



Bureau of Land Management Mobile Retardant Base Stormwater Pollution Prevention Plan

April 14, 2021

Aarcher, Inc.
88 Inverness Circle East, Suite I-106
Englewood, Colorado 80112
(303) 662-1696
bwisniewski@aarcherinc.com



Bureau of Land Management
National Operations Center, OC-670
Denver Federal Center
Building 50, 5th Street
Denver, Colorado 80225-0047
(303) 236-0589
sjcompton@blm.gov

Table of Contents

SECTION 1: INTRODUCTION 1
SECTION 2: INDUSTRIAL ACTIVITIES, ASSOCIATED POLLUTANTS, AND CONTROL MEASURES ... 2
SECTION 3: SITE SELECTION CONSIDERATIONS..... 3
SECTION 4: BEST MANAGEMENT PRACTICES CHECKLIST 4
SECTION 5. SPILL PREVENTION AND RESPONSE..... 6
SECTION 6: EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT 9
Attachment A Summary of Industrial Activities, Associated Pollutants, and Control Measures A-1
Attachment B Mobile Retardant Support Contract Requirement B-1
Attachment C Example of Site Layout Preferences and Considerations C-1

This document has been created in collaboration between Bureau of Land Management (BLM) Engineering and the Fire Leadership Team (FLT).

This plan is intended to provide guidance on facility compliance with federal stormwater permitting requirements and how operations should continue to maintain such compliance. The intent of preparing this plan is not to obtain a stormwater discharge permit (i.e., file a Notice of Intent).

With this document, it is the BLM's intent to self-examine areas where best management practices (BMPs) can be implemented and maintained to achieve compliance with regulations. By following this plan, the BLM intends to comply with requirements regardless of permit status, regulatory scrutiny, or host airport cooperation.

SECTION 1: INTRODUCTION

The BLM has the capability to open temporary tanker base operations at various airports with little notice. These mobile retardant bases (MRBs) are considered temporary duration operations, as they have temporary infrastructure for emergency response, such as the following:

- Mobile retardant support trailers that provide fuel and retardant equipment for mixing and loading
- Small to Large (i.e., 3,000-gallon to 20,000-gallon) tanks for retardant storage depending on service as SEAT, LAT, OR VLAT MRB
- Hoses to connect water supply to site water utilities
- Temporary parking areas

Typically, MRBs are supported by the closest District/Unit/Forest and/or ordering agency and follow the same authority structure under a Unit/Forest Aviation Manager and appropriate State Aviation Manager/Regional Aviation Manager. This MRB SWPPP is an addition to your required SEAT/ATB operations plan. Please ensure appropriate contacts for hazardous spills is in the operations plan and readily available. MRBs are commonly deployed at permanent/fixed tanker bases to provide additional surge support for tanker base firefighting operations. Protocols mentioned in this document assume MRBs follow this similar chain of command.

Purpose

The Clean Water Act (CWA) prohibits the unpermitted discharge of pollutants to navigable waters. Stormwater from industrial facilities has been identified as a significant source of contaminants impacting the nation's surface and ground waters. This Stormwater Pollution Prevention Plan (SWPPP) provides MRB site selection considerations, control measures for managing water runoff, BMPs, and spill prevention and response procedures for anticipated industrial activities. These BMPs support cleaning up existing site conditions and facilitate continued site management and operations that will prevent negative impacts on stormwater.

This plan is intended to provide guidance on facility compliance with nationally recognized stormwater permitting requirements and how operations should continue to maintain such compliance. By following this plan, the BLM intends to comply with nationally recognized requirements regardless of permit status, state and federal regulatory scrutiny, or host airport cooperation. The BLM intends to meet best management practices as would be outlined by a discharge permit in an effort to prevent environmental impacts and reduce the potential for any pollution-causing event.

SECTION 2: INDUSTRIAL ACTIVITIES, ASSOCIATED POLLUTANTS, AND CONTROL MEASURES

Attachment A includes two tables that summarize the industrial activities, associated pollutants, and stormwater control measures for an MRB. Table A-1 is intended to be used by MRBs using liquid concentrate retardant (i.e. Phos-Chek LC-95A products). Table A-2 is intended to be consulted by MRBs using powder concentrate retardant (i.e. MVP). For each potential pollutant source, control measures are identified to prevent or reduce the discharge of pollutants to waters of the United States to the greatest extent achievable.

For additional, detailed descriptions of any of the control measures described in the tables, refer to the stormwater management plan for the nearest permanent/fixed tanker base.

SECTION 3: SITE SELECTION CONSIDERATIONS

With this document, it is the BLM's intent to self-examine areas where BMPs can be implemented and maintained to achieve compliance with federal regulations, as well as to prevent contamination of **both** groundwater and surface water. Along with the checklist provided below, see Attachment C for a visual example of site layout preferences and considerations.

- Consider distance to nearby waterway(s).** The MRB site must be at least 300 feet from any waterway, including seasonal lakes or streams, to prevent pollutants from discharging to surface water. Prior to selecting a MRB site, conduct an aerial photograph search to determine if any waterways would be within this 300-foot radius, or could potentially be affected by pollutants in runoff associated with MRB activities.
- Avoid impacts to neighboring water bodies.** Beyond waterways within 300 feet of the MRB, avoid locations that have the potential to drain to other surface water features neighboring BLM operations. If a site obviously drains into a surface water feature, control measures must be deployed to limit off-site pollution. Examples include culvert plugs and filtering booms. (See photos in Attachment C)
- Consider site topography.** Where infrastructure does not exist or is not functional, natural features such as topography can be used to either allow infiltration (e.g., a level unpaved surface) or direct stormwater toward control features deployed to prevent runoff to grade (e.g., a site sloped in one direction where booms or berms can intercept runoff). [Note: in the event MRB runoff infiltration, there is the potential for soil contamination that may require soil sampling and remediation pending the makeup of the runoff.]
- Limit off-site runoff via drainage infrastructure.** Wherever possible, setup the MRB where the potential for stormwater or wash water to run off-site is minimal. Avoid areas with storm drains that discharge off site, especially where storm drains are located on the ramp, or, deploy magnetic drain covers or other preventative measures to intercept flows from reaching drainage infrastructure and leaving the site.
- Demarcate site runoff pattern and tank placement.** Use chalk or spray paint to designate where runoff should drain (i.e., arrows designating flow path) and where retardant tanks should be placed so as to identify anticipated flow areas for spill response and prevent runoff from discharging off site or, if applicable, to storm drains.
- Prevent the comingling of runoff.** Consider the direction of runoff from the ramp and avoid comingling runoff with that of a neighboring operator. If comingling of runoff is a possibility, note neighboring operator business name and contact information.
- Use existing response resources.** Where available, existing response means will be used to capture stormwater runoff, wash water, or retardant spills. The intent of this is to allow for cleanup using readily available equipment such as spill kits and vacuum trucks. Sites should utilize existing infrastructure such as curbing, drainage swales, and existing, neighboring BLM evaporation ponds to aid in spill response. This should be achievable at most sites, specifically at permanent/fixed tanker bases where MRBs are deployed for surge support. Communicate with your Unit Aviation Manager regarding access to these resources during MRB operations.
- Consider which activities can take place off site.** Potential polluting activities, such as fueling, hazardous material storage, aircraft maintenance, and aircraft washing, increase the need to provide control measures and practices for those activities. Identify any activities that can take place off site, such as conducting fueling and maintenance at the fixed base operator (FBO) or limiting aircraft washing. Conduct fueling and maintenance activities at the FBO whenever possible.

