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Specification
for
Hazardous Waste Tank Operating Record

REVISION

Rev No.	DCN No.	Change Summary	Release Date	DCN Initiator	Document Owner
7	DCN3265	Updated for branding and minor changes	January 2024	T. Ovitt	K. Rydberg

Prior revision history, if applicable, is available from the Document Control Office.

1. INTRODUCTION

This procedure is for use at the Albany NanoTech Complex (ANC) to assist in maintaining compliance with the state and federal environmental regulations that apply to the management of hazardous waste storage tanks. The content of this specification and the attached hazardous waste storage tank inspections / audit checklists are not intended to address every aspect of hazardous waste management regulation. They are intended to provide an overview of the role of each NY CREATES employee in complying with the sections of the regulations that relate to their activities at the ANC.

2. PURPOSE

- 2.1 To provide a written procedure on the proper storage, labeling, inspection, and monitoring of all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment associated with the solvent waste storage tanks at [ANC](#).
- 2.2 To meet all local, state, and federal hazardous waste management requirements for tanks.
- 2.3 To prevent, detect, and respond to environmental or human health hazards associated with the release of hazardous waste.

3. NY CREATES RESPONSIBILITIES

- 3.1 It is the responsibility of each environmental engineer to ensure that the proper procedures are followed for labeling of the hazardous mixed solvent waste collection tank and solvent waste storage tank and that the content of each tank is less than 90 days old at all times.
- 3.2 It is the responsibility of the EHS department to maintain the monthly total Volatile Organic Compounds (VOCs) emission monitoring records.
 - 3.2.1 Only EHS personnel trained to perform monthly VOC monitoring are permitted to do so. Only EHS personnel who have been trained will be considered “authorized inspectors.”
- 3.3 It is the responsibility of the water treatment personnel to maintain the daily inspection records, and to submit a copy of the inspection report to the EHS department at the end of each month.
- 3.4 Only water treatment personnel trained to perform daily inspections are permitted to do so. Only water treatment personnel who have been trained will be considered “authorized inspectors.”

4. ASSOCIATED DOCUMENTS

- 4.1 **EHS-00061-F1:** Air Emission Control Equipment Inspection Checklist
- 4.2 **EHS-00061-F2:** Solvent Waste Storage Tank Inspection Checklist (WWT1)
- 4.3 **EHS-00061-F3:** Solvent Waste Storage Tank Inspection Checklist (WWT2)
- 4.4 **EHS-00061-F4:** Monthly Volatile Organic Compounds Monitoring Form

5. HAZARDOUS MANAGEMENT

- 5.1 The following are the total organics, listed in percent by weight, in the liquid solvent hazardous waste stream generated at [ANC](#):

Name	CAS #	Estimated % by weight in mixture
Propylene Glycol Monomethyl Ether Acetate (PGMEA)	108-65-6	30
Propylene Glycol Monomethyl Ether (PGME)	107-98-2	20
Ethyl lactate	97-64-3	10
Gamma butyrolactone (GBL)	96-48-0	10
N-methyl-2-pyrrolidone (NMP)	872-50-4	10
Cyclohexanone	108-94-1	10
Isopropyl alcohol (IPA)	67-63-0	10
Total Organics		100%

- 5.2 The Mixed Solvent Waste Collection / Transfer Tank and Solvent Waste Storage Tank contain liquid solvent waste and shall therefore be labeled with red "Hazardous Waste" labels (see pictures in Attachment 1). These labels are to be dated as soon as solvent waste is placed in the tank. The label shall be filled out to include:

- Waste type (liquid)
- Chemical contents (propylene glycol monomethyl ether acetate [PGMEA], propylene glycol monomethyl ether [PGME], ethyl lactate, gamma butyrolactone [GBL], N-methyl-2-pyrrolidone [NMP], cyclohexanone, isopropyl alcohol [IPA])
- Associated hazard (ignitable)

- 5.2.1 Each hazardous waste tank shall be relabeled with a new date as soon as the solvent storage tank is emptied, as noted by the operator in the daily tank inspection sheet.

NOTE: The date on the hazardous waste label shall never exceed 90 days. Whenever the larger Solvent Waste Storage Tank is pumped out, the Mixed Solvent Waste Collection / Transfer Tank should be emptied first, and then a label with a new date shall be placed on both tanks; both tanks should have the same hazardous waste date.

6. EQUIPMENT - TANK IDENTIFICATION NUMBER

All tanks listed in the table below have been clearly labeled with the tank identification number listed herein.

Tank ID Number	Description	Location	Material	Capacity	Size
N2-SW-T-01	Mixed Solvent Waste Collection/ Transfer Tank	WWT 1	Carbon Steel	150 gallons	2'6" x 4'0" Straight size
N2-SW-T-02	Solvent Waste Storage Tank	WWT 2	Carbon Steel	560 gallons	4' Diameter x 6' Straight size

See Attachment 2, Mechanical Solvent Waste System Storage Process, and Instrumentation Diagram (Sheet No. H002 01/02), for tank identification and locations within the ANC.

7. EQUIPMENT - PUMP IDENTIFICATION NUMBER

All pumps listed in the table below have been clearly labeled with the pump identification number listed herein.

Pump ID Number	Description	Location	Type	Rating	Wetted Parts
N2-SW-P-01	Mixed Solvent Transfer Pump	WWT 1	Air Diaphragm (WIL-FLEX Diaphragm)	10 gpm @ 25 psig	Stainless Steel
N2-SW-P-02	Solvent Waste Sump Pump	WWT 1	Air Diaphragm (WIL-FLEX Diaphragm)	10 gpm @ 25 psig	Stainless Steel
N2-SW-P-03	Truck Loading Pump	WWT 2	Air Diaphragm (WIL-FLEX Diaphragm)	50 gpm @ 25 psig	Stainless Steel
N2-SW-P-03	Solvent Waste Sump Pump	WWT 2	Air Diaphragm (WIL-FLEX Diaphragm)	10 gpm @ 25 psig	Stainless Steel

See Attachment 2, Mechanical Solvent Waste System Storage Process and Instrumentation Diagram, for pump identification and locations within the ANC.

8. EQUIPMENT – PRESSURE RELIEF VALVE IDENTIFICATION NUMBER

The Pressure Relief Valves listed in the table below have been clearly labeled with the valve identification number listed herein.

