

**TA-54 Area G Nitrate-Salt
Waste Container Response Instructions**

Document No.: EP-AREAG-PLAN-1248
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HISTORY OF REVISIONS

Document No./Revision No.	Issue Date	Action	Description
EP-AREAG-PLAN-1248, R.0	May 28, 2014	New Document	

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1. PURPOSE

The purpose of this plan is to provide pre-planning and initial entry requirements for potential release scenarios from the nitrate salt-bearing waste containers. This plan is intended to minimize the consequences to personnel and the environment from a potential incident.

2. HISTORY

On February 14, 2014 there was a radiological release in the underground at the Waste Isolation Pilot Plant (WIPP). It was postulated that an energetic chemical reaction occurred. On May 15, 2014 WIPP released photographs which showed a Los Alamos National Laboratory (LANL) drum containing remediated nitrate salt-bearing waste had breached in Panel 7, Room 7. The cause of the breach and other potentially impacted drums is currently unknown, but is being actively investigated.

The current inventory of nitrate salt-bearing waste containers fall into 3 categories: 1) remediated, 2) un-remediated, and 3) cemented. Only the remediated containers have been “treated” and therefore are suspected of possible reactions. The remediated drums have all been placed in standard waste boxes (SWBs) and are located in a HEPA-ventilated, temperature-controlled PermaCon with a fire suppression system. The un-remediated drums have all been placed in 85-gal overpacks and will be transferred to a HEPA-ventilated, temperature-controlled PermaCon with a fire suppression system. The layouts of the TA-54-231 and TA-54-375 fire suppression systems within the PermaCons are illustrated on Appendix 1, TA-54-231 PermaCon Fire Protection System, and Appendix 2, TA-54-375 PermaCon Fire Protection System.

All of the remediated drums in SWBs are located in the PermaCon in TA-54-375. Appendix 3, TA-54-375 SWB Storage Plan, is a diagram of the SWB layout in TA-54-375. The un-remediated drums are located in TA-54-230 and will be moved into the TA-54-231 PermaCon.

The cemented waste containers are not considered to present any risk and are therefore not addressed here.

3. SITE CONSIDERATIONS

The drums and SWBs are spaced to satisfy the Resource Conservation and Recovery Act (RCRA) requirements, which require a minimum of two feet between containers. Until the final configuration for the un-remediated drums is achieved a list of drum locations will be kept and provided to Emergency Management (EM). EM is the central point of distribution and will provide appropriate information to responders, including Emergency Response (ER) and Los Alamos Fire Department (LAFD). When the final configuration is achieved, a diagram with drum locations within the TA-54-231 PermaCon will be produced, provided to EM, and posted in the TA-54 Operations Center. A preliminary walkdown of TA-54-230, TA-54-231, TA-54-375 and TA-54-412 has been completed with EM and ER. A walkdown with LAFD will be completed. Photos of the final configuration will be provided to EM.

Appendix 4, TA-54 Structure Location Map, is a map showing the 100-meter initial standoff distance from all affected facilities and a copy of it will be posted in the TA-54 Operations Center and the Emergency Operations Center (EOC).

The primary access into Area G will be the west entrance adjacent to the TA-54 Operations Center. Due to wind conditions, response organizations may have to enter Area G through the east gate. That road is not paved, but is maintained and it will be regularly inspected by appropriate personnel, including Emergency Operations (EO) and LAFD, to ensure accessibility. The road is inspected in accordance with EP-AREAG-WO-DOP-1246, TA-54 Area G Nitrate Salt-bearing Waste Container Monitoring, and repaired after each significant rain event.