SECTION 4: BEST MANAGEMENT PRACTICES CHECKLIST

BLM Engineering and the FLT have compiled a list of BMPs that are known to currently exist and/or be successful at retardant-loading bases. When establishing an MRB, the Air Tanker Base Manager will complete the checklist included in Table 1.

Table 1. Best Management Practices Checklist

Yes	No	N/A	BMP	Notes
Startup				
			1. Site Management. Ensure a land-use agreement is in place for the planned MRB and the host airport.	
			2. Site Management. Prior to MRB deployment, and as a part of the land-use agreement, ensure the host airport conducts a visual inspection of the planned MRB site to ensure there are no existing spills. File inspection documentation with site start-up procedures.	
			3. Site Management. Take photos of the MRB site prior to deployment and send to the Unit Aviation Manager. File photos with site start-up procedures. Starting in the 2021 fire season, this is a mandatory requirement (#3 and #29 are required).	
			4. Good Housekeeping. For any tanker base with uncontrolled stormwater or wash water discharge, deploy filtering booms before and during base operation. Contact your UAM for obtaining booms from a nearby permanent/fixed tanker base or geographic area cache (See Section 5 below).	
			5. Good Housekeeping. Ensure the contractors disclose the type of soap for aircraft washing activities. Request biodegradable or approved soaps as directed by the BLM CASHE Program.	
			6. Retardant Mixing, Loading, and Handling. Make proper notifications if storing hazardous materials over certain quantities and for releases over certain quantities (see corresponding operations checklist items #27 and #31).	
			7. Retardant Mixing, Loading, and Handling. Fill water and mix tanks from the top via a compliant air gap.	
			8. Retardant Mixing, Loading, and Handling. If the water/mix tank fill port does not have a compliant air gap and the tank is filled with a hose or hard plumbing, install a testable backflow preventer on the water line and test the backflow preventer annually.	
			9. Retardant Storage. Ensure a vacuum truck (where accessible) or trash pump is available to clean retardant spills in secondary containment (if/when necessary).	
			10. Retardant Storage. Provide secondary containment for all retardant tanks, fuel tanks, and hazardous materials. Ensure secondary containment requirements are considered on a site-specific basis.	
			11. Retardant Storage. Ensure retardant tank secondary containment is sized for the largest volume tank plus 10%.	
			12. Spill Control Measures. If the MRB location is near airport stormwater drains, deploy drain covers to prevent a spill from flowing into a storm drain or catch basin when loading aircraft with retardant or when fueling aircraft.	
			13. Spill Control Measures. Locate a 5-gallon fuel spill kit on the ramp before and during base operation.	
			14. Good Housekeeping. Provide basic sanitation to all employees.	
Operations				
			15. Good Housekeeping. Deploy filtering booms before and during base operation for any tanker base with uncontrolled stormwater or wash water discharge that could potentially runoff to grade or a neighboring waterway / water body.	
			16. Good Housekeeping. Wash aircraft with cold water only. If soap must be used for aircraft washing, use only biodegradable or BLM CASHE Program approved soap.	
			17. Good Housekeeping. Wash the ramp with only cold water after every load and at the end of operations.	
			18. Retardant Mixing, Loading, and Handling. Inspect drums of waste retardant for leaks or damage to drums weekly and at the end of operations. (This BMP is also included in the shutdown checklist, item #34)	
			19. Retardant Mixing, Loading, and Handling. Put measures in place to limit releases during retardant mixing, loading, and handling (e.g. load catchment buckets, relief valves for transfer pumps).	

**Stormwater Pollution Prevention Plan (SWPPP)
Mobile Retardant Base**

Yes	No	N/A	BMP	Notes
			20. Retardant Mixing, Loading, and Handling. Make proper regulatory notifications for release of hazardous materials over certain quantities. (This BMP is also included in the startup checklist section as item #6.)	
			21. Retardant Mixing, Loading, and Handling. Store waste retardant in drums labeled "Collected Retardant for Disposal" in the tank farm containment area.	
			22. Retardant Storage. Maintain the secondary containment structure in good condition to allow cleanup of spilled material and a safe walking surface for employees.	
			23. Spill Control Measures. Inspect the tanker base for spills of retardant after every load.	
			24. Spill Control Measures. Clean up spills upon discovery.	
			25. Spill Control Measures. Avoid parking loaded aircraft overnight when possible. If loaded aircraft must be parked overnight, park them in the pit or an area where accidental releases can be contained.	
			26. Spill Control Measures. Train personnel on procedures for cleaning up spilled retardant, off-loading retardant from aircraft, how accumulated retardant can be reused, and the method of disposal according to written standard operating procedures.	
			27. Site Management. Notify the State Aviation Manager if retardant is spilled over thresholds described in Section 6 of this plan (See Section 6 below regarding EPCRA Section 304).	
Shutdown				
			28. Site Management. After MRB deconstruction, and as a part of the land-use agreement, ensure the host airport conducts a visual inspection of the MRB site to ensure it is in acceptable condition (e.g., no existing spills, equipment is removed). File inspection documentation with site shut-down procedures.	
			29. Site Management. Take photos of the MRB site and send to the Unit Aviation Manager after MRB deconstruction. File photos with site shut-down procedures. Starting in the 2021 fire season, this is a mandatory requirement.	
			30. Site Management. If a pressure washer is used for cleaning purposes upon shutdown, do not use hot water or soap.	
			31. Site Management. Notify the State Aviation Manager if retardant is stored on site or dispersed over the thresholds described in Section 6 of this plan (See Section 6 Below regarding EPCRA Section 311 & 312).	
			32. Good Housekeeping. Ensure base shut-down procedures are documented in the standard operating procedures or SWPPP and are implemented.	
			33. Good Housekeeping. Dispose of any "collected retardant" either as liquid or as absorbents with hazardous materials (HAZMAT) support. Absorbent contaminated with power concentrate retardant can be put into a plastic bag and disposed of in the dumpster.	
			34. Retardant Mixing, Loading, and Handling. Inspect drums of waste retardant for leaks or damage to drums weekly and at the end of operations. (This BMP is also included in the operations checklist section #18.)	
			35. Management of Unused Retardant. Transfer unused retardant back to the contractor and/or to a permanent/fixed base at the end of the operating period.	
			36. Management of Unused Retardant. Dispose of any unused mixed retardant that cannot be returned to the retardant contractor through the existing North Wind contract with the support of the HAZMAT Coordinator. <i>Note: Past disposal practices, such as selling unused mixed retardant to local farmers or releasing to grassy areas near the airport, are not permitted and may result in fines.</i>	
			37. Management of Unused Retardant. If located at a BLM permanent/fixed tanker base and storing unused Phos-Chek LC-95A retardant on site upon shutdown, notify the HAZMAT Coordinator and Unit Aviation Manager of the volume of unused retardant and ensure it is enclosed in secondary containment.	
			38. Management of Unused Retardant. If located at a BLM permanent/fixed tanker base and storing unused MVP retardant on site upon shutdown, notify the HAZMAT Coordinator and Unit Aviation Manager of the volume of unused retardant and ensure the retardant is stored in an area where it is not exposed to the elements (e.g., place inside warehouse or nearby fire cache).	
			39. Stained Soil Cleanup. At the end of each operating period, ensure base personnel notify the State Aviation Manager of any stained soil that resulted from base operations. Stained soils may need to be screened and/or tested by a HAZMAT Coordinator in order to determine if soils have been impacted by constituents of concern in the fire retardant.	
			40. Responsible Disposal. Ensure the MRB properly disposes of captured retardant and retardant-contaminated sludge or soil with the support of a HAZMAT Coordinator and proper documentation per Sections 5 and 6 of this plan.	