Pressure Relief Valve ID Number	Location	Housing	Description
PVR-01	WWT1 - Mixed Solvent Waste Collection/ Transfer Tank	Ductile Iron A536	Pressure/Conservation Vent 14" W.C. Pressure and 2" W.C. Vacuum, 316 SS Pallets, FEP Film Diaphragm
PVR-02	WWT2 - Solvent Waste Storage Tank	Ductile Iron A536	Pressure/Conservation Vent 14" W.C. Pressure and 2" W.C. Vacuum, Ductile iron and 316 SS Pallets, FEP Film Diaphragm

See Attachment 2, Mechanical Solvent Waste System Storage Process and Instrumentation Diagram, for Pressure Relief Valve identification and locations within the ANC.

9. EQUIPMENT – FLAME ARRESTOR IDENTIFICATION NUMBER

Flame arrestors listed in the table below have been clearly labeled with the Flame Arrestor number listed herein.

Flame Arrestor ID Number	Location	Description
FA-01	WWT1	End of line Flame Arrestor 316 SS Hoof, 316SS Grid Assembly 2" FPT
DFA-01	WWT2	Denotation Flame Arrestor 2" Flange, Steel Housing 316SS Element Winding

See Attachment 2, Mechanical Solvent Waste System Storage Process and Instrumentation Diagram, for Flame Arrestor identification and locations within the ANC.

10. LOCATION

Refer to the following attachments for further detail on the location of the Mixed Solvent Waste Collection Tank and Solvent Waste Storage Tank, pumps, pressure relief valves, flame arrestors, and other auxiliary equipment within the Wastewater Treatment System at [ANC](#):

- Attachment 3 – Wastewater Treatment System Equipment Layout Level 1 (Sheet No. EQUIP-L1-01).
- Attachment 4 – Wastewater Treatment System Equipment Layout Level 2 (Sheet No. EQUIP-L2-01).

11. AIR EMISSION CONTROL EQUIPMENT - PRESSURE RELIEF VALVE / CONSERVATION VENT DESIGN AND OPERATION

11.1 The hazardous waste tank has a capacity of 560 gallons.

11.2 The hazardous waste in the tank has a maximum organic vapor pressure of 19.57 kPa. The sample to determine the maximum organic vapor pressure of the hazardous waste was collected on 5/11/09 and analyzed by Atlantic Product Services Inc. on 5/21/09 using the ASTM Method D-5191.

11.3 The results of the determination for the maximum organic vapor pressure for the hazardous waste in the tank are provided in Attachment 5.

11.4 The hazardous waste in the tank is not heated and has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

11.4.1 For a tank design capacity less than 75 m³, 19815 gallons, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

11.5 Both tanks are equipped with pressure relief valves which use a spring-loaded pressure relief valve / conservation vent that vent to the atmosphere during normal operation for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications.

11.5.1 These pressure relief valves are designed to operate with no detectable organic emissions when the device is secured in the closed position. Proper operation of these devices is confirmed when they are monitored for the presence of volatile organic compounds (VOCs) on a monthly basis using Reference Method 21.

- 11.5.2 The settings at which the pressure relief valves open have been established such that the devices remain in the closed position whenever the tank internal pressure is within the internal pressure maximum operating range of 3.0 psi based on the manufacturer's recommendations. This device will open when the tank's internal pressure exceeds 0.500 psi.
- 11.5.3 The only time that the pressure relief valves are expected to open is when the tank is being pumped out. After this or any other event that causes the pressure relief valve to open, the pressure relief valve / conservation vent will be retested for volatile organic compound leaks / emissions, using Reference Method 21, to confirm the proper operation of the device and zero emissions to the atmosphere.
- 11.5.4 These pressure relief valves are made of suitable materials (as listed in Section 8) that minimize the exposure of hazardous waste to the atmosphere and will maintain the integrity of the closure device throughout their intended service.
- 11.5.5 These pressure relief valves are operated and maintained in accordance with the manufacturer's recommendations. Refer to Attachment 8 for Manufacturer's Installation and Maintenance Guide for Weight Loaded Vents.
- 11.6 The air emission control equipment (pressure relief valves/conservation vents) shall be visually inspected for defects that could result in an air pollution emission. Defects include visible cracks, gaps, holes; cracked, broken or damaged seals or gaskets; and broken or missing hatches, access covers, caps, or other closure devices on an annual basis. See **EHS-00061-F1: Air Emission Control Equipment Inspection Form** for the checklist that is used to document inspection of this equipment annually.
- 11.6.1 **EHS-00061-F1: Annual Air Emission Control Equipment Inspection Form** includes the tank identification number; name of the inspector; the date; the type of equipment to be inspected; a description of the items inspected; and a description of any defects, their location, and corrective action taken to repair the defect.

12. DAILY TANK SYSTEM INSPECTIONS

- 12.1 Authorized NY CREATES Wastewater treatment operators shall inspect each tank at least once each operating day, using the Solvent Waste Storage Tank Inspection Checklists **EHS-00061-F2** (WWT1) and **EHS-00061-F3** (WWT2).
- 12.2 These inspection records include the following:
- Overfill/spill control equipment (e.g., tank and room secondary containment) to ensure that it is in good working order.
 - The above-ground portions of the tank system to detect corrosion or releases of waste.
 - Data gathered from monitoring equipment and leak-detection equipment (e.g., liquid level sensors and leak detectors, sump pump level indicators) to ensure that the tank system is operated according to its design. Liquid level sensors, leak detectors, and sump pump level indicators that are monitored continuously are hard-wired to the building management system to alert the operator, if activated. The monitoring equipment shall be tested and calibrated annually.
 - The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of a release of hazardous waste (e.g., wet spots, dead vegetation).
- 12.3 Authorized NY CREATES Wastewater treatment operators shall visually inspect each pump at least once each operating day for indications of liquid dripping from the pump seals using the Solvent Waste Storage Tank Inspection Checklists in **EHS-00061-F2** (WWT1) and **EHS-00061-F3** (WWT2).
- 12.4 Instructions on the completion of the daily inspections are provided on the inspection form.
- 12.5 If the tank system or a component of the tank system (i.e., piping, pumps, valves, secondary containment, sump, etc.) is in poor condition or unfit for service, or the inspector has found a deficiency, the inspector must contact the EHS department to take proactive steps to investigate, repair, and/or replace the equipment, parts, or components immediately.

- 12.5.1 A first attempt at repair (e.g., tightening the packing gland, tightening bolts, reseating of fitting/gasket, etc.) shall be made no later than five (5) calendar days after a deficiency is detected.
- 12.5.2 When a deficiency is detected, it shall be fully repaired as soon as practicable, but no later than 15 calendar days after it has been detected.
- 12.6 The tank system inspection records shall be stored in the EHS office, available for an inspector to review, for a minimum of three years.