4. BUILDING CONSIDERATIONS

Domes TA-54-231 and TA-54-375 have PermaCons installed within them. PermaCons are stainless steel enclosures designed for contamination control. Each has high-efficiency particulate air (HEPA) filtration and has been tested to ensure adequate airflow through the PermaCon. Each has several Continuous Air Monitors (CAMs) to monitor for airborne radioactive contamination. Two remotely monitored CAMs are installed in the TA-54-375 PermaCon which provides notification when there is a significant airborne release. Each structure has HVAC for heating and cooling within the PermaCons. All combustibles and flammable liquids have been removed from the domes, and the PermaCons. There are no hazardous materials, other than those in the waste containers, within the domes or PermaCons. The domes are not routinely occupied although daily and hourly inspections are performed. Access to the PermaCons is restricted by Standing Order.

Dome TA-54-230 is a fabric dome with fire suppression. It is considered short-term storage and all un-remediated drums will be moved to the TA-54-231 PermaCon the week of May 26.

5. VENTILATION STATUS

Because the HEPA ventilation is a key component of the contamination control within the PermaCon, if it were to be non-functional, the contamination control provided by the PermaCon would be compromised. Therefore, its status should be monitored and mitigative actions implemented if non-functional. The procedure on the hourly inspections of the containers contains a requirement to verify the HEPA ventilation is operating. Therefore any failure of the system would be known within an hour. If the ventilation system is found to be non-functional, the inspector will notify the Shift Operations Manager (SOM) who will coordinate with appropriate resources to repair the system as soon as possible. If the ventilation is non-functional for an extended period of time, the temperature measurements of the containers will be increased from daily to twice daily.

6. LTP PERSONNEL

LANL Transuranic (TRU) Waste Program (LTP) is currently transitioning to a 4 x 10 schedule (Monday - Thursday) with the TA-54 Operations Center manned 5 x 10 (Monday - Friday). Core work hours are 0630 - 1700. All normal support personnel are available during those hours. The Abnormal Operating Procedures and Emergency Response Procedure (see references) rely on the TA-54 Operations Center personnel to make notifications, contact Subject Matter Experts (SMEs), and coordinate with response organizations. EP-AREAG-FO-DOP-1246 provides direction to personnel performing hourly inspections on the backshift and weekends since they will not have access to TA-54 Operations Center personnel.

To support a backshift or weekend response, the TA-54 Operations Center will maintain an on-call list with the following personnel:

- Facility Operations Director (FOD)
- Operations Manager (OM)
- SOM
- Shift Operations Supervisor (SOS)
- Radiological Control Technician (RCT) Foreman
- RCT (2)
- Industrial Hygiene (IH)
- Operations Center Operator (OCO)
- Nuclear Operator

In accordance with company procedure, on-call LTP personnel are required to be on site within two hours.

7. RESPONSE ACTIONS

The following actions will initiate a response action requiring notification to LAFD via 911 and the Emergency Operations Support Center (EOSC) 667-6211:

1. Loss of container integrity such as evidence of leakage and/or lid or lid container gasket compromised
2. Bulging such as expansion of side walls or top
3. Chemical reaction such as smoke or release of internal contents to atmosphere
4. Evidence of fire or smoke
5. Blistering paint on a container
6. A container temperature measurement that is greater than 15 °F higher than the control temperature in accordance with EP-AREAG-FO-DOP-1246
7. A verified CAM alarm

Response personnel will initially mobilize to 100 meters from the affected facility as shown on the figure in Appendix 4. If specialized tools are identified (none have been to date), they will be staged in a central location more than 100 meters from any of the potential facilities. The forklift with blast protection will be staged between TA-54-231 and TA-54-375 as shown in Appendix 4. The Hazardous Material (HazMat) team will develop an incident specific response plan and safety plan per EO procedures (see references), which will be approved by the Incident Commander (IC) prior to any mitigation. LAFD, LTP SMEs, HazMat, and the Field Monitor Team (FMT) from Emergency Response will be involved in the planning for any mitigation and will be included in the pre-job briefing. In addition, the FMT has pre-planned the placement of additional monitoring equipment if it is needed. EO has personnel on call to support the IC including chemists, modelers, health physicists, samplers, etc.

