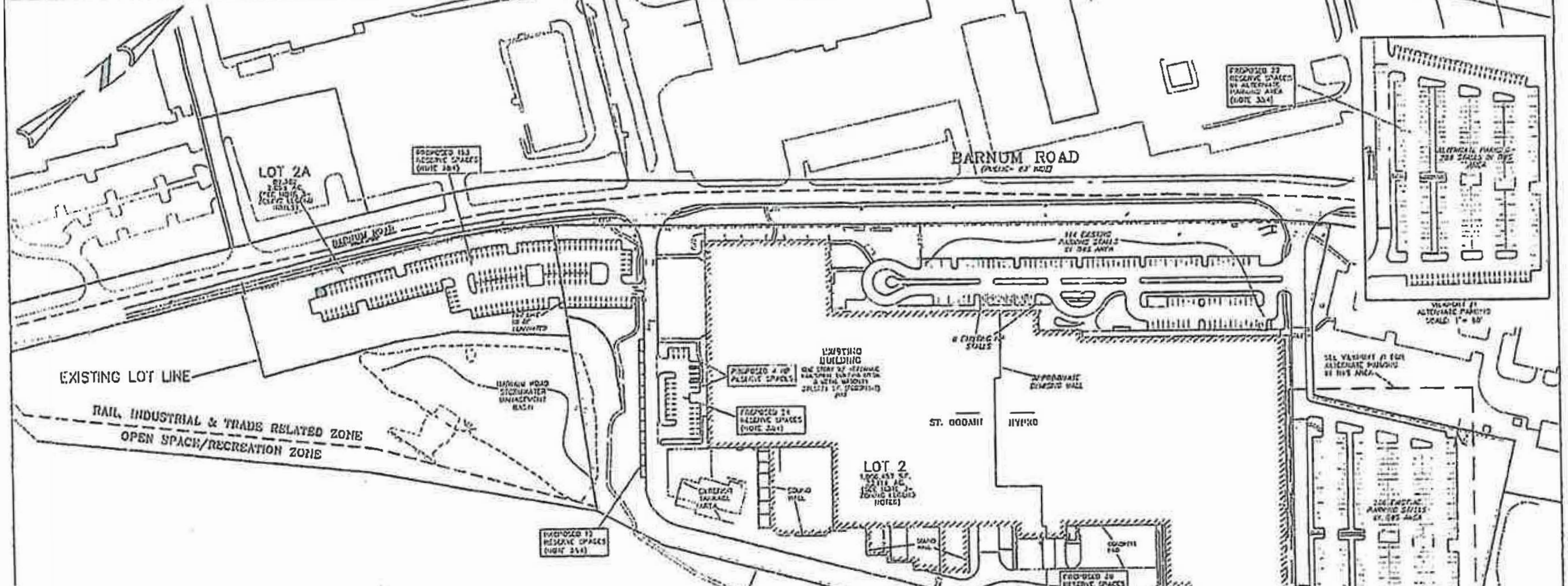
SCOPE OF WORK (pick the actions that best fit your project or application)

___ Site Plan
___ Wetlands NOI
XX Minor amendment or modification of an approved plan
___ Historic District renovations/addition/alternations
___ Other (Specify) _____

___ Reconsideration
___ Zoning Variance

Explain work to be performed: Storage and procedures already in place, extra storage will use existing storage locations, more printers are being constructed now

Comments from Notifying Agencies: Waiting for Fire Department to do site inspecton



ZONING LEGEND

	REQUIRED	PROVIDED	PROVIDED W/ RESERVE PARKING	COMPLIANCE
LOT AREA	3 AC.	[illegible] (NOTE 4)	[illegible] AC	YES
LOT FRONTAGE	[illegible]	[illegible]	[illegible]	YES
[illegible]	[illegible]	[illegible]	[illegible]	YES
- SIDE	[illegible]	[illegible]	[illegible]	YES
- REAR	[illegible]	[illegible]	[illegible]	YES
MAX HEIGHT	[illegible]	[illegible]	[illegible]	YES
[illegible]	[illegible]	[illegible] (NOTE 1)	[illegible] (NOTE 1)	YES
PARKING TOTAL	[illegible] (NOTE 2)	[illegible]	[illegible]	YES
- SIZE	[illegible]	[illegible]	[illegible]	YES
- [illegible]	[illegible]	[illegible]	[illegible]	YES
PARKING SETBACK				
- [illegible]	[illegible]	[illegible]	[illegible]	YES
- [illegible]	[illegible]	[illegible]	[illegible]	YES
[illegible]	[illegible]	[illegible]	[illegible]	YES

ZONING LEGEND NOTES:

1.) BUILDING FOOTPRINT = 391,992 S.F.*
EXISTING ADDITIONAL IMPERVIOUS AREA = 312,??? S.F.*
RESERVED PARKING IMPERVIOUS AREA = 23,344 S.F.
TOTAL IMPERVIOUS AREA = [illegible] S.F. (18.37± AC.)
IMPERVIOUS SURFACE RATIO = 18.37± AC / 23.5± AC = [illegible]

2.) REQUIRED PARKING
MANUFACTURING =152,231 S.F. x 2/1,000 S.F. =304.5 SPACES
ACCESSORY USES
OFFICE =[illegible] S.F. x 1/1000 S.F. =[illegible] SPACES
STORAGE/ WAREHOUSE =[illegible] S.F. x 1/1000 S.F. =[illegible] SPACES
MECHANICAL =33,737 S.F. x 1/1000 S.F. =33.7 SPACES
CORRIDOR/ CIRCULATION =34,080 S.F. x 1/1000 S.F. =34.0 SPACES
MEZZANINE SPACE =63,523 S.F. x 1/1000 S.F. =63.5 SPACES
TOTAL= [illegible] ([illegible] SPACES)

(THE MEZZANINE WILL NO LONGER BE INCLUDED FOR MANUFACTURING OR WAREHOUSE SPACE AND WILL BE REMOVED FROM THE USABLE FLOOR SPACE.)

4.) LOT 2A & 2 ARE TO BE COMBINED.

* INFORMATION AS SHOWN ON "SP2 - CIVIL PHASE 2 SITE IMPROVEMENTS PLAN SECTION 02" BY [illegible] APPROVED BY THE DEVENS ENTERPRISE COMMISSION ON 05/27/08 AND OBTAINED FROM PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY PLAN OF LAND IN DEVENS (HARVARD), MASSACHUSETTS" BY THE BSC GROUP, INC. DATED MAY [illegible], 2010. STAMPED DRAFT [illegible]: INFORMATION USED TO FILL IN EXISTING ZONING INFORMATION THAT WAS NOT INCLUDED IN PLAN ABOVE.

NOTES:

1. THIS PROJECT WILL NOT IMPACT PARKING OR CHANGE TRAFFIC VOLUMES OR CIRCULATION PATTERNS.
2. A) EXISTING OR PROPOSED USE WILL NOT GENERATE ELECTROMAGNETIC INTERFERENCE TO ANY SENSITIVE RECEPTOR. INTERFERENCE WITH THE HARVARD-SMITHSONIAN RADIO TELESCOPE (1400-1720 MHz) IS SPECIFICALLY PROHIBITED.

   B) PROPOSED OR EXISTING USE WILL NOT CAUSE PROLONGED, MULTIPLE PATTERNS OF NOISE OR VIBRATION NUISANCE TO, OR INTERFERE WITH, ANY SENSITIVE RECEPTOR.

   C) A MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) AIR QUALITY PERMIT IS NOT REQUIRED.
3. NO BUILDING OR PERMANENT ACCESSORY STRUCTURE SHALL BE PLACED WITHIN AREAS DESIGNATED AS PROPOSED RESERVE SPACES.
4. PROPOSED RESERVE SPACES ARE SUBJECT TO A "COVENANT REGARDING PARKING CONSTRUCTION LIMITS" TO BE RECORDED AT THE WORCESTER REGISTRY OF DEEDS.

GRAPHIC SCALE

"I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS"

STEVEN M. HORSFALL P.L.S. 5-19-15 DATE

APPROVED: DATE: 5-21-15
DEVENS ENTERPRISE COMMISSION CHAIRMAN

SCALE 1"= [illegible]	1	[illegible]	PER D.E.C. REVIEW	
DATE [illegible]	REV	DATE	REVISION	BY

CALARE PROPERTIES, INC.
112 BARNUM RD.
(HARVARD) DEVENS, MA

ZONING & RESERVE PARKING PLAN

KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS

SHEET NO. 4

Industrial Performance Standards Checklist for Newly Proposed Projects

All projects within the Devens Regional Enterprise Zone (DREZ) must comply with the Devens Enterprise Commission (DEC) Industrial Performance Standards (IPS) under 974 CMR 4.00. This checklist is intended to assist Applicants in determining at the time of submittal, or ideally before submittal, if their project may or may not involve development and/or activities that may impact sound, vibration, air quality, or lighting within the DREZ.

Site layout, building(s) design/orientation, traffic patterns, location of outdoor equipment and numerous other project components can impact sound, vibration, air quality, and lighting within the DREZ. By identifying any potential IPS concerns early on in the review process, Applicants can design their projects to ensure compliance with the IPS at all times and avoid potential future violations of the IPS and costly mitigation after the fact.

Please note, if a project requires an air permit from the Massachusetts Department of Environmental Protection (DEP), the Applicant will need to initiate permitting through the DEP office as well. Even if a project requires a DEP air permit, the proponent still must demonstrate compliance with the DEC IPS.

Please circle the correct answer to each question in this checklist. Please note that by circling "NO", the Applicant is not relieved of demonstrating compliance with the IPS requirements. If "NO" is circled and a potential concern is identified during the review process, it could temporarily suspend the approval process timeline until the concern is adequately addressed. If "YES" is answered, please explain and provide any supporting studies, modelling files, or information to aid the DEC in their evaluation of the project.

Project Name Modification of Titanium Powder Storage Amount at 112 Barnum Rd

Does the proposed project and associated activities involve any potential increases in sound, vibration, air quality, odor, dust, lighting and/or electromagnetic interference that are covered under the DEC Industrial Performance Standards?