SECTION 5. SPILL PREVENTION AND RESPONSE

In case of a spill that cannot be contained safely in the immediate area by available personnel, notify the Unit Aviation Manager who will direct the containment and cleanup activities. In the event of a spill that reaches soil, gravel, or migrates off site, notify the Unit Aviation Manager who will direct the containment and cleanup activities. Maintain the local HAZMAT Coordinator's contact information on site for additional support in the event of a spill. Additional notifications may be necessary such as airport authority and District and State level managers/coordinators. Notification process should be outlined in the Operations plan and readily available.

In the event that an MRB is deployed at an existing permanent/fixed tanker base or within a reasonable driving distance, coordinate with that location's assigned Tanker Base Manager before deployment to ensure extra spill prevention and response equipment (spill kits, booms, etc.) are ordered and readily available on site.

Small and Medium Spills

The following procedures are recommended when cleaning up small to medium spills, which are the expected size of a SEAT-capacity MRB.

- Quickly control the spill by stopping or securing the spill source. This could be as simple as up-righting a container and using dry sweep or absorbent pads to soak up spilled material.
- Deploy control measures (such as collapsible berms, dikes, or absorbent booms) to prevent the spill from migrating off site.
- Use spill kits or absorbent materials to clean the spill as much as possible.
- Allow used absorbent materials (e.g., pads, dry sweep) to dry, contain in a plastic bag, and arrange for disposal with the HAZMAT Coordinator.
- After any spill, wash down the ramp with cold water to remove any potential pollutants that could contact stormwater. This wash water must be directed to filtering booms in place along the perimeter of the ramp.
- At the end of the operating period, notify the Soil Scientist and HAZMAT Coordinator of any stained soil that remains on the base.

Large spills

The following procedures are recommended when cleaning up large spills, which are the expected size of MRBs serving SEATs to VLATs:

- If this spill is retardant (e.g., load lost) utilize a collapsible berm, secure any magnetic drain covers to prevent an unauthorized discharge, and arrange for a vacuum truck to clean up the spill. Alternatively, place filtering booms downslope and use a low-pressure hose to direct spilled retardant through the boom before percolating off site.
- If the large spill involves flammable liquid (e.g., fuel from the truck) personnel must leave the area and notify the Unit Aviation Manager and District HAZMAT Coordinator who will make notifications to outside agencies (if necessary).
- If the large spill involves concentrated retardant, contact the State Aviation Manager and collect this retardant for disposal immediately. If the concentrated retardant spill was caused by the retardant contractor, this spill is their responsibility and the State Aviation Manager should be contacted to engage with them to require their cleanup immediately. If the concentrated retardant spill was caused by BLM (e.g. hose break or pump seal loss when conveying concentrate to a mix tank), then contact the HAZMAT Coordinator immediately to request a hazardous waste collection from North Wind.
- Inform the host airport of the spill location, type of chemical spilled, and approximate amount so that they may follow the airport reporting and documenting procedures. This may include determining if they must contact emergency response personnel who will operate with their own established procedures.
- Notify the State Aviation Manager of the spill and document by photo the extent of the spill/reason for the failure.

All spill materials (such as collapsible berms, dikes, filtering booms, and absorbent booms) will be sourced from the closest permanent/fixed tanker base or geographic area cache. Ensure MRB operations pre-planning activities consider sourcing of these materials, including at least a 2-week lead time as quoted by the filtering boom manufacturer.

Collapsible berms

- Large berms can retain up to 748 gallons of liquid; \$1,344/berm
- Mid-sized berms can retain up to 359 gallons of liquid; \$843/berm
- Small berms can retain up to 179 gallons of liquid; \$612/berm

Dikes

A High-Volume SpillBlocker Dike can retain 4.6 gallons of liquid; \$362.00/dike

- (2) high-volume dikes for a 5-gallon spill
- (11) high-volume dikes for a 50-gallon spill
- (174) high-volume dikes for an 800-gallon spill

Filtering Booms

Booms (also referred to as “socks”) are passive treatment intended for surface application. Filtering booms trap particulates and contaminants while allow water to flow through. Filtrexx brand booms (called Envirosoxx) can be custom ordered with additives based on intended use. Two additives are appropriate for activities at BLM tanker bases:

- NutriLoxx additive is a natural material that chemically adsorbs soluble phosphorus and nitrogen (Ammonium-N) in stormwater.
- MetaLoxx additive is a natural ionic that reduces metals loads (Cd, Cr, Cu, Ni, Pb, Zn).
- OR: Envirosoxx Industrial Blend has been added as a 2021 offering combining the capabilities of both NutriLoxx and MetaLoxx in one sock.

Filtrexx booms are 10 feet in length and are available in three diameters (6 inches, 8 inches, and 12 inches). The 8-inch diameter booms have an initial flow rate of 7 gallons per minute/foot; the flow rate decreases as the booms become clogged with sediment. Booms are sold by the pallet of 16 booms.