8. REFERENCES

EP-DIV-BEP-20048, EWMO Division Building Emergency Plan (BEP)

EP-DIV-RM-AOP-20201, Discovery of an Airborne, Liquid and/or Solid Material Release or Spill

EP-DIV-RM-AOP-20204, Waste Container Questionable Integrity

EP-DIV-RM-ERP-20200, EWMO Area Emergency Response

EP-AREAG-FO-DOP-1246, TA-54 Area G Nitrate Salt-bearing Waste Container Monitoring

8. REFERENCES (continued)

EP-AREAG-SO-1247, TA-54 Area G Domes TA-54-231 and TA-54-375 PermaCon Access Restrictions

EO-ER-600-005, EO-ER Emergency Response Plan

EO-ER-630-003, Hazmat Safety Officer Guidelines

EO-ER-630-001, Hazmat Group Supervisor Guidelines

LANL Hazardous Waste Permit, Attachment D, Contingency Plan

APPENDIX 1

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TA-54-231 PERMACON FIRE PROTECTION SYSTEM

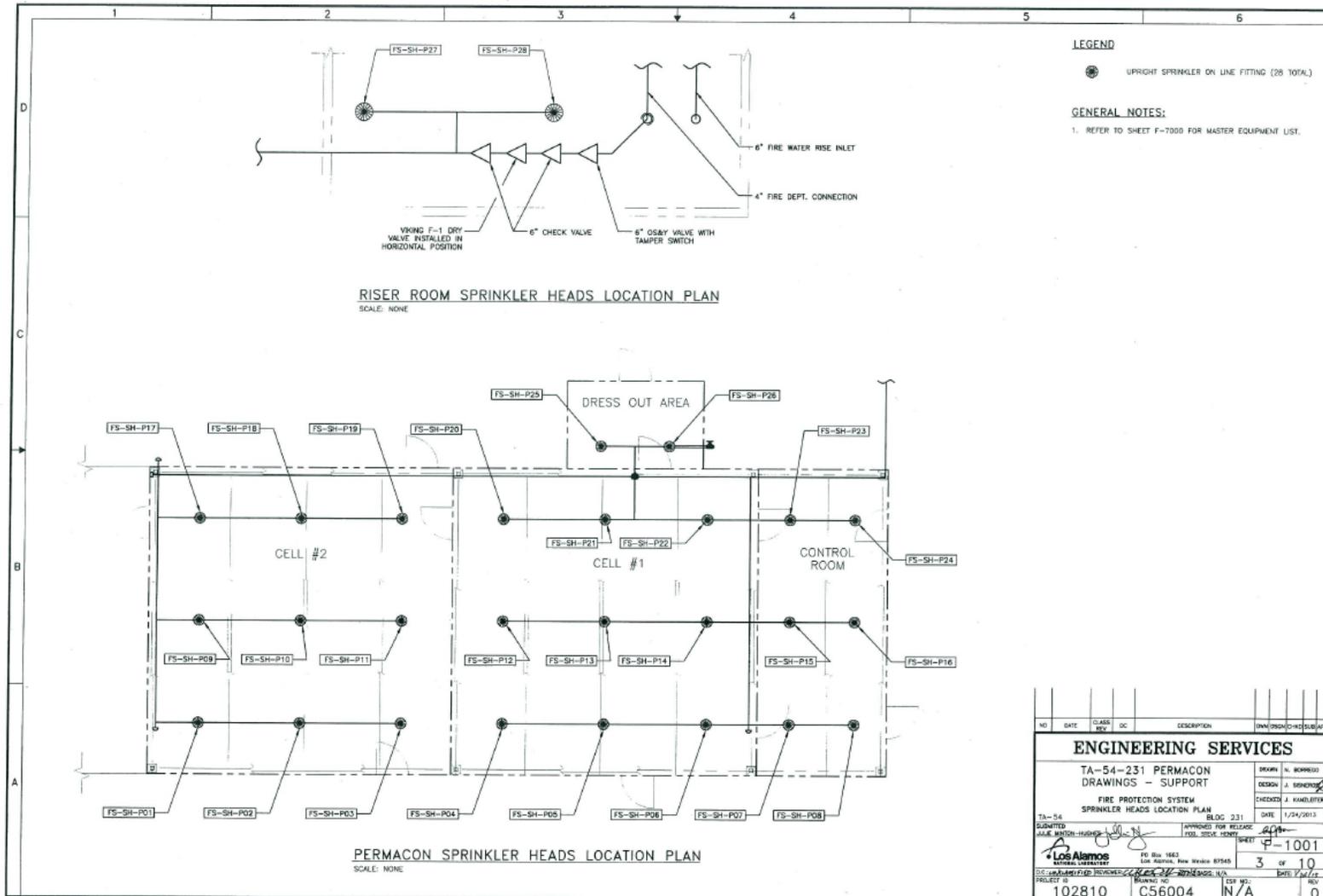


Figure 1-1, TA-54-231 PermaCon Sprinkler Heads Location Plan

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TA-54-375 PERMACON FIRE PROTECTION SYSTEM