YES	NO
	(NO)

If you answered yes, will the Applicant demonstrate compliance directly or will the project proponent employ an expert to demonstrate compliance? Please provide pertinent contact information of the responsible official:

_____

_____

_____

_____

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Noise

Does the proposed project have the ability to increase sound?	**YES**	**NO**
1. Will the increase in sound plus background sound exceed 974 CMR 4.05 (3)a?	**YES**	**NO**
2. Will the total sound plus background sound exceed 974 CMR 4.05 (3)b?	**YES**	**NO**
3. Will the increase in sound create pure tones that will exceed 974 CMR 4.05 (3)c and/or 974 CMR 4.05 (3)d7?	**YES**	**NO**
4. Will the increase in sound create impulsive sounds that will exceed 974 CMR 4.05 (3)dl-6 and/or 974 CMR 4.05 (3)d8?	**YES**	**NO**
5. Are there procedures and controls proposed to reduce sound during earth removal per 974 CMR 4.07(10)?	**YES**	**NO**
Checklist Options to Demonstrate Sound Compliance		
6. Have all of your potential sound sources been identified?	**YES**	**NO**
7. Will spreadsheet calculations of the potential increase in sound be provided?	**YES**	**NO**
8. Will sound modeling of the proposed project be provided?	**YES**	**NO**
9. Will the facility submit a protocol describing the potential sound monitoring, metrics, and modeling as required?	**YES**	**NO**
10. Does the project propose to collect background sound data (typically 7-days worth of valid data is sufficient)?	**YES**	**NO**
11. If the facility intends to collect background sound data will it include other qualifying weather data such as wind speed, wind direction, sky conditions, etc.?	**YES**	**NO**
12. Is mitigation to reduce the overall sound profile proposed?	**YES**	**NO**
13. Is sound mitigation to be assumed when calculations or modeling is performed? (modelling files are required to be submitted to the DEC)	**YES**	**NO**
14. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in sound?	**YES**	**NO**
15. Have increases in sound with respect to traffic been considered?	**YES**	**NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Vibration

Does the proposed project have the ability to increase vibration?	**YES**	**NO**
16. Will the increase in vibration exceed 974 CMR 4.05 (4)a??	**YES**	**NO**
Checklist Options to Demonstrate Vibration Compliance		
17. Have all of the potential vibration sources been identified?	**YES**	**NO**
18. Will spreadsheet calculations of the potential increase in vibration be provided?	**YES**	**NO**
19. Will the proponent provide vibration modeling of the proposed project?	**YES**	**NO**
20. Does the project propose to collect background vibration data?	**YES**	**NO**
21. Is mitigation proposed to reduce the overall vibration profile?	**YES**	**NO**
22. Is vibration mitigation to be assumed when the calculations or modeling performed?	**YES**	**NO**
23. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in vibration as proposed?	**YES**	**NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Air Quality

Does the proposed project have the ability to create air, visible, and/or odor emissions?	**YES**	**NO**
24. Will the proposed project meet the air quality standards in 974 CMR 4.02(3)	**YES**	**NO**
25. Are there procedures and controls proposed to minimize impacts during earth removal per 974 CMR 4.07(7)?	**YES**	**NO**
26. Will the proposed project require a MassDEP air quality permit per 974 CMR 4.02 (1)	**YES**	**NO**
If the project will require an air permit, then the proponent should set up a meeting with the regional MassDEP office to determine air permitting requirements, and answer the following:		
27. Will the proposed project submit a Limited Plan Approval application?	**YES**	**NO**
28. Will the proposed project submit a Non-Major Comprehensive Plan Approval application?	**YES**	**NO**
29. Will the proposed project submit a Major Comprehensive Plan Approval application?	**YES**	**NO**
30. Will the proposed project be a Title V source?	**YES**	**NO**
31. Will the proposed project be a PSD source?	**YES**	**NO**
Checklist Options to Demonstrate Air Quality Compliance		
32. Have you identified all of your potential air, visible and/or odor sources?	**YES**	**NO**
33. Will there be any visible emissions?	**YES**	**NO**
34. Will there be any dust emissions?	**YES**	**NO**
35. Will there be any odor emissions?	**YES**	**NO**
36. Will there be any potential increases in air, odor or dust emissions within the DREZ that will impact any internal or external receptors?	**YES**	**NO**
37. Will the project proponent provide spreadsheet calculations of the potential increase in air and/or odor emissions within the DREZ to demonstrate how the increase will not impact any internal or external receptors?	**YES**	**NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Checklist Options to Demonstrate Air Quality Compliance (cont.)

38. Will the project proponent provide air and/or odor modeling of the proposed project within the DEC or into the neighborhood surrounding the DEC??	YES NO
39. Is mitigation proposed to reduce the overall air and/or odor profile?	YES NO
40. Is air pollution and/or odor control to be assumed when the calculations or modeling is performed?	YES NO
41. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in air and/or odor as proposed?	YES NO

Lighting/Illumination

Does the proposed project have the ability to create additional Illumination?	YES **NO**
42. Will lighting meet the illumination standards set forth in 974 CMR 4.04(3)?	YES NO
43. Have all of the potential light sources been identified?	YES NO
44. Will spreadsheet calculations of the potential increase in light and how it will not affect the Observatory outlined in 974 CMR 4.04(1) or any external or internal receptors be provided?	YES NO
45. Is mitigation proposed to reduce the overall light profile?	YES NO

Electromagnetic Interference

Does the proposed project have the ability to create electromagnetic interference?	YES **NO**
46. Have you identified all your potential electromagnetic sources?	YES NO
47. Are you proposing to provide spreadsheet calculations of the potential increase in electromagnetic interference and how it will not affect any internal or external receptors as per 974 CMR 4.03(3)?	YES NO
48. Are you proposing any mitigation to reduce your overall electromagnetic profile?	YES NO
49. Will your project comply with all the electromagnetic requirements under 974 CMR 4.03?	YES NO

Lawrence B. Hoglin Vulcan Forms Inc.
12/1/25

FP-002A
(Rev. 6/23)

The Commonwealth of Massachusetts
City/Town of Devens

Application For License

Massachusetts General Law, Chapter 148 §13

☐ New License ☒ Amended License

GIS Coordinates
42°32' 38.56" N
LAT.
71°35' 10.14" W
LONG.

License Number

Application is hereby made in accordance with the provisions of Chapter 148 of the General Laws of Massachusetts for a license to store flammables, combustibles or explosives on land in buildings or structures herein described.

Location of Land: 112 Barnum Road, Devens, MA 03049 Parcel #027.00017-0500.0
Number, Street and Assessor's Map and Parcel ID

Attach a plot plan of the property indicating the location of property lines and all buildings or structures.

Owner of Land: PPF Industrial 112 Barnum LLC c/o Seyon Management

PPF Industrial 112 Barnum LLC c/o Seyon Management
Address of Land Owner: 535 Boylston St. Boston, MA 02116

Use and Occupancy of Buildings and Structures: Additive Manufacturing

If this is an application for amendment of an existing license, indicate date of original license and any subsequent amendments
Original license dated 6/16/2022
Attach a copy of the current license

Flammable and Combustible Liquids, Flammable Gases and Solids

Complete this section for the storage of flammable and combustible liquids, solids, and gases; see 527 CMR 1.00 Table 1.12.8.50; Attach additional pages if needed. All tanks and containers are considered full for the purposes of licensing and permitting.

PRODUCT NAME	CLASS	MAXIMUM QUANTITY	UNITS gal., lbs, Cubic feet	CONTAINER UST, AST, IBC, drums

Total quantity of all flammable liquids to be stored: 40 gallons in various flammable cabinets

Total quantity of all combustible liquids to be stored: 4,200 gallons of #2 fuel in above ground tanks (generator)

Total quantity of all flammable gases to be stored: 4 LP cylinders (fork truck)

Total quantity of all flammable solids to be stored: 165,000 lbs (75,000 kg) of titanium powder in SS hoppers, 30 gal SS drums, 7 - 15kg plastic containers in flammable cabinets

LP-gas *(Complete this section for the storage of LP-gas or propane)*

Indicate the maximum quantity of LP-gas to be stored and the sizes and capacities of all storage containers. *(See 527 CMR 1.00 Table 1.12.8.50)*

- Maximum quantity (*in gallons)* of LP-gas to be stored in aboveground containers: 80 gallons

List sizes and capacities of all aboveground containers used for storage:

4 x 20 gallon tanks for fork truck

- Maximum quantity (*in gallons)* of LP-gas to be stored in underground containers: 0

List sizes and capacities of all underground containers used for storage: None

Total aggregate quantity of all LP-gas to be stored: 80 gallons

Fireworks (*Complete this section for the storage of fireworks)* NA

Indicate classes of fireworks to be stored and maximum quantity of each class. *(See 527 CMR 1.00 Table 1.12.8.50)*

- Maximum amount (*in pounds*) of Class **1.3G**: _____ Type/class of magazine used for storage: _____
- Maximum amount (*in pounds*) of Class **1.4G**: _____ Type/class of magazine used for storage: _____
- Maximum amount (*in pounds*) of Class **1.4**: _____ Type/class of magazine used for storage: _____

Total aggregate quantity of all classes of fireworks to be stored: _____

Explosives *(Complete this section for the storage of explosives)* NA

Indicate classes of explosive to be stored and maximum quantity of each class. *(See 527 CMR 1.00 Table 1.12.8.50)*

- Maximum amount (*in pounds*) of Class **1.1**: _____ Number of magazines used for storage: _____
- Maximum amount (*in pounds*) of Class **1.2**: _____ Number of magazines used for storage: _____
- Maximum amount (*in pounds*) of Class **1.3**: _____ Number of magazines used for storage: _____
- Maximum amount (*in pounds*) of Class **1.4**: _____ Number of magazines used for storage: _____
- Maximum amount (*in pounds*) of Class **1.5**: _____ Number of magazines used for storage: _____
- Maximum amount (*in pounds*) of Class **1.6**: _____ Number of magazines used for storage: _____

I, Lawrence B. Maglin, hereby attest that I am authorized to make this application. I acknowledge that the information contained herein is accurate and complete to the best of my knowledge and belief. I acknowledge that all materials stored pursuant to any license granted hereunder must be stored or kept in accordance with all applicable laws, codes, rules and regulations, including but not limited to Massachusetts Chapter 148, and the Massachusetts Fire Code (527 CMR 1.00). I further acknowledge that the storage of any material specified in any license granted hereunder may not exceed the maximum quantity specified by the license.

Signature Lawrence B. Maglin Date 12/2/25 Name Lawrence B Maglin

PLEASE NOTE THAT ONLY APPLICATIONS WITH ORIGINAL WET SIGNATURES WILL BE ACCEPTED. PHOTOCOPIES OF APPLICATIONS WILL NOT BE PROCESSED.