13. MONTHLY VOLATILE ORGANIC COMPOUNDS MONITORING

- 13.1 All parts, including pumps, valves, flanges, flame arrestors, and pressure relief valves as listed in **EHS-00061-F4: Monthly Volatile Organic Compounds Monitoring Form** shall be monitored monthly to detect for leaks using the Reference Method 21 – Determination of Volatile Organic Compound Leaks.
- 13.1.1 The tanks shall be pumped out every 60-90 days.
- 13.2 All parts, including pumps, valves, flanges, flame arrestors, and pressure relief valves as listed in **EHS-00061-F4**, and as outlined in Attachment 6, the Monthly Volatile Organic Compounds Monitoring Equipment Diagram, have been marked with black writing and a white background so that each piece of equipment can readily be distinguished from other pieces of equipment.
- 13.2.1 The monitoring equipment used to detect volatile organic compounds is a MiniRae 3000 which meets the performance criteria of Reference Method 21.
- 13.2.2 This monitoring equipment shall be calibrated before each use in accordance with Reference Method 21 using zero air calibration gas and a mixture of isobutylene that meets the performance criteria stated in Reference Method 21. The results of the calibration sequence shall be documented on the Monthly Volatile Organic Compounds Monitoring Form (**EHS-00061-F4**).
- 13.2.3 The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.
- 13.3 The Monthly Volatile Organic Compounds Monitoring Form (**EHS-00061-F4**) includes the name of the inspector, the date, the type of equipment to be sampled, its identification label, a description, and its location in the facility.

- 13.4 When a leak is detected (> 500 ppm), it shall be fully repaired as soon as practicable, but no later than 15 calendar days after it has been detected, unless a valid reason for a delay can be documented. The following requirements also apply:
- A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found, and the date the leak was detected, shall be attached to the leaking equipment. See Attachment 7 for an example of such an identification label.
 - The identification on equipment, except on a valve, may be removed after it has been repaired.
 - The identification on a valve may be removed after it has been monitored for 2 successive months and no leak has been detected during those two (2) months.
 - A first attempt at repair (e.g., tightening the packing gland, tightening bolts, reseating of fitting/gasket, etc.) shall be made no later than five (5) calendar days after each leak is detected.
 - Instructions on the completion of monthly monitoring are provided on the Monthly Volatile Organic Compounds Monitoring Form (**EHS-00061-F4**).
 - The monthly Volatile Organic Compounds monitoring results shall be stored in the EHS office, available for an inspector to review, for a minimum of three years.

14. SCHEDULE OF COMPLIANCE

- 14.1 **Daily** – Daily inspections shall be done on a daily basis within 24 hours of the previous inspection (7 days a week).
- 14.2 **Weekly** – Weekly visual check of pumps will be done during the weekly 90-day area inspections.
- 14.3 **Monthly** – Monthly volatile organic compound sampling will be performed during the last week of every month.
- 14.4 **Various** – Volatile organic compound sampling will be performed around the pressure relief valve/conservation vent each time that the tanks are pumped out.
- 14.5 **Annual** – Annual inspections of the pressure relief/conservation vent and flame arrestor. Ideally this should be completed during the month of May every year.

15. TRAINING

15.1 Upon initial assignment, NY CREATES water treatment personnel performing tank inspections will be provided on-the-job training by a designated individual on the requirements set forth in this procedure, on tank inspection checklists, and the following:

- Procedure for using, inspecting, repairing, and replacing facility emergency monitoring equipment
- Communication or alarm systems (provided in Emergency Response Team [ERT] training)
- Responses to fire or explosions (provided in ERT training)
- Response to groundwater contamination incidents
- Shutdown of operations

15.2 NY CREATES water treatment personnel must take part in an annual review of this initial training.

15.3 Records to document the completion of this training will be kept on file in the EHS office.

16. ATTACHMENTS

16.1 **Attachment 1** – Example Hazardous Waste Labels

16.2 **Attachment 2** – Mechanical Solvent Waste System Storage Process and Instrumentation Diagram (Sheet No. H002 [01/02])

16.3 **Attachment 3** – Wastewater Treatment System Equipment Layout Level 1 (Sheet No. EQUIP-L1-01)

16.4 **Attachment 4** – Wastewater Treatment System Equipment Layout Level 2 (Sheet No. EQUIP-L2-01)

16.5 **Attachment 5** – Laboratory Results for Maximum Organic Vapor Pressure for Hazardous Waste

16.6 **Attachment 6** – Monthly Volatile Organic Compounds Monitoring Equipment Diagram

16.7 **Attachment 7** – Weatherproof Identification Label

16.8 **Attachment 8** – Protectoseal® Installation and Maintenance Guide for Weight Loaded Vents

ATTACHMENT 1 – EXAMPLE HAZARDOUS WASTE LABELS (N2-SW-T-01 AND -02)

N2-SW-T-01

HAZARDOUS WASTE

ACCUMULATION (Check box if satellite)

Solid Waste Liquid Waste Mixed Waste

Ignitable (Flashpoint <140°F) 116°F

Reactive Toxic Corrosive (pH<2.0) or (pH>12.5) ____

Start Date: ___/___/___

Contact Name: Robert Duff Department/Building/Tenant: CNSE – WWT1 – Mixed Solvent Waste Collection Tank

Chemical contents (product name or major chemical component):
Propylene Glycol Monomethyl ether acetate (PGMEA), Propylene Glycol Monomethyl ether (PGME), Ethyl Lactate, Gamma Butyrolactone (GBL), N-methyl-2-pyrrolidone (NMP), Cyclohexanone, Isopropyl alcohol (IPA)

HANDLE WITH CARE!
 CONTAINS HAZARDOUS OR TOXIC WASTES

N2-SW-T-02

HAZARDOUS WASTE

ACCUMULATION (Check box if satellite)