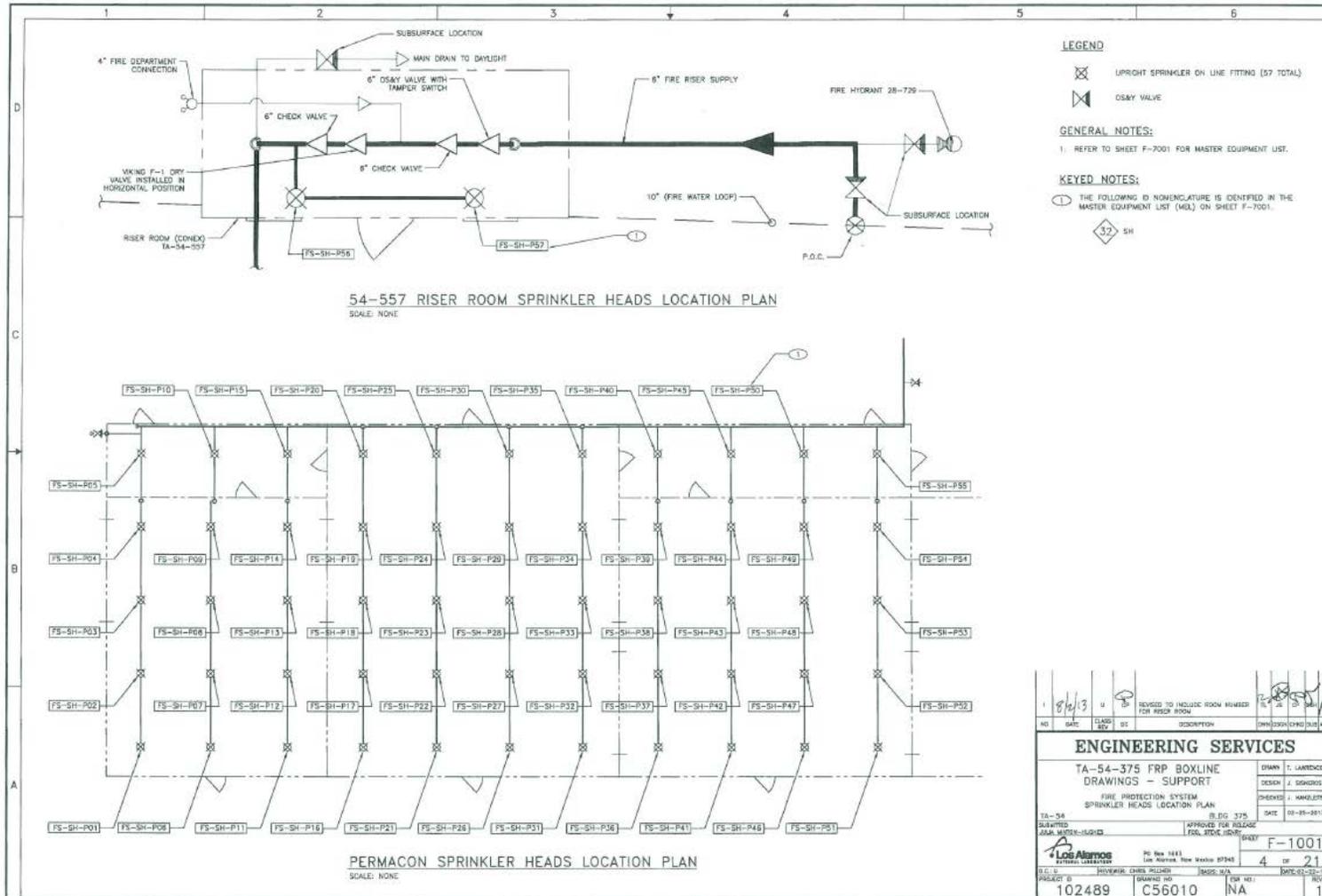


Figure 2-1, TA-54-375 PermaCon Sprinkler Heads Location Plan