Fire Department Use Only

I, Timothy Kelly, Head of the Revere Fire Department endorse this application with my

☒ Approval ☐ Disapproval

Signature of Head of the Fire Department

12/3/2025
Date

Recommendations: _____

Breakdown of Titanium powder storage by end of 2026

36 hoppers by rack & rack by EDM room with maximum amount of Ti powder

(Kg) = 18,000kg

54 drums of powder on racks by entry way to Ti64 room = 14,000kg

900 of containers in flammable cabinets of Ti powder = 9,000kg (subject to how EOS printers will be set up. Also working with purchasing to make these drums instead)

40 hoppers out on floor and 40 reclaim buckets and maximum amount of Ti powder with maximum machines = 26,000kg

16 of hoppers / drums in Ti64 room on rack-AP&C, and on AP&C units and transfer units and on the floor. = 8,000kg (Will not always be full)

Grand total is 75,000 kg.

We projected the remaining budget (9000) after hoppers filled on the containers. Ideally, we do not have 900 containers of powder, but the 9000kg buffer gives us wiggle room if any mistakes are made in ordering too much powder, so we will always be under the 75,000 kg.

Devens Fire Department
182 Jackson Road
Devens, MA 01434
978.772.4600

HAZARDOUS MATERIALS REGISTRATION FORM (HMRF)

Date:	**2/26/2025**
Facility Name:	**VulcanForms Inc.**
Facility Address:	**112 Barnum Road, Devens, MA 01434**
Type of Business:	**Additive Manufacturing**

HMRF Preparer Information

Name/Title:	**Lawrence B. Maglin Director HSSE**
Mailing Address:	**112 Barnum Road, Devens, MA 01434**
Telephone Number:	**908-507-2427**
Fax Number:	**908-365-1872**
Email Address:	**Lmaglin@vulcanforms.com**

List TWO emergency contact personnel for your facility:

1. Name:	Lawrence B. Maglin	Phone:	9085072427
Title:	Director HSSE	24 Hour Phone:	9086853078
Email:	Lmaglin@vulcanforms.com	Fax Number:	
2. Name:	Doug Huston	Phone:	3095824209
Title:	Facilities Manager	24 Hour Phone:	3095824209

Email: dhuston@vulcanforms.com Fax Number:

Registration Fee Calculation (Please check all that apply to your facility):

Hazardous Waste Generator: Yes ☒ No ☐

☐ VSQG ☐ SQG ☒ LQG

Fee Due:

Underground Storage Tanks:? Yes ☐ No ☒

Number of Tanks :

Fee Due:

Chemical Storage Amounts: Yes ☐ No ☐

☐ Less than 300 Gallons ☒ Greater than 300 Gallons

Fee Due:

TOTAL FEES DUE:

- **Please return this completed form to:**
- **Please include required registration fee by check payable**
- **Form and fee are due:**

March 15, 2025

Hazardous Waste Generator Status

Does your facility generate chemical or hazardous waste? Yes ☒ No ☐

Indicate your generator status:
☐ VSQG (less than 27 gallons/month)
☐ SQG (27 to 250 gallons/month)
☒ LQG (greater than 250 gallons/month)

If yes, list your EPA or DEP Generator Identification Number: MAC300011012

List all hazardous waste present at your facility.

Waste Name	CAS #	Location of Hazardous Waste Storage & Satellite Storage Areas	Number and Size of Container(s)	Maximum Quantity Stored Annually
HazWaste Liquid N.O.S. (Chromium) 9, PG111, ERG171 NA3077	Titanium & Nickel Powder, filters in Water	See Haz Area on map	2-8 55 gal drums at any given time	Disposed of within 90 days
HazWaste Solid N.O.S. (Chromium) 9, PG111, ERG171 NA3077	Gloves, booties, hoods, parts, clean rags with powder	See Haz Area on map	1-3 Box at any given time	Disposed of within 90 days
Non Regulated Oil Waste	Coolants, waste oil	See Haz Area on map	1 55 gal drum at any given time	Disposed of within 90 days
HazWaste Liquid N.O.S. (Chromium) 9, PG111, ERG171 NA3083	Waste cuttings with powder from lab	See Haz Area on map	1 55 gal drum at any given time	Disposed of within 90 days
HazWaste Liquid N.O.S. (Chromium) 9, PG111, ERG171 NA3077	Titanium & Nickel Powder in water	See Haz Area on map	1-2 55 gal drums at any given time	Disposed of within 90 days
HazWaste Liquid N.O.S. (Chromium) 9, PG111, ERG171 NA3077	Titanium & Nickel Powder in water	See Haz Area on map	2-4 275gal totes at any given time	Disposed of within 90 days

Chemical Storage

Does your facility handle, use or store chemicals (e.g., oils, solvents, acids/bases, cleaning agents, fuels or compressed gas cylinders)? Yes ☒ No ☐

If, in the last calendar year, you stored greater than 10,000 pounds of any hazardous chemical for which you are required to maintain a Safety Data Sheet (SDS) or 500 pounds of an Extremely Hazardous Substance, your facility is required to file a **Tier II Emergency and Hazardous Chemical Inventory** in accordance with US EPA Emergency Planning and Community Right-to-Know ACT (EPCRA) requirements.

Will your facility be filing a Tier II form for last year? Yes ☐ No ☒

Does your facility store compressed gas cylinders? Yes ☒ No ☐

Does your facility store flammable materials? Yes ☒ No ☐

Does your facility have any **above ground** storage tanks? Yes ☒ No ☐

If yes, complete the following table:

	Tank 1	Tank 2	Tank 3	Tank 4
Date of Installation	2008	2008		
Date of Last Tank Test	2016	2016		
Tank Capacity	2100 gal	2100 gal		
Material Stored	#2 diesel	#2 diesel		
Type (steel or fiberglass)	Steel/Double Wall with leak detection	Steel/ Double wall with leak detection		

	Tank 5	Tank 6	Tank 7	Tank 8
Date of Installation				
Date of Last Tank Test				
Tank Capacity				
Material Stored				
Type (steel or fiberglass)				

List all chemicals present at your facility stored in quantities equal to or greater than 1 liter (33.8 ounces) or 1 kilogram (2.2 pounds). Copy this sheet if additional space is necessary.

Chemical Name	Hazard(s)*	Location of Chemical Storage Areas	Number and Size of Container(s)	Maximum Quantity Stored Annually
Hydrofluoric Acid	**Corrosive**	**Corrosive Cabinet – Metal Lab**	**3 x 500 ml**	**3 x 500 ml**
Nickel Alloy Powder	**Respiratory**	**Raw material storage, Devens Printer # 1**	**4 x Feed Hopper**	**4 x 800 kg**
Titanium Alloy Powder	**Flammable Solid**	**Raw material storage, Devens Printer # 1**	**60 Feed hoppers, 30 gal SS drums**	**Total on site is 75,000 kg**
Hydrochloric Acid	**Corrosive**	**Corrosive Cabinet – Metal Lab**	**3 x 500 ml**	**3 x 500 ml**
Isopropyl Alcohol	**Flammable**	**Various Flammable Storage Cabinets in facility**	**20 gallons**	**20-30 gallons**
Acetone	**Flammable**	**Flammable Cabinet – Metal Lab**	**1 x 2 gallons**	**1 x 2 gallons**
Methanol	**Flammable**	**Flammable Cabinet – Clean room**	**1 x 4 liters**	**1 x 4 liters**
Nitric Acid	**Corrosive**	**Corrosive Cabinet – Metal Lab**	**4 x 2.5 liters**	**4 x 2.5 liters**
#2 Diesel Fuel	**Combustible**	**2 storage ABT for emergency generator – See map**	**2 x 2100 gal**	**2 x 2100 gal**
Argon	**SA**	**Gas Cabinet**	**2 Cylinders**	**2 Cylinders**
Lube Oil	**Flashpoint >200°C**	**Machine Shop, Maintenance**	**200 gal**	**2 x 55 gal 5-8 x 5 gal**

Lube Oil	**Flashpoint >200°C**	**Machine Shop, Maintenance**	**5 gal**	**5 x 5 gal**
Machine cutting fluid	**NA**	**Machine Shop, HAAS mill**	**55 gal**	**2 x 55 gal drum**

***List chemicals, hazard, amount and location that could, during an emergency, harm employees, first responders or the environment. Refer to the Safety Data Sheets and/or the GHS labeling system for chemical hazards.**

Underground Storage Tanks

Does your facility have any **underground** storage tanks? Yes ☐ No ☒
If yes, attach a copy of your Fire Department permit and complete the following table:

	Tank 1	Tank 2	Tank 3	Tank 4
Date of Installation				
Date of Last Tank Test				
Tank Capacity				
Material Stored				
Type (steel or fiberglass)				

Sewer Discharge Permit

Does your facility have any of the following types of permits for the Massachusetts Water Resources Authority (MWRA) Group, General or Sewer Use Discharge Permit?
Yes ☐ No ☒

If **Yes**, please attach a copy of permit.

General Facility Information

List spill clean-up materials and equipment present on-site.

1) Spill Kits: Printer Area, S&R, Secondary Processing & Hazardous Waste Storage, see map
2) Extra supplies in safety supply room & extra spill kits
3)

List potential spill pathways for chemicals to enter the environment (e.g. floor drains, dry wells, cracked pavement, loading docks).

