

Stormwater Pollution Prevention Plan

for:

Unalaska Airport
Unalaska, Alaska
(907) 581-1786

SWPPP Contact(s):

Alaska DOT&PF
Unalaska Airport Manager
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SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Facility Information

Facility Information

Name of Facility: Unalaska Airport

Physical Location: Airport Beach Road and Ballyhoo Road, Unalaska, Alaska, 99685

Street: PO Box 920525

City: Dutch Harbor

State: AK

ZIP Code: 99692

County or Similar Subdivision: Aleutians West Census Area

Permit Tracking Number: _____ (if covered under a previous permit)

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Latitude:

Longitude:

1. ___° ___' ___" N (degrees, minutes, seconds)

1. ___° ___' ___" W (degrees, minutes, seconds)

2. ___° ___.' ___' N (degrees, minutes, decimal)

2. ___° ___.' ___' W (degrees, minutes, decimal)

3. 53.899215 ° N (decimal)

3. 166.545327 ° W (decimal)

Method for determining latitude/longitude (check one):

USGS topographic map (specify scale: _____)

EPA Web site

GPS

X Other (please specify): Google Earth

Is the facility located in Indian Country? **No**

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." _____

Is this facility considered a Federal Facility? **No**

Estimated area of industrial activity at site exposed to stormwater: 9 acres

Discharge Information

Does this facility discharge stormwater into an MS4? **No**

If yes, name of MS4 operator: _____

Name(s) of water(s) that receive stormwater from your facility: Unalaska Bay / Dutch Harbor

Are any of your discharges directly into any segment of an "impaired" water? **Yes**

If Yes, identify name of the impaired water (and segment, if applicable): 1) South Unalaska Bay (Category 4a); 2) At one time Dutch Harbor was listed as a Category 5 Section 303(d) listed waterways for industrial and urban runoff, it was downgraded to a category 2 waterway and recently has been removed from the impaired water body list (see table below).

ID	Category ID	Activity	Block Number	Estimated Time	Location	Priority	Responsible Party	Comments
1	1	1	1	1	1	1	1	1

Identify the pollutant(s) causing the impairment: 1) Seafood Processing Waste; 2) Industrial, Urban Runoff

For pollutants identified, which do you have reason to believe will be present in your discharge? 1) None 2) Industrial runoff of petroleum and de-icing chemicals may be discharged into Dutch Harbor.

For pollutants identified, which have a completed TMDL? South Unalaska Bay

Do you discharge into a receiving water designated as a Tier 2 (or Tier 2.5) water? No

Are any of your stormwater discharges subject to effluent guidelines? No

If Yes, which guidelines apply? _____

Primary SIC Code or 2-letter Activity Code: 4581 (refer to Appendix D of the permit)

Identify your applicable sector and subsector: Sector S / S1

1.2 Contact Information/Responsible Parties

Facility Operator (s):

Name: Alaska DOT&PF – Central Region
 Address: Unalaska Airport
 City, State, Zip Code: Unalaska, AK 99685
 Telephone Number: (907) 581-1786
 Email address: steve.berninger@alaska.gov
 Fax number: (907) 581-1850
 Cell number: (907) 359-1786 or (907) 359-1850

Facility Owner (s):

Name: Alaska DOT&PF – Central Region; Southwest District
 Address: 4111 Aviation Drive
 City, State, Zip Code: Anchorage, AK 99519
 Telephone Number: (907) 269-0751

Email address: troy.larue@alaska.gov

Fax number: (907)269-0750

SWPPP Contact:

Name: [Unalaska Airport Manager](#)

Telephone number: (907) 581-1786

Email address: steve.berninger@alaska.gov

Fax number: (907) 581-1850

Cell number: (907) 359-1786 or (907) 359-1850

SWPPP Preparer:

Name: [Environmental Impact Analyst](#)

Telephone number: (907) 269-0714

Email address: Jennifer.Lindberg@alaska.gov

Qualifications: [Jennifer has a B.S. in Environmental Policy, 4 years of experience working in a wide range of federal and state environmental policy issues, has achieved AK-CESCL certification \(ID#10036\), and completed SWPPP trainings through EPA including 'EPA's New Industrial Stormwater Permit: What You Need to Know about the MSGP 2008' and 'Monitoring and reporting for the 2008 MSGP'.](#)

1.3 Stormwater Pollution Prevention Team

Staff Names	Individual Responsibilities
DISTRICT SUPERINTENDENT	Oversight of Airport Operations; SWPPP Implementation
AIRPORT MANAGER	Airport Operations, Control Measures and Corrective Actions, and Facility Inspections
CENTRAL REGION M&O ENVIRONMENTAL ANALYST	SWPPP Development, Facility Inspections and Annual Report
CENTRAL REGION M&O ENVIRONMENTAL SPECIALIST	SPCC Plan and Facility Inspections

1.4 Activities at the Facility

The Unalaska Airport is located in the City of Unalaska, AK, on Amaknak Island in the Aleutian Islands (Appendix A). The facility consists of one 3,900-foot-long asphalt-surfaced runway (12/30). Paved aprons with leased areas are located to the north and south of the eastern portion of the runway. The DOT&PF equipment and maintenance building is located on the northern apron. Outside activities include equipment fueling, runway maintenance, and deicing and sanding activities. Diesel fuel and gasoline for equipment and vehicle fueling are located in 4,000-gallon, 1,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Runway maintenance is limited to repainting runway markings (once a year) and sealing stress cracks in the asphalt surface (as necessary). These activities are performed in accordance with DOT&PF procedures and require dry weather. Deicing activities include mechanical plowing and the application of liquid urea, pelletized urea, and liquid E36 (potassium acetate) on airport surfaces.

Drainage patterns for the Unalaska Airport are shown on figure(s) in Appendix A. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area on the western portion of the apron. Additionally, the eastern portion of Watershed C under the end of the runway/safety area a culvert drains to a vegetated ditch and then into another culvert labeled Outfall C draining into Dutch Harbor.

1.5 General Location Map

The general location map for this facility has been placed in Appendix A.

1.6 Site Map

Site map(s) for this facility are placed in Appendix A.

SECTION 2: POTENTIAL POLLUTANT SOURCES

2.1 Industrial Activity and Associated Pollutants

Industrial Activity	Associated Pollutants
DOT&PF Runway deicing	Urea and potassium Acetate (E36), sand, sediment
DOT&PF Equipment fueling	Diesel fuel, gasoline
DOT&PF Snow removal	Hydraulic fluid, diesel fuel
DOT&PF Building heating	Fuel Oil
DOT&PF Fire fighting	Purple K (Potassium Bicarbonate)
DOT&PF Runway sanding/sweeping	Sand and sediment, hydraulic fluid, oils
DOT&PF Equipment maintenance	Hydraulic fluid, oil, diesel, anti-freeze
DOT&PF Float plane airport de-vegetation	Diesel fuel, hydraulic fluid
DOT&PF Runway maintenance	Paint, paint thinner, tar*, asphalt solvent, concrete*, crack sealant*
Tenant aircraft deicing	Propylene glycol
Tenant aircraft fueling & lubricants	Aviation fuel, lubricants

*Purchased commercially.

DOT&PF maintains Material Safety Data Sheets (MSDS) at the maintenance and airport stations which discloses uses and hazards associated with chemicals to prevent harm to human health and the environment including proper uses, clean-up, storage, and disposal.

2.2 Spills and Leaks

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls
Vehicle fueling area	B and C
Snow storage area between apron and runway and along either side of the runway.	A, B, and C

Description of Past Spills/Leaks

Date	Description	Outfalls
2008	1k gallons diesel fuel	B

2010	200 gallons diesel fuel	B

2.3 *Non-Stormwater Discharges Documentation*

The 2008 MSGP provides limitations on stormwater discharges under Subpart S 8.S.1. The MSGP ‘authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.’

Specifically prohibited under Sector S (Air transportation) coverage of the MSGP is “discharge of aircraft, ground vehicle, runway and equipment wash waters; nor the dry weather discharge of deicing chemicals.” Discharges associated with snowmelt are not dry weather discharges.

- Date of evaluation: July 8, 2010
- Description of the evaluation criteria used: Mid-summer visit to observe outfalls in both dry and wet conditions. Outfalls were observed during a light rain to determine the color, clarity and turbidity of the water leaving the airport.
- List of the outfalls or onsite drainage points that were directly observed during the evaluation: All points of water entry onto the airport, outfalls A and B and the detention area from watershed C were viewed in both dry and wet conditions.
- Different types of non-stormwater discharge(s) and source locations: No non-stormwater discharges were observed. During the summer there are no de-icing activities and due to small operations limited fueling takes place on the airport. Though outfalls and airport observed during a rain event no running water was observed at outfalls. Drainage culverts located along the eastern boundary line of the airport present a difficult issue for sampling. The drains potentially collect drainage from the roadway, adjacent properties and the airport which then discharges into Dutch Harbor.
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge: N/A at this time.

2.4 *Salt Storage*

No salt is used at the airport facility for deicing purposes because these products are corrosive to aircraft surfaces and mechanical parts. DOT&PF has no salt storage.

2.5 *Sampling Data Summary*

Because this is the initial permit term for this facility, no stormwater discharge sampling data is available to report at this time.

SECTION 3: STORMWATER CONTROL MEASURES

3.1 *Minimize Exposure*

Due to the moderate average snowfall (approximately 21 inches/year) and relatively moderate coastal climate, urea is the primary deicing compound (average annual usage of 55 tons/year, of which approximately 45 tons are dispensed wet and the remaining 10 tons dispensed dry). E36, potassium acetate, is also utilized (average of 10,000 gallons/year) when conditions are suitable. Sanding activities are not performed at the Unalaska Airport. The deicers are primarily only used on the runway itself, on an as-needed basis; mechanized clearing is the preferred method when weather conditions are suitable. Liquid urea is stored in two ASTs, one 6,000 and the other 12,000-gallons in capacity, located near the east corner of the equipment and maintenance building. Additional liquid urea is stored in a 1,000-gallon tank inside the equipment and maintenance building. Pelletized urea is stored in reinforced plastic bags with volumes of 1.5 tons in the former Mark Air building located near the south corner of the equipment and maintenance building. E36 is stored in two 4,000-gallon ASTs located east of the urea tanks. Both the liquid urea and E36 are gravity fed through piping to dispensers situated on the southern corner of the equipment and maintenance building.

DOT&PF airport equipment is stored and all equipment maintenance is performed indoors at the equipment and maintenance building, which has a concrete floors and floor drains. Equipment is kept in good working condition (minimizes leaks) and older equipment is replaced.

A spill kit is available at the equipment and maintenance building and an SPCC Plan is in place to minimize potential for fuel spills (Appendix K).

Best Management Practice (BMP)	
Minimizing Exposure – Vehicle and Equipment Maintenance Areas	<ol style="list-style-type: none"> 1. Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drains other than those to approved disposal methods (including sanitary sewers or treatment facilities, oil/water separators, etc.) – if operations are uncovered, perform them on a concrete pad that is impervious and contained. 2. Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills. 3. Check vehicles closely for leaks and use pans to collect fluid when leaks occur. 4. Use berms, curbs, grassed swales, or other diversion measures to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area. 5. Discharge vehicle wash or rinse water to the

	<p>sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. Do not discharge wash water to a storm drain or to surface water.</p> <ol style="list-style-type: none"> 6. Inspect the maintenance area regularly to ensure BMPs are implemented. 7. Train employees on waste control and disposal procedures. 8. Inspect the maintenance area regularly for proper implementation of control measures.
<p>Minimizing Exposure – Vehicle and Equipment Storage Areas</p>	<ol style="list-style-type: none"> 1. Store vehicles and equipment indoors, when possible. 2. Store vehicles and equipment awaiting maintenance in designated areas, when possible. 3. Park leaking deicing trucks in a designated area. 4. Use absorbents to cleanup spills and leaks. 5. Use drip pans under all vehicles and equipment for the collection of fluids. 6. Clean pavement surfaces to remove oil and grease without using large amounts of water. 7. Regularly sweep area to minimize debris on the ground. 8. Provide dust control if necessary. When controlling dust, sweep and/or apply water or materials that will not impact surface or groundwater. 9. Train employees on procedures for storage and inspection items.
<p>Minimizing Exposure –Materials Storage Areas</p>	<ol style="list-style-type: none"> 1. Store materials indoors, when possible. 2. Maintain good integrity of all storage containers (e.g., used oil, hydraulic fluids, solvents, waste aircraft fuel). 3. Create a centralized storage area for waste materials. 4. Cover and/or enclose chemical storage areas (including temporary cover such as a tarp that prevents contact with precipitation). 5. Inspect storage tanks and piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks and perform preventative maintenance. 6. Plainly label containers. 7. Provide fluid level indicators. 8. Properly dispose of chemicals that are no

	<p>longer in use.</p> <ol style="list-style-type: none"> 9. Store and handle reactive, ignitable, or flammable liquids in compliance with applicable local fire codes, local zoning codes, and the National Electric Code. 10. Provide drip pads/pans where chemicals are transferred from one container to another to allow for recycling of spills and leaks. 11. Develop and implement spill plans or spill prevention, containment and countermeasure (SPCC plans). 12. Train employees in spill prevention and proper materials management.
<p>Minimizing Exposure – Fuel System and Fueling Areas</p>	<ol style="list-style-type: none"> 1. Develop and implement a system to report any spill exceeding 5 feet in any direction or which has entered the storm drainage system. 2. Use fueling hoses with check valves to prevent hose draining after filling. 3. Provide spill kits on all fuel trucks, at fueling stations, at strategic locations. Each kit should be properly stocked and maintained. Store used materials in individual sealed container and labeled to ensure proper handling and disposal as a hazardous material. 4. Keep spills cleanup materials readily available. 5. Clean up spills and leaks immediately. 6. Use dry cleanup methods for fuel areas rather than hosing down the fuel area. Sweep up absorbents as soon as spilled substances have been absorbed. 7. Use spill and overflow protection devices. 8. Provide curbing or posts around fuel pumps to prevent collisions from vehicles. 9. Regularly inspect and perform preventative maintenance on fuel storage tanks to detect potential leaks before they occur. 10. Inspect the fueling area for leaks and spills. 11. Do not allow “topping off” of the fuel in the receiving equipment. 12. Train personnel on vehicle fueling BMPs.
<p>Minimizing Exposure – Storing Liquid Fuels</p>	<ol style="list-style-type: none"> 1. Develop and implement spill plans. 2. Train employees in spill prevention and control. 3. For ASTs – provide secondary containment, such as dikes, with a height sufficient to contain a spill. 4. For ASTs – use double walled tanks with

	<p>overflow protection.</p> <ol style="list-style-type: none"> 5. For ASTs – Keep liquid transfer nozzle/hoses in secondary containment area. 6. Store drums indoors when possible. 7. Clearly label drums with contents.
<p>Minimizing Exposure – Equipment Cleaning Areas</p>	<ol style="list-style-type: none"> 1. Confine activities to designated areas outside drainage pathways and away from surface waters. 2. If washing outdoors, cover the cleaning operation and ensure that all washwaters drain to the intended collection system.

3.2 Good Housekeeping

Due to weather conditions, waste materials generated are kept indoors and/or in containers prior to proper disposal. Fuel tanks are fairly new and in good condition. Tanks and fueling area are regularly monitored for leaks and spills.

<p>Best Management Practice (BMP)</p>	
<p>Good Housekeeping – Vehicle and Equipment Maintenance Areas</p>	<ol style="list-style-type: none"> 1. Eliminate floor drains that are connected to the storm or sanitary sewer. 2. Prevent and contain spills and drips 3. Perform all cleaning at a centralized station so the solvents stay in one area. 4. Remove any parts that are dipped in liquid slowly to avoid spills. 5. Use drip pans, drain boards, and drying racks to direct drips back into fluid holding tank for reuse. 6. Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. 7. Transfer used fluids to the proper container promptly; do not leave full drip pans or other containers around the shop. Empty and clean drip pans and containers. 8. Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible. 9. Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. 10. Prohibit pouring liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

11. Maintain an organized inventory of materials.
12. Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous waste materials.
13. Store batteries and other significant materials inside.
14. Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers in compliance with environmental regulations.