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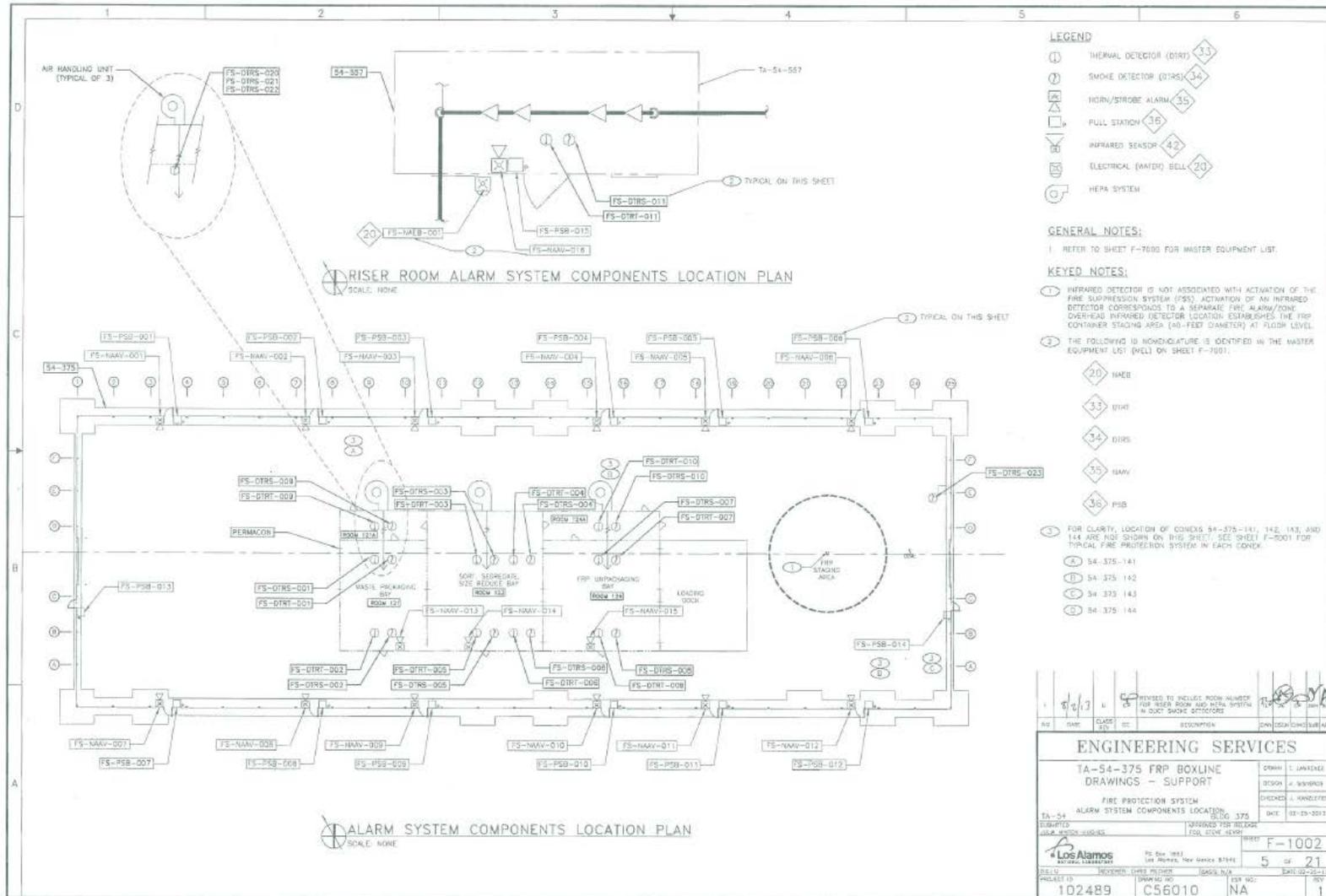