Booms can be ordered directly from Filtrexx:

Filtrexx International

Bryan Hofmann – QISP, Northern California Regional Representative

Mobile: (209) 200-7841

Bryan.hofmann@filtrexx.com

www.filtrexx.com

Heavy Metal Filtering Socks

The Filtrexx socks with the Metalox captures and retains heavy metals such as copper, lead, zinc, chromium, cadmium and arsenic. The filtering socks also allow water to go through. They are designed to protect storm drains from pollutants including sediment, debris, hydrocarbons, chemicals, and heavy metals. The dimensions are 5 inches in diameter and 10-foot long; \$147/ 6+ socks. For more information visit the following website:

<https://www.newpig.com/filtrexx-filtersoxx-with-metaloxx/p/FLT718?searchTerm=Metaloxx>

Absorbent Booms/Socks

An absorbent boom is filled with vermiculite for form a barrier and prevent a spill from spreading; one sock can retain 8 gallons of liquid, is 5 inches in diameter, and is 10 feet long; \$144/ package of four socks.

- 1 sock for a 5-gallon spill
- 6 socks for a 50-gallon spill

- 94 socks for a 750-gallon spill

Collapsible berms, dikes, and absorbent booms can be found at these websites:

<https://www.newpig.com/spillblockers-berms-dikes-barriers/c/5029>

<https://www.dultmeier.com/products/0.165.2399/1636>.

Chemical Absorbent Pillows can absorb up to 1 gallon/pillow; \$234/12 pillows.

- 5 pillows for a 5-gallon spill
- 50 pillows for a 50-gallon spill
- 800 pillows for an 800-gallon spill

Absorbent pillows are available at this website:

<https://www.newpig.com/absorbent-pillows-pans/c/5014?show=All>.

Site personnel should have enough spill containment and cleanup materials on site for a small or medium spill. Contact the Unit Aviation Manager for large spills or spills that cannot be contained with available materials. Spills that are caused by fuel or retardant delivery contractors are to be cleaned up by the responsible contractor.

Various spill response actions are available through the BLM's Hazardous Materials Response Services contract with North Wind. Contact your HAZMAT Coordinator to assess and initiate any response actions covered under this contract.

SECTION 6: EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

Emergency Planning and Community Right-to-Know (EPCRA) activities are of concern to tanker bases because all formulations of fire retardant have a Safety Data Sheet (SDS) and concentrated Phos-Chek LC-95A retardant contains ammonia, cadmium, and chromium. Phos-Chek MVP and the latest LCE-20 do not contain cadmium or chromium, but contain ammonia as a constituent of concern.

Missoula Technology and Development Center (MTDC) has been in contact with the US Environmental Protection Agency (EPA) on this type of reporting for several decades and has taken on the responsibility of reporting on behalf of interagency fire operations, including BLM tanker bases¹. Refer to the SWPPP of the nearest permanent/fixed tanker base for additional information on program background and regulatory points of contact.

Hazardous Chemical Reporting – Community Right-to-Know; also known as Section 311 and Section 312 (Tier I and Tier II)

Federal regulations require that a facility submit an SDS to the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) for each hazardous chemical present at the facility at any time during the previous calendar year in amounts over a certain threshold. Tanker base personnel must notify the Unit Aviation Manager if concentrated retardant is stored on site over the following quantities:

- Concentrated Phos-Chek LC-95A retardant equal to or greater than 820 gallons
- Powdered MVP retardant equal to or greater than 3,450 pounds
- Concentrated Phos Chek LCE-20 retardant equal or greater than 900 gallons

Therefore, if the MRB stores more than 820 gallons of concentrated Phos-Chek LC-95A retardant, or two pallets of the powdered MVP retardant, or 898 gallons of LCE-20 retardant reporting is required.

Tanker base personnel must notify the State Aviation Manager at the end of the operating period so it can be reported to MTDC. Based on this threshold, this is a compliance requirement for nearly all BLM tanker bases, *including MRBs*.

Emergency Release Notification; also known as Section 304

A hazardous substance release, such as the release of concentrated retardant to the environment, triggers the requirement to immediately notify emergency planning commissions once it exceeds reportable quantities. Tanker base personnel must notify the State Aviation Manager in the event of a retardant release over the following quantities:

- Concentrated Phos-Chek LC-95A retardant equal to or greater than 2,800 gallons
- Mixed liquid concentrate Phos-Chek LC-95A retardant equal to or greater than 17,400 gallons

Therefore, if the MRB spills more than 2,800 gallons of concentrated liquid Phos-Chek LC-95A retardant or 17,400 gallons of the mixed liquid Phos-Chek LC-95A retardant, emergency reporting is required due to exceeding the threshold for Chromium (D007). Tanker base personnel must immediately notify the State Aviation Manager so it can be reported.

¹ NOTE: At the time this document was released, NOC Engineering and the SWPPP Project COR have consulted EPA's Regulation Implementation Division regarding EPCRA requirements specifically for fire retardant products. BLM is awaiting their interpretation and response to our request to reconsider EPCRA reporting thresholds applicable to our operations and product use.

Emergency reporting is not required for spills of MVP or LCE-20 as these do not contain hazardous substances.

State-specific Tier II Reporting Requirements and forms (namely Form 8700-30) can be found on the EPA website <https://www.epa.gov/epcra/state-tier-ii-reporting-requirements-and-procedures>.

Toxic Chemical Release Reporting – Community Right-to-Know; also known as Section 313, Toxic Release Inventory (TRI), or Form R

Facilities are required to annually report how much of each toxic chemical they managed that year over a certain threshold. The State Aviation Manager must be notified if a facility operates with 10 or more full-time-equivalent employees AND dispersed mixed retardant over the following quantities:

- Mixed liquid concentrate Phos-Chek LC-95A retardant equal to or greater than 1,060,000 gallons
- Mixed powdered MVP retardant equal to or greater than 1,908,400 gallons
- Mixed liquid concentrate Phos-Chek LCE-20 retardant equal to or greater than 1,390,000 gallons

Therefore, though it is highly unlikely given the nature of MRB operations, if the MRB loads and disperses more than 1,060,000 gallons of liquid Phos-Chek LC-95A retardant, 1,908,000 gallons of the powdered MVP, or 1,390,000 gallons of liquid Phos-Chek LCE-20 retardant AND operates with 10 or more full-time-equivalent employees, reporting is required. Tanker base personnel must notify the State Aviation Manager at the end of the operating period so it can be reported to MTDC.

Refer to the SWPPP at the nearest permanent/fixed tanker base for additional information on BMPs, regulatory reporting, spill cleanup, and personnel/contractor responsibilities as well as state-specific and MTDC points of contact.

Attachment A
Summary of Industrial Activities, Associated Pollutants,
and Control Measures

**Table A-1. Summary of Industrial Activities, Associated Pollutants, and Control Measures
for Mobile Retardant Bases Using Liquid Concentrate (Phos-Chek LC-95A)**

Note: For additional information on any of the control measures described in the table, refer to the stormwater management plan for the nearest permanent/fixed tanker base.