3.3 Maintenance

DOT&PF M&O facility has an SPCC Plan, which is in use and dated July 2011. A spill kit is kept stocked and on-site. Fuel tanks are inspected to ensure compliance, and the staff trained to inspect for leaks.

Equipment is regularly maintained and kept in proper working order, thereby minimizing leak potential.

Best Management Practice (BMP)	
Maintenance – Vehicle and Equipment Monitoring and Repairs	<ol style="list-style-type: none"> 1. Regularly inspect vehicles for leaks and maintenance 2. Vehicles are kept in good working condition and monitored for leaks to prevent discharges 3. Leaking equipment is kept indoors until repairs can be made with drip pans and absorbents in place as necessary. 4. Equipments maintenance is conducted indoors 5. All storage containers are monitored for leaks and stored indoors when possible. 6. Fuel tanks are inspected regularly for leaks and integrity.
Maintenance – Deicing/anti-icing runways and pads	<ol style="list-style-type: none"> 1. Evaluate and optimize present chemical application rates. 2. Use sand where possible to enhance friction. 3. Plow and broom runways prior to application of deicing chemicals. 4. Heat solid deicers and sand prior to application. 5. Install and calibrate devices to meter the amount of pavement deicer being applied. 6. Emphasize anti-icing operations which minimize the need to deice. 7. Pre-wet with liquid deicers to improve adhesion of solid deicers to the iced surface. 8. When possible, use deicers which have less of an environmental impact (e.g. sodium formate

- and potassium acetate opposed to urea and glycol.)
- 9. Ensure proper handling and disposal of unused deicing chemicals in vehicles.
- 10. Use ice detection systems.
- 11. Use airport traffic flow strategies and departure slot allocation systems.

3.4 *Spill Prevention and Response*

Structural Controls (Inspection Procedures)

Tanks, lines, and pumps are inspected in accordance with the SPCC plan. A spill kit is staged in the equipment and maintenance building, and all oil-handling employees are trained annually in spill prevention, control, and countermeasures.

Container Labeling

All containers with new products are labeled with the manufacturer's labeling. Container labeling is standard operating procedure at the airport and all containers are labeled when generated. Containers such as drums are labeled with USED OIL or Non-Hazardous Waste labels. No hazardous waste is generated during airport maintenance and operational activities. All tank containers are labeled with both the product type and tank number.

Preventative Measures

All equipment fuel tanks have secondary containment (double walled tanks), overfill prevention, and valves that prevent equipment overfills. Bollards surround the tanks providing additional spill protection. A spill kit is located in the equipment and maintenance building. Heating oil is stored in an underground storage tank (UST) located near the north corner of the equipment and maintenance building. Used oil from equipment maintenance is stored indoors in 55-gallon steel drums at the equipment and maintenance building.

Spill Response Procedures

1. Assess the situation. Confirm there is no potential risk from fires, confined spaces, safety hazards. If the cause of the spill can be fixed quickly (tank overfill), stop the release.
2. Get help. If you are not alone at the site, find someone to assist you.
3. If possible, stop the spill. Spill kit(s) contain tank repair putty.
4. If stopping the spill is not possible, then contain the spill. Spill kit(s) contain booms or spill socks. The goal is to reduce the amount of ground surface that gets contaminated.
5. If there is equipment available, an earthen berm can stop the flow of oil.
6. **Report the spill to Environmental Specialist, and then your supervisor.** If the spill is a reportable quantity (see below), **DOT&PF will need to notify the ADEC Response Team.** Even if the spill is not reportable, log the spill and our response in the SPCC Plan.

Notification Procedures

The supervisor will notify ADEC immediately of any discharge of hazardous substance or oil to surface water. In the event of a release to land, the supervisor will notify ADEC immediately of a discharge of oil in excess of 55 gallons, or of any discharge of a hazardous substance. The supervisor will notify ADEC within 48 hours of a discharge of oil in excess of 10 gallons, but less than 55 gallons. If a discharge of oil from 1

to 10 gallons occurs, the supervisor will notify ADEC by writing within 30 days. The supervisor will notify ADEC within 48 hours of discharge in excess of 55 gallons to an impermeable secondary containment area or structure.

A spill kit is located in the equipment and maintenance building. The airport has a SPCC plan in place and up to date to comply with changes within the SPCC regulations.

3.5 Erosion and Sediment Controls

Stormwater runoff from Watershed C flows to a series of catch basins and subsurface culverts into a vegetated detention area. Natural vegetation is maintained around airport. Outfalls A and B and Watersheds A and B are vegetated and have rock outfalls. The entrance to the airport is regularly swept to keep sediment from entering the airport from the public dirt road, part of watershed C.

Great amounts of debris are blown onto the airport, including dirt and small rocks, due to high winds. During rain events, M&O sweeps the runway and apron to remove dirt and small rocks without creating dust. During sweeping activities, turbid waters are created. This water is brushed towards the detention area in Watershed C and towards vegetated areas to prevent erosion and reduce impacts.

Appropriate BMPs during maintenance work that includes ground disturbance or potential discharges, followed by re-seeding will be enacted as additional erosion and sediment controls (see Appendix L for examples of typical BMPs).

3.6 Management of Runoff

Due to the coastal climate conditions, the Unalaska area gets fairly frequent precipitation, with an average annual precipitation of approximately 64 inches distributed throughout the year. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area. Additionally, the eastern portion of Watershed C, under the end of the runway/safety area, a culvert drains to a vegetated ditch and then into another culvert labeled Outfall C which drains to Dutch Harbor. Natural vegetation is maintained between paved surfaces and vehicle maintenance and storage are in-doors.

Drainage culverts located along the eastern boundary line of the airport present a difficult issue for sampling. The drains potentially collect drainage from the roadway, adjacent properties and the airport which then discharges into Dutch Harbor. Outfall C also appears to collect drainage from non-airport properties located directly south and adjacent to the airport.

Best Management Practice (BMP)	
Management of Runoff	1. Maintain as much vegetation as possible in maintenance areas and areas where stormwater leaves impermeable surfaces.

2. Utilize velocity dissipaters such as; vegetation, rock outfalls, and check dams.
 3. Create opportunities for filtration and settling such as gently sloped vegetated ditches.
-

3.7 Salt Storage Piles or Piles Containing Salt

Salts are corrosive to aircraft surfaces and mechanical parts. Salt is not used on airport facilities for deicing activities. There is no salt storage at the Unalaska Airport.

3.8 MSGP Sector-Specific Non-Numeric Effluent Limits

In general, stormwater runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area. A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow.

8.S.3.1.1 – Aircraft, Ground Vehicle and Equipment Maintenance Areas. All equipment maintenance takes place indoors at the equipment and maintenance building located at the north apron.

8.S.3.1.2 – Aircraft, Ground Vehicle and Equipment Cleaning Areas. Dust and dirt is occasionally sprayed from equipment during the summer, as needed.

8.S.3.1.3 – Aircraft, Ground Vehicle and Equipment Storage Areas. Equipment is stored indoors the vast majority of the time. Exceptions would be occasionally parking equipment outside during the summer. Equipment utilized is relatively new, and kept in proper working order.

8.S.3.1.4 – Material Storage Areas. Liquid urea is stored in two ASTs, one 6,000 and the other 12,000-gallons in capacity, located near the east corner of the equipment and maintenance building. Additional liquid urea is stored in a 1,000-gallon tank inside the equipment and maintenance building. Pelletized urea is stored in reinforced plastic bags with volumes of 1.5 tons in the former Mark Air building located near the south corner of the equipment and maintenance building. E36 is stored in two 4,000-gallon ASTs located east of the urea tanks. Heating oil is stored in an AST located near the north corner of the equipment and maintenance building as well as adjacent to housing units west of the maintenance shop. Diesel and gasoline fueling tanks are located south of the maintenance building. Used oil from equipment maintenance is stored indoors in 55-gallon steel drums at the equipment and maintenance building. All other materials used in the maintenance and operations of the Unalaska Airport are stored indoors at the maintenance facility.

8.S.3.1.5 – Airport Fuel System and Fueling Areas. Diesel fuel and gasoline for equipment and vehicle fueling are located in 1,000-gallon, 4,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Both tanks are

relatively new and properly maintained, with an automatic shut-off device. A spill kit is on-site and an SPCC Plan is in place.

8.S.3.1.6 – Source Reduction. Mechanical means are used to keep the runway clear of snow, ice, and debris when possible. Urea is utilized when necessary to keep the runway safe due to climatic conditions. When conditions necessitate, E36 is utilized.

8.S.3.1.7 – Management of Runoff. Due to the coastal climate conditions, the Unalaska area gets fairly frequent precipitation, with an average annual precipitation of approximately 64 inches distributed throughout the year. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area to the west. To the east, Watershed C enters a series of culverts that empties into Dutch Harbor through Outfall C. A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow. In the winter, runway and taxiways are plowed to the edge and blown off the runway pad. Snow from the apron area is stacked on a gravel pad in the infield area between the apron and runway and on either side of the runway. Great amounts of debris are blown onto the airport, including dirt and small rocks, due to high winds. During rain events, M&O sweeps the runway and apron to remove dirt and small rocks without creating dust. During sweeping activities, turbid waters are created. This water is brushed towards the detention area in Watershed C and towards vegetated areas to prevent erosion and reduce impacts.

8.S.3.2 – Deicing Season. The deicing season typically runs from mid-October through mid-May. Deicing chemical usage falls below the usage threshold required for benchmark monitoring. The threshold established in the MSGP is 100,000 gallons of glycol and 100 tons of urea. No benchmark monitoring is required.

3.9 Employee Training

Stormwater training for airport staff will take place annually during the deicing season and will coincide with an inspection of the airport facility. In addition to training on the inspection process, training will include any updates to MSGP requirements, procedures for Quarterly Visual Assessment and discussion of operational activities at the airport facility. Training for airport staff will also include fuel handling and spill reporting procedures. Besides scheduled annual training, new staff will be trained on an as-needed basis. Staff training logs area found in Appendix G.

The level of training provided will be commensurate with each worker's assignments and responsibilities. Training may be accomplished in a number of ways:

- Through workshops, classes, working groups, conference calls, and/or shop level tailgate briefings.
- Through discussions and presentations at pollution prevention team meetings, periodic environmental compliance briefings, and similar group gatherings.
- Through signs/posters posted in significant locations in facilities.
- Through providing written copies of BMPs.

- Through online training such as EPA webcasts.

3.10 Non-Stormwater Discharges

See Section 2.3 for discussion

3.11 Waste, Garbage and Floatable Debris

Wastes and debris are covered and/or stored indoors prior to landfill disposal. Garbage is stored in covered dumpsters and picked up on a weekly basis. Outside areas around the airport are kept clear of debris and clutter. Shop waste water passes through an oil water separator and then is treated through the Unalaska Waste Water Treatment plan. All waste water from the facility goes to local municipal treatment facilities.

Best Management Practice (BMP)	
Waste, Garbage, and Floatable Debris	<ol style="list-style-type: none">1. Waste and debris are stored in cover containers or indoors and removed regularly.2. Maintenance and airport areas are kept clear of debris and clutter.3. The oil water separator is cleaned out annually.4. Human waste and all water is treated through a waste water facility.

3.12 Dust Generation and Vehicle Tracking of Industrial Materials

Airport runway and apron areas are paved and swept regularly to reduce harm to aircraft from dust and debris. Great amounts of debris are blown onto the airport, including dirt and small rocks, due to high winds. During rain events, M&O sweeps the runway and apron to remove dirt and small rocks without creating dust. During sweeping activities, turbid waters are created. This water is brushed towards the detention area in Watershed C and towards vegetated areas to prevent erosion and reduce impacts.

SECTION 4: SCHEDULES AND PROCEDURES FOR MONITORING

For each type of monitoring, your SWPPP must include a description of:

1. **Sample Location(s).** Describe where samples will be collected, including any determination that two or more outfalls are substantially identical. [Analytical monitoring not applicable for this facility \(MSGP, Part 6\).](#)
2. **Pollutant Parameters to be Sampled.** Include a list of the pollutant parameters that will be sampled and the frequency of sampling for each parameter. [Sector S parameters of concern are Biological Oxygen Demand \(BOD\), Chemical Oxygen Demand \(COD\), Ammonia, and pH – however, threshold levels are not attained for this facility therefore, analytical monitoring is not applicable \(MSGP, Part 6\).](#)
3. **Monitoring Schedules.** Include the schedule you will follow for monitoring your stormwater discharge, including where applicable any alternate monitoring periods to be used for facilities in climates with irregular stormwater runoff (MSGP, Part 6.1.6). [Analytical monitoring not applicable for this facility \(MSGP, Part 6\).](#)
4. **Numeric Limitations.** List here any pollutant parameters subject to numeric limits (effluent limitations guidelines), and which outfalls are subject to such limits. Note that numeric limits are only included for Sectors A, C, D, E, J, K, L, and O. [Analytical monitoring not applicable for this facility \(MSGP, Part 6\).](#)
5. **Procedures.** Describe procedures you will follow for collecting samples, including responsible staff who will be involved, logistics for taking and handling samples, laboratory to be used, etc. [Analytical monitoring not applicable for this facility \(MSGP, Part 6\).](#)

SECTION 5: INSPECTIONS

For the routine facility inspections and the comprehensive site inspections to be performed at your site, include a description of the following:

- The names of the person(s), or the positions of the person(s), responsible for inspection: [Airport Manager](#)
- The schedules to be used for conducting inspections. Include here any tentative schedule that will be used for facilities in climates with irregular stormwater runoff discharges (MSGP, Part 4.2.3):
[Routine inspections will take place monthly during the deicing season \(typically mid-October through mid-May\), as denoted in table below. An additional routine inspection will take place when stormwater discharge is occurring, during the months of July – September as site conditions warrant. The annual comprehensive inspection will take the place of a routine inspection during the deicing season, likely in March or April when day length is longer and sufficient time remains to complete annual reporting \(due by end of September of each permit year\).](#)

Month	Deicing Season	Inspection Schedule
January	x	Routine
February	x	Routine
March	x	Routine
April	x	Comprehensive
May	x	Routine
June		
July		One additional
August		routine inspection
September		during quarter
October	x	Routine
November	x	Routine
December	x	Routine

and

- Specific areas of the facility to be inspected, including schedules for specific outfalls: [Areas that are subject to deicing due to aircraft operations will be inspected during each inspection, as will equipment fueling, deicing material storage areas, and snow storage areas. Additionally, during the summer routine inspection, any potential discharges and drainages will also be inspected. Inspection will be conducted at stormwater discharge locations at Outfalls A, B and C and the detention area from Watershed C, as depicted in Appendix A.](#)
- Sampling methods: [Collect a grab sample within the first 30 minutes from a discharge resulting from a measurable storm event or as soon as practicable after the first 30 minutes. If the 30 minute period is exceeded, document it in the SWPPP explaining why it was not possible to take a sample within the first 30 minutes. A measurable storm event is one that results in a discharge from the outfall. The storm event is preceded by at least 72 hours of dry weather \(or 72 hours since the last measurable storm event\). In the case of snowmelt, the monitoring must be performed at a time when a measurable discharge occurs. For each monitoring event, except snowmelt monitoring, identify the date and duration \(in hours\) of the rainfall event, rainfall total \(in inches\) for that rainfall event, and time \(in days\) since the previous measurable storm event. For snowmelt monitoring, you must identify the date of the sampling event. When adverse weather conditions prevent the collection of samples, take a substitute sample during the next qualifying storm event.](#)