Figure 2-2, TA-54-375 PermaCon Alarm System Component Location Plan

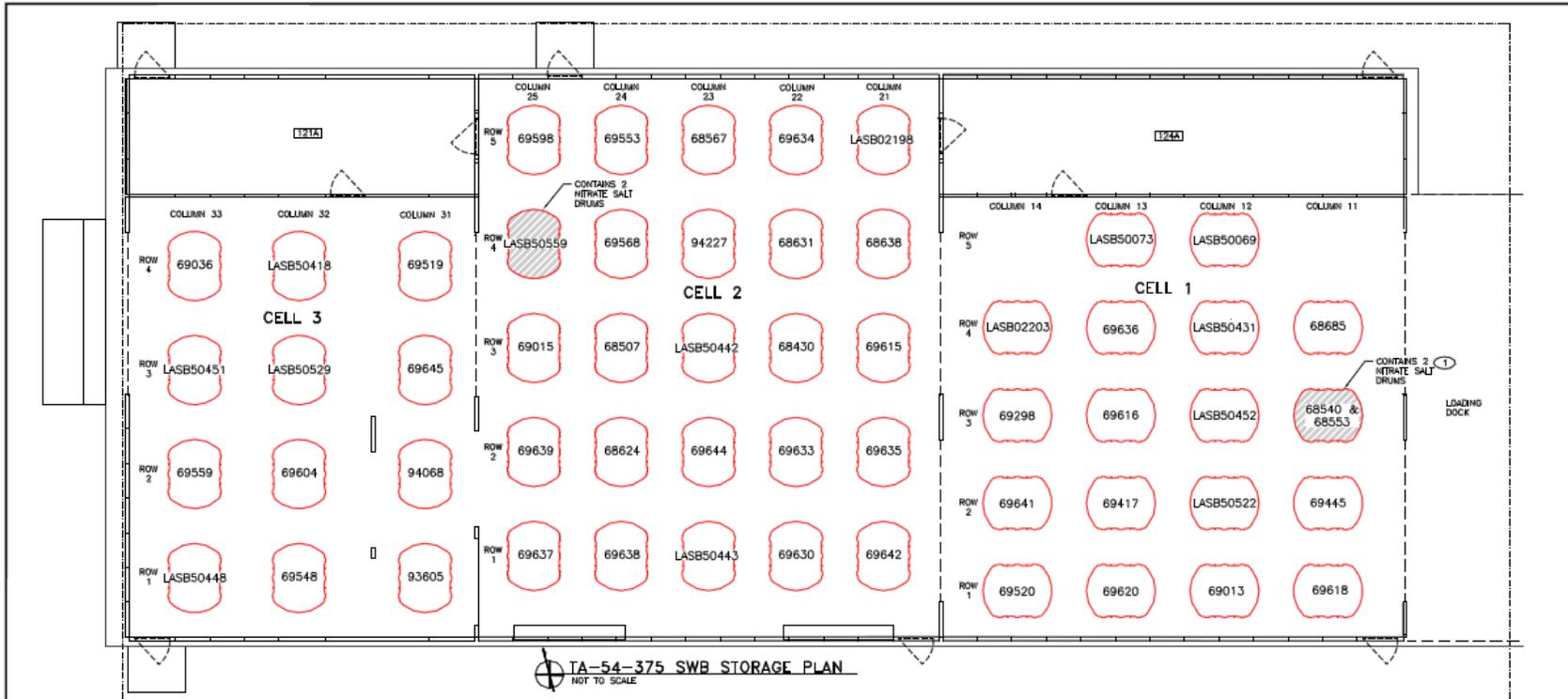
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TA-54-375 SWB STORAGE PLAN