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for Phos-Chek LC-95A Product
Ramp	Aircraft fueling	Fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform aircraft fueling at the host airport designated area/ FBO whenever possible.
			Secondary Containment	<ul style="list-style-type: none"> ▪ Position all fuel tanks in secondary containment. If secondary containment is not provided for trailer-mounted tanks, ensure personnel monitor these tanks daily for leaks, spills, and damage.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Promptly clean up all drips and leaks using absorbent materials or other dry methods. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used during spill cleanup. ▪ Ensure the fuel-servicing contractor cleans up and disposes of spills for which it is responsible. If the spill is caused by the BLM, contact the HAZMAT Coordinator for cleanup and disposal.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ When applicable Deploy the Single Engine Air Tanker (SEAT) contract-provided spill kit (contract requires fuel-servicing vehicles to carry enough petroleum product absorbent pad or materials to absorb or contain a 5-gallon petroleum spill). ▪ Use drip pans or specially designed absorbent pads under all connections during fueling.
Ramp	Aircraft parking and maintenance	Engine oil, hydraulic fluid	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform aircraft maintenance and parking at the host airport / FBO whenever possible.
			Secondary Containment	<ul style="list-style-type: none"> ▪ Deploy spill berms or filtering booms around retardant-loaded aircraft that are parked overnight. These will surround the aircraft on the downslope side of the parking area so that any releases are captured.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Inspect the ramp and parking areas every morning for spills of retardant, fuel, or oil. ▪ Promptly clean up all drips and leaks using absorbent materials or other dry methods. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used in the cleanup of a spill.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Instruct contractors to use drip pans or pads under parts that have been observed to leak. ▪ Store captured used oil from drip pans and maintenance in a 5-gallon bucket labeled USED OIL. Keep the bucket closed and maintained in good condition.
Yard	Retardant delivery	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ If a rupture or hose disconnection occurs at the storage tank, contain the spilled retardant in a secondary containment berm until it is pumped out for reuse or disposal. ▪ If a rupture or hose disconnection occurs at the delivery truck, notify the Unit Aviation Manager immediately so they can engage with the contractor for its required responsibility for cleanup.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Ensure the retardant delivery contractor has absorbent materials and containers available for cleaning and disposal. ▪ Confirm the delivery contractor remains at the delivery truck while pumping retardant. ▪ In the event of a retardant release during delivery, the delivery pump will be shut off to stop the source of the release.

**Stormwater Pollution Prevention Plan (SWPPP)
Mobile Retardant Base**

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for Phos-Chek LC-95A Product
Yard	Retardant storage	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ Locate retardant tanks in secondary containment sized to hold the contents of the largest single container plus an extra 10% capacity for precipitation. Temporary secondary containment structures are available through the retardant contract. ▪ Park contractor trailer-mounted tanks in a drive-on containment structure. If such a containment structure is not feasible, inspect trailer-mounted tanks daily for leaks.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Evaporate stormwater that accumulates in the secondary containment berm. ▪ Squeegee small spills in the secondary containment berm, transfer it to a 5-gallon bucket, and return it to the mixing tank if reusable. Shovel dried retardant located in the secondary containment berm into containers for disposal. ▪ If there is a large spill, immediately contact the State Aviation Manager to contract a vacuum truck to suction up spilled retardant from the containment berm and transport it to a disposal facility.
Ramp	Retardant mixing, and loading	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ Support the weight of the retardant transfer hose with cement blocks or t-stands so the hose does not compromise the integrity of the secondary containment berms. ▪ When shutting down the base, collect wash water from rinsing hoses and pumps in a 55-gallon drum, poly tank, or vacuum truck for off-site disposal.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Promptly clean up all drips and leaks using dry methods. ▪ Deploy a container underneath the quick coupler to catch drips, leaks, or spills of retardant when connecting and disconnecting. ▪ Capture drips from the retardant sampling stems on each pump. ▪ If the retardant collected in the containers is not usable, contact the HAZMAT Coordinator to dispose of waste retardant and all products used during spill cleanup. ▪ Ensure the retardant contractor or delivery service cleans up and disposes of spills for which it is responsible. If the spill is caused by the BLM, contact the HAZMAT Coordinator for cleanup and disposal. ▪ During shutdown, inspect the site for any visible contamination or stained soil and coordinate disposal with the HAZMAT Coordinator.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Ensure a 5-gallon spill kit is located on the ramp when in operation. ▪ Place absorbent materials and shoveled debris in a container labeled COLLECTED RETARDANT – ABSORBED and contact the HAZMAT Coordinator for disposal.
Ramp	Ramp washing	Retardant, engine oil, hydraulic fluid, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Direct ramp wash water to a stormwater management structure (e.g., evaporation pond) if available.
			Filtering Booms	<ul style="list-style-type: none"> ▪ Where stormwater infrastructure is not available, place filtering booms around the perimeter of the ramp such that any ramp runoff is filtered through the booms. ▪ Use booms capable of filtering metals and nitrogen from effluent (e.g., Filtrexx Envirosiox with NutriLoxx and MetaLoxx – source these booms from neighboring permanent/fixd tanker bases). ▪ Fix the filtering booms in place with stakes or gravel bags when the tanker base is mobilized and remove upon tanker base deconstruction. ▪ Do not move the booms until there is a need to replace (i.e., saturated, red staining is observed downstream of the booms, clogged with sediment) or ready for disposal. ▪ Ensure the booms do not move or separate; booms must be in a continuous line, so a release point is not created. ▪ Maintain booms in good condition, protected from vehicular traffic, and replaced when damage is visible. ▪ Contact the HAZMAT Coordinator to dispose of used booms.

**Stormwater Pollution Prevention Plan (SWPPP)
Mobile Retardant Base**

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for Phos-Chek LC-95A Product
Ramp	Ramp washing	Retardant, engine oil, hydraulic fluid, fuel	Good Housekeeping	<ul style="list-style-type: none"> ▪ Inspect the ramp every morning for spills of retardant or oil and clean them up with absorbent materials and other dry methods. ▪ Remove as much spilled or leaked material as possible throughout the fire season using dry methods to limit movement of contaminants with stormwater. ▪ Wash the ramp with pressurized cold water (no detergent) after every retardant load and again at the end of the operating period. ▪ Filter all wash water through booms prior to leaving the ramp.
Ramp	Aircraft washing	Retardant, engine oil, hydraulic fluid, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform all aircraft washing at the host airport whenever possible.
			Stormwater Infrastructure	<ul style="list-style-type: none"> ▪ Direct ramp wash water to a stormwater management structure (e.g., evaporation pond) if available.
			Filtering Booms	<ul style="list-style-type: none"> ▪ Where stormwater infrastructure is not available, ensure that wash water is discharged through filtering booms. ▪ Use only water and/or biodegradable soap to wash aircraft.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Diligently clean up spills and leaks that occur on the ramp using dry methods, even when booms are deployed. These booms reduce, but do not eliminate, the discharge of heavy metal and nitrogen contaminants from retardant. Over time, contamination of the soil where wash water infiltrates may result, requiring soil remediation.
Yard	Vehicle parking	Engine oil, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Park vehicles at the host airport whenever possible.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Place drip pans or absorbent pads under parked vehicles that are observed to leak. ▪ Promptly clean leaks, spills, or stains in the parking area using dry methods. ▪ Inspect the parking area for drips and stains.
Yard	Hazardous materials storage	Retardant, fuel, and miscellaneous paints	Secondary Containment	<ul style="list-style-type: none"> ▪ Store all hazardous materials in secondary containment. ▪ Store all hazardous materials in the tank farm secondary containment berm, within a structure (e.g., shed, storage trailer), or on portable secondary containment pallets.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Promptly clean up all drips and leaks using dry methods in accordance with the product SDS. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used in the cleanup of a spill.
Yard	Solid waste collection	Miscellaneous solid waste	Good Housekeeping	<ul style="list-style-type: none"> ▪ Keep all dumpster and trash container lids closed when not in use so precipitation does not reach the contents and to keep loose materials from blowing from the containers. ▪ Maintain dumpster and trash containers in good condition (e.g., not leaking, covers intact).

