FTWC Project Alternatives Summary			
Option	**Safe Handling Met**	**Unmeasured Release Risk**	**Comment**
Leave in Place			
No change - continue in current configuration	N	Y	Would require +125 years for decay, including surveillance, maintenance, and ongoing risk. Pressure builds over time, increasing ultimate disposal complexity (existing venting manifold would not be an option due to pressure). Long term external insult risk.
Leave in place, with mitigation structure * 3 suboptions	N	Y	Would require +125 years for decay, including surveillance, maintenance, and ongoing risk. Structure construction risk. Pressure builds over time, increasing ultimate disposal complexity (existing venting manifold would not be an option due to pressure). Long term external insult risk.
Leave in place, with structure and capture technology. * 2 suboptions	N	Y	Would require +125 years for decay, including surveillance, maintenance, and ongoing risk. Structure construction risk. Pressure builds over time, increasing ultimate disposal complexity (existing venting manifold would not be an option due to pressure).
Place FTWC in containment vessel, then leave in place. * 2 suboptions	N	Y	Requires handling and therefore unmitigated release risk, and then >125 year surveillance. Long term external insult risk. Pressure builds over time, increasing ultimate disposal complexity (existing venting manifold would not be an option due to pressure).
Leave in place for specific duration to allow additional decay, then vent, transport, and disposition	Y	N	Increasing pressure complicates future mitigation effort, eventually eliminating safe controlled venting option.
Vent, Repackage, and Transport from Site			
Controlled venting, sorting and segregation, offsite shipment at current location * 2 suboptions	Y	Y	Greater potential for additional release. Inadequate infrastructure and safety systems.
Construct facility over containers for venting, sorting, and packaging operation in place	Y	Y	Construction activities without disturbing the containers would be extremely difficult, and likely controls would make construction impossible.
Construct portable facility at remote location, then transport and place over containers	N	Y	Construction activities without disturbing the containers would be extremely difficult, and likely controls would make construction impossible.
Option	**Safe Handling Met**	**Unmeasured Release Risk**	**Comment**
Transport Without Venting			
Transport onsite in standard cargo configuration	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release.
Transport onsite in remote handling configuration (remote handling from Area G to Tritium Facility)	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release.
Transport onsite in containment vessel * 3 suboptions	N	Y	Noncompliant transport. Release in vessel creates new, contaminated container. No commercially available product to address all risk factors.
Transport onsite by air	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release.
Transport onsite by rolling roadblock	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. No location that will accept as-is.
Transport onsite in full road closure	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. No location that will accept as-is.
Transport offsite in standard cargo configuration	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. No location that will accept as-is.
Transport offsite in remote handling configuration	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. Significant public impact. No location that will accept as-is.
Transport offsite in containment vessel * 3 suboptions	N	Y	Noncompliant transport. Release in vessel creates new, contaminated container. No commercially available product to address all risk factors. No location that will accept as-is.
Transport offsite by air	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. No location that will accept as-is.
Transport offsite by rolling roadblock	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. Significant public impact. No location that will accept as-is.
Transport offsite in full road closure	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release. Significant public impact. No location that will accept as-is.
Transport to onsite location for emergency mitigation	N	Y	Noncompliant transport, and risk of unmitigated/unmeasured release in transport, then known unmitigated release during breaching operation.
Transport entire storage facility with containers inside to different location	N	Y	Same risks as transporting containers individually, with more complexity.
Move FTWCs into containment vessel, then intentionally puncture, then transport for disposal	N	N	Initial handling involves unmitigated release risk. Once in containment and punctured, can be transported safely but cannot be compliantly transported offsite, and no location will accept in non-certified container.
Move FTWCs into containment vessel, then intentionally puncture, then transport for treatment	N	N	Initial handling involves unmitigated release risk. Once in containment and punctured, can be transported safely but cannot be compliantly transported offsite, and processing the contaminated containment vessel would be extremely complex, and no location exists to do so.

Option	Safe Handling Met	Unmeasured Release Risk	Comment
Controlled venting, then transport			
Vent in place, then transport offsite for further processing * 2 suboptions	Y	N	Compliant shipping challenges. Less safe than pre-sorting, and no current offsite repackaging capability. Unmitigated release risk during transport in remote location.
Vent in place, then transport onsite for further processing **SELECTED OPTION**	Y	N	Perform only required venting in field, then transport to LANL tritium facility for further processing. Lowest risk for transport, and minimizes field activities. Preferred option.
Vent in place, then transport offsite for permanent disposal	Y	N	Transport risk, plus no current facility will accept in unsorted condition.
Vent in place, then transport onsite for permanent disposal	Y	Y	Once vented the containers can be moved on site safely, but onsite disposal at Area G with the pressure monitoring manifold installed would not meet disposal cell requirements, and would also require permitting.
Vent in place, then transport to onsite storage location for long term storage * 2 suboptions	Y	N	Once vented, containers are in a safe configuration for short term transportation and therefore can be transported to a location with the infrastructure for safe repackaging. Long term storage at this point is simply postponing disposition, when the containers can be safely processed now and permanently resolved.
Vent in place, then transport to offsite storage location for long term storage * 2 suboptions	N	Y	Once vented, containers are in a safe configuration for short term transportation and therefore can be transported to a location with the infrastructure for safe repackaging. Long term storage at this point is simply postponing disposition, when the containers can be safely processed now and permanently resolved. Additionally, containers would not be compliant for offsite transport.
Vent in place with venting manifold, but with 100% containment (no emissions) * 2 suboptions	Y	Y	Design venting system with total containment. This option would require a very complex venting, capture, and pressure monitoring system that would require transport as a complete system once connected. The receiving vessel would then require mitigation. Connections, hoses, etc. could not be disconnected once venting operations began, and would pose significant leak risk while in transport (unmitigated release). Any version of this approach with a sampling capability would still require the same analysis, permitting, etc.
Option	**Safe Handling Met**	**Unmeasured Release Risk**	**Comment**
Onsite Disposal at Area G			
Dispose onsite as-is at Area G	N	Y	Risk of unmitigated release, plus Area G not currently permitted for FTWC disposal. Adds to buried waste inventory.
Dispose onsite after controlled venting only at Area G	Y	N	Same risks as venting and offsite disposal, but also adds to buried waste inventory. Area G not currently permitted for FTWC disposal.
Dispose onsite after controlled venting and sorting at Area G	Y	N	Same risks as venting and offsite disposal, but also adds to buried waste inventory. Area G not currently permitted for FTWC disposal.
Dispose onsite after controlled venting at Area G, sorting at Tritium facility, transport back to Area G	Y	N	Same risks as venting and offsite disposal, but also adds to buried waste inventory. Area G not currently permitted for FTWC disposal.
Temporarily dispose (bury) at Area G, then recover and disposition later.	N	Y	Handling risks magnified due to burial and later recovery activities, and future pressures will making venting much more complex/impossible.
Emergency Mitigation			
Perform priority pressure mitigation response (hazardous device dynamic puncture)	N	Y	Unmitigated/unmeasured release. Complex cleanup and disposal.
Perform priority pressure mitigation response (hazardous device water jet puncture)	N	Y	Unmitigated/unmeasured release. Complex cleanup and disposal.
Perform priority pressure mitigation response (hazardous device cutting band puncture)	N	Y	Unmitigated/unmeasured release. Complex cleanup and disposal.
Perform priority pressure mitigation response (venting manifold)	Y	N	Would require emergency authorization, and does not meet all regulatory requirements.