1) Generator tanks – storm drain – Has valve for shut off for drain
2) Receiving dock – trench drain – Has valve for shut off for drain
3)

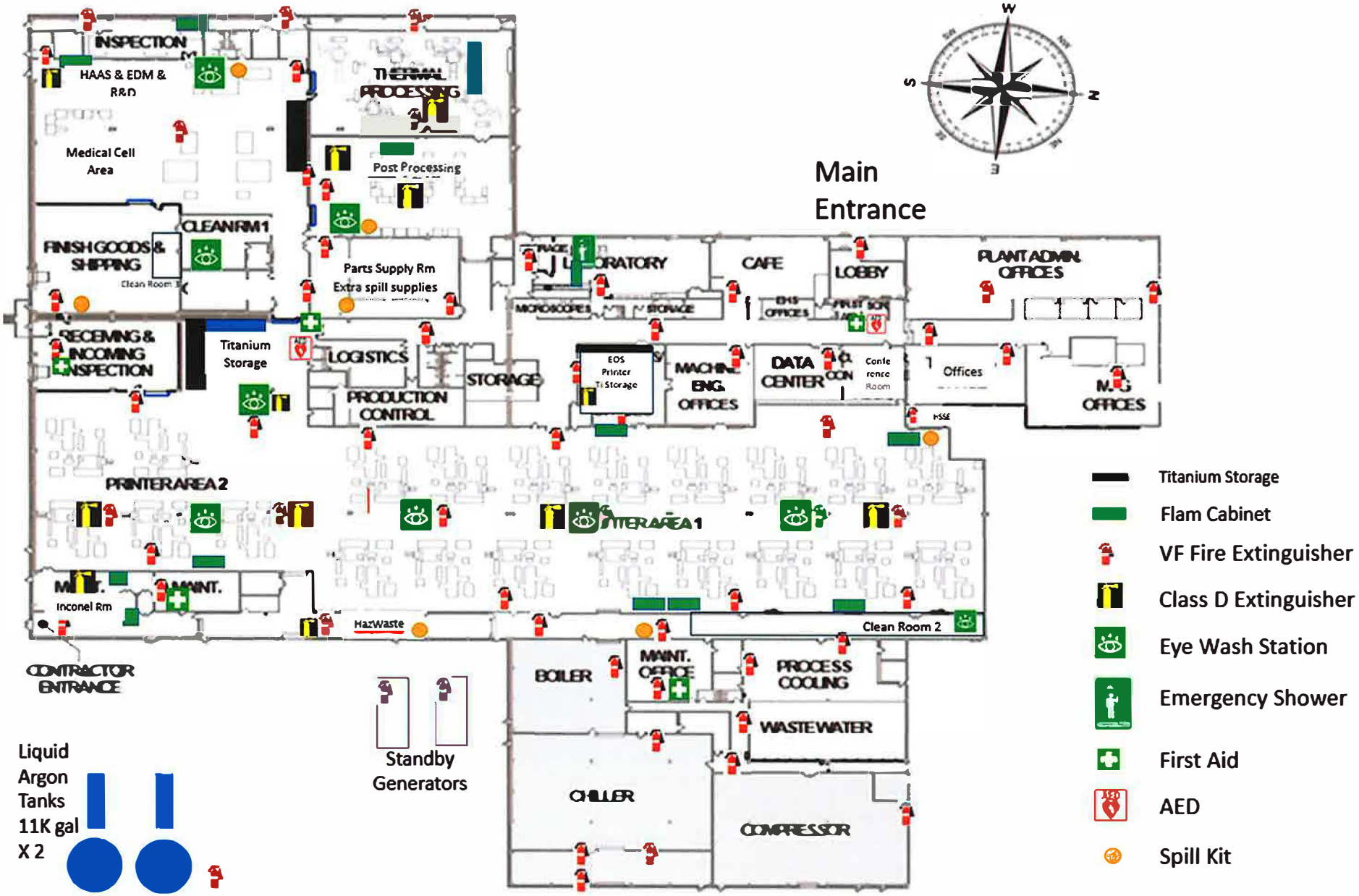
Facility Maps

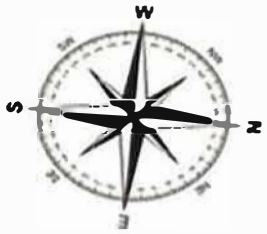
1) Attach a simple floor plan of the INTERIOR of your facility indicating the locations where hazardous materials are handled or stored. Indicate the location of chemical storage areas, compressed gas cylinders, spill control equipment, flammable storage areas/cabinets, and hazardous waste storage areas. Please note any special hazards that threaten emergency response personnel within these areas. Note any special hazards that threaten emergency response personnel.

2) If applicable, please attach a site map indicating the location(s) of storage tank(s) and other hazardous materials or wastes stored OUTDOORS.

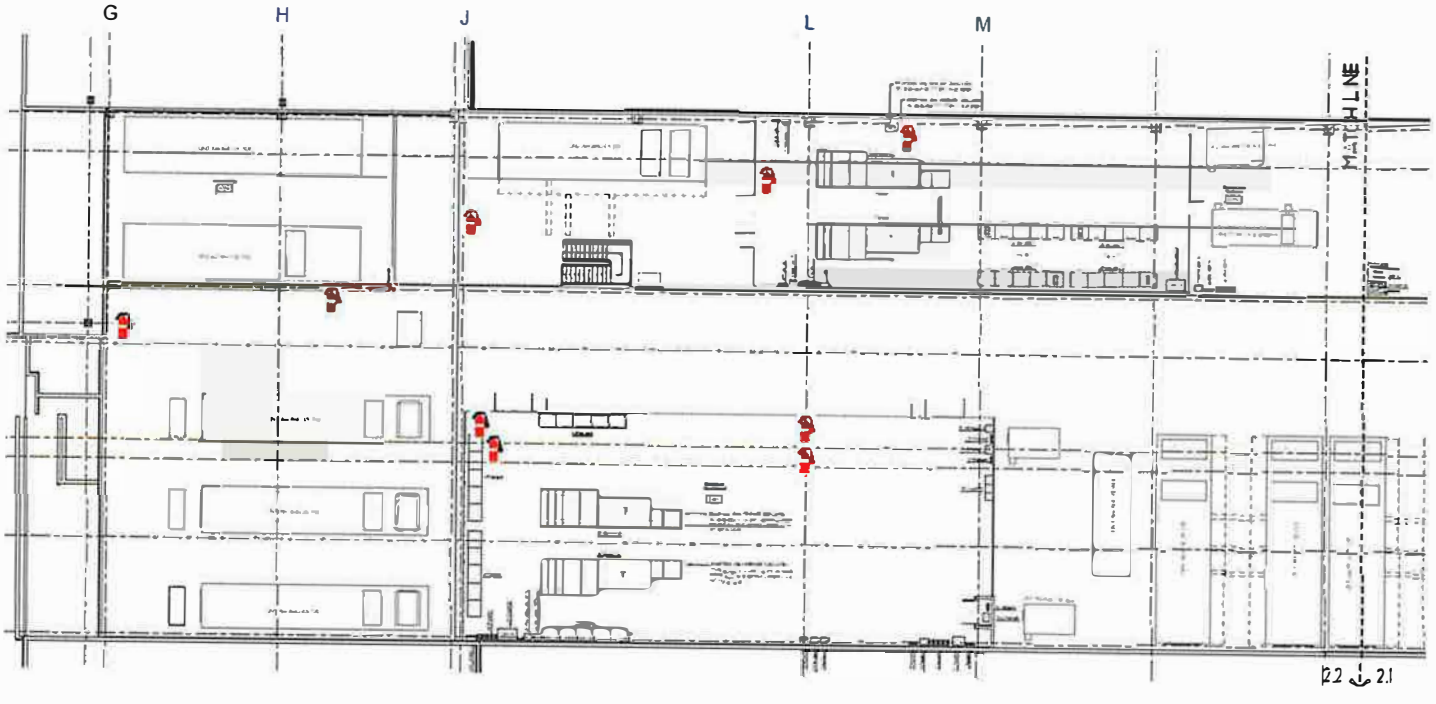
REGISTRATION WILL NOT BE ACCEPTED AS COMPLETE WITHOUT A FLOOR PLAN

VulcanForms – 112 Barnum Road – Devens, MA – First Floor





Emergency Equipment VulcanOne – Devens, MA
Mezzanine



- Fire Extinguisher
- Class D Extinguisher
- Eye Wash Station
- Emergency Shower
- First Aid
- AED

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

Additive Manufacturing (3D Printing)

Issued

Permit Number	DEV-000546	**Issued To**	Vulcan Forms
Effective	02/25/2025 @ 08:00	**Located On**	112 Barnum RD 2 Devens, MA 01434-3506 Worcester
Expires	02/25/2026 @ 08:00	**Fee**	$50.00

Issued On 02/27/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Issued in accordance with NFPA1 527CMR 1.00

527 CMR CH. 46.1

Permit Done

DEV-000546

ISSUED

Print • Download • Email • Email Log • Revoke • Renew
View ESO Properties Record

Permit Type	Additive Manufacturing (3D Printing)
Applicant	Vulcan Forms
Location	112 Barnum RD 2 Devens MA 01434-3506 County: Worcester
Contacts	Larry Maglin Work: 908-507-2427
Application Filed	02/25/2025
Effective	02/25/2025 @ 08:00
Expiration	02/25/2026 @ 08:00
Authorized	02/25/2025
Authorized By	Ammie Boucher
Issued	02/27/2025
Issued By	Ammie Boucher
Fee	$50.00
Checklists	--
Notes	--
Attachments	--

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

Hazardous Processing

Issued

Permit Number	DEV-000538	**Issued To**	Vulcan Forms
Effective	02/25/2025 @ 08:00	**Located On**	112 Barnum RD 2 DEVENS, MA 01434
Expires	02/25/2026 @ 08:00	**Fee**	$50.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Hazardous Processing
527 CMR CH 60

Issued in accordance with NFPA1 527CMR 1.00

The Commonwealth of Massachusetts

DEPARTMENT OF FIRE SERVICES

Application for Permit to Process Hazardous Materials

FP-300
(Rev. 1.1.2015)

Company Information:

Company Name: VulcanForms Inc.

Street Address: 112 Barnum Road Devens, MA 01434

Responsible Party:

Official Title: Director HSSE

Telephone number: 908.507.2427 Email: Lmaglin@vulcanforms.com

In accordance with 527 CMR 1.00 Section 1 12.8.34.1.2, the above named facility is conducting the following hazardous material process(es) at the category identified below *(Select all categories applicable to the facility)*:

- ☐ CATEGORY 2 – *Capacity of largest size vessel used in hazardous material process is greater than 2.5 gallons, but does not exceed 60 gallons*
- ☒ CATEGORY 3 – *H Occupancy Classified facility, per 780 CMR Mass Building Code, or capacity of largest size vessel used in hazardous material process is greater than 60 gallons, but does not exceed 300 gallons*
- ☐ CATEGORY 4 – *Capacity of largest size vessel used in hazardous material process exceeds 300 gallons, but is not covered by Category 5.*
- ☐ CATEGORY 5 – *Amount of hazardous material in a process exceeds threshold quantity of 29 CFR 1910.119 or 40 CFR 68*

I attest that as the responsible official for the company named above that the facility is in compliance with the applicable requirements of 527 CMR 1.00 Section 60.8 and other applicable provisions of 527 CMR and MGL 148. Further, I herby certify that I am authorized to execute this application. I declare under the penalty of perjury that the statements and information provided herein are true as of the date of this application.

Signature of Responsible Party: Lawrence B. Maglin

Title: Director HSSE Telephone number: 908.507.2427

The Commonwealth of Massachusetts

_____ **Fire Department**

FP-300

PERMIT

City or Town: Devens Date: 2/25/25 Permit Number (if applicable): 538

In accordance with the provisions of M.G.L. Chapter 148, as provided in 527 CMR 1.00 Section 1.12.8.34.1.2 this permit is granted

to Vulcan Forms
(Full Name of Person, Firm or Corporation)

at 112 Barnum Rd Devens Ma 01434
(Street and # or Describe Location for Adequate Identification)

for the processing of hazardous materials.