**Table A-2. Summary of Industrial Activities, Associated Pollutants, and Control Measures
for Mobile Retardant Bases Using Powder Concentrate (MVP)**

Note: For additional information on any of the control measures described in the table, refer to the stormwater management plan for the nearest permanent/fixed tanker base.

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for MVP Product
Ramp	Aircraft fueling	Fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform aircraft fueling at the host airport whenever possible.
			Secondary Containment	<ul style="list-style-type: none"> ▪ Position all fuel tanks in secondary containment. If secondary containment is not provided for trailer-mounted tanks, ensure personnel monitor these tanks daily for leaks, spills, and damage.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Promptly clean up all drips and leaks using absorbent materials or other dry methods. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used during fuel spill cleanup. ▪ Ensure the fuel-servicing contractor cleans up and disposes of spills for which it is responsible. If the spill is caused by the BLM, contact the HAZMAT Coordinator for cleanup and disposal.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Deploy the SEAT contract-provided spill kit (contract requires fuel-servicing vehicles to carry enough petroleum product absorbent pad or materials to absorb or contain a 5-gallon petroleum spill). ▪ Use drip pans or specially designed absorbent pads under all connections during fueling.
Ramp	Aircraft parking and maintenance	Engine oil, hydraulic fluid	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform aircraft maintenance and parking at the host airport whenever possible.
			Secondary Containment	<ul style="list-style-type: none"> ▪ Deploy spill berms or filtering booms around retardant-loaded aircraft that are parked overnight. These will surround the aircraft on the downslope side of the parking area so that any releases are captured. (NOTE: If a retardant-loaded aircraft will remain parked overnight at the MRB, managers must ensure the deployed booms will not be able to be lifted such that they would inhibit or endanger other aircraft or activity within the MRB area.)
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Inspect the ramp and parking areas every morning for spills of retardant, fuel, or oil. ▪ Promptly clean up all drips and leaks using absorbent materials or other dry methods. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used in the cleanup of a spill.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Instruct contractors to use drip pans or pads under parts that have been observed to leak. ▪ Store captured used oil from drip pans and maintenance in a 5-gallon bucket labeled USED OIL. Keep the bucket closed and maintained in good condition.
Yard	Retardant delivery	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ If a rupture or hose disconnection occurs at the storage tank, contain the spilled retardant in a secondary containment berm until it is pumped out for reuse or disposal. ▪ If a rupture or hose disconnection occurs at the delivery truck, notify the Unit Aviation Manager immediately so they can engage with the contractor for its required responsibility for cleanup.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Ensure the retardant delivery contractor has absorbent materials and containers available for cleaning and disposal. ▪ Confirm the delivery contractor remains at the delivery truck while pumping retardant. ▪ In the event of a retardant release during delivery, the delivery pump will be shut off to stop the source of the release.

**Stormwater Pollution Prevention Plan (SWPPP)
Mobile Retardant Base**

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for MVP Product
Yard	Retardant storage	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ Locate retardant tanks in secondary containment sized to hold the contents of the largest single container plus an extra 10% capacity for precipitation. Temporary secondary containment structures are available through the retardant contract. ▪ Park contractor trailer-mounted tanks in a drive-on containment structure. If such a containment structure is not feasible, inspect trailer-mounted tanks daily for leaks.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Evaporate stormwater that accumulates in the secondary containment berm. ▪ Squeegee small spills in the secondary containment berm, transfer it to a 5-gallon bucket, and return it to the mixing tank if reusable. Shovel dried retardant located in the secondary containment berm into containers for disposal. ▪ If there is a large spill, immediately contact the State Aviation Manager to contract a vacuum truck to suction up spilled retardant from the containment berm and transport it to a disposal facility.
Ramp	Retardant mixing, and loading	Retardant	Secondary Containment	<ul style="list-style-type: none"> ▪ Support the weight of the retardant transfer hose with cement blocks or t-stands so the hose does not compromise the integrity of the secondary containment berms. ▪ When shutting down the base, collect wash water from rinsing hoses and pumps in a 55-gallon drum, poly tank, or vacuum truck for off-site disposal.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Deploy a container underneath the quick coupler to catch drips, leaks, or spills of retardant when connecting and disconnecting. ▪ Capture drips from the retardant sampling stems on each pump. ▪ Reuse captured retardant if possible. ▪ If reuse of captured retardant is not possible, use absorbent to solidify the liquid, put it into a plastic bag, and dispose of it in the dumpster. ▪ Promptly clean up all drips and leaks using dry methods. ▪ Ensure the retardant contractor or delivery service cleans up and disposes of spills for which it is responsible. ▪ Place materials used during retardant cleanup in a plastic bag and dispose of it in the dumpster. ▪ During shutdown, inspect the site for any visible contamination or stained soil and coordinate cleanup with the HAZMAT Coordinator.
			Spill Prevention and Response	<ul style="list-style-type: none"> ▪ Ensure a 5-gallon spill kit is located on the ramp when in operation. ▪ Place materials used during retardant cleanup in a plastic bag and dispose of it in the dumpster.
Ramp	Ramp washing	Retardant, engine oil, hydraulic fluid, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Direct ramp wash water to a stormwater management structure (e.g., evaporation pond) if available.
			Filtering Booms	<ul style="list-style-type: none"> ▪ Where stormwater infrastructure is not available, place filtering booms around the perimeter of the ramp such that any ramp runoff is filtered through the booms. ▪ Use booms capable of filtering nitrogen from effluent (e.g., Filtrexx Envirosoxx with NutriLoxx). ▪ Fix the filtering booms in place with stakes or gravel bags when the tanker base is mobilized and remove upon tanker base deconstruction. ▪ Do not move the booms until there is a need to replace (i.e., saturated, red staining is observed downstream of the booms, clogged with sediment) or ready for disposal. ▪ Ensure the booms do not move or separate; booms must be in a continuous line, so a release point is not created. ▪ Maintain booms in good condition, protected from vehicular traffic, and replaced when damage is visible. ▪ Contact the HAZMAT Coordinator to coordinate disposal of used booms.