Solid Waste Liquid Waste Mixed Waste

Ignitable (Flashpoint <140°F) 116°F

Reactive Toxic Corrosive (pH<2.0) or (pH>12.5) ____

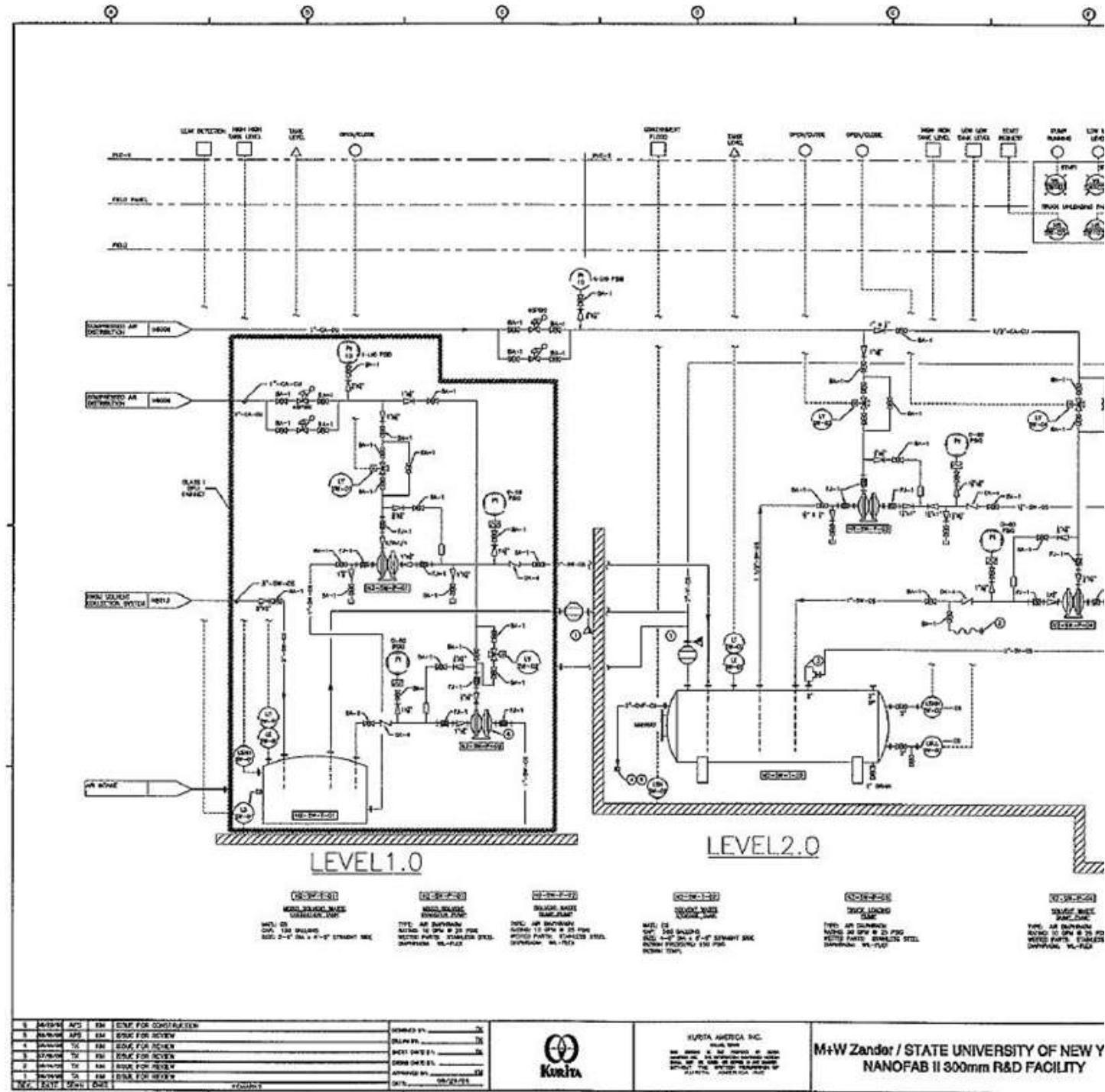
Start Date: ___/___/___

Contact Name: Robert Duff Department/Building/Tenant: CNSE – WWT2 – Solvent Waste Storage Tank

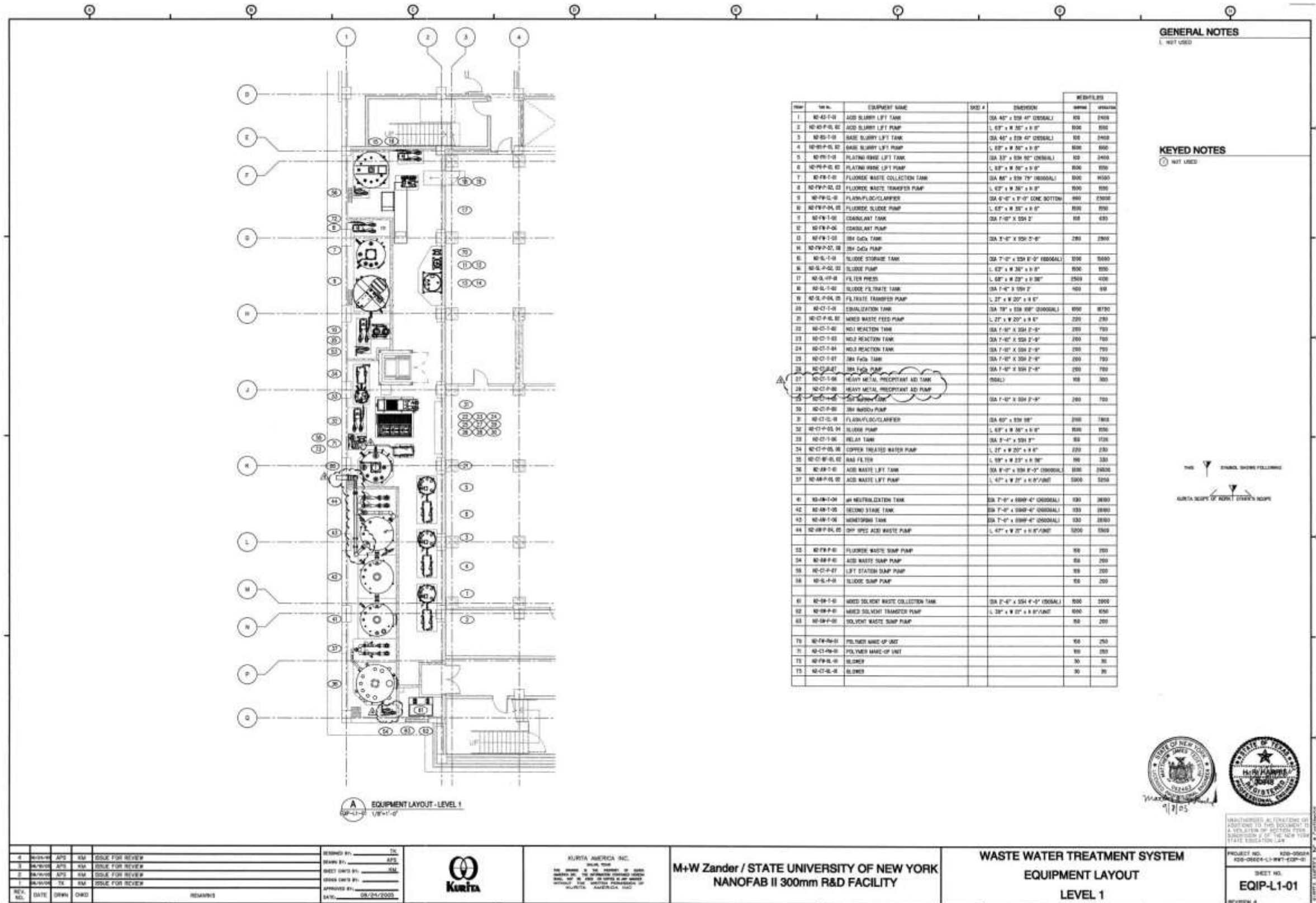
Chemical contents (product name or major chemical component):
Propylene Glycol Monomethyl ether acetate (PGMEA), Propylene Glycol Monomethyl ether (PGME), Ethyl Lactate, Gamma Butyrolactone (GBL), N-methyl-2-pyrrolidone (NMP), Cyclohexanone, Isopropyl alcohol (IPA)