☐ CATEGORY 2 ☒ CATEGORY 3 ☐ CATEGORY 4 ☐ CATEGORY 5

Fee Paid $ 50.00 This Permit will expire on 2/25/26

Signature of Official Granting Permit: [signature] Title Captain

This permit must be conspicuously posted upon the premises

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

Non-Flammable Pressurized Tank

Issued

Permit Number	DEV-000541	**Issued To**	Vulcan Forms
Effective	02/25/2025 @ 08:00	**Located On**	112 Barnum RD
Expires	02/25/2026 @ 08:00		2
			DEVENS, MA 01434
		Fee	$50.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Non-Flammable
Pressurized Tank Storage
527 CMR CH 63

Issued in accordance with NFPA1 527CMR 1.00

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

Pressurized Flammable Tank Storage

Issued

Permit Number	DEV-000539	**Issued To**	Vulcan Forms
Effective	02/25/2025 @ 08:00	**Located On**	112 Barnum RD 2 DEVENS, MA 01434
Expires	02/25/2026 @ 08:00	**Fee**	$50.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Flammable
Pressurized Tank Storage
527 CMR CH 63

Issued in accordance with NFPA1 527CMR 1.00

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

* Flammable and Combustible Storage Cabinets

Issued

Permit Number	DEV-000543	**Issued To**	Vulcan Forms
Effective	02/28/2025 @ 08:00	**Located On**	112 Barnum RD 2 Devens, MA 01434-3506 Worcester
Expires	02/28/2025 @ 08:00	**Fee**	$50.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Storage of Flammables and Combustibles

527 CMR CH 66

Issued in accordance with NFPA1 527CMR 1.00

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

LPG Storage Tanks

Issued

Permit Number	DEV-000540
Effective	02/25/2025 @ 08:00
Expires	02/25/2026 @ 08:00

Issued To	Vulcan Forms
Located On	112 Barnum RD 2 DEVENS, MA 01434
Fee	$50.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

LPG Storage

527 CMR CH 69.5

Issued in accordance with NFPA1 527CMR 1.00

Devens Fire Department

182 Jackson Road, Devens, 01434, United States

Dumpster

Issued

Permit Number	DEV-000542
Effective	02/25/2025 @ 08:00
Expires	02/25/2026 @ 08:00

Issued To	Vulcan Forms
Located On	112 Barnum RD 2 DEVENS, MA 01434
Fee	$30.00

Issued On 02/25/2025

Ammie Boucher

Ammie Boucher

Authorized On 02/25/2025

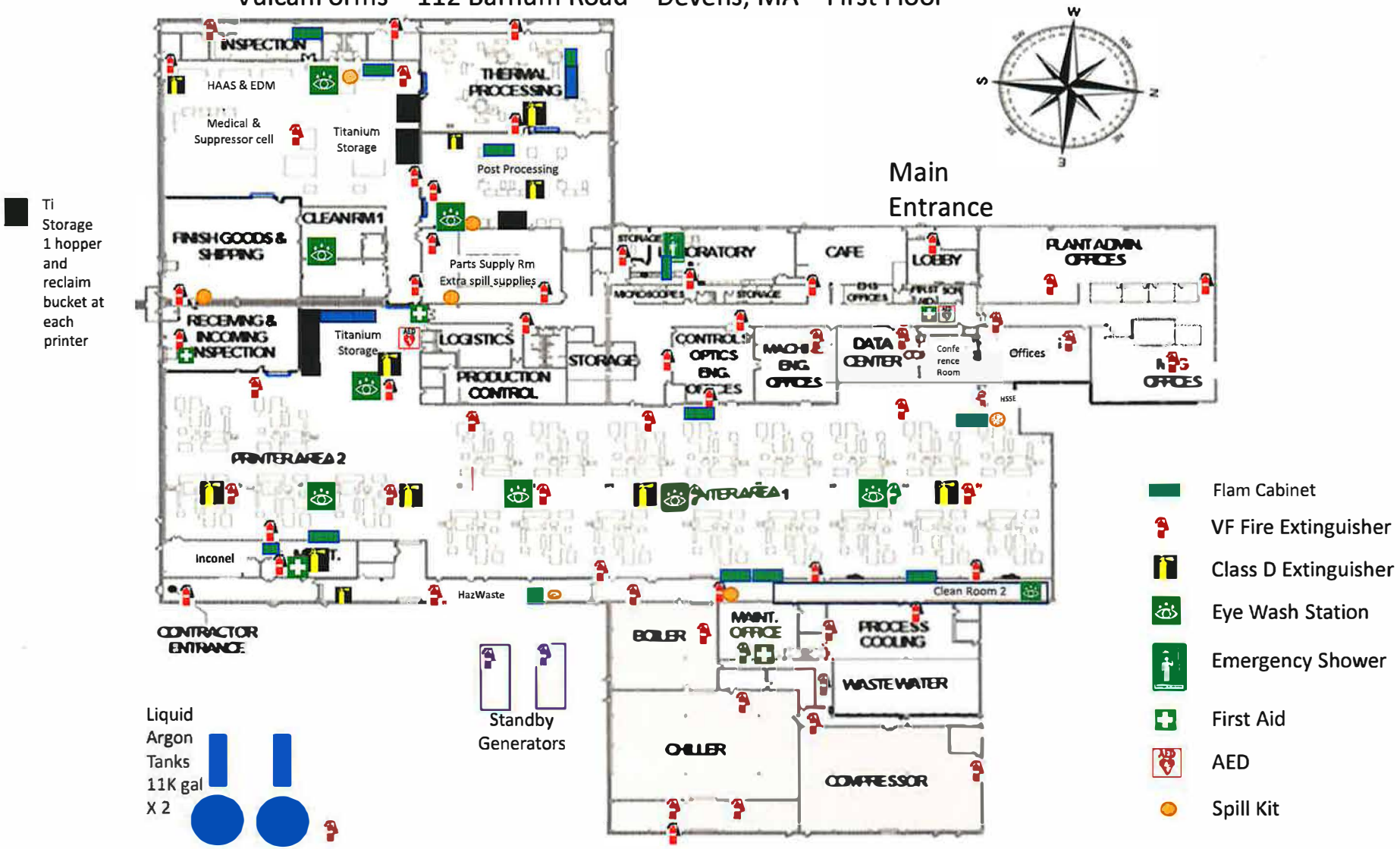
Ammie Boucher

Ammie Boucher, Fire Prevention Inspector

Dumpster: 527 CMR CH19

Issued in accordance with NFPA1 527CMR 1.00

VulcanForms – 112 Barnum Road – Devens, MA – First Floor



Combustible Dust Program

1. PURPOSE

The presence of metallic dusts presents a potential explosion and fire hazard. If dust is suspended in air in the right concentration, under certain conditions, it can become explosible. This document establishes requirements and procedures to control combustible dust accumulation and minimize dust generation for storage, transfers and operations through routine housekeeping, preventive maintenance, and special cleaning.

2. SCOPE

This procedure establishes housekeeping, preventive maintenance, and training requirements for VulcanForms facilities that utilize metallic powders that have the potential to produce combustible dust. Appendix A lists these areas.

3. DEFINITIONS

3.1. **Combustible dust**: Any combustible solid material that presents a fire or explosion hazard when suspended in air.
3.2. **Explosible**: Capable of being exploded.
3.3. **Housekeeping**: Routine cleaning and organizing of the workplace.
3.4. **Intrinsically Safe:** Equipment and wiring which is incapable of releasing sufficient electrical or thermal energy to cause ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration.
3.5. **Job Safety Analysis (JSA):** Technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between worker, task, tools and work environment. After identification of uncontrolled hazards, steps are taken to eliminate or reduce them to an acceptable risk level.
3.6. **Metallic Powders**: Metal powders (usually in the 40-60 µm size range) like titanium alloys, Nickle/Iron alloys and aluminum alloys. For this procedure, these metal powders are considered a form of combustible dust.
3.7. **Personal Protective Equipment (PPE)**: Equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses.
3.8. **Preventive maintenance**: Maintenance that is regularly performed on a piece of equipment to lessen the likelihood of it failing.

4. RESPONSIBILITIES

4.1. The HSSA Department shall:
4.1.1. Coordinate necessary sample collection and testing.
4.1.2. Assist departments in developing work instructions, JSA's and policies for minimizing dust generation from operations, storage and disposal of metallic powders.
4.1.3. Develop training for affected employees.
4.1.4. Review and, if necessary, revise the Combustible Dust Program every three years.

5. DEPARTMENTAL REQUIREMENTS
   5.1. Powder accumulates in or on:
      5.1.1. In printers on machine parts and equipment surfaces.
      5.1.2. Machine filter cartridge system cleaning
      5.1.3. Explosion proof vacuum systems cleaning
      5.1.4. Build plates and shroud after process, before cleaning
      5.1.5. Waste containers
      5.1.6. Downdraft and other cleaning operations
      5.1.7. Transfer operations of power from smaller containers to feed hoppers
      5.1.8. Lab operations during cutting and destructive sampling

      The most effective way of minimizing combustible dust hazards is to prevent its buildup.

   5.2. Departments that work with powder shall:
      5.2.1. With HSSA their facilities to identify where hazards are present.
      5.2.2. Establish a site-specific schedule based on their equipment and operations.
      5.2.3. Train their employees appropriately to perform required cleaning.
      5.2.4. Develop work instructions, JSA's as needed, to address and eliminate dust buildup(see example in Appendix B). The plan shall:
         5.2.4.1. Step by step instructions to manage powder manipulation to prevent dust generation
         5.2.4.2. Assign responsibility for cleaning specific areas to shift employees. This may include vacuuming, wiping down and disposal of waste materials.
      5.2.5. Ensure that electrical panels, junction boxes and fittings are free of any powder.
      5.2.6. Provide proper cleaning tools and ensure they are kept in working condition. In hazardous (classified) locations, all tools (vacuum, powered hand tools) or other equipment (hammers, screwdrivers, wrenches) shall meet area's electrical classification. When worn out, tools shall be replaced immediately.
      5.2.7. Conduct a JSA, if needed to identify hazards and controls.
      5.2.8. Enforce PPE requirements set by HSSA. PPE shall be available and associated training is provided to all employees assigned to perform cleaning tasks and to others who may be in the area where powder is being used.
         5.2.8.1. Appendix D PPE requirements for possible contact with powder
      5.2.9. Compressed air-nitrogen-argon shall not be used for cleaning clothes.
      5.2.10. Compressed nitrogen or argon can be used for cleaning contaminated build plates and shrouds ONLY on a controlled downdraft table or media blast with grounding, bonding and ventilation is used to control powder and minimize dust cloud thus reducing the risk of a fire/explosion.
      5.2.11. Ensure items are grounded and bonded to minimize static electricity discharge.
      5.2.12. Ensure Control of Hazardous energy sources are at a zero state when doing maintenance and repair during operations.