**Stormwater Pollution Prevention Plan (SWPPP)
Mobile Retardant Base**

Industrial Activity Area	Industrial Activity	Associated Pollutants	Control Measure	Control Measure Description for MVP Product
Ramp	Ramp washing	Retardant, engine oil, hydraulic fluid, fuel	Good Housekeeping	<ul style="list-style-type: none"> ▪ Inspect the ramp every morning for spills of retardant or oil and clean them up with absorbent materials and other dry methods. ▪ Remove as much spilled or leaked material as possible throughout the fire season using dry methods to limit movement of contaminants with stormwater. ▪ Wash the ramp with pressurized cold water (no detergent) after every retardant load and again at the end of the operating period. ▪ Filter all wash water through booms prior to leaving the ramp.
Ramp	Aircraft washing	Retardant, engine oil, hydraulic fluid, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Perform all aircraft washing at the host airport whenever possible.
			Stormwater Infrastructure	<ul style="list-style-type: none"> ▪ Direct ramp wash water to a stormwater management structure (e.g., evaporation pond) if available.
			Filtering Booms	<ul style="list-style-type: none"> ▪ Where stormwater infrastructure is not available, ensure that wash water is discharged through filtering booms. ▪ Use only water and/or biodegradable soap to wash aircraft.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Diligently clean up spills and leaks that occur on the ramp using dry methods, even when booms are deployed. These booms reduce, but do not eliminate, the discharge of nitrogen contaminants from retardant. Over time, contamination of the soil where wash water infiltrates may result, requiring soil remediation.
Yard	Vehicle parking	Engine oil, fuel	Minimize Exposure	<ul style="list-style-type: none"> ▪ Park vehicles at the host airport whenever possible.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Inspect the parking area for drips and stains. ▪ Place drip pans or absorbent pads under parked vehicles that are observed to leak. ▪ Promptly clean leaks, spills, or stains in the parking area using dry methods. ▪ If the spilled material is retardant, place materials used during retardant cleanup in a plastic bag and dispose of it in the dumpster. ▪ If the spill is fuel, oil, or hazardous materials, contact the HAZMAT Coordinator to assist with disposal of spill cleanup waste.
Yard	Hazardous materials storage	Retardant, fuel, and miscellaneous paints	Secondary Containment	<ul style="list-style-type: none"> ▪ Store all hazardous materials in secondary containment. ▪ Store all hazardous materials in the tank farm secondary containment berm, within a structure (e.g., shed, storage trailer), or on portable secondary containment pallets.
			Good Housekeeping	<ul style="list-style-type: none"> ▪ Promptly clean up all drips and leaks using dry methods in accordance with the product SDS. ▪ Contact the HAZMAT Coordinator to assist with disposal of all products used in the cleanup of a spill.
Yard	Solid waste collection	Miscellaneous solid waste	Good Housekeeping	<ul style="list-style-type: none"> ▪ Keep all dumpster and trash container lids closed when not in use so precipitation does not reach the contents and to keep loose materials from blowing from the containers. ▪ Maintain dumpster and trash containers in good condition (e.g., not leaking, covers intact).

Attachment B
Mobile Retardant Support Contract Requirement

Mobile Retardant Support Contract Requirements

The BLM recognizes that a leak or spill from fire retardant or Jet-A fuel stored on a mobile support trailer has the potential to cause an environmental impact, depending on the size of the spill; location the trailer is parked; and proximity to grade, groundwater, or surface water. The BLM requires their contractors to meet the following engineering and management practices to prevent environmental impacts and reduce the potential for any pollution-causing event:

1. The following requirements are outlined in the SEAT contract under Section C7.2.2:
 - o *The contractor is responsible for handling and cleanup of fuel, oil, and retardant contamination on airport ramps, retardant sites, parking areas, landing areas, etc., when caused by contractor aircraft or personnel. In the event of a spill of fuel, oil, or fire chemicals the contractor shall notify the SEAT manger or airtanker base manager immediately. The contractor must detail to the government what actions are or will be taken to stop the spill and what actions the contractor will take to clean up the spill and rehabilitate the area. Additionally, any cost to the government as a result of the spill by either contractor aircraft or personnel may be charged to the contractor and deducted from payments due.*
2. The following environmental control requirements are outlined in the mobile retardant contract per B-15 Contract No. AG-024B-C-14-9042, Amendment 01 US Forest Service Mobile Retardant Bases National Office Section B Schedule of Items:
 - i. Site spill containment plan. The contractor and the agency representative at the incident will jointly develop a Site Spill Management Plan.
 - ii. The retardant contractor will be responsible for the removal and disposal of chemical residue and chemical spills created in the retardant mixing area or due to accident or negligence of retardant personnel. All cleanup and disposal will be accomplished in accordance with state and federal environmental regulations.
 - iii. Spills that result from aircraft companies, agency personnel, other agency contractors, or natural disaster will not be the retardant contractor's responsibility. The retardant contractor shall assist in the cleanup efforts and may charge the government for additional material cost, other than labor, incurred to support the cleanup.
 - iv. All wash-down water generated from cleaning aircraft and ramp surfaces shall be the ordering agency's responsibility for disposal.
 - v. At the close of a mobile retardant base contract, unused mixed retardant and wash-down water created from retardant equipment cleanup is the responsibility of the agency.
 - vi. At locations where wastewater collection and/or containment are shared by contractor and agency, disposal costs may be pro-rated based on estimated gallons generated by the government or contractor.