HANDLE WITH CARE!
 CONTAINS HAZARDOUS OR TOXIC WASTES

ATTACHMENT 2 – MECHANICAL SOLVENT WASTE SYSTEM STORAGE PROCESS AND INSTRUMENTATION DIAGRAM



ATTACHMENT 3 – WASTEWATER TREATMENT SYSTEM EQUIPMENT LAYOUT LEVEL 1 (SHEET NO. EQUIP-L1-01)



GENERAL NOTES
1. NOT USED

KEYED NOTES
1. NOT USED

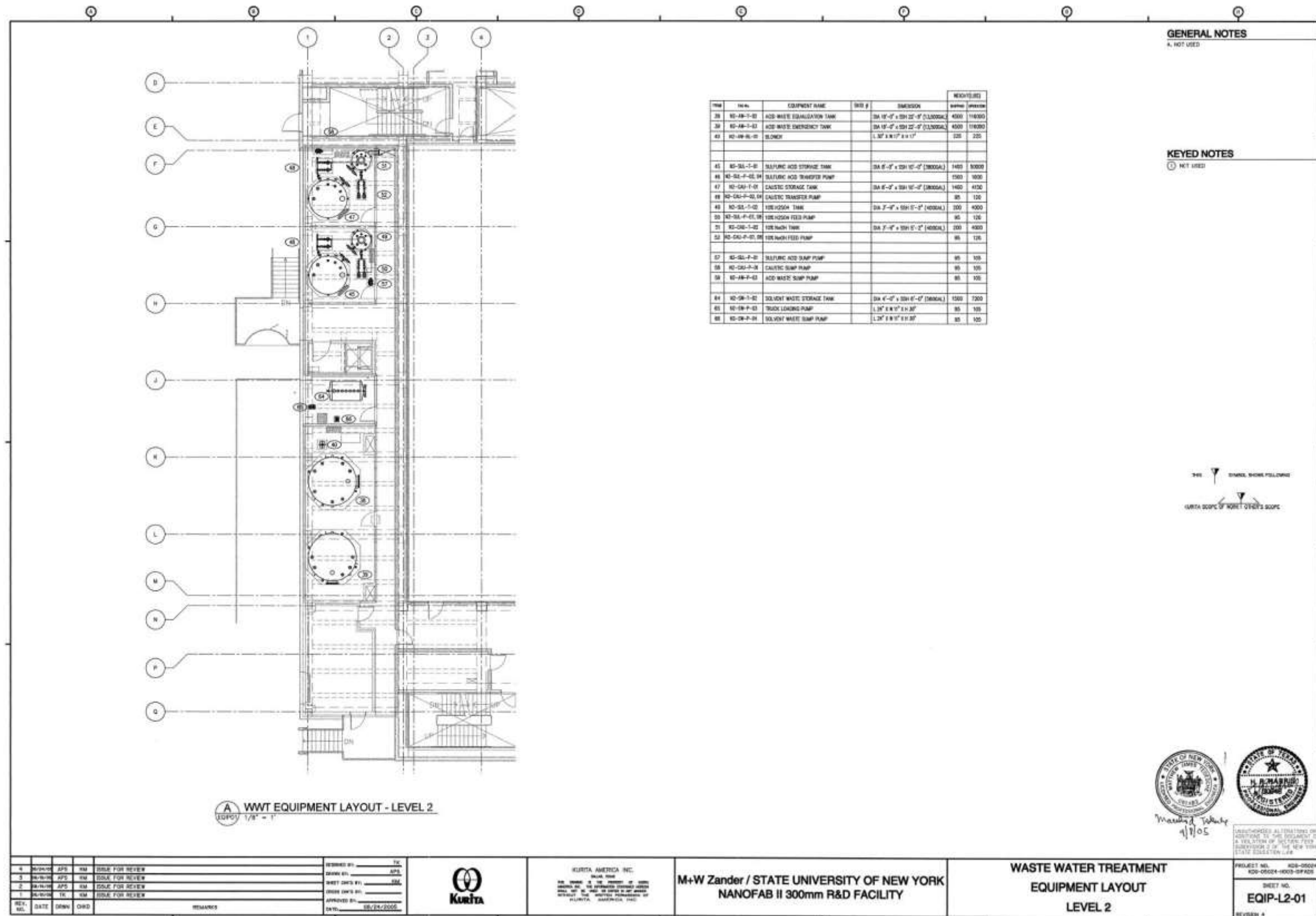
THIS SYMBOL SHOWS FOLLOWING
AURIA SLOPE OF ROAD, STAIRS, ETC.



REPRODUCED AND/OR TRANSMISSION OF ANY PART OF THIS DOCUMENT IS A VIOLATION OF SECTION 209 OF THE NEW YORK STATE VESSEL CODE.