5.3. INSPECTIONS AND EQUIPMENT MAINTENANCE
- 5.3.1. Develop an inspection schedule. The schedule shall address:
  - 5.3.1.1. Dust producing equipment.
  - 5.3.1.2. Printers
  - 5.3.1.3. Transfer of powders
- 5.3.2. Dust collecting equipment.
  - 5.3.2.1. Vacuums
  - 5.3.2.2. Cleaning of print plates and associated shrouds
  - 5.3.2.3. Downdraft tables and media blast equipment
- 5.3.3. Interior surfaces (exhaust ductwork, vents, etc.) cleaning.
  - 5.3.3.1. Printers
  - 5.3.3.2. Ampro systems
  - 5.3.3.3. Downdraft tables and media blast equipment
  - 5.3.3.4. Parts taken out of printers

5.4. Maintain powder operations and collecting equipment to limit the generation and escape of dust during operation.

5.5. Maintain proper seals on any collection equipment or containers.

6. TRAINING

6.1. All employees exposed to areas with powder that could generate combustible dust shall complete the following training:
- 6.1.1. Working with powders training program upon hire, (1500-ALL-EHS-TR-0019) and then once every three years.
- 6.1.2. Respirator training program upon hire, (1500-ALL-EHS-TR-0015). review training annually.
- 6.1.3. Control of Hazardous Energy sources on hire (1500-ALL-EHS-TR-0001), review training annually.

6.2. Employees working at heights (ladders, harness, lifts) to clean printers, handle repairs and maintenance shall complete the following training initially and every three years thereafter:
- 6.2.1. Ladder safety (1500-ALL-EHS-TR-0012).
- 6.2.2. Working from heights (1500-ALL-EHS-TR-0006).
- 6.2.3. Aerial Lift-Scissors Lift – Fork truck all need operator training. Only "Authorized Operators" can operate equipment they are authorized for.

7. STORAGE OF METAL POWDER

7.1. Titanium Alloy Powder – all powder not hooked up or ready to be hooked up to a specific printer will be stored in the raw material area of the site.

- 7.1.1. Virgin Powder – 7.5 kg containers
  - 7.1.1.1. 7.5 kg Containers will be stored in raw material area inside grounded flammable storage cabinets
  - 7.1.1.2. Cabinets will be marked with safety label supplied by HSSA
  - 7.1.1.3. 30 gallon stainless steel drums will be grounded and bonded
- 7.1.2. Transferred Powder – 7.5 kg containers to Feed Hooper (~375 kg/50 containers)
  - 7.1.2.1. Transfer operations will follow work instruction (1500-ALL-EHS-WI-0003

EV A) for proper setup grounding and cleanup.

7.1.2.3. Loaded Feed hopper will have safety label supplied by HSSA and other associated paperwork for QMS.

7.1.2.4. Feed hoppers are stored In raw materials area of the plant and go directly to printer and hooked up as a supply at the printer when needed.

7.1.3. Reclaim Powder – in feed hopper

7.1.3.1. Loaded Feed hopper will have safety label supplied by HSSA and other associated paperwork for QMS.

7.1.3.2. Feed hoppers are stored In raw materials area of plant and go directly to printer and hooked up as a supply at the printer when needed.

7.2. Inconel Powder (nickel / iron alloy)

7.2.1. Powder comes from manufacture in stainless steel sealed Feed Hoppers. (~800kg per feed hopper)

7.2.2. Feed hopper will have safety label supplied by HSSA and other associated paperwork for QMS.

7.2.3. Feed hoppers are stored in raw materials area of plant and go directly to printer and hooked up as a supply at the printer as needed.

8. POWDER USAGE AT PRINTER

8.1. All powder is fed from feed hopper to material hopper on top of machine.

8.1.3. Gas conveyance system is used to minimize potential combustion of the powder as it moves through the feed hopper to the screening process to the top powder container on the printer.

8.1.4. When printing, argon gas is in the build area at ~25ppm of O2, the balance of the atmosphere in the chamber is assumed to be argon gas.

8.1.3.8. Proper PPE requirements must be met when entering a dirty machine

- Level 3 PPE with Firewatch.

9. DOWNSTREAM PROCESSING

9.1 When print is completed:

9.1.3.8. Print is transported to Transport POD with argon still in chamber via airlock door

9.1.3.9. Transport POD is transported to secondary processing area via fork truck.

9.1.3.10. All transfers and material movement done until build is de-powdered will be done in Level 3 PPE with firewatch.

9.1.3.11. POD is removed and put into the Solukon for de-powdering process.

- Process is done under Argon for inert conditions.
- When bulk de-powdering is done, POD is transferred to down draft table for removal of print plate & print.
- Print plate/build are transferred back to Solukon for fine de-powdering.

10. WASTE DISOSAL

10.1. All powder waste shall be disposed of in the proper waste stream at the hazardous waste storage area at the site.

10.2. Proper PPE (as per 8.1.3.8) shall be used when disposing of waste that may become contain or

10.3.

10.4. has been contaminated with powder.

Ruwac Vacuum waste

10.4.4. Protective suits, gloves
10.4.5. Wipes
10.4.6. Waste hoses from powder carrying devices
10.4.7. Filters from filter carts
10.4.8. Water from downdraft, media blast or cleaning stations.
10.4.9. Residue from cut up samples from metals lab
10.4.10. Any powder spills from any process or location

11. PROGRAM EVALUATION
    11.1. HSSA shall review the Combustible Dust Program every three years unless additions, subtractions or updates or equipment changes are made.

12. RESOURCES
    12.1. NFPA 660: Standard for Combustible Dusts and Particulate Solids
    12.2. 29 CFR 1910.22 Housekeeping
    12.3. 29 CFR 1910.307 Hazardous Locations
    12.4. 29 CFR 1910.1200 Hazard Communication
    12.5. General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act (Employers must keep workplaces free from recognized hazards likely to cause death or serious physical harm)..

13.0 Revision Log

VERSION	DATE	REVISION DESCRIPTION	APPROVALS
A	11.11.21	1st Issue	L. Maglin K. Wyman
B	3/2/22	Update site locations and add other policy updates	L. Maglin K. Wyman
3	11/2/2025	NFPA Updates, Generation 3	L. Maglin

Appendix A Powder Areas

Site	Location	Hazard
Vulcan One	Printer Production area	Powder management
Vulcan One	Raw material area	Powder management
Vulcan One	Metals Lab	Powder management
Vulcan One	Downdraft, media blast, cleaning area	Powder management
Vulcan One	Hazardous Waste area	Powder management
Vulcan One	Metals Lab	Powder management
Burlington HQ	Metals Lab	Powder management
Burlington HQ	Printer Production R&D area	Powder management
Burlington HQ	Downdraft, media blast, cleaning area	Powder management
Burlington HQ	Raw material area	Powder management
Burlington HQ	Hazardous Waste area	Powder management

TYPE	DESCRIPTION
Policy	Health & Safety

VERSION	CHANGE ID	DESCRIPTION OF CHANGES
0	CO-841	Transfer of 1500-DV-BR-EHS-P-0014 to Greenlight Guru
1	CO-889	Update Hospital from Nashoba to UMass Memorial Health on page 7.

TABLE OF CONTENTS

1. AUTHORITY

The HSSE department is responsible for initiating changes to this plan and reviewing annually. Updates, revisions and changes are approved by the VP of Operations and the head of HSSE.

HSSE management system roles, responsibilities and authorities are defined at relevant functions and levels within the organization through system manuals, procedures, and work instructions. Plant management provides the resources essential to the implementation and control of the HSSE management system, including training, human resources, specialty services, financial resources, and technical and information services. The HSSE head has primary responsibility for establishing, operating, maintaining, and reporting on the performance of the HSSE management system.

2. PURPOSE

The purpose of this policy is to ensure that personnel entering VulcanOne are provided with proper information regarding policies, training, and work instructions. This is to minimize or eliminate any injuries, illness from our employees, contractors, or visitors to our sites. The procedure also ensures minimal or no damage to property or occupational exposure in the workplace. It is the responsibility of all employees to see to it that personnel, vendors, outside contractors, and other visitors follow these procedures. This procedure also ensures VulcanForms follows our own policies and quality programs, all Federal, State, and Local regulations.

3. SCOPE

This procedure applies to all personnel and visitors who enter VulcanOne. The system is designed to cover environmental aspects and health and safety risks that the facility can control and directly manage, and those that it does not directly control or manage but over which it can be expected to have an influence.

The Health & Safety policy is to ensure workplace safety program development and compliance. This is an overview document and references multiple policy and work instructions. After general orientation by HSSE or site designee, each department is tasked with providing specific work practice work instructions, area safety and other policies that will affect employees, visitors, and contractors.

This procedure is intended to serve as the basis for an employer-integrated safety and health management program. The program consists of these ten (10) essential elements/sections:

1) Management's commitment and involvement
2) Safety committee operation
3) Provisions for safety and health training
4) Safety Inspections
5) Preventive Maintenance
6) First aid procedures
7) Incident investigations
8) Recordkeeping of injuries
9) Job specific safety rules and procedures
10) Site Policies to be reviewed

4. MANAGEMENT'S COMMITMENT AND INVOLVEMENT

VulcanForms promotes the health and safety of all our employees and the protection of the environment by providing appropriate training, raising awareness, operating with sound procedures and by setting high standards for the maintenance of our facility. To accomplish these goals, we rigorously monitor the performance of our activities with the aim of eliminating personal injuries and the prevention of pollution in our workplace.

Employees of VulcanForms will not be directed by their supervisor to work in an unsafe manner or under unsafe conditions. If any VulcanForms employee believes that their supervisor is directing them to work under unsafe conditions, the employee shall immediately report that to the head of HSSE or their designee.

It is management's responsibility to be involved and provide a healthy & safe workplace for our employees. It is the responsibility of all employees to follow the company's policies, work instructions and procedures while on the job.

The management and employees of VulcanForms are committed to a policy of environmental excellence with respect to all our business activities in our ongoing effort to remain environmentally responsible as members of this city, state, and nation.

Our Safety and Environmental guidelines will provide a basis for VulcanForms continual improvement and commitment to our safety and environmental standards which supports our company goals in preventing incidents, illnesses, and environmental incidents.