For the quarterly visual assessments to be performed at your site, include a description of the following:

- The names of the person(s), or the positions of the person(s), responsible for inspection: [Airport Manager](#).
- The schedules to be used for conducting inspections. Include here any tentative schedule that will be used for facilities in climates with irregular stormwater runoff discharges (MSGP, Part 4.2.3): [Due to the long winter season, the four quarterly visual assessments will all take place during the period of April – October, with two in April – June and two in July – October. It is anticipated that a visual assessment during April will capture snowmelt discharge.](#)
- Sampling methods: [Collect a grab sample within the first 30 minutes from a discharge resulting from a measurable storm event or as soon as practicable after the first 30 minutes. If the 30 minute period is exceeded, document it in the SWPPP explaining why it was not possible to take a sample within the first 30 minutes. A measurable storm event is one that results in a discharge from the outfall. The storm event is preceded by at least 72 hours of dry weather \(or 72 hours since the last measurable storm event\). In the case of snowmelt, the monitoring must be performed at a time when a measurable discharge occurs. For each monitoring event, except snowmelt monitoring, identify the date and duration \(in hours\) of the rainfall event, rainfall total \(in inches\) for that rainfall event, and time \(in days\) since the previous measurable storm event. For snowmelt monitoring, you must identify the date of the sampling event. When adverse weather conditions prevent the collection of samples, take a substitute sample during the next qualifying storm event.](#)

Month	Visual Assessment Schedule
January	-
February	-
March	-
April	Take break-up plus
May	one quarterly
June	visual assessment
July	Take two
August	quarterly
September	visual
October	assessments
November	-
December	-

and

- Specific areas of the facility to be inspected, including schedules for specific outfalls: [Visual assessment samples will be collected at stormwater discharge locations at Outfalls A, B, C and the detention area from Watershed C, as depicted in Appendix A.](#)

SECTION 6: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

6.1 Documentation Regarding Endangered Species.

In checking the ESA Listed Species Consultation Guide – Anchorage Fish and Wildlife Field Office, it was determined that the Unalaska Airport is within the range of the Steller's Eiders and the Northern Sea Otter. Consultation with USFWS was initiated, however it has been determined that USFWS no longer has a federal nexus for conducting Section 7 consultation for MSGP under the ADEC, see Appendix J for correspondence. However, a copy of the SWPPP was sent to the USFWS and a self determination was made. Any recommendations would be incorporated into this plan as necessary. The ADOT has determined that airport operations meet Eligibility Criterion E of the MSGP, and are not likely to adversely affect ESA species.

While Steller's Eiders and the Northern Sea Otter may be present near the Unalaska Airport, they are not likely to occur within the action area of the airport. Airport maintenance and practices seek to reduce the presence of wildlife on the airport, of particular importance are bird species which can result in safety issues. The Unalaska Airport has not exceeded the benchmark or limitations of applicable effluent limitation guidelines. Best management practices seek to limit the potential for contamination from airport operations and anti-icing practices help reduce deicing chemical quantities. The SWPPP was sent to the USFWS for input on methods to reduce and prevent impacts to ESA species and recommendations would be incorporated into this plan as feasible.

6.2 Documentation Regarding Historic Properties

No subsurface disturbances resulting from building or installing control measures are occurring at this facility, therefore discharge-related activities do not have the potential to have an effect on historic properties. Eligibility Criterion A of the MSGP is met, no further action is required.

6.3 Documentation Regarding NEPA Review (if applicable)

No operations related to New Source Performance Standards (NSPS) take place at this facility.

SECTION 7: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Steve Berninger Title: Airport Manager
Signature: Steve Berninger Date: 5/11/11



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

**DELEGATION OF SIGNATURE AUTHORITY,
SWPPP AND OTHER NPDES MSGP RELATED REPORTS AND
DOCUMENTS**

Airport Name: Unalaska

I, Robert A. Campbell, P.E. hereby designate the Airport Manager, Steve Berninger, assigned to Unalaska Airport to be the DOT&PF duly authorized representative for the purpose of overseeing compliance with the NPDES Multi-Sector General Permit, at the Unalaska Airport. By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix B, Subsection 11.A of EPA's Multi-Sector General Permit (MSGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix B, Subsection 11.B.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Robert A. Campbell, P.E.

Title: Regional Director

Signature _____

Date _____

Handwritten signature in blue ink, appearing to be "R. Campbell", and the date "4-28-11" written below it.

SECTION 8: SWPPP MODIFICATIONS

Description of SWPPP Modification	Name	Date	Signature

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

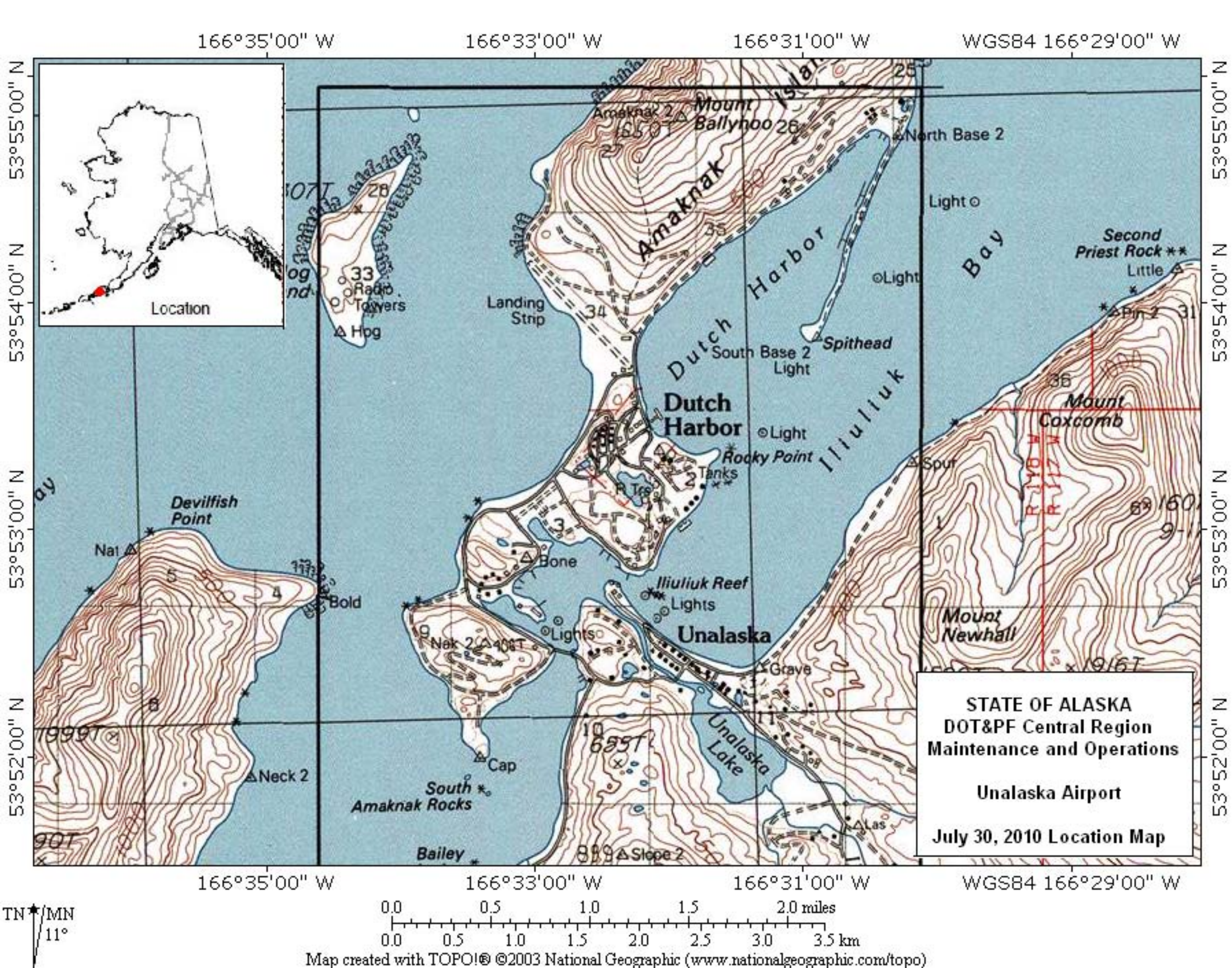
- Appendix A – General Location Map & Site Map(s)*
- Appendix B – Permit*
- Appendix C – NOI and Letters*
- Appendix D – Visual Assessments*
- Appendix E – Inspections*
- Appendix F – Corrections*
- Appendix G – Training*
- Appendix H – Annual Report*
- Appendix I – Blank Forms*
- Appendix J – Miscellaneous*
- Appendix K – SPCC Plan (Unalaska)*
- Appendix L – BMP Summary and Typical*

Appendix A – General Location Map & Site Map(s)

State Airport Location Map

Airport Watershed Map

Airport Layout Plan



166°35'00" W

166°33'00" W

166°31'00" W

WGS84 166°29'00" W

53°55'00" N
53°54'00" N
53°53'00" N
53°52'00" N

53°55'00" N
53°54'00" N
53°53'00" N
53°52'00" N



STATE OF ALASKA
DOT&PF Central Region
Maintenance and Operations

Unalaska Airport

July 30, 2010 Location Map

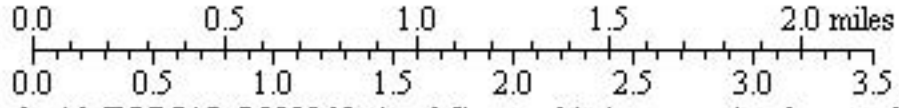
166°35'00" W

166°33'00" W







166°31'00" W

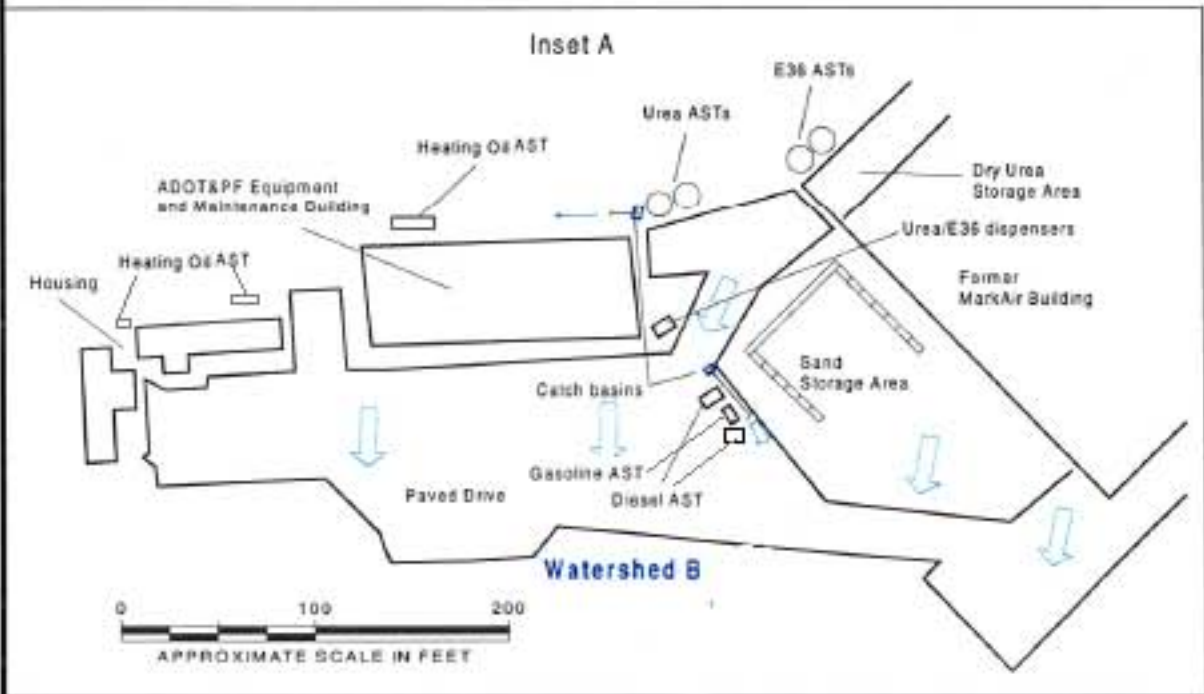
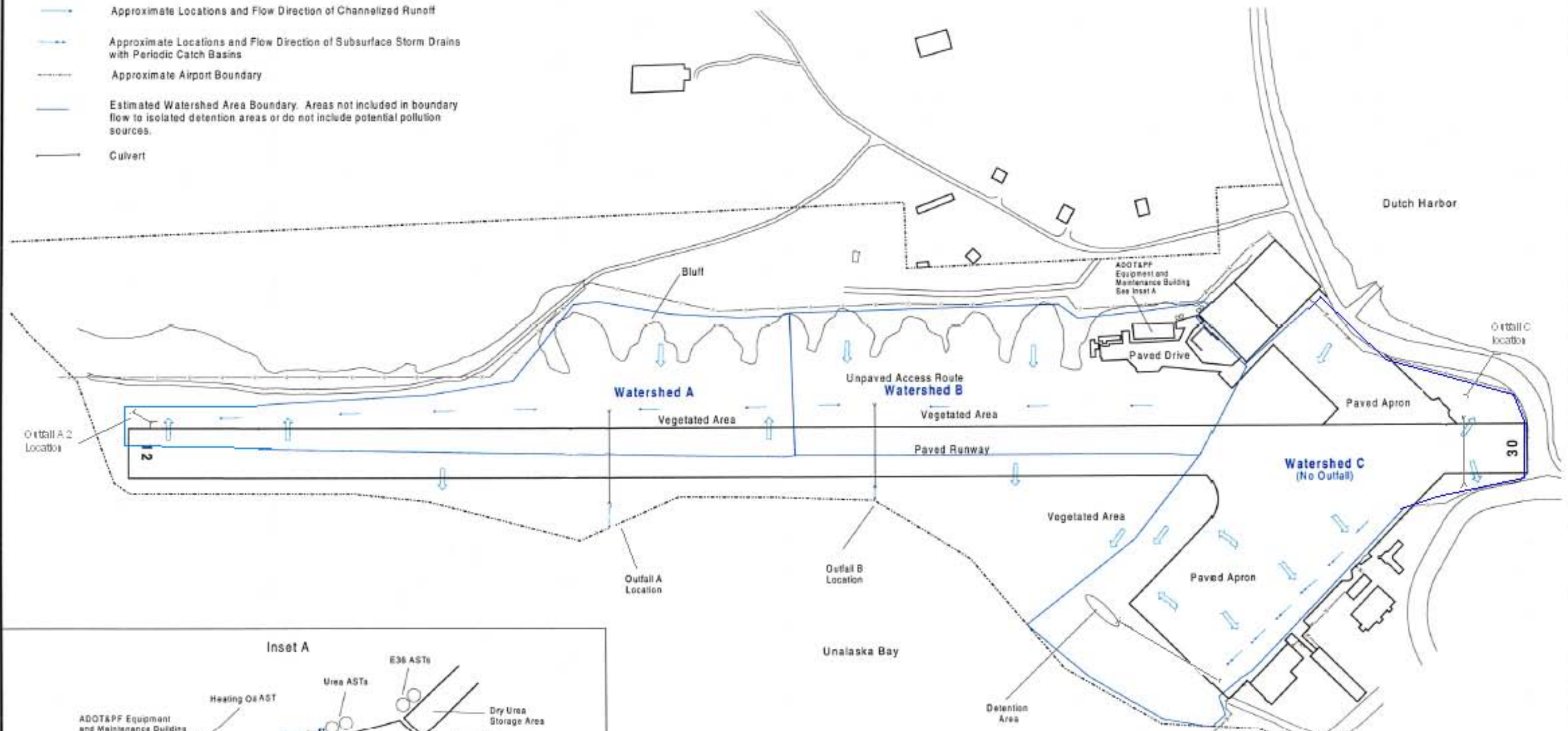
WGS84 166°29'00" W