DESIGNED BY: TK DRAWN BY: EFS CHECKED BY: SM DATE: 08/24/2005	KURITA AMERICA, INC. 100 PARKWAY 200 NEW BRUNSWICK, NJ 08901-2000 PHONE: 732-241-2000 FAX: 732-241-2001 WWW.KURITA.COM	M+W Zander / STATE UNIVERSITY OF NEW YORK NANOFAB II 300mm R&D FACILITY	WASTE WATER TREATMENT SYSTEM EQUIPMENT LAYOUT LEVEL 1	PROJECT NO. K20-05024 K20-05024-L1-W1-EQP-01 SHEET NO. EQUIP-L1-01 REVISION: 4
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ATTACHMENT 4 – WASTEWATER TREATMENT SYSTEM EQUIPMENT LAYOUT LEVEL 2 (SHEET NO. EQUIP-L2-01)



ATTACHMENT 5 – LABORATORY RESULTS FOR MAXIMUM ORGANIC VAPOR PRESSURE FOR HAZARD



ATLANTIC
Product Services, Inc.

EPA RFG No. 1008 U.S. CUSTOMS APPROVED
N.Y.S. ELAP No. 10750 U.S. EPA No. NY00071
Website: www.apsinsp.com

2 Terminal Road
Building OB
Carteret, New Jersey 0700

Phone (732) 969-480
Fax (732) 969-111
Email: postmaster@apsinsp.com

Inspections of Quality

ANALYTICAL REPORT

SUBMITTED SAMPLE : 090513045-001A
 LOCATION : ADIRONDACK ENVIRONMENTAL SERVICE
 314 N. PEARL ST ALBANY, NY 12207
 PRODUCT : MIXED SOLVENT
 SAMPLE DATE : 05/11/2009 LAB DATE: 05/21/2009
 A.P.S. FILE NO. : 76603

On a submitted sample, the following analytical results were obtained:

LAB No.	0509-820	
METHOD NO.	TESTS:	MIXED SOLVENT
D-5191	VAPOR PRESSURE EQUIV. AT 100 DEG. F	2.84 psi 211 146.8 mm Hg 20 19.57 Kpa

ATLANTIC PRODUCT SERVICES, INC.

STEPHEN M. LEVANO



Experience is the solution

314 North Pearl Street • Albany, New York 12207 • (518) 434-4546 • Fax (518) 434-0891

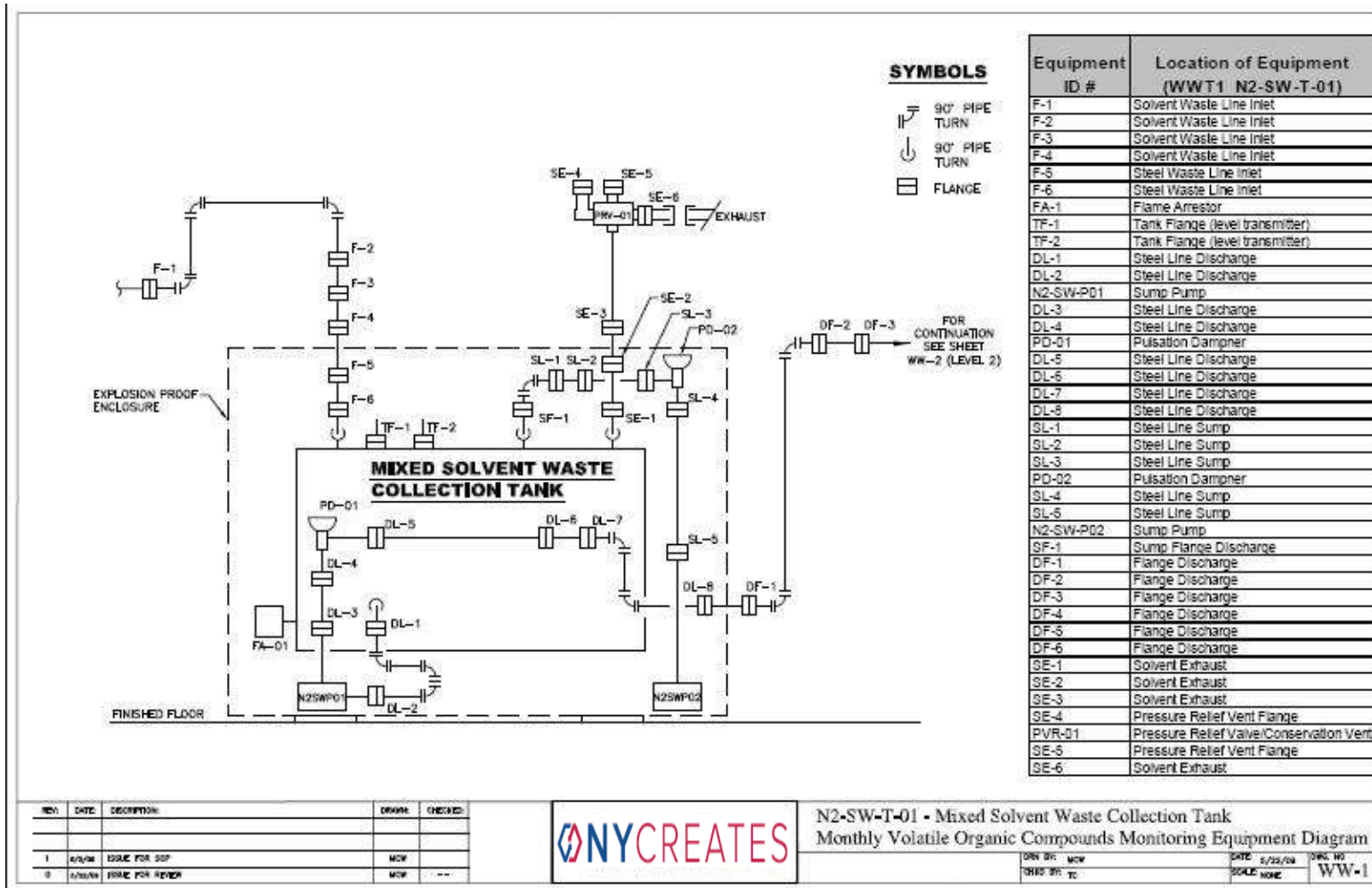
TERMS, CONDITIONS & LIMITATIONS

All service rendered by the **Adirondack Environmental Services, Inc.** are undertaken and all rates are based upon the following terms:

- (a) Neither **Adirondack Environmental Services, Inc.**, nor any of its employees, agents or sub-contractors shall be liable for any loss or damage arising out of **Adirondack Environmental Services, Inc.**'s performance or nonperformance, whether by way of negligence or breach of contract, or otherwise, in any amount greater than twice the amount billed to the customer for the work leading to the claim of the customer. Said remedy shall be the sole and exclusive remedy against **Adirondack Environmental Services, Inc.** arising out of its work.
- (b) All claims made must be in writing within forty-five (45) days after delivery of the **Adirondack Environmental Services, Inc.** report regarding said work or such claim shall be deemed or irrevocably waived.
- (c) **Adirondack Environmental Services, Inc.** reports are submitted in writing and are for our customers only. Our customers are considered to be only those entities being billed for our services. Acquisition of an **Adirondack Environmental Services, Inc.** report by other than our customer does not constitute a representation of **Adirondack Environmental Services, Inc.** as to the accuracy of the contents thereof.
- (d) In no event shall **Adirondack Environmental Services, Inc.**, its employees, agents or sub-contractors be responsible for consequential or special damages of any kind or in any amount.
- (e) No deviation from the terms set forth herein shall bind **Adirondack Environmental Services, Inc.** unless in writing and signed by a Director of **Adirondack Environmental Services, Inc.**
- (f) Results pertain only to items analyzed. Information supplied by client is assumed to be correct. This information may be used on reports and in calculations and **Adirondack Environmental Services, Inc.** is not responsible for the accuracy of this information.
- (g) Payments by credit card are subject to a 3% additional charge.

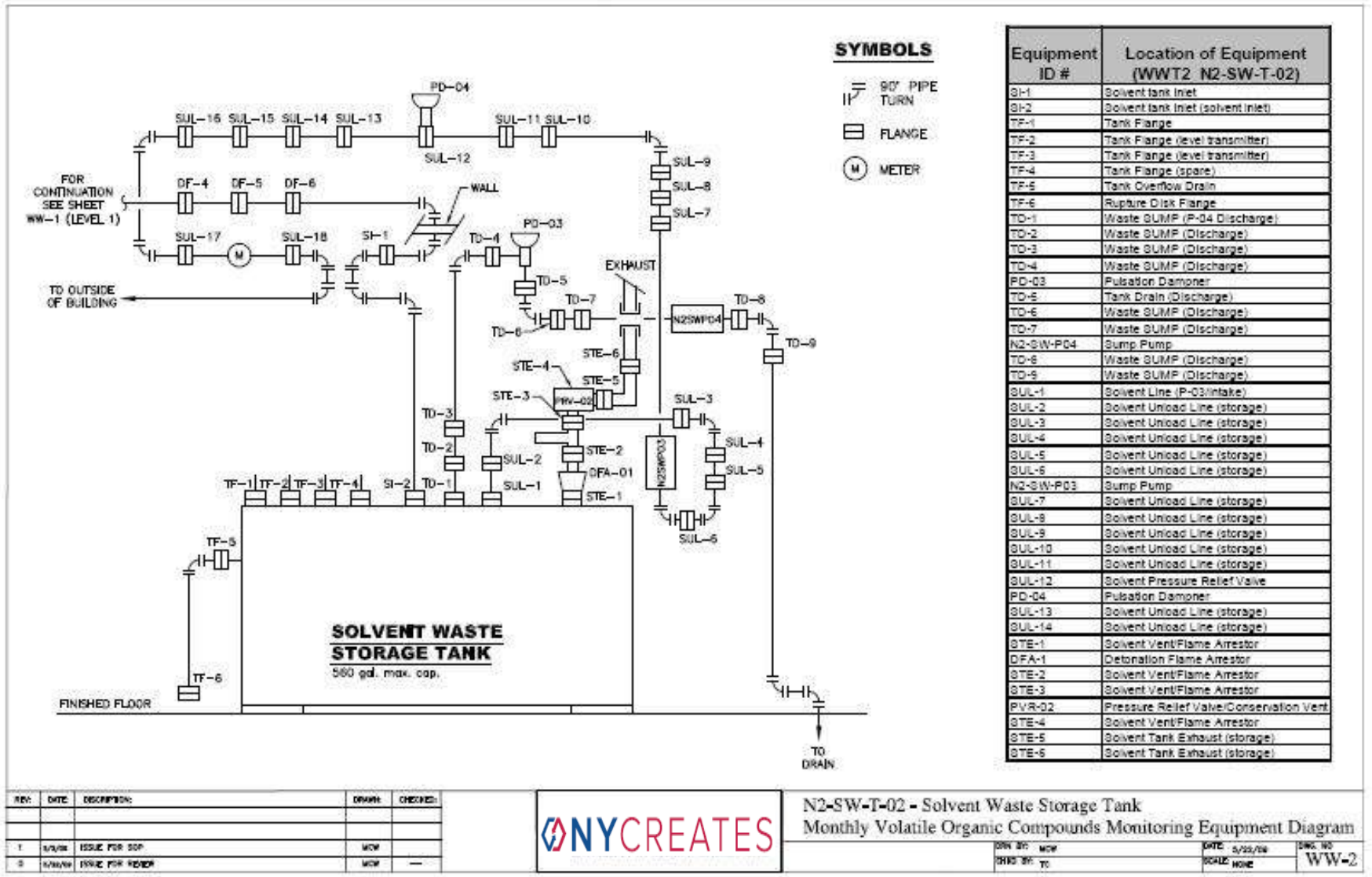
Albany, NY

ATTACHMENT 6 – MONTHLY VOLATILE ORGANIC COMPOUNDS MONITORING EQUIPMENT DIAGRAM (WW-1)



Printed copies are considered uncontrolled. Verify revision prior to use.

MONTHLY VOLATILE ORGANIC COMPOUNDS MONITORING EQUIPMENT DIAGRAM (WW-2)



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ATTACHMENT 7 – WEATHERPROOF IDENTIFICATION LABEL

CAUTION

Equipment ID: _____

Date leak was found: _____

Date leak was detected: _____

Detection results: _____

Initials: _____

ATTACHMENT 8 – PROTECTOSEAL® INSTALLATION AND MAINTENANCE GUIDE FOR WEIGHT LOADED VENTS

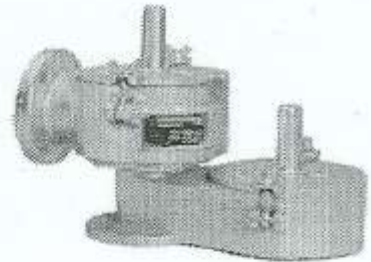
Tank protection division - pipe-away pressure/vacuum conservation vent series 18540

Page 1 of 6



PIPE-AWAY PRESSURE / VACUUM CONSERVATION VENT Series No. 18540

Protectoseal Series No. 18540, Pipe-Away Pressure / Vacuum Conservation Vent, is designed to provide pressure and vacuum relief in applications that require hazardous vapors to be piped away, rather than released into the atmosphere. The pallets in the vent housing allow intake of air and escape of vapors as the tank normally breathes in and out. Pallets open and close to permit only that intake or outlet relief necessary to remain within permissible working pressures and avoid tank damage. Relieving vapors are piped away through a flanged side connection.