VulcanForms will strive to provide a safe and healthy work environment within the scope of our abilities for all visitors, vendors, and contractors that enter our facility. Every person entering our facility has a responsibility to adhere to safety and environmental rules that promote a safe and environmentally responsible workplace. Our HSSE guidelines are based on National, International, Local, City, State and/or Company regulatory compliance.

4.1 Hazard Identification, Risk Assessment, and Risk Control

4.1.1 VulcanForms uses a cross-functional team approach to identify hazards, assess their risks, and implement necessary control over all activities and areas of our facility. This approach is defined in ***pFMEA-005: HSSE FMEA***. Job safety analyses and/or audits have been converted to the FMEA, which include rankings of severity, probability and control and thus provide relative measures of risk. These sheets document operational controls and provide a means for tracking recommended actions. Items to be tracked are kept in the HSSE Action Tracker, located on the HSSE SharePoint site.

4.2 VulcanForms Stated Environmental, Health, and Safety Policy

4.2.1 It is the policy of VulcanForms to provide a workplace that:

- Is safe from hazards, minimizes/eliminates occupational exposure from environmental hazards.
- Minimizes waste generation from our operations and focuses on sustainability as a good corporate steward of the environment.
- Is proactive in making sure contractors and visitors follow our HSSE rules while at any of our locations.
- Empowers all employees to stop any unsafe activity if people are at risk.

4.2.2 Management is accountable:

- To implement continuous improvement with all employees to reduce workplace injuries and hazards.
- To follow the company, Federal, State, and local regulatory safety policies.

4.3 Environmental Aspects

4.3.1 VulcanForms Management Review Team (MRT) identifies the environmental aspects that the facility controls and over which it may be expected to have influence and determines which of those aspects are considered significant.

4.3.2 Discussions regarding significance are recorded in MRT meeting minutes. These aspects are reviewed at least annually by the MRT or when there is a new or changed process or activity at the facility. The MRT meeting minutes and other records.

4.4 KPIs and Targets

4.4.1 The Management Review Team is responsible for determining annual operational objectives and target KPIs. Objectives and targets are developed for all aspects of operations. HSSE objectives take into consideration environmental aspects, occupational hazards and risks, technological options, and financial, operational, and business plans, as well as views of interested parties.

4.4.2 KPIs for tracking multiple items to look at leading and lagging indicators for HSSE (lost time, days away from work, OSHA recordables, first aid, incidents, near misses, notice of violations etc.) are tracked weekly or monthly depending on the KPI. HSSE programs will be amended as necessary to include new projects, activities, products, and services as appropriate.

5. SAFETY AND HEALTH TRAINING

5.1 Safety and Health Orientation

5.1.1 Workplace safety and health orientation begins on the first day of initial employment or job transfer. Each employee has access to a copy of this safety manual, (located on the HSSE SharePoint site and Greenlight Guru) associated site policies and area work instructions via their supervisor, for review and future reference. Supervisors will ask questions of employees and answer employees' questions to ensure knowledge and understanding of safety rules, policies and job-specific procedures described in our workplace safety program manual.

5.1.2 All employees will be instructed by their supervisors that compliance with the safety rules described in the workplace safety manual is required.

5.1.3 All training is assigned with consideration of site needs, regulatory and VulcanForms training requirements.

5.1.4 Records and assigned training will be recorded on the Training Matrix worksheet (Form 200-1). This includes some confidential information, as a result this information is restricted to HR and the site HSSE head and their designee.

5.2 Job-Specific Training

5.2.1 HSSE will do a safety orientation program within 1-2 weeks of hire.

5.2.2 Supervisors will initially train employees on how to perform assigned job tasks safely.

5.2.3 Supervisors will carefully review with each employee the specific safety rules, policies and procedures that are applicable and that are described in the workplace safety manual.

5.2.4 Supervisors will give employees verbal instructions and specific directions on how to do the work safely.

5.2.5 Supervisors will observe employees performing the work. If necessary, the supervisor will provide a demonstration using safe work practices or remedial instruction to correct training deficiencies before an employee is permitted to do the work without supervision.

5.2.6 All employees will receive safe operating instructions on seldom used or new equipment before using the equipment.

5.2.7 Supervisors will review safe work practices with employees before permitting the performance of new, nonroutine or specialized procedures.

5.2.8 Supervisors will record all training and authorization for specific work instructions on appropriate forms.

5.3 Periodic Retraining of Employees

5.3.1 All employees will be retrained periodically on safety rules, policies, and procedures, and when changes are made to the workplace safety manual, updates are required by the Training Matrix, other changes due to new material hazards or new processes are introduced into the workplace and any regulatory requirements.

5.3.2 Individual employees will be retrained after the occurrence of a work-related injury caused by an unsafe act, not following appropriate policies and/or work instructions, and when a supervisor observes employees displaying unsafe acts, practices, or behaviors.

5.4 Employee Authorization for Procedures and Equipment

5.4.1 Employees will not be allowed to perform specific functions or tasks and/or use equipment unless they have been completely trained on the procedure/task or certified in use of equipment.

6. SAFETY INSPECTIONS

6.1 It is the responsibility of all employees to maintain safe working conditions.

6.2 Checklists for safety inspections ensure that important items are not overlooked. Inspections identify areas of risk (incidents and/or injury).

6.3 The HSSE department conducts a monthly site safety survey. Finished reports include deficiencies to be addressed. This information is communicated to area managers and corrective actions are added to the Action Tracker (located in HSSE SharePoint) to make sure corrective actions are implemented.

6.4 Inspections of Hazardous Waste storage and consolidation areas are done weekly at all locations. **Area managers are expected to do walkthroughs of their areas regularly.** Other audits for 6S and various quality programs also take place on their own schedule. Corrective actions from those audits or observations should also be placed on an Action Tracker to document resolution of issues.

6.5 Management makes periodic inspections, announced and unannounced.

7. PREVENTIVE MAINTENANCE (PM)

7.1 Preventive maintenance programs will avoid most equipment failures. Provide regular equipment maintenance to prevent breakdowns that can create hazards.

7.1.1 Each team within responsible for PMs for their equipment.

7.1.2 Maintenance is responsible for building equipment PM's and other equipment as assigned.

7.1.3 Building landlords are responsible for equipment relating to maintaining the structure and outside issues. The liaison for landlord issues is the Facility Manager with help from HSSE as needed.

- M&R responsibilities for leased buildings will vary due to contractual differences between sites.

7.2 Preventive maintenance is a schedule of planned inspections to prevent breakdowns and failures before they happen.

7.2.1 Inspections should be performed at regularly scheduled times.

7.3 Preventive and regular maintenance are documented and tracked to completion. All repairs, maintenance, and PM work will follow the policies below when appropriate:

Document Title	Description
POL-HSSE-003	Confined Space
POL-HSSE-005	Safety Work Permit
POL-HSSE-007	Hot Work
POL-HSSE-015	Control of Hazardous Energy Sources and Use of LOTO

7.4 During PM, workers can document damage or wearing of parts and equipment to repair or place parts before they cause a failure or injury.

8. FIRST-AID PROCEDURES

8.1 Emergency Phone Numbers

VulcanOne – Devens, MA	
First Aid Response & Ambulance Fire Department & State	911 911 (Emergency Only)
Non-Emergency	978-722-8800
Emergency Spills	800-839-3975
Poison Control	800-222-1222
Emerson Health Urgent Care Littleton	978-287-8990
UMass Memorial HealthAlliance-Hospital	978-466-2000
UMass Memorial HealthAlliance-Hospital (Emergency Room)	978-466-2451

8.2 Minor First-Aid Treatment

First-aid kits are kept at various locations in the facility. If you sustain an injury or are involved in an incident requiring minor first-aid treatment:

- Inform your supervisor.
- Administer first-aid treatment to the injury or wound.
- If a first-aid kit is used, supervisor will indicate usage on the incident report.
- Access to a first-aid kit is not intended to be a substitute for medical attention.
- If additional medical treatment is needed, supervisor or designee will transport employee to urgent care facility.

8.3 Non-Emergency Medical Treatment

For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If you sustain an injury requiring treatment other than first aid:

- Inform your supervisor.
- Supervisor or designee will transport you to urgent care facility.
- Provide details to supervisor for the completion of the incident report.

8.4 Emergency Medical Treatment

If you sustain a severe injury requiring emergency treatment:

- Call for help and seek assistance from a co-worker. Contact supervisor.
- Call for 9-1-1 if life is at risk (not breathing, severe bleeding, unconscious or severe trauma).
- Notify emergency coordinator.
- Have someone meet the ambulance and provide directions to hurt employee.
- Supervisor or designee ride along in ambulance or follow to emergency care facility.
- Provide details for the completion of the incident report.

8.5 First-Aid Training

Employees will be offered First-Aid, CPR, AED training when 3rd party organizations such as American Red Cross or National Heart Association can provide training at our sites for our employees. This will be strictly on a volunteer basis and will serve to build up a high percentage of employees who are trained on the site.

8.6 First-Aid Instructions

Use required bloodborne pathogen procedures and universal precautions while administering first aid. Kits for bloodborne pathogen are located with First Aid Kits at all locations.

8.6.1 Wounds

Minor: Cuts, lacerations, abrasions, or punctures.

- Wash the wound using soap and water; rinse it well.
- Cover the wound using a clean dressing.

Major: Large, deep, and bleeding wounds.

- Stop the bleeding by pressing directly on the wound, using a bandage or cloth.
- Keep pressure on the wound until medical help arrives.

Broken Bones:

- Do not move the victim unless it is necessary.
- If the victim must be moved, "splint" the injured area. Use a board, cardboard, or rolled newspaper as a splint.

8.6.2 Burns

Thermal (Heat):

- Rinse the burned area without scrubbing it and immerse it in cold water. ***Do not use ice water.***
- Blot dry the area and cover it using sterile gauze or a clean cloth.

Chemical:

- Immediately flush the exposed area with cool water for 15 to 20 minutes.

8.6.3 Eye Injury

Small Particles:

- Do not rub your eyes.
- Use the corner of a soft, clean cloth to draw particles out or hold the eyelids open and flush the eyes continuously with water.

Large or Stuck Particles:

- If a particle is stuck in the eye, do not attempt to remove it.
- Cover both eyes with a bandage.

Chemical:

- Immediately irrigate the eyes and under the eyelids with water for 30 minutes.

8.6.4 Neck or Spine Injury

- If the victim appears to have injured their neck or spine or is unable to move their arm or leg, do not attempt to move the victim unless it is necessary.

8.6.5 Heat Exhaustion

- Loosen the victim's tight clothing.