TN★/MN
11°

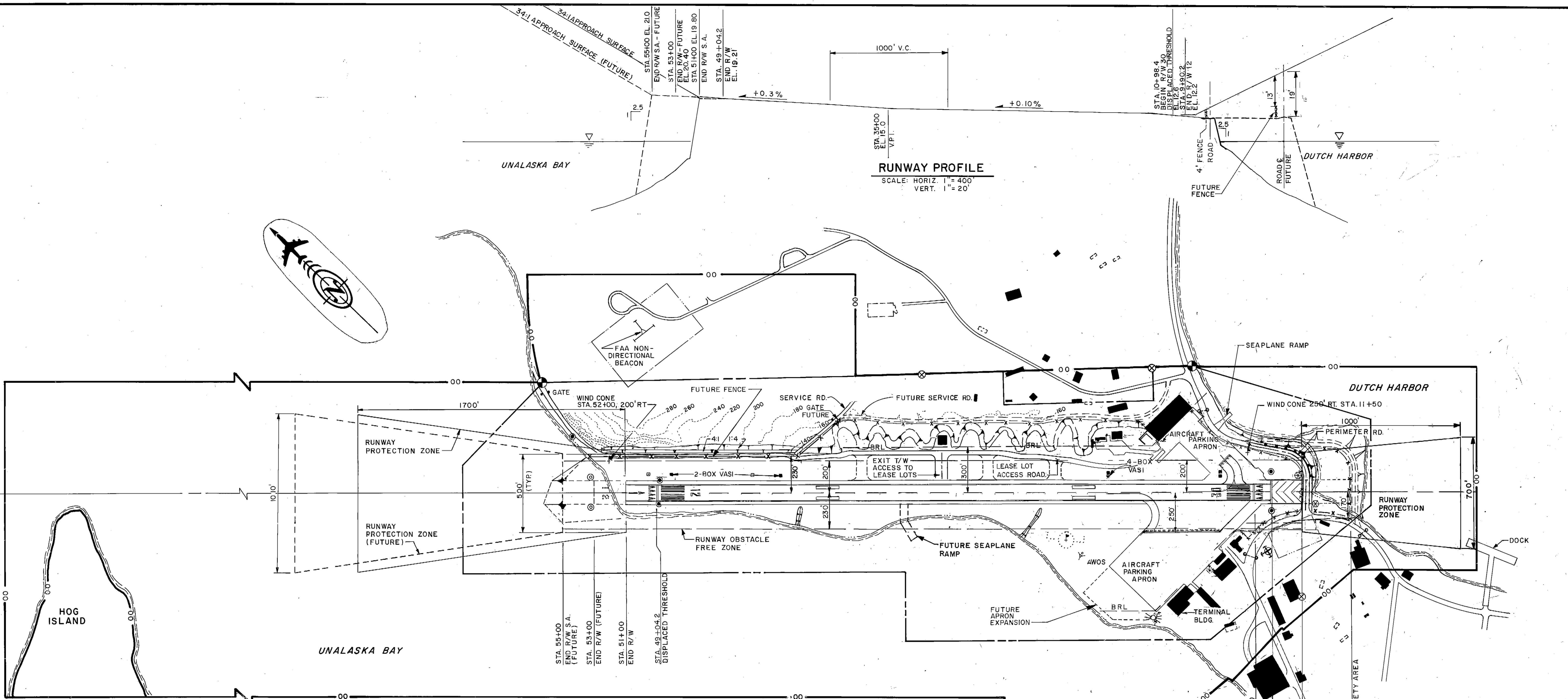


LEGEND

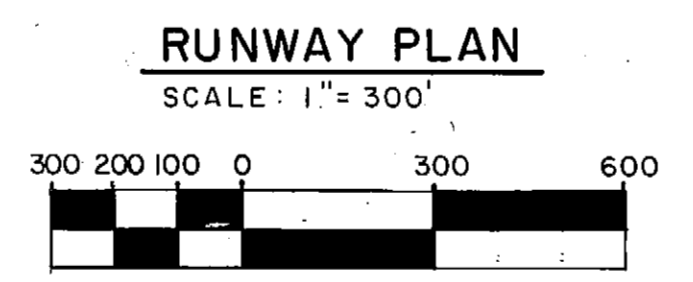
-  Estimated Areas and Direction of Sheet Flow Runoff
-  Approximate Locations and Flow Direction of Channelized Runoff
-  Approximate Locations and Flow Direction of Subsurface Storm Drains with Periodic Catch Basins
-  Approximate Airport Boundary
-  Estimated Watershed Area Boundary. Areas not included in boundary flow to isolated detention areas or do not include potential pollution sources.
-  Culvert



Storm Water Pollution Prevention Plan Unalaska Airport, Alaska	
SITE MAP	
May 2000	Y-6313
 SHANNON & WILSON, INC. Geotechnical & Environmental Consultants	
Fig. 1	



DECLARED DISTANCES				
RUNWAY	TORA	TODA	ASDA	LDA
12	4100'	4100'	4000'	3800'
30	4100'	4100'	3900'	3800'



BASIC DATA TABLE		
RUNWAY DATA		
	EXISTING	FUTURE
EFFECTIVE GRADIENT	0.21%	SAME
% WIND COVERAGE	90%	SAME
INSTRUMENT RUNWAY	R/W 12 NPI	SAME
PAVEMENT SURFACE	ASPHALT	ASPHALT
PAVEMENT STRENGTH	S60, T 210	S60, T 210
APPROACH SURFACES	M.T.	SAME
RUNWAY LIGHTING	M.T.	SAME
RUNWAY MARKING	N.P.T.	N.P.T.
VISUAL APPROACH AIDS	R/W 12 VASI 4	VASI = 4
AIRPLANE DESIGN GROUP	C-III	C-III
RUNWAY DIMENSIONS	100' x 4,100'	100' x 4,310'
RUNWAY S.A. DIMENSIONS	150' x 4,300'	150' x 4,700'

BASIC DATA TABLE		
AIRPORT DATA		
	EXISTING	FUTURE
AIRPORT ELEVATION (MSL ESTIMATED)	19	21
AIRPORT REFERENCE POINT (A.R.P.)	N53°54'00.5" W166°32'36.6"	
NORMAL MAX. TEMP. OF HOTTEST MONTH	60° F	60° F
TAXIWAY LIGHTING	NONE	MT
RAMP LIGHTING	FLOOD	SAME
	L.A.T.	L.O.N.G.
R/W 12 (STA. 49+00)	N53°54'12.4" W166°32'56.4"	
R/W 12 (FUTURE) STA. 53+00)	N53°54'15.2" W166°33'01.1"	
R/W 30 (STA. 11+00)	N53°53'45.7" W166°32'12.0"	
NAVIGATION AIDS	NDB/DME	SAME

LEGEND		
	EXISTING	FUTURE
PROPERTY LINE	---	---
BUILDING RESTRICTION LINE (B.R.L.)	---	---
AVIGATION AND HAZARD EASEMENT	---	---
AIRPORT LOCATION POINT	●	●
AIRPORT REFERENCE POINT	●	●
WIND CONE & SEGMENTED CIRCLE	☼	☼
BUILDINGS	■	■
ROADWAYS	—	—
VHF ANTENNA	⊕	⊕
MANDATORY INSTRUCTION SIGN	⊗	⊗
ROTATING BEACON	⊙	⊙
SHORE LINE	—	—
RUNWAY BOUNDARY MARKERS	—	—
REIL	●	●
VASI	—	—
RADIO ACTIVATED VEHICLE STOP LIGHT	⊗	⊗
HOLD LINE	—	—
CHAIN-LINK FENCE	—x—x—	—x—x—
GUARD RAIL	—•••—	—•••—

NON-STANDARD CONDITIONS				
ITEM	STANDARD	EXISTING	FUTURE	
APP SURFACE CL. OVER RD. (20:1)	15'	0'	15'	
FAR PART 77 SURFACES	NO PENETRATION	SEE SHEET 2 HILL & BLDGS. SOUTH OF THRES: R/W 30		
RUNWAY SAFETY AREA WIDTH	500'	150'	150'	
RUNWAY SAFETY AREA LENGTH	1000' BEYOND END	200'	200' (R/W 30) 500' (R/W 12)	
BRL	750'	300' NORTH SIDE 170' SOUTH SIDE	300' NORTH SIDE 170' SOUTH SIDE	
R/W C TO ROAD APP. END R/W 30	320'	120'	120'	
R/W C TO LEASE LOT ACCESS ROAD	320'	175'	175'	
R/W C TO HOLD LINE	250'	200'	250'	
R/W OFZ	200' LT. & RT.	125' LT. R/W 30 THRES	125' LT. R/W 30 THRES	
R/W OFA	400' LT. & RT.	200' RT. 125' LT.	200' RT. 125' LT.	
APP SURFACE R/W 30 PENETR. BY FENCE	0'	4'	0'	

BY	DATE	CHANGE
		REVISIONS

THIS SET SUPERCEDES PLAN DATED 6-15-81

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

UNALASKA AIRPORT
AIRPORT LAYOUT PLAN

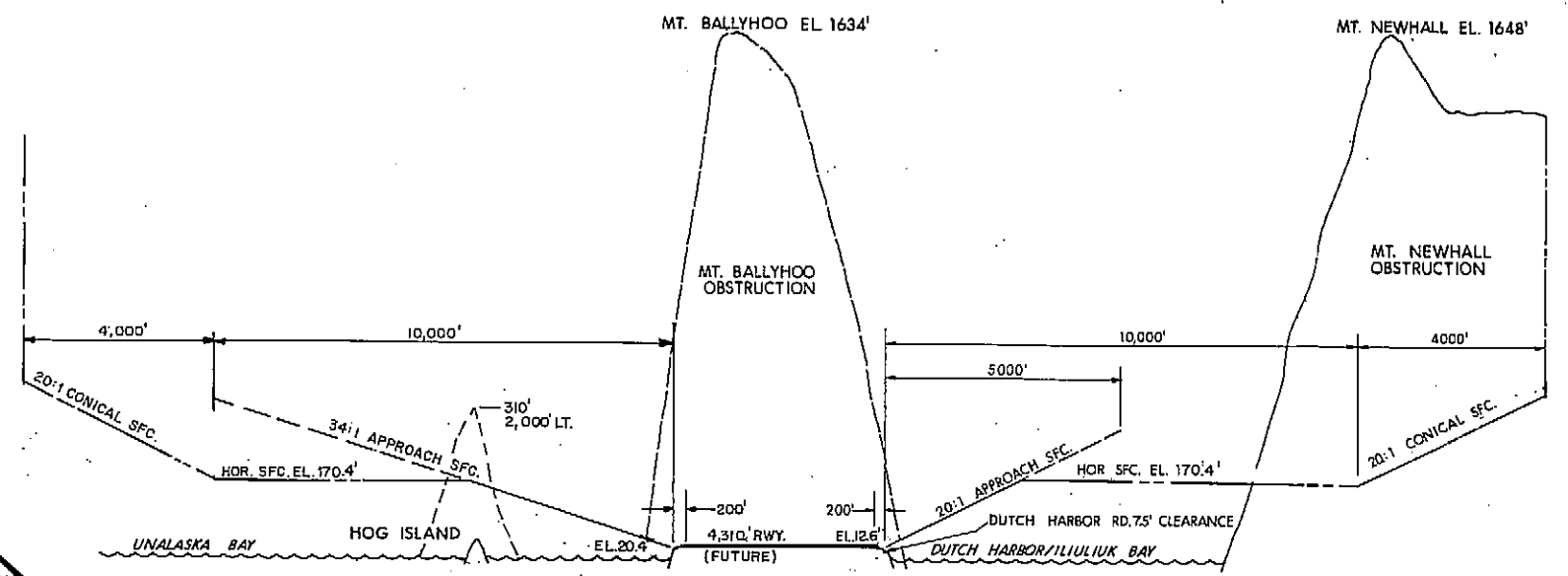
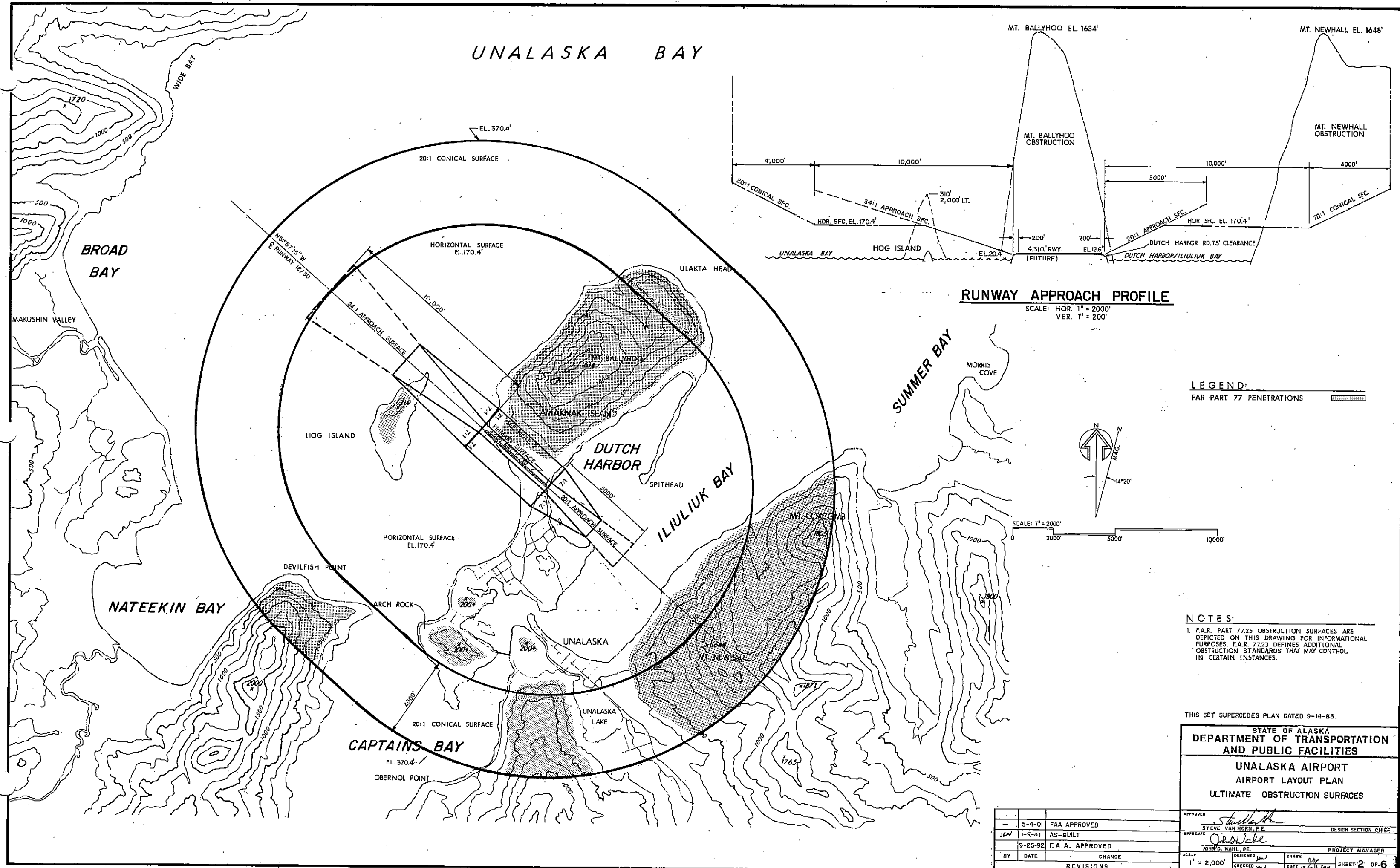
APPROVED: *Brooks H. Wade*
BROOKS H. WADE, P.E. ASSIST. DESIGN CHIEF