Attachment C
Example of Site Layout Preferences and Considerations

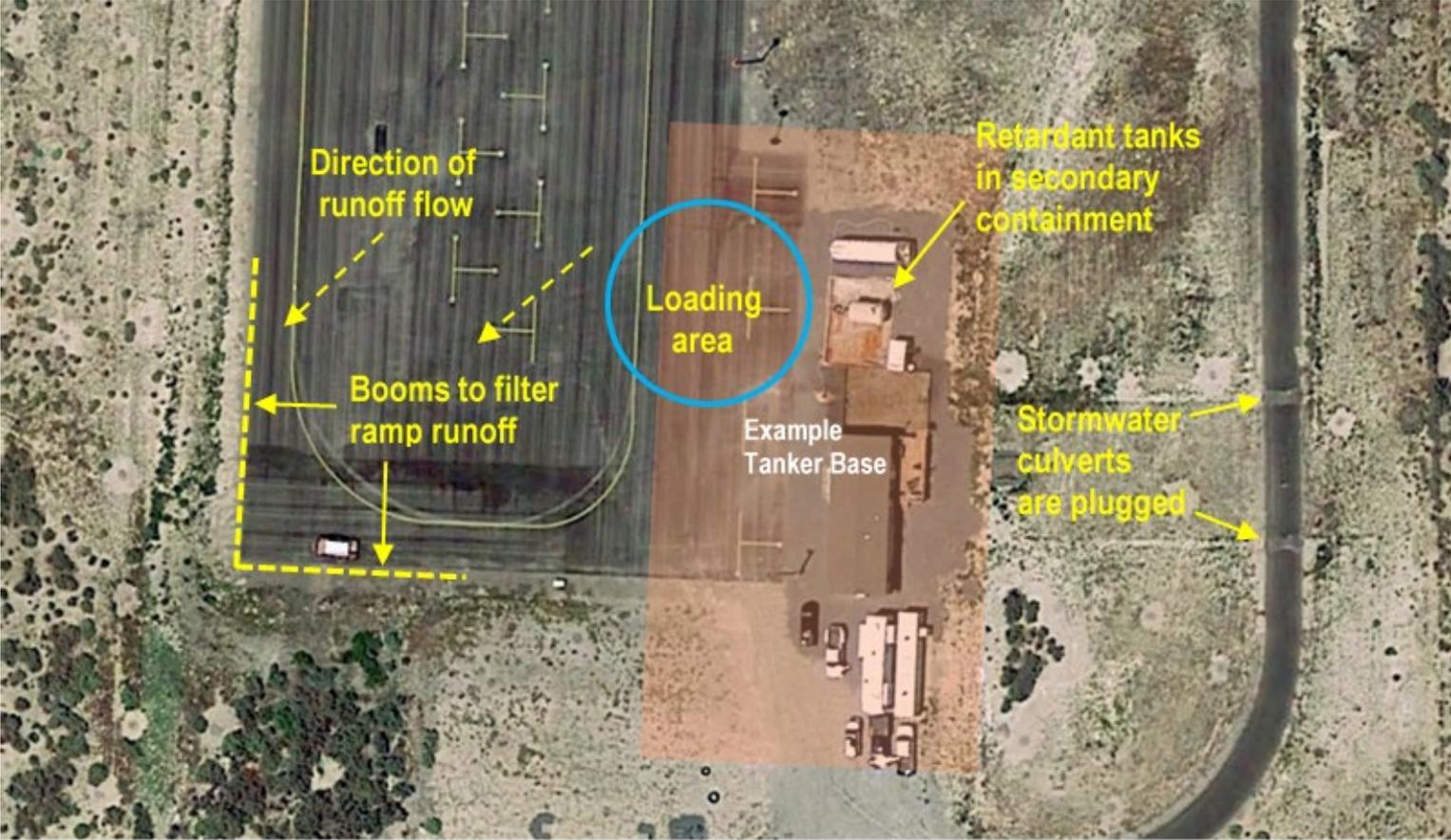


Photo 1. Example mobile retardant base aerial view with BMPs (Panaca pictured).

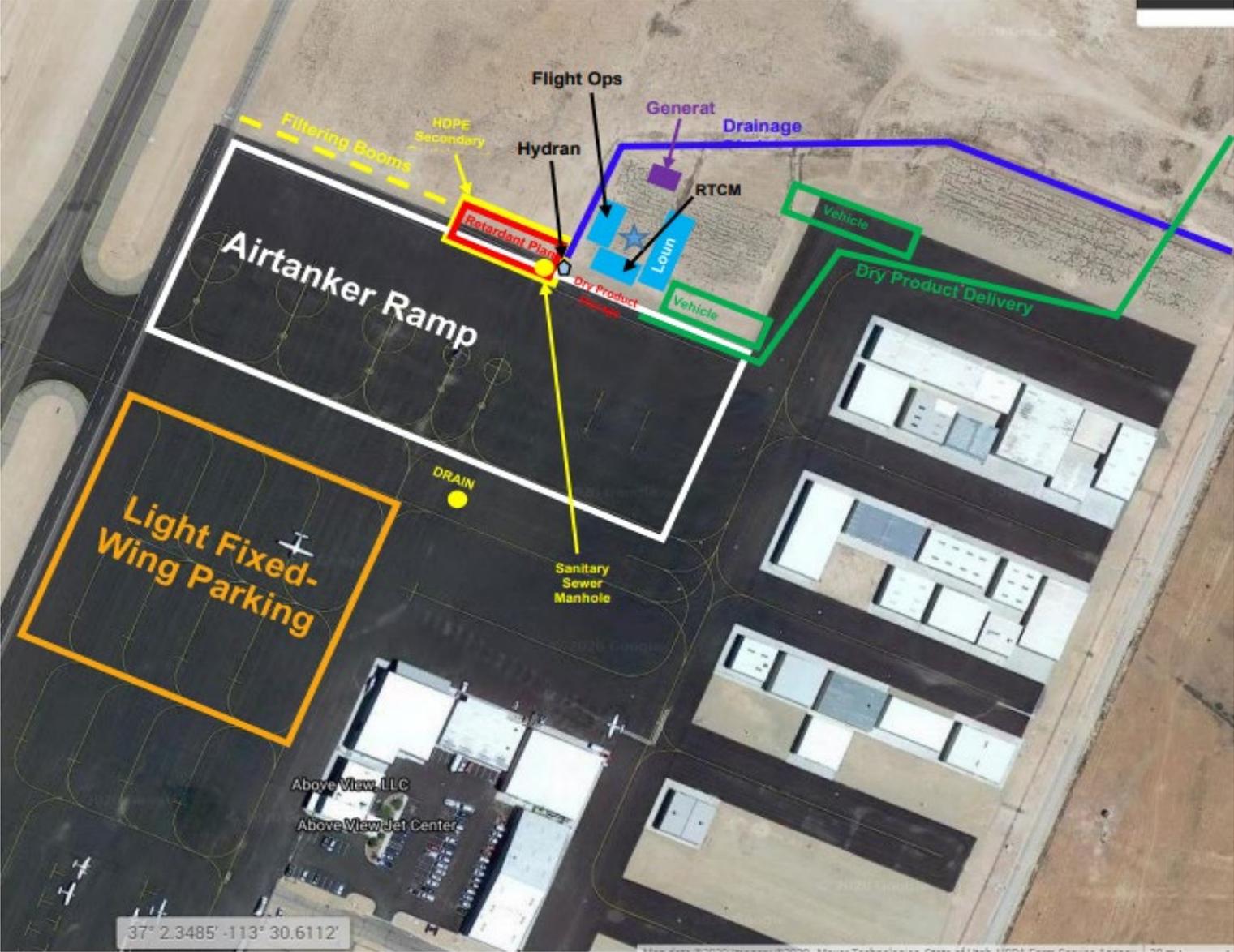


Photo 2. Example mobile retardant base aerial view with BMPs (St. George pictured).