GENERAL NOTES

- THIS STORAGE PLAN DEPICTS THE LOCATION OF 55 STANDARD WASTE BOXES (SWB) IN 375 PERMACON. THE NUMBER ON EACH SWB IS A CONTAINER ID.
- UNLESS OTHERWISE SPECIFIED, THE MINIMUM SEPARATION DISTANCE BETWEEN SWBs IS 2 FEET.

KEY NOTES

- THIS SWB CONTAINS TWO 55 GALLON DRUMS AND IS IDENTIFIED BY THE NUMBERS ASSOCIATED WITH THE DRUMS.

SWB PECCI TABLE - CELL 3				
CONTAINER ID	ROW	COLUMN	PECCI	
69036	4	33	10.31	
LASB50418	4	32	26.62	
69519	4	31	17.19	
LASB50451	3	33	9.78	
LASB50529	3	32	10.21	
69645	3	31	16.09	
69559	2	33	14.07	
69604	2	32	11.57	
94068	2	31	28.99	
LASB50448	1	33	3.39	
69548	1	32	0.84	
93605	1	31	14.76	

SWB PECCI TABLE - CELL 2				
CONTAINER ID	ROW	COLUMN	PECCI	
69598	5	25	2.04	
69553	5	24	12.47	
68567	5	23	1.31	
69634	5	22	10.96	
LASB02198	5	21	23.94	
LASB50559	4	25	11.89	
69598	4	24	4.52	
94227	4	23	1.30	
68631	4	22	1.30	
69638	4	21	8.11	
69015	3	25	3.01	
68507	3	24	4.77	
LASB50442	3	23	16.73	
68430	3	22	11.23	
69015	3	21	3.01	
69639	2	25	4.42	
68624	2	24	0.95	
69644	2	23	9.39	
69633	2	22	20.18	
69630	2	21	4.38	
69637	1	25	6.69	
69638	1	24	8.11	
LASB50443	1	23	24.80	
69630	1	22	20.43	
69642	1	21	4.91	

SWB PECCI TABLE - CELL 1				
CONTAINER ID	ROW	COLUMN	PECCI	
LASB50073	5	13	42.56	
LASB50099	5	12	51.80	
LASB02203	4	14	23.91	
69636	4	13	15.07	
LASB50431	4	12	61.58	
69565	4	11	8.54	
69298	3	14	23.18	
69616	3	13	9.75	
LASB50452	3	12	37.94	
68540 & 68553	3	11	1.90	
69641	2	14	9.11	
69417	2	13	0.009	
LASB50522	2	12	42.60	
69445	2	11	5.15	
69520	1	14	5.09	
69620	1	13	20.42	
69013	1	12	0.67	
69618	1	11	4.13	

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TA-54 STRUCTURE LOCATION MAP