APPROVED: *John G. Wahl*
JOHN G. WAHL, P.E. PROJECT MANAGER

SCALE: AS SHOWN
DESIGNED: *John G. Wahl*
CHECKED: *John G. Wahl*
DATE: 3-16-87

SHEET 1 OF 6

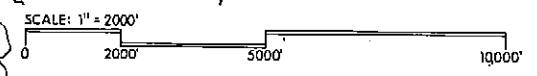
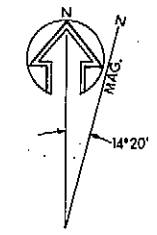
UNALASKA BAY



RUNWAY APPROACH PROFILE

SCALE: HOR. 1" = 2000'
VER. 1" = 200'

LEGEND:
FAR PART 77 PENETRATIONS

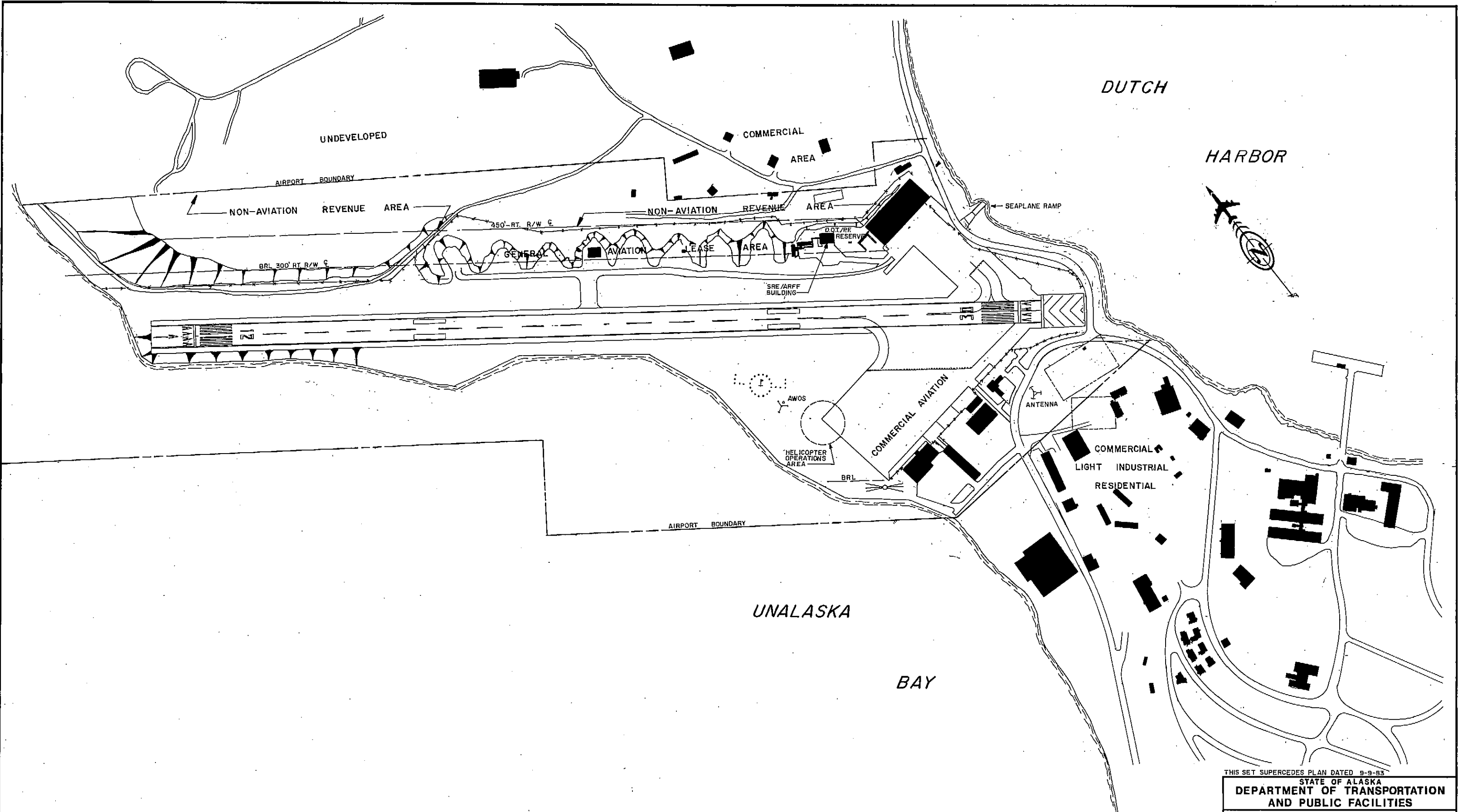


NOTES:
1. F.A.R. PART 77.25 OBSTRUCTION SURFACES ARE DEPICTED ON THIS DRAWING FOR INFORMATIONAL PURPOSES. F.A.R. 77.23 DEFINES ADDITIONAL OBSTRUCTION STANDARDS THAT MAY CONTROL IN CERTAIN INSTANCES.

THIS SET SUPERCEDES PLAN DATED 9-14-83.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
UNALASKA AIRPORT
AIRPORT LAYOUT PLAN
ULTIMATE OBSTRUCTION SURFACES

APPROVED	<i>[Signature]</i>	DESIGN SECTION CHIEF
APPROVED	STEVE VAN HORN, P.E.	DESIGN SECTION CHIEF
APPROVED	<i>[Signature]</i>	PROJECT MANAGER
APPROVED	JOHN G. WAHL, RE	PROJECT MANAGER
BY	DATE	CHANGE
		REVISIONS
SCALE	1" = 2,000'	DRAWN
CHECKED		DATE
		SHEET 2 OF 6



THIS SET SUPERCEDES PLAN DATED 9-9-83
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 UNALASKA AIRPORT
 AIRPORT LAYOUT PLAN
 EXISTING LAND USE PLAN

BY	DATE	CHANGE	SCALE	DESIGNED	DRAWN	DATE	SHEET
		REVISIONS	1" = 200'	J.G.G.	J.G.G.	7/24/92	3 OF 6

APPROVED	<i>Steve Van Horn</i>	DESIGN SECTION CHIEF
APPROVED	<i>John A. Wall</i>	PROJECT MANAGER

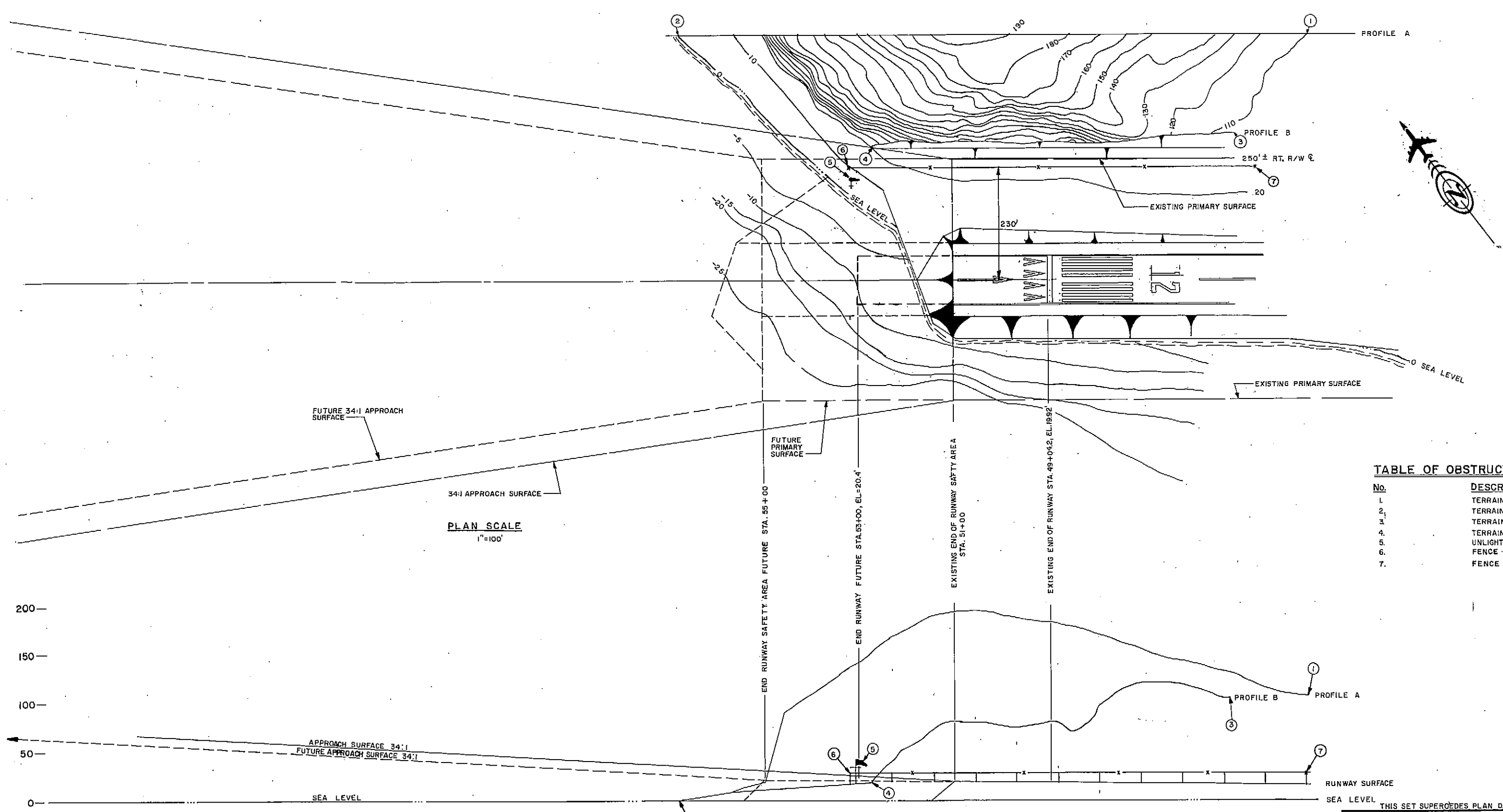


TABLE OF OBSTRUCTIONS

No.	DESCRIPTION
1.	TERRAIN
2.	TERRAIN
3.	TERRAIN
4.	TERRAIN
5.	UNLIGHTED WIND CONE
6.	FENCE
7.	FENCE

PLAN SCALE
1"=100'

PROFILE SCALE
VERT. 1"=50'
HORZ. 1"=100'

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

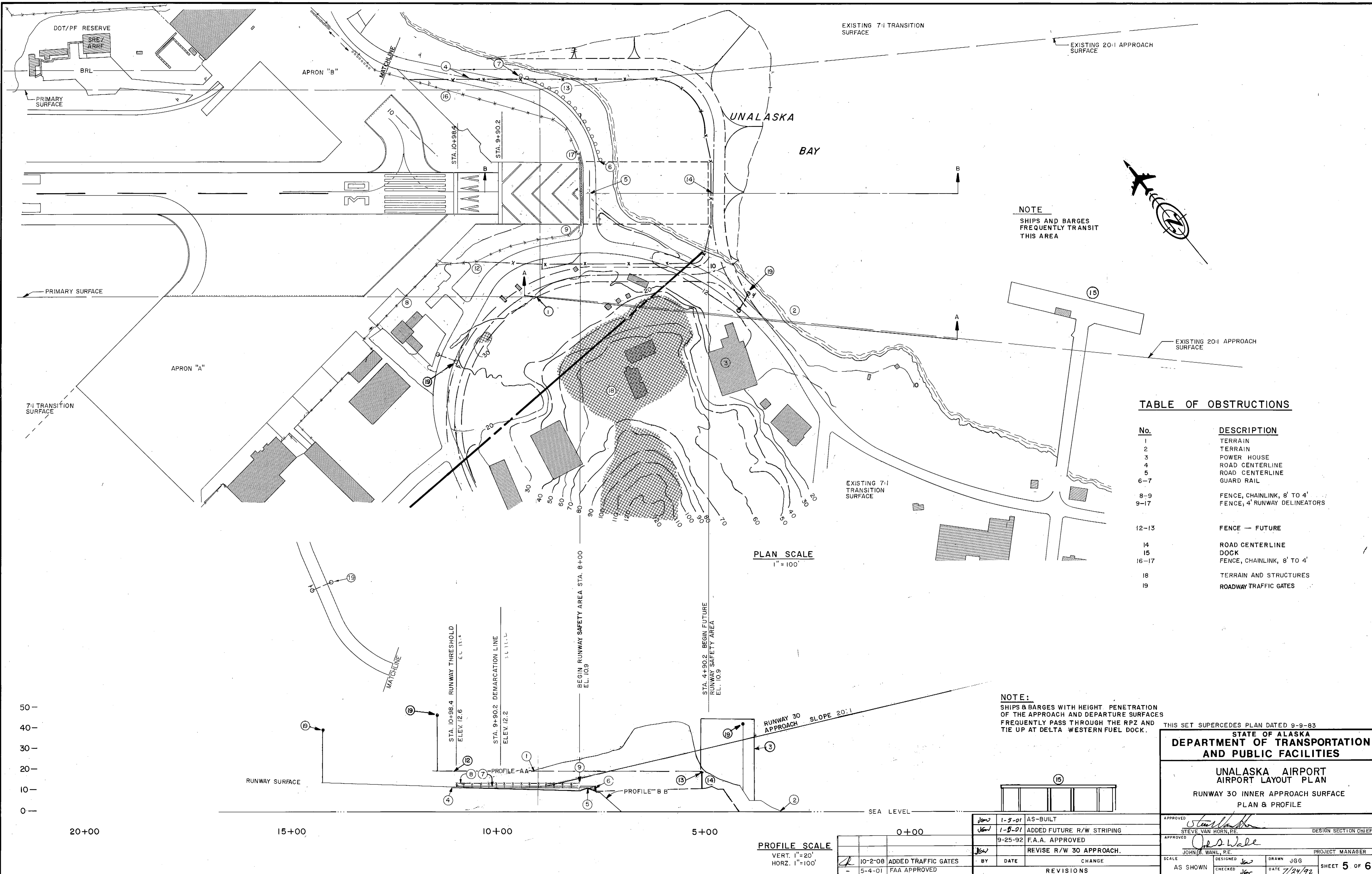
UNALASKA AIRPORT
AIRPORT LAYOUT PLAN
RUNWAY 12 INNER APPROACH SURFACE
PLAN & PROFILE

BY	DATE	CHANGE	SCALE	DESIGNED	DRAWN	CHECKED	DATE	SHEET
	5-4-01	FAA APPROVED	AS SHOWN	JGG	JGG	JGG	7/24/92	4 OF 6
	1-5-01	AS-BUILT						
	1-5-01	ADDED FUTURE STRIPING						
	9-25-92	F.A.A. APPROVED						

THIS SET SUPERCEDES PLAN DATED 9-9-83

APPROVED: *[Signature]*
STEVE VAN HORN, P.E. DESIGN SECTION CHIEF

APPROVED: *[Signature]*
JOHN W. WAHL, P.E. PROJECT MANAGER



NOTE
SHIPS AND BARGES
FREQUENTLY TRANSIT
THIS AREA



TABLE OF OBSTRUCTIONS

No.	DESCRIPTION
1	TERRAIN
2	TERRAIN
3	POWER HOUSE
4	ROAD CENTERLINE
5	ROAD CENTERLINE
6-7	GUARD RAIL
8-9	FENCE, CHAINLINK, 8' TO 4'
9-17	FENCE, 4' RUNWAY DELINEATORS
12-13	FENCE — FUTURE
14	ROAD CENTERLINE
15	DOCK
16-17	FENCE, CHAINLINK, 8' TO 4'
18	TERRAIN AND STRUCTURES
19	ROADWAY TRAFFIC GATES

PLAN SCALE
1" = 100'

PROFILE SCALE
VERT. 1" = 20'
HORZ. 1" = 100'

NOTE:
SHIPS & BARGES WITH HEIGHT PENETRATION
OF THE APPROACH AND DEPARTURE SURFACES
FREQUENTLY PASS THROUGH THE RPZ AND
TIE UP AT DELTA WESTERN FUEL DOCK.