- Allows tank to breathe normally, in and out
- Reduces costly evaporation losses
- Vapors piped away through a flanged connection one size larger than inlet providing greater flow capabilities
- Even inlet-outlet models also available
- Sizes 2" (50.8mm) through 12" (304.8mm)
- Settings achieved by weight loading
- Minimum/Maximum settings
- Maintains permissible working pressure to avoid tank damage
- Higher pressure / vacuum settings available
- ProFlow® Sizing/Selection Software
- Patented, FEP Film "Air-Cushioned Seating"
- Low-leak pallet design - certified test reports
- "Steam-Jacketing" available
- Drawing / dimension chart
- Installation & maintenance instructions
- Easy handling, inspection & maintenance
- Factory tested and certified
- Conforms with European ATEX Directive 94/9/EC
- Non-metallic (Thermoplastic Resin & FRP) construction available

Materials of Construction

SERIES	HOUSING	PALLETS	PALLET DIAPHRAGM
18540	Aluminum 356	Aluminum	FEP Film

<http://www.protectoseal.com/18540.html>

5/19/200

Tank protection division - pipe-away pressure/vacuum conservation vent series 18540

Page 2 of 6

C18540	Ductile Iron A536	316 S.S.	FEP Film
F18540	316 S.S.	316 S.S.	FEP Film
RE18540	Aluminum 356	316 S.S.	FEP Film
M18540	Hastelloy A494	Hastelloy C276	FEP Film

Flange mating: Aluminum: Mates with 125# FF ANSI
 Other metals: Mates with 150# RF ANSI

(For more detailed product information, e-mail us at: info@protectoseal.com.
 Be sure to include the product number and your name and address.)

[| PRODUCTS |](#) [| KEY CONTACTS |](#) [| UNDERSTANDING TANK SAFETY |](#)
[| WHAT'S NEW |](#) [| REGULATIONS |](#)

[| MAIN MENU |](#) [| COMPANY PROFILE |](#) [| QUALITY STATEMENT |](#)
[| TANK PROTECTION DIVISION |](#) [| SAFETY CONTAINER DIVISION |](#)
[| SITE MAP |](#) [| E-MAIL |](#)

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 225 W. Foster Ave.
 Bensenville, IL 60106
 Phone: (630) 595-0800
 Fax: (630) 595-8059
 E-mail: info@protectoseal.com



Model No.
C1854202
SN . 202A87



WEIGHT LOADED VENTS
Series Nos. 6240, 7800, 8540H, 8740, 16240,
17800 & 18540

Installation and Maintenance

INSTALLATION

If any questions arise concerning the proper installation of vents, please contact Protectoseal or one of our Authorized Representatives.

CAUTION:

When installing any Protectoseal venting device, the legal, corporate and advisory safety regulations and procedures appropriate for the specific installation site must be fully understood and followed.

Note 1: Depending on the vent style, it will include removable covers, a formed weatherhood, or a combination of covers and hood. If the vent includes a weatherhood, the stem guide may be taped to the top of the hood to prevent damage during shipment. Install the guide in the tapped hole on top of the hood.

Note 2: When pressure or vacuum weights (packed separately if heavy) are included with a unit, the weights should be inspected, properly identified and set aside for later installation. Weights will be stamped with a serial number matching the number on the vent, identification as pressure or vacuum weights, and a statement as to the contribution that each weight provides to the total pressure or vacuum setting.

PROCEDURE:

1. Loosen wing nuts and remove covers/weatherhood.
2. Withdraw pressure/vacuum pallet assemblies and remove protective cardboard and tape from each assembly.
3. Remove any protective flange covers.
4. Check carefully to insure that no packing materials remain on or inside the vent housings.
5. Mount the vent to the appropriate inlet and/or outlet flange using gaskets compatible with service conditions. Note: For some vent styles, threaded studs that mate with tapped holes in the vent housing flange are provided. For best performance, the vent should be mounted level so that the seating surfaces are no more than 1° off horizontal.
6. Reinstall pressure and/or vacuum pallet assemblies into their respective openings. Setting weights (if required) should be installed by engaging the hole in the weight on the appropriate pallet assembly stem.

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7. Replace the covers and/or weatherhood. Note: Make sure that the pallet assembly stem positively engages the stem guide hole in the weatherhood or cover. Each pallet assembly must be free to move upwards, with the pallet stem traveling into the stem guide.
8. Replace wing nuts or nuts and tighten to secure covers/hoods in position.

MAINTENANCE

If any questions arise concerning the proper maintenance of vents, please contact Protectoseal or one of our Authorized Representatives.

CAUTION:

When maintaining any Protectoseal venting device, the legal, corporate and advisory safety regulations and procedures appropriate for the specific installation site must be fully understood and followed.

PROCEDURE:

1. Loosen wing nuts and remove covers/weatherhood.
2. Inspect the gasket on the covers. Replace if deteriorated or damaged.
3. Remove any loose dirt or foreign material from the housing interior and exterior. Check inside the stem guide hole of the weatherhood and/or covers and remove any dirt or accumulation of foreign material from these holes.
4. Withdraw pressure/vacuum pallet assemblies and set aside for inspection. Note: identify any weights on the pressure/vacuum pallet assemblies for later reinstallation.
5. Inspect the screens that protect the pressure and vacuum ports. Clean or replace as necessary.
6. Inspect and clean the machined seating surfaces in the vent housings with a suitable cleaning fluid. Seats should be free of nicks, mars or accumulations of foreign material. Caution: Do not use a file or other sharp tool to clean seating surface.
7. Inspect the pallet assemblies. If pallets are deteriorated or bent, they must be replaced. Inspect the diaphragm material in the pallet assemblies. The diaphragms must be clean, flat and smooth. If the diaphragm material is deteriorated, it must be replaced. Make sure that all nuts and screws on the pallet assemblies are tightened securely.
8. Reinstall pressure and/or vacuum pallet assemblies into their respective openings. Setting weights (if required) should be reinstalled by engaging the hole in the weight on the appropriate pallet assembly stem.
9. Replace the covers and/or weatherhood and screens. Note: Make sure that the pallet assembly stem positively engages the stem guide hole in the weatherhood or cover. Each pallet assembly must be free to move upwards, with the pallet stem traveling into the stem guide.
10. Replace wing nuts or nuts and tighten to secure covers/hoods in position.

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