- Give the victim ***sips*** of cool water.
- Make the victim lie down in a cooler place with their feet raised.

9. INCIDENT INVESTIGATION

9.1 Incident Investigation Procedures

An incident investigation will be performed by the supervisor at the location/area where the incident occurred. The HSSE department is responsible for seeing that the incident reports are being filled out completely and that the recommendations are being addressed. Use ***FRM-HSSE-009: Incident Report Form*** for all incidents that involve:

- Injury, illness, property damage, occupational exposure and environmental incidents.

Incident report supervisors will investigate all incidents, injuries, and occupational diseases using the following investigation procedures:

- Implement temporary control measures to prevent any further injuries to employees.
- Review the equipment, operations, and processes to gain an understanding of the incident situation.
- Identify and interview each witness and any other person who might provide clues to the incident's causes.
- Investigate casual conditions and unsafe acts; make conclusions based on existing facts.
- Complete the incident investigation report.
- Provide recommendations for corrective actions. Assign persons and due dates for completion.
- Indicate the need for additional or remedial safety training.

Incident investigation reports must be submitted to the HSSE department within 24 hours of the incident. Incidents which are deemed High Severity Incidents (HSI), or High Potential Incidents (HiPO) will result in an incident investigation.

The HSSE head or designee will lead investigation, utilizing appropriate employees and management staff as needed. HSI & HiPO will have initial meeting within 1-2 days after incident as scheduled by head of HSSE or designee.

Follow-up meetings will be scheduled as needed to make sure corrective and preventive issues are resolved. Investigation will be closed only when all items/issues are resolved.

OSHA requires employers to report any and/or all of the following within (8) hours of the incident:

- Fatalities.
- A single incident which requires hospitalization of (3) or more employees.

Note: OSHA Central telephone number: 1-800-321-6742.

9.2 Instructions for Completing the Incident Report

An incident investigation is not designed to find fault or place blame, but it is an analysis of the incident to determine causes that can be controlled or eliminated.

Fill out all sections. If a section is not applicable, put NA. All sections should have an entry.

Actions to prevent incident recurrence should account for "root causes" and address solutions. If you are having difficulty with this or any other section, please contact HSSE department for guidance.

9.3 Recordkeeping Procedures

The HSSE department will control and maintain all employee incident and injury records. Records are maintained for a minimum of five (5) years and include:

- Incident Reports, pictures and any other relevant information
- Log and Summary of Occupational Injuries and Illnesses as required by OSHA's Recordkeeping

Regulation, 29 CRF 1904.2:

- OSHA Form 300 (Rev. 1-2004): Log of Work-Related Injuries and Illnesses
- OSHA Form 300A (Rev. 1-2004): Summary of Work-Related Injuries and Illnesses
- OSHA Form 301: Injury and Illness Incident Report

NOTE: See FRM-HSSE-009: Incident Report Form

10. SAFETY RULES, POLICIES, AND PROCEDURES

The safety rules contained on these pages have been prepared to protect you in your daily work. Employees are to follow these rules, review them often and use good common sense in carrying out assigned duties.

These safety rules shall include both general workplace safety rules and job-specific safety rules.

General Rules: All Employees – Interns – Contract Workers will receive safety orientation upon hire. This orientation covers the following topics:

- Parking VF1
- Security
- Covid-19
- Stated Policy for HSSE
- Hierarchy of Controls
- Personal Protective Equipment (PPE)
- Your Responsibilities
- Contractors
- Safety Work Permit – Pre-Task Plan Program
- Emergency Action Plans
- Blood Borne Pathogens
- Firearms – Illicit materials on site
- Medical Emergencies
- Control of Hazardous Energy Sources (LOTO)
- Fire Extinguishers
- Emergency Equipment
- Hazard Communication
- Safety on the Manufacturing Floor and Safely Working with Chemicals
- Hazardous Waste Management
- 6S to Success

10.1 Contractor Safety

- VulcanForms requires all contractors working on VulcanOne to provide information and documentation prior to work being performed on our site. (NDA, COI, HASP etc.).
- Contractors must also receive Safety Orientation prior to job start.
- All contractors will have to participate in the Safety Work Program, which may require a Pre-Task Plan and Safety Work Permit being generated to do work.

10.2 Job-Specific Rules

All Employees – All Locations

10.2.1 Housekeeping

- Use caution signs/cones to barricade slippery areas.
- Do not store or leave items on aisleways or walkways.
- Do not block or obstruct corridor intersections, exits or accesses to safety and emergency equipment such as fire extinguishers or fire alarms.
- Do not place materials such as boxes or trash in walkways and passageways.
- Do not use solvents for general cleaning purposes. Solvents under controlled conditions and according work instructions are permitted.
- Mop up water around water fountains, drink machines and ice machines.
- No Food or Drink in prohibited areas, note restrictions and exemptions when entering areas.

10.2.2 Lifting Procedures

10.2.2.1 General

- Test the weight of the load before lifting by pushing the load along its resting surface.
- If the load is too heavy or bulky, use lifting and carrying aids such as hand trucks, dollies, pallet jacks and carts, or get assistance from a co-worker.
- Never lift anything if your hands are greasy or wet.
- Wear protective gloves when lifting objects with sharp corners or jagged edges.

10.2.2.2 When Lifting

- Face the load.
- Position your feet 6"-12" apart with one foot slightly in front of the other.
- Bend at the knees, not at the back.
- Keep your back straight.
- Get a firm grip on the object using your hands and fingers. Use handles when they are present.
- Hold the object as close to your body as possible.
- Perform lifting movements smoothly and gradually; do not jerk the load.
- If you must change direction while lifting or carrying the load, pivot your feet and turn your entire body. Do not twist at the waist.
- Set down objects in the same manner as you picked them up, except in reverse.
- Do not lift an object from the floor to a level above your waist in one motion. Set the load down on a table or bench and then adjust your grip before lifting it higher.

10.2.3 Ladders and Stepladders

- Read and follow the manufacturer's instructions label affixed to the ladder if you are unsure how to use the ladder.
- Inspect and do not use ladders that have loose rungs, cracked or split side rails, missing rubber foot pads, or other visible damage.
- Keep ladder rungs clean and free of grease. Remove buildup of material such as dirt or mud.
- When performing work from a ladder, face the ladder and do not lean backward or sideways from the ladder.
- Allow only one person on the ladder at a time.

- Do not stand on the top two rungs of any ladder.
- Do not stand on a ladder that wobbles or leans to the left or right of center or is crooked.
- Do not try to "walk" a ladder by rocking it. Climb down the ladder and then move it.

10.2.4 Climbing a Ladder

- Face the ladder when climbing up or down it.
- Do not carry items in your hands while climbing up or down a ladder.
- Maintain a three-point contact by always keeping both hands and one foot or both feet and one hand on the ladder when climbing up or down the ladder.

10.2.5 Driving/Vehicle Safety

10.2.5.1 Fueling Vehicles

- Turn off the vehicle before fueling.
- Do not smoke while fueling a vehicle.
- Wash hands with soap and water if you spill gasoline on them.

10.2.5.2 Driving Rules

- Shut all doors and fasten your seat belt before moving the vehicle.
- Always obey traffic patterns and signs.
- Maintain a three-point contact using both hands and one foot or both feet and one hand when climbing into and out of vehicles.
- Do not leave keys in an unattended vehicle.

10.2.6 Furniture Use

- Open only one file cabinet drawer at a time. Close the filing cabinet drawer you were working in before opening another filing drawer in the same cabinet.
- Use the handle when closing doors, drawers, and files.
- Put heavy files in the bottom drawers of file cabinets.
- Do not tilt your chair on its back two legs while you are sitting in it.
- Do not stand on furniture to reach high places.

10.2.7 Equipment Use

- Do not use fans that have excessive vibration, frayed cords or missing guards.
- Do not place floor-type fans in walkways, aisles or doorways.
- Do not plug multiple electrical cords into a single outlet.
- Do not use extension or power cords that have the ground prong removed or broken off.
- Do not use frayed, cut or cracked electrical cords.
- Use a cord cover or tape down cords when running them across aisles, between desks or across entrances or exits.
- Do not use lighting fluid to clean drafting equipment; use soap and water.

10.2.8 Manufacturing – R&D Operations

10.2.8.1 PPE – Minimum requirements to enter manufacturing and R&D (printers/shop/furnace/downstream) areas:

- Safety eyewear
- Long pants (down to bottom of ankle)

- Hearing protection as required by job task (work instructions)
- Gloves as required by job task (work instructions)
- Other PPE may be required for powder operations, electrical work etc.

10.2.8.2 Chemical Labs (Metallurgical & Clean Rooms) – Working in laboratory areas:

- Appropriate gloves as required by job task (work instructions)
- Safety glasses, goggles and/or face shield as required by job task (work instructions)
- Apron as required by job task (work instructions)
- Sleeves as required by job task (work instructions
- Hearing protection as required by job task (work instructions)

10.3 Emergency Actions – Evacuation

10.3.1 When the building alarm sounds, all personnel will evacuate through the closest exit and proceed to the nearest muster station.

- If working on a printer, press the e-stop before you leave.
- If working on laser systems, engage emergency shut off before you leave.
- Do not panic, run or go to office to pick up coat, computer or personal items.
- Do not re-enter the building, go to your car or leave the site until instructed to.

10.4 Spills

10.4.1 If there is a spill of chemical or raw material:

- Evacuate the area.
- Notify emergency coordinator at your site.

10.5 Confined Space

10.5.1 All employees have been informed as to what is considered a confined space within each site. Work instructions are posted at each of these areas for how to access this equipment. Only authorized and trained personnel can access this equipment.

11. REFERENCE DOCUMENTS

Document Title/Number	Document Description
QSG-VF1	Quality System Glossary
SOP-01	Document and Change Management Procedure
POL-HSSE-003	Confined Space
POL-HSSE-005	Safety Work Permit
POL-HSSE-007	Hot Work
POL-HSSE-015	Control of Hazardous Energy Sources and Use of LOTO
pFMEA-005	HSSE FMEA
ISO 14001 Standard	Section 4.3.2, 4.3.4, 4.4.1 - 4.4.7, 4.5.1, 4.5.4, 4.6

POL-HSSE-009 (DOC-3147) Ver. 1

Approved By:

(CO-889) Admin Change to POL-HSSE-009

Description

Admin change to replace Nashoba Valley Medical Center with UMass Memorial HealthAlliance-Hospital in section 8.1.

Justification

Nashoba Valley Medical Center closed down. Need to update for emergency purposes.

Assigned To:	Initiated By:	Priority:	Impact:
Kelley Long	Richie Thach	Medium	Minor

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