THIS SET SUPERCEDES PLAN DATED 9-9-83

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

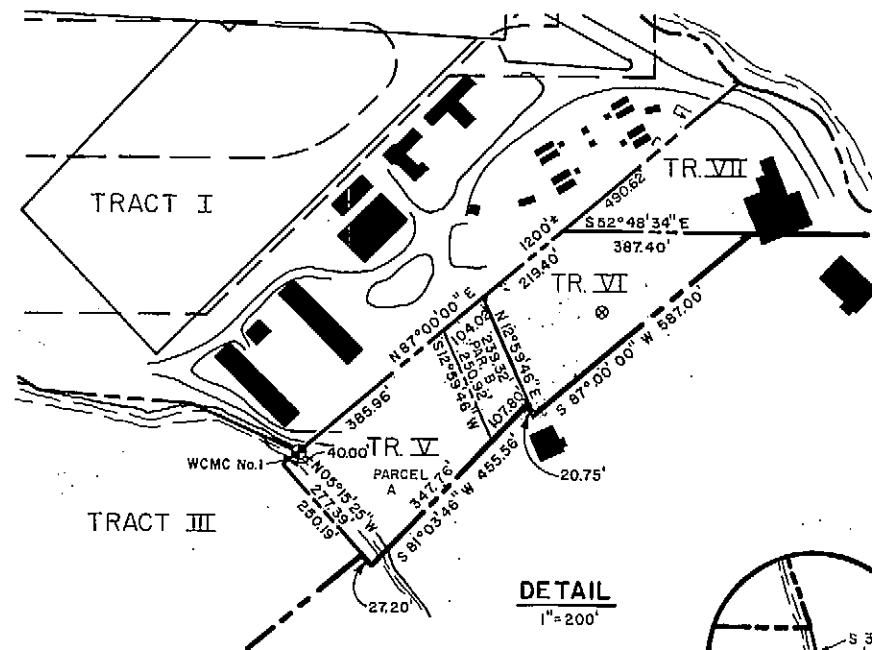
UNALASKA AIRPORT
AIRPORT LAYOUT PLAN
RUNWAY 30 INNER APPROACH SURFACE
PLAN & PROFILE

APPROVED	<i>Steve Van Horn</i>	DESIGN SECTION CHIEF
APPROVED	<i>John Z. Wahl</i>	PROJECT MANAGER
SCALE	AS SHOWN	DESIGNED
SCALE	AS SHOWN	CHECKED
DATE	7/29/92	DRAWN
DATE	7/29/92	DRAWN
DATE	7/29/92	DRAWN
DATE	7/29/92	DRAWN

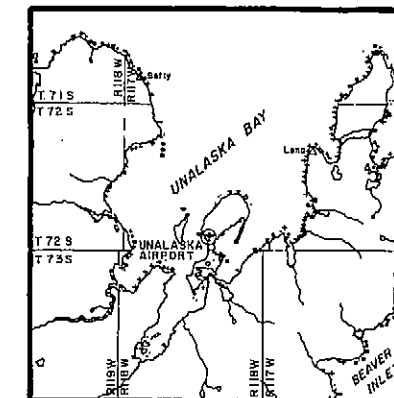
REV	DATE	CHANGE
1	1-5-01	AS-BUILT
2	1-5-01	ADDED FUTURE R/W STRIPING
3	9-25-92	F.A.A. APPROVED
4	10-2-08	ADDED TRAFFIC GATES
5	5-4-01	FAA APPROVED

**TRACT I MEANDERS
ALONG UNALASKA BAY**

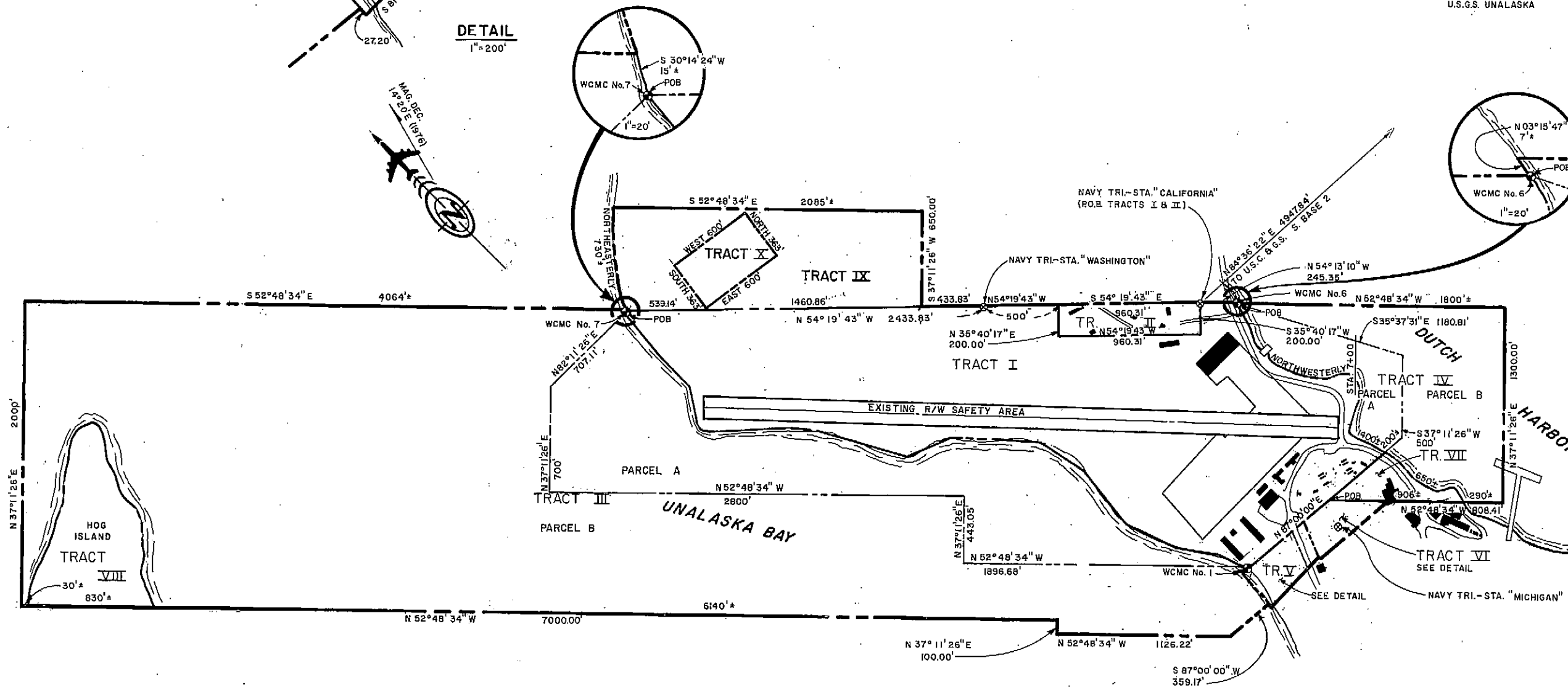
STARTING AT MC No. 7;
 GO S 02°55' 15" E FOR 370.09'
 THEN S 08° 21' 45" E FOR 350.00'
 THEN S 23° 21' 45" E FOR 156.40'
 THEN S 20° 34' 21" E FOR 126.39'
 THEN S 40° 06' 58" E FOR 304.47'
 THEN S 46° 53' 49" E FOR 300.43'
 THEN S 37° 43' 29" E FOR 306.96'
 THEN S 37° 32' 32" E FOR 307.17'
 THEN S 76° 26' 07" E FOR 332.34'
 THEN S 51° 28' 38" E FOR 300.11'
 THEN S 49° 56' 59" E FOR 300.00'
 THEN S 20° 50' 47" E FOR 343.35'
 THEN S 02° 23' 49" E FOR 444.50'
 THEN S 22° 01' 34" E FOR 339.53'
 THEN S 48° 25' 20" E FOR 300.11'
 THEN S 27° 30' 00" E FOR 226.55'
 ENDING AT MC No. 1.



PROPERTY STATUS					
TRACT	PARCEL	A.D.A. No.	AREA ACRES	INTERESTS	DATE ACQUIRED
I		11355	105±	QCD, UNALASKA CORP. SURFACE ESTATE 14 (c)(4) ANCSA	6-18-80
II			4.41		
III	A	11477	98±	ILMA, DEPT. OF NATURAL RESOURCES	6-5-86
IV	B	11525	226±	ILMA, DEPT. OF NATURAL RESOURCES	6-5-86
V	A	11478	10±	AVIGATION & HAZARD EASEMENT-DNR	6-4-86
	B	11526	26±		
			2.284		
VI			0.563		
VII		11479	2.314	AVIGATION & HAZARD EASEMENT	
VIII			13±	AVIGATION & HAZARD EASEMENT	
IX			27±	AVIGATION & HAZARD EASEMENT	
X			5.00	AVIGATION & HAZARD EASEMENT	



VICINITY MAP
 SCALE 1"=4 MILES
 T 72 S, R 17 W
 SEWARD MERIDIAN, ALASKA
 U.S.G.S. UNALASKA



ALASKA STATE PLANE COORDINATE SYSTEM
 ZONE 10

U.S.C. & G.S. SOUTH BASE 2
 N 1192887.73 E 5040166.29
 MEAN AZIMUTH CORRECTION = 07° 33' 36.8"

U.S.C. & G.S. SOUTH RADIO TOWER
 N 1187962.97 E 5036228.07
 MEAN AZIMUTH CORRECTION = 07° 32' 36.3"

RUNWAY MIDPOINT (EXISTING)
 N 1192597.36 E 5033788.53
 MEAN AZIMUTH CORRECTION = 07° 32' 12.2"

MEAN SCALE FACTOR = 1.00002105
 ALL BEARINGS & DISTANCES SHOWN ARE GRID.

LEGEND

- ⊙ U.S. NAVY IRON CAPPED CONCRETE POST
- EXISTING STRUCTURE
- ⊙ A.D.A. 5/8" REBAR WITH ALUMINUM CAP

THIS INFORMATION IS BASED ON DIVISION OF AVIATION DUTCH HARBOR SURVEY CONTROL SHEET, 3/6/75

NOTE

1. AIRPORT NAME CHANGED BY VILLAGE RESOLUTION.
2. ALL BEARINGS, DISTANCES & AREAS ARE SUBJECT TO VERIFICATION BY GLM FIELD SURVEY PURSUANT TO ANCSA AS SET FORTH IN 43 CFR 2650.5-4(b).

THIS PLAN SUPERSEDES PROPERTY PLAN DATED 7/29/80

STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES**
 AVIATION DESIGN & CONSTRUCTION CENTRAL REGION

**UNALASKA AIRPORT
 (DUTCH HARBOR)
 PROPERTY PLAN**

BY	DATE	CHANGE	REVISIONS
	5-4-01	FAA APPROVED	
	9-25-92	F.A.A. APPROVED	
DT	7-24-97	AS BUILT PER PROJECT No. 53261	
JKL	10/20/06	UPDATE PROP STATUS TR. III PAR. A & B TO THE PAR. A & B SPLIT TR. III & TR. IV INTO PARCELS A & B	
JKL	12/19/03	UPDATE PROPERTY STATUS TRACT I, A.D.A. NO. 11355 ADDED PAR. B DIMENSION TO TRACT VII	

APPROVED	<i>Tommy Gene Heinrich, Jr.</i>	CHIEF DESIGN ENGINEER
APPROVED	<i>Brooks H. Wade, Jr.</i>	EASTERN DISTRICT ENGINEER
SCALE	1" = 400'	
DESIGNED	JKL	
CHECKED	JKL	
DATE	10/10/83	
SHEET	1	OF 1

Appendix B –Multi-Sector General Permit

Sector S Specifications from MSGP

A disc with an electronic version of the 2008 MSGP is located in the back of this binder or can be found at:

http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf

Appendix C –NOI

Acknowledgement of Coverage under MSGP

Notice of Intent

STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM

SEAN FARRELL, GOVERNOR
555 Cordova Street
Anchorage, Alaska 99501-2617
Phone: (907) 269-6285
Fax: (907) 334-2415
<http://www.dec.alaska.gov>

July 21, 2011

Company: Alaska Dept of Transportation and
Public Facilities

ATTN: Robert Campbell

P.O. Box 196900

Anchorage, AK 99519

Facility:

Unalaska Airport

Airport Beach Road and Ballyhoo Road

Dutch Harbor, AK 99693

SUBJECT: Acknowledgement of Coverage / Assigned Permit Number

HIGH IMPORTANCE: Your Permit Tracking Number is AKR05DB42

This letter acknowledges that you have submitted a complete Notice of Intent form to be covered under the Alaska Pollutant Discharge Elimination System (APDES) Multi-Sector General Permit for Stormwater Discharges associated with industrial activity (MSGP) on June 21, 2011. Coverage under this permit begins at the conclusion of your sixty day waiting period, on September 19, 2011. This is not a determination of the validity of the information you provided which your eligibility for coverage under the MSGP is based on. An important aspect of certification requires that you correctly determine whether you are eligible for coverage under this permit. Your signature on the Notice of Intent certifies that you have read, understand, and are implementing all of the applicable requirements.

The Multi-Sector General Permit requires you to have developed and begun implementing a Storm Water Pollution Prevention Plan (SWPPP) and outlines important inspection and record keeping requirements. You must also comply with any additional location-specific requirements applicable to your area. A copy of the MSGP must be kept with your SWPPP. An electronic copy of this permit and additional guidance materials can be viewed and downloaded at <http://www.dec.state.ak.us/water/wqspac/stormwater/stormwater.htm>.

If you have general questions regarding the storm water program or your responsibilities under the MSGP, please call (907) 269-6283.

Thank you and sincerely,

Ronni Wilcock for William Ashton

MEMORANDUM

State of Alaska

*Department of Transportation & Public Facilities
Central Region - Division of Maintenance & Operations*

To: William Ashton
Storm Water and Wetlands Manager
ADEC

Date: July 6, 2011

Project Name: Unalaska State Airport

From: Jennifer Lindberg
Environmental Impact Analyst
ADOT&PF

Project No: Maintenance and Operations

Subject: NOI Form

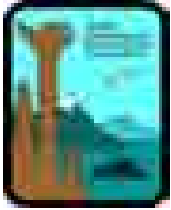
Attached is the Notice of Intent (NOI) form for coverage under the Alaska Pollutant Discharge Elimination System (APDES) Multi-Sector General Permit (MSGP) for stormwater discharges associated with industrial activity at the Unalaska Airport, Dutch Harbor, Alaska (see attached area map).

An interagency journal entry is being processed for this permit.

If you have questions regarding this permit application, please contact me at 907-269-0714 and Jennifer.Hillman@alaska.gov.

Attachments:

- 1- NOI Form
- 2- Endanger Species Documentation




Notice of Intent (NOI) For Storm Water Discharges Associated With Industrial Activity Under the APDES Multi-Sector General Permit

Submission of this completed Notice of Intent (NOI) constitutes notice that the operator identified in Section I of this form requests authorization to discharge pollutants to waters of the United States from the facility or site identified in Section III under Alaska's APDES Storm Water Multi-Sector General Permit (MSGP) for industrial storm water. Submission of this NOI constitutes your notice to ADEC that the facility identified in Section III of this form meets the eligibility conditions of Part 1.1 of the MSGP. Please read and make sure you comply with all eligibility requirements, including the requirement to prepare a storm water pollution prevention plan. Refer to the instructions at the end of this form to complete your NOI.

Section I. Operator Information	
Organization:	
Contact Person:	
Mailing Address:	Street (PO Box):
	City: State: Zip:
	Phone: Fax(optional):
	Email:
Section II Billing Contact Information	
Organization:	
Contact Person:	
Mailing Address:	Street (PO Box):
[] Check here if same as Operator Information	City: State: Zip:
	Phone: Fax(optional):
	Email:
Section III. Facility Information	
Facility Name:	
Have storm water discharges from your site been covered previously under an NPDES or APDES Permit? <input type="checkbox"/> Yes <input type="checkbox"/> No	
a. If Yes, provide the Tracking Number if you have coverage under EPA's MSGP 2000 or the NPDES permit number if you had coverage under an EPA individual permit.	
b. If no, was your facility in operation and discharging storm water prior to October 30, 2005? <input type="checkbox"/> Yes <input type="checkbox"/> No	
c. If no to "b", did your facility commence discharging after October 30, 2005 and before January 5, 2009? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Location Address:	
Street:	
City: State: Alaska Zip:	
Borough or similar government subdivision:	
Latitude: Longitude:	
Determined By: <input type="checkbox"/> GPS <input type="checkbox"/> USGS topographic map <input type="checkbox"/> Other	
If you used a USGS topographic map, what was the scale?	
Estimated area of industrial activity at your site exposed to storm water: (acres)	
Is this a federal facility? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Section IV. Discharge Information				
Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
If yes, name of MS4 operator: _____				
Receiving Water and Wetlands information: (if additional space is needed for this question, fill out Attachment 1.)				
a. What is the name(s) of your receiving water(s) that receive storm water directly and/or through a MS4? If your receiving water is impaired, then identify the name of the impaired segment, if applicable, in parenthesis following the receiving water name.	b. Are any of your discharges directly into any segment of an "impaired" water?	c. If you answered yes to question b, then answer the following three questions:		
		i. What pollutant(s) are causing the impairment?	ii. Are the pollutant(s) causing the impairment present in your discharge?	iii. Has the TMDL been completed for the pollutant(s) causing the impairment?
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Water Quality Standards (for new dischargers only)				
Are any of your discharges into any portion of a receiving water designated by the state under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Has the receiving water(s) been designated by the state under its antidegradation policy as Tier 3 water (Outstanding Natural Resource Water)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Federal Effluent Limitation Guidelines and Sector-Specific Requirements				
a. Are you requesting permit coverage for any storm water discharges subject to effluent limitation guidelines? <input type="checkbox"/> Yes <input type="checkbox"/> No				
b. If yes, which effluent limitation guidelines apply to your storm water discharge?				
40 CFR Part/Subpart	Eligible Discharges	Affected MSGP Sector	Check if applicable	
Part 411, Subpart C	Runoff from material storage piles at cement manufacturing facilities.	E	<input type="checkbox"/>	
Part 418, Subpart A	Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished products, by-products, or waste products (SIC 2874).	C	<input type="checkbox"/>	
Part 423	Coal pile runoff at steam electric generating facilities.	O	<input type="checkbox"/>	
Part 429, Subpart I	Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas.	A	<input type="checkbox"/>	
Part 436, Subpart B, C, or D	Mine dewatering discharges at crushed stone mines, construction sand and gravel mines, or industrial sand mines.	J	<input type="checkbox"/>	
Part 443, Subpart A	Runoff from asphalt emulsion facilities.	D	<input type="checkbox"/>	
Part 445, Subparts A & B	Runoff from hazardous waste and non-hazardous waste landfills.	K,L	<input type="checkbox"/>	
c. If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis? <input type="checkbox"/> Yes <input type="checkbox"/> No				

Identify the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code that best represents the products produced or services rendered for which your facility is primarily engaged, as define in MSGP:					
Primary SIC Code:		Or		Primary Activity Code:	
Identify the applicable sector(s) and subsector(s) of industrial activity, including co-located industrial activity, for which you are requesting permit coverage.					
a. Sector:	Subsector:	b. Sector:	Subsector:	c. Sector:	Subsector:
d. Sector:	Subsector:	e. Sector:	Subsector:	f. Sector:	Subsector:
Is your site presently inactive or unstaffed? <input type="checkbox"/> Yes <input type="checkbox"/> No					
a. If yes, is your site expected to be inactive and unstaffed for the entire permit term? <input type="checkbox"/> Yes <input type="checkbox"/> No					
b. If no to a, then indicate the length of time that you expect your facility to be inactive and unstaffed.					
Section V. Storm water Pollution Prevention Plan (SWPPP) Contact Information					
SWPPP Contact Name:					
Phone:			Email:		
URL of SWPPP (if applicable):					
Section VI. Endangered Species Protection					
Using the instructions in Appendix E of the MSGP, under which criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit?					
<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F					
If you select criterion E from Part 1.1.4.5:					
What federally-listed species or federally-designated critical habitat are in your "action area"?					
List the pollutants expected to be present in your discharge:					
If you are an existing discharger, do you have effluent monitoring data from EPA's MSGP 2000 or another previous NPDES permit? <input type="checkbox"/> Yes <input type="checkbox"/> No					
1. If no, why not? <input type="checkbox"/> No monitoring required for my sector <input type="checkbox"/> Inactive/unstaffed site <input type="checkbox"/> Other:					
2. Do you have any other data characterizing pollutants in your storm water (describe)?					
3. If you have benchmark monitoring data, did you exceed any of the applicable benchmarks? <input type="checkbox"/> Yes <input type="checkbox"/> No					
4. Did you exceed any applicable effluent limitation guideline or cause or contribute to an exceedance of a state water quality standard? <input type="checkbox"/> Yes <input type="checkbox"/> No					
5. If you answered "yes" to either question 3 or 4 above, for what pollutant(s)?					
Attach documentation supporting criterion E eligibility. Documentation should address species and habitat listed above and the potential effects of pollutants in your discharge on the listed species and habitat.					
If you select criterion F from Part 1.1.4.5, provide the operator's NPDES Tracking Number under which you are certifying eligibility:					
Section VII. Historic Preservation					
Using the instructions in Appendix F of the MSGP, under which criterion listed in Part 1.1.4.6 are you eligible for coverage under this permit? <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D					

Section VIII. Certification Information:	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and reviewed the information contained herein. Based on the best of my knowledge and belief, this document and attachments contain true and accurate information, including the validity of the data and information provided herein.	
Printed Name: Robert E. Campbell, P.E.	Title: Regional Director
Signature: 	Date: 6/28/11 Email: robert.campbell@alaska.gov
MOI Preparer (Complete if MOI was prepared by someone other than the certifier)	
Prepared By: Jennifer Lindberg	
Organization: ADOT&PF	
Phone: 907-269-0714	Email: jennifer.lindberg@alaska.gov

DOT&PF Unalaska Airport
Attachment 2
Unalaska Airport Endangered Species Documentation

ADOT&PF is seeking coverage for the Unalaska Airport under the Alaska Pollutant Discharge Elimination System (APDES) Multi-Sector General Permit (MSGP). Under Part 1.1.4.5 of the MSGP, ADOT&PF has determined that the Unalaska Airport meets Criterion E: DOT&PF discharges associated with airport activities and related activities, and allowable non-stormwater discharges are not likely to adversely affect federally-listed endangered and threatened species or designated critical habitat.

After reviewing the USFWS endangered species consultation page, it has been determined that both threatened and endangered species can be found in the Unalaska Airport area.

1. Steller's Eiders (listed as threatened in 1997) winter range includes the Unalaska area.
2. Northern Sea Otter (listed as threatened in 2005).

Potential pollutants from the airport include urea and E-36 from de-icing activities and petroleum products associated with vehicle and equipment maintenance. The impacts associated with these pollutants are expected to be minimal. Vehicle maintenance is performed indoors, in shops equipped with drainage systems and oil water separators; the water that leaves the shops is then treated by the local municipal water works. Stormwater that leaves the airport, which may contain de-icing chemicals and petroleum products, passes through a series of vegetated ditches and culverts as well as a containment pond before entering Unalaska waters allowing for filtration and settling. The remaining stormwater leaves via sheet flow to vegetated areas. Best management practices such as good housekeeping, regular vehicle maintenance, anti-icing activities such as mechanical sweeping and proper storage of fuel and chemicals are utilized to prevent and reduce stormwater discharges.

Further, through emails with the USFWS in April, 2011, it was determined that there is no federal nexus to trigger a formal ESA Section 7 analysis. However, DOT&PF has submitted copies of the SWPPP to both USFWS and NMFS and comments and concerns would be incorporated where possible.

Appendix D – Visual Assessments

Visual Assessment Forms

SPCC Monthly Inspection Checklist

QUARTERLY VISUAL ASSESSMENT

Visual assessments needed quarterly for each outfall location, with one sample/year taken from snowmelt runoff. Collect sample using clean, clear container within 30 minutes of beginning of discharge event (if not possible, describe situation below). Examine sample in well lit area and record results below.

Name of Facility		Discharge/Outfall Location	
NPDES Tracking No.		Date & Time	
Name of Inspector(s)		Outfall Name	
Weather Conditions			
Additional Notes			
Nature of Discharge	Runoff (Need 3 annually)	Snow Melt (Need 1 annually)	

Observation	Description (Circle)			Comments and/or Source of Contamination
Color	Clear	Cloudy	Dark	
Odor	Absent	Sewage	Rotten Eggs	
Clarity	Clear	Cloudy	Dark	
Floating Solids	Absent	Present		
Settled Solids	Absent	Present		
Suspended Solids	Absent	Present		
Foam	Absent	Present		
Oil Sheen	Absent	Present	Smell	
Stains at Outfall	Absent	Present	Other	
Dry Weather Flow	Absent	Present		
Dead Vegetation	Absent	Present		
Sample taken in clean, clear container?			Yes	No
Sample inspected in well lit area?			Yes	No

If applicable, describe why it was not possible to take samples within the first 30 minutes of precipitation event:

Inspector Name/Title: _____

Signature: _____

Appendix E – Inspections

Inspection Forms

ROUTINE FACILITY INSPECTION REPORT

Facility inspections needed quarterly (monthly during deicing season) – annual comprehensive inspection counts for one. Inspections need to include all Industrial areas/activities exposed to stormwater: fuel tanks and dispensing areas, equipment parking areas, material storage/stockpile sites, waste material and trash disposal locations, off-site tracking areas (entrances/exits), aircraft deicing areas, snow dumps, and any implemented control measures.

Name of Facility		NPDES Tracking No.	
Inspector's Name(s)		Date & Time	
Weather Conditions			
Runoff Occurring	Yes	No	Describe:

Any previously unidentified discharges of pollutants since last inspection?	Yes	No	If Yes, describe:
Any previously unidentified pollutants in existing discharges?	Yes	No	If Yes, describe:
Evidence of, or potential for, pollutants entering the drainage system?	Yes	No	If Yes, describe:
Evidence of pollutants discharging to receiving waters at outfalls?	Yes	No	If Yes, describe:

Area/Activity Inspected (Brief description)	Control Measures Operating Effectively (Yes or No, and description)	Corrective Action Needed/Notes (Identify needed maintenance and repairs, or control measures needing replacement)

Notes	
-------	--

Inspector Name/Title: _____ Signature: _____

Appendix F – Corrections

Corrections Log

CORRECTIVE ACTION LOG

Date	Description of Corrective Action (Include repair/maintenance of control measures)	Name	Signature

Appendix G – Training

Annual Employee Training Log

SPCC Record of Annual Discharge Prevention Briefings and Trainings

TRAINING RECORD

Training Date		
Training Description		
Trainer		
	Employee(s) trained	Employee signature

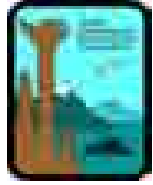
Training Date		
Training Description		
Trainer		
	Employee(s) trained	Employee signature

Training Date		
Training Description		
Trainer		
	Employee(s) trained	Employee signature

Appendix H –Annual Report

MSGP Annual Reporting Form

SPCCC Annual Facility Inspection Checklist



Alaska Department of Environmental Conservation

MSGP Annual Reporting Form

Section I. General Information

Facility Name:			
APDES Permit Tracking Number:			
<u>Facility Physical Address</u>			
Street:			
City:	State:	Alaska	Zip:
Lead Inspector's Name:		Title:	
Additional Inspectors Names:			
Contact Person:		Title:	
Phone:		Email:	
Inspection Date:			

Section II. General Inspection Findings

1. As part of this comprehensive site inspection, did you inspect all potential pollutant sources, including areas where industrial activity may be exposed to storm water? Yes No

If NO, describe why not:

Note: Complete Section III of this form for each industrial activity area inspected and included in your SWPPP or as newly defined, in Section II parts 2 and 3 below, where pollutants may be exposed to storm water.

2. Did this inspection identify any storm water or non-storm water outfalls not previously identified in your SWPPP? Yes No

If YES, for each location, describe the sources of those storm water and non-storm water discharges and any associated control measures in place:

3. Did this inspection identify any sources of storm water or non-storm water discharges not previously identified in your SWPPP? Yes No

If YES, describe these sources of storm water or non-storm water pollutants expected to be present in these discharges, and any control measures in place:

4. Did you review storm water monitoring data as part of this inspection to identify potential pollutant hotspots? Yes No NA, no monitoring performed

If YES, summarize the findings of that review and describe any additional inspection activities resulting from this review:

5. Describe any evidence of pollutants entering the drainage system or discharging to surface waters, and the condition of and around outfalls, including flow dissipation measure to prevent scouring:

6. Have you taken or do you plan to take and corrective actions, as specified in Part 3 of the permit, since your last annual report submission (or since you received authorization to discharge under this permit if this is your first annual report), including any corrective actions identified as a result of this annual comprehensive site inspection?

Yes No

If YES, how many conditions requiring review for corrective active as specified in Parts 3.1 and 3.2 of the MSGP were addressed by these corrective actions?

Note: Complete the attached Corrective Action Form (Section IV) for each condition indentified, including any conditions identified as a result of this comprehensive storm water inspection.

Section III. Industrial Activity Area Specific Findings

Complete one block for each industrial activity area where pollutants may be exposed to storm water. Copy this page for additional industrial activity areas.

In reviewing each area, you should consider:

- Industrial materials, residue, or trash that may have or could come into contact with storm water;
- Leaks or spills from industrial equipment, drums, tanks, and other containers;
- Offsite tracking of industrial or waste materials from areas of no exposure to exposed areas; and
- Tracking or blowing of raw, final, or waste material from areas of no exposure to exposed areas.

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Note: Copy this page and attach additional pages as necessary.

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Industrial Activity Area:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? Yes No

3. Have any control measures failed and require replacement? Yes No

4. Are any additional/revised control measures necessary in this area? Yes No

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form.)

Section IV. Corrective Actions		
<p>Complete this page for each specific condition requiring a corrective action or a review determining that no corrective action is needed. Copy this page for additional corrective actions or reviews.</p> <p>Include both corrective actions that have been initiated or completed since the last annual report, and future corrective actions needed to address problems identified in the comprehensive storm water inspection. Include an update on any outstanding corrective actions that had not been completed at the time of your previous annual report.</p>		
1. Corrective Action # _____	of _____	for this reporting period.
2. Is this corrective action:		
<p>An update on a corrective action from a previous annual report; or</p> <p>A new corrective action?</p>		
3. Identify the condition(s) triggering the need for this review:		
<p>Unauthorized release of discharge</p> <p>Numeric effluent limitation exceedance</p> <p>Control measures inadequate to meet applicable water quality standards</p> <p>Control measures inadequate to meet non-numeric effluent limitations</p> <p>Control measures not properly operated or maintained</p> <p>Change in facility operations necessitated change in control measures</p> <p>Average benchmark value exceedance</p> <p>Other (describe):</p>		
4. Briefly describe the nature of the problem identified:		
5. Date problem identified:		
6. How problem was identified:		
<p>Comprehensive site inspection</p> <p>Quarterly visual assessment</p> <p>Routine facility inspection</p> <p>Benchmark monitoring</p> <p>Notification by EPA or ADEC</p> <p>Other (describe):</p>		
7. Description of corrective action(s) taken or to be taken to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, analyses to be conducted, etc.) or if no modification are needed, basis for that determination:		
8. Did/will this corrective action require modification of you SWPPP?	Yes	No
9. Date corrective action initiated:		
10. Date corrective action completed:	Or expected to be completed:	
11. If corrective action not yet completed, provide the status of the corrective action as the time of the comprehensive site inspections and describe any remaining steps (including timeframes associated with each step) necessary to complete the corrective action:		

Section V. Annual Report Certification

Compliance Certification

Do you certify that your annual inspection has met the requirements of Part 4.2 of the permit, and that, based upon the results of this inspection, to the best of your knowledge, you are in compliance with the permit? Yes No

If No, summarize why you are not in compliance with the permit:

Annual Report Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Authorized Representative: _____ Title: _____

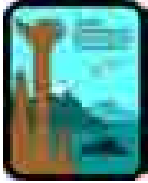
Signature: _____ Date Signed: _____ Email: _____

Appendix I – Blank Forms

MSGP Industrial Discharge Monitoring Report (MDMR)

Airport Deicer Tracking Form

Tenant Deicer Tracking Form



Alaska Department of Environmental Conservation

MSGP Industrial Discharge Monitoring Report (MDMR)

Reason(s) for Submission (Check all that apply):		
Submitting monitoring data (fill in all Sections).		
Reporting no discharge for all outfalls for this monitoring period (fill in Sections I, II, III, IV, and VI).		
Reporting that your site status has changed to inactive and unstaffed (fill in Sections I, II, VI and include date of status change in comments field in Section V).		
Reporting that your site status has changed to active (fill in all sections and include date of status change in comments field in Section V).		
Reporting that no further pollutant reductions are achievable for all outfalls and for all pollutants via Part 6.2.1.2 of the MSGP (fill in Sections I, II, and VI).		
Section I. Permit Information		
Permit Tracking Number:		
Section II. Facility Information		
Facility Name:		
<u>Facility Physical Address</u>		
Street:		
City:	State: Alaska	Zip:
Contact Name:	Email:	
MDMR Preparer (Complete if MDMR was prepared by someone other than the person signing the certification in Section VI):		
Prepared By:	Organization:	
Email:	Phone:	
Section III. Discharge Information		
Identify Monitoring Period:	Check here if proposing alternative monitoring periods due to irregular storm water runoff. Identify alternative monitoring schedule and indicate for which alternative period you are reporting monitoring data.	
Quarter 1 (April 1 – June 30)	Quarter 1: From	To
Quarter 2 (July 1 – September 30)	Quarter 2: From	To
Quarter 3 (October 1 – December 31)	Quarter 3: From	To
Quarter 4 (January 1 – March 31)	Quarter 4: From	To
Are you required to monitor for cadmium, copper, chromium, lead, nickel, silver, or zinc?		Yes No (Skip to Section IV)
What is the hardness level of the receiving water?	mg/L	
Section IV. Outfall Information		
How many outfalls are identified in your SWPPP?		List names of outfalls required to be monitored in the table below.
Do any of your outfalls discharge substantially identical effluents?		Yes No
If YES, for each monitored outfall, indicate outfall names that are substantially identical in the table below.		
a. Monitored Outfall Name*	b. Substantially Identical Outfalls [List name(s) of outfall(s) that are substantially identical to outfall in a.]	c. No Discharge?

*Reference attachment if additional space is needed to complete the table.

Instructions for Completing the MSGP Industrial Discharge Monitoring Report (MDMR)

Who Must Submit A Discharge Monitoring Report to ADEC?

An operator or owner of a facility covered under the Multi-Sector General Permit (MSGP or permit) that are required to monitor pursuant to Parts 6.2, 6.3, and 8 of the permit must submit the MSGP Discharge Monitoring Report (MDMR) consistent with the reporting requirements specified in Part 7.1 of the permit.

Completing the Form

Type or print, in the appropriate areas only. "NA" can be entered in areas that are not applicable. If you have any questions about how or when to use this form, contact the ADEC Storm Water Program at (907) 269-6285 or online at <http://www.dec.state.ak.us/water/wppspc/stormwater/stormwater.htm>.

Reasons for Submission

Indicate your reason(s) for submitting this MDMR by checking all boxes that apply. The reasons for submission are defined as follows:

- *Submitting monitoring data:* For each storm event sampled, submit one MDMR form with data for all outfalls sampled. Select this reason even if you only have monitoring data for some of your outfalls (i.e., some outfalls did not discharge). If you select this reason, you are required to complete all Sections of the form.
- *Reporting no discharge for all outfalls for this monitoring period:* Indicates that there were no discharges from all outfalls during this monitoring period. If you select this reason, you are only required to complete Sections I, II, III, IV, and VI.
- *Reporting that your site status has changed to inactive and unstaffed:* Indicates that your facility is currently inactive and unstaffed (See Part 6.2.1.3 of the permit for more information). If you select this reason, you are only required to complete Sections I, II, and VI and include date of status change in the comment field in Section V.
- *Reporting that your site status has changed from inactive to active:* Indicates that your facility is currently active (See Part 6.2.1.3 of the permit for more information). If you select this reason, you are required to complete all Sections of the form and include date of status change in the comment field in Section V.
- *Reporting that no further reductions are achievable for all outfalls and for all pollutants via Part 6.2.1.2 of the permit:* Indicates that your facility has determined that no further pollutant reductions are technologically and economically practicable in light of best industry practice to meet the technology-based effluent limitations or are necessary to meet the water-quality-based effluent limitations in Parts 2 of the permit (See Part 6.2.1.2 of the permit for more information). If you select this reason, you are required to complete Sections I, II and VI. However, if you can make this finding for some outfalls and pollutants, but not for others, you cannot select this reason; you will instead be able to identify which outfalls and which pollutants you can make this finding for in Section V.

Section I. Permit Tracking Number

Enter the APDES or NPDES tracking number assigned by ADEC's or EPA's Storm water Program to the facility. If you do not know the tracking number, you can find the tracking number assigned to your facility on ADEC's Water Permit Search www.dec.state.ak.us/water/WaterPermitSearch/Search.aspx or EPA's Notice of Intent (NOI) Search website (www.epa.gov/npdes/noisearch) if you submitted your NOI on EPA's website.

Section II. Facility Information

- Enter the facility's official or legal name. Unless the name of your facility has changed, please use the same name provided on your NOI. You can use ADEC's Water Permit Search, www.dec.state.ak.us/water/WaterPermitSearch/Search.aspx or EPA's NOI Search website (www.epa.gov/npdes/noisearch) to view your NOI if you submitted your NOI on the EPA website.
- Enter the street address, including city, state, and zip code of the actual physical location of the facility. Do **not** use a P.O. Box.
- Identify the name, telephone number, and email address of the person who will serve as a contact for ADEC on issues related to monitoring at your facility. This person should be able to answer questions related to storm water discharges and monitoring or have immediate access to individuals with that knowledge. This person does not have to be the facility operator but should have intimate knowledge of monitoring activities at the facility.
- If the form was prepared by someone other than the person who is signing the certification statement in Section VI (for example, if the MDMR was prepared by a member of the facility's storm water pollution prevention team or a consultant for the certifier's signature), include the name, organization, telephone number, and email address of the MDMR preparer.

Section III. Discharge Information

- Indicate the appropriate monitoring period (Quarter 1, 2, 3, or 4) covered by the MDMR. "Alternative" monitoring periods can apply to facilities located in arid and semi-arid climates or in areas subject to snow or prolonged freezing. To use alternative monitoring periods, you must provide a revised monitoring schedule here in the first monitoring report submitted and indicate for which alternative monitoring period you are reporting monitoring data. If using alternative monitoring periods, identify the first day of the monitoring period through the last day of the monitoring period for each of the four periods. The dates should be displayed as month (Mo) / day (Day). See Parts 6.1.6 and 6.1.7 of the permit for more information.
- If you are submitting benchmark monitoring data, identify if your facility is required to collect benchmark samples for one or more hardness-dependent metals (i.e., cadmium, copper, lead, nickel, silver, and zinc). If you select "yes" to this question you must also complete the table in Section III, and if you select "no" to this question, you may skip to Section IV.
- If you selected "yes" for the previous question, then you are required to submit to ADEC with your first benchmark report a hardness level established consistent with the procedures in Appendix J of the permit, which is representative of your receiving water. If your outfalls discharge to more than one receiving water, as reported in your NOI form, you should report hardness for the receiving water with the lowest hardness values. Hardness values must be reported in milligrams per liter (mg/L).

Section IV. Outfall Information

- Enter the total number of outfalls identified in your SWPPP. Outfalls are locations where storm water exits the facility, including pipes, ditches, swales, and other structures used to remove storm water from the facility.
- Indicate if your facility has two or more outfalls that you believe discharge substantially identical effluents (i.e., storm water), based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to storm water, and runoff coefficients of their drainage areas. See Parts 5.1.5.2 and 6.1.1 of the permit for more information on substantially identical outfalls.
- If you selected "yes" for the previous question, then you must list the outfall name(s) in Column b that you expect to be substantially identical to the corresponding outfall in Column a.
 - Monitored Outfall Name:* List name(s) of outfall(s) you are required to monitor.
 - Substantially Identical Outfalls:* List name(s) of outfall(s) substantially identical to "Monitored Outfall" in Column a. (if applicable).
 - No Discharge:* Check box if you are reporting "No Discharge" for the monitored outfall for the reporting period identified in Section III.

Example:

a. Monitored Outfall Name	b. Substantially Identical Outfall	c. No Discharge
Outfall A	Outfall B; Outfall C	<input type="checkbox"/>
Outfall D		<input checked="" type="checkbox"/>

Reference attachments if additional space is needed to complete the table in Section IV.

Section V. Monitoring Information

- Enter the APDES or NPDES tracking number assigned to the facility reported in Section I.
- For the reported monitoring event, indicate whether the discharge was from a rainfall or snowmelt event. If you select "rainfall", then indicate:
 - the duration (in hours) of the rainfall event;
 - rainfall total (in inches) for that rainfall event; and
 - time (in days) since the previous measurable storm event.
- If the discharge occurs during a period of both rainfall and snowmelt, check both the rainfall and snowmelt boxes and report the appropriate rainfall information in items a-c. To report multiple monitoring events in the same reporting period, copy Page 2 of this Form and enter each monitoring event separately with data for all outfalls sampled.
- For each pollutant monitored at an outfall, you must complete one row in the Table as follows:
 - *Outfall Name:* Provide the outfall name for which you monitored (e.g., Outfall 1, Outfall 2, Outfall 3).
 - *Monitoring Type:* Provide the type of monitoring using the specified codes below:
 - QBM – Quarterly benchmark monitoring;
 - ELG – Annual effluent limitations guidelines monitoring;
 - S – State specific monitoring;
 - I – Impaired waters monitoring; or
 - O – Other monitoring as required by ADEC.

Instructions for Completing the MSGP Industrial Discharge Monitoring Report (MDMR)

- *Parameter(s)*: Enter each “Parameter” (or “pollutant”) monitored. For QBM and ELG monitoring, use the same parameter name as in Part 8 of the permit.
- *Quality or Concentration*: Enter sample measurement value for each parameter analyzed and required to be reported. Enter “ND” (i.e., not detected) for any sample results below the method detection limit or “BQL” (i.e., below quantitation limit) for sample results above the detection limit but below the quantitation limit.
- *Units*: Enter the units for sample measurement values (e.g., “mg/L” for milligrams per liter) for each parameter analyzed and required to be reported. For monitoring results reported as ND or BQL, this space will be left blank and the units will be reported under *Results Description*.
- *Results Description*: This section must be completed for any monitoring results reported as ND or BQL in the “Quality or Concentration” column. For ND, report the laboratory detection level and units in this column. For BQL, report the laboratory quantitation limit and units in this column.
- *Collection Date*: Identify the sampling date for each parameter monitoring result reported on this form.
- *Exceedance due to natural background pollutant levels*: Check box if following the first 4 quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than 4 quarters of data) you have determined that the exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background for that outfall and any substantially identical outfalls. See Part 6.2.4.2 of the permit for more information. Attach supporting rationale for your determination to the submitted MDMR and reference attachment in comments portion of Section V.
- *No further pollutant reductions achievable*: Check box if after collection of 4 quarterly samples (or sooner if the exceedance is triggered by less than 4 quarters of data), the average of the 4 monitoring values for any parameter exceeds the benchmark and you have made the determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limitations or are necessary to meet the water-quality-based effluent limitations in Parts 2 of the permit (See Part 6.2.1. of the permit for more information) for that outfall and any substantially identical outfalls. Attach supporting rationale for your determination to the submitted MDMR and reference attachment in comments portion of Section V.
- Where violations of the permit requirements are reported, include a brief explanation to describe the cause and corrective actions taken and reference each violation by date. Also, this section should include any additional comments such as are required when changing site status from inactive and unstaffed to active or vice versa. Attach additional pages if you need more space.

Attach additional copies of Section V as necessary to address all outfalls and parameters.

Section VI. Certification

Enter *Printed Name and Title of Principal Executive Officer or Authorized Agent* with *Signature of Principal Executive Officer or Authorized Agent*, and the *Date* this form was signed and the email address of the “*Principal Executive Officer or Authorized Agent*.” If you submit multiple pages of Section V monitoring data, each page must be appropriately signed and certified as described below.

The MDMRs must be signed as follows:

- (1) For a corporation, a responsible corporate officer shall sign the MDMR, a responsible corporate officer means:
 - (A) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
 - (B) the manager of one or more manufacturing, production, or operating facilities, if
 - (i) the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental statutes and regulations;
 - (ii) the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and

(iii) authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship, the general partner or the proprietor, respectively; or

(3) for a municipality, state, or other public agency, either a principal executive officer or ranking elected official shall sign the application; in this subsection, a principal executive officer of an agency means

(A) the chief executive officer of the agency; or

(B) a senior executive officer having responsibility for the overall operations of a principal geographic unit or division of the agency.

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated MDMR will not be considered valid.

Where to File the MDMR Form

Monitoring data collected pursuant to Parts 6.2, 6.3, and 8 of the permit must be reported on the paper MDMR form and sent to the following address:

If you file by mail, please submit the original form with a signature in ink. ADEC will not accept a photocopied signature. Remember to retain a copy for your records.

MSMRs sent by mail:

Alaska Dept. of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501
Phone: (907) 269-6285

Appendix J – Miscellaneous

Airport Tennant Letter – 2011

Airport Tennant Letter – 11/9/2010

SWPPP Staff Title and Responsibility Table

Alternate Authority Authorization Letter

USFWS and NMFS ESA Documentation

Lindberg, Jennifer A (DOT)

From: Lindberg, Jennifer A (DOT)
Sent: Wednesday, June 29, 2011 10:51 AM
To: Kimberly_Klein@fws.gov; Barbara.Mahoney@noaa.gov
Subject: RE: Concurrence - Unalaska Airport Operations
Attachments: CR SWPPP Unalaska.doc; Appendix A_Unalaska Watershed Map.pdf; RE: Homer Airport ESA Consultation

Kimberly and Barbara,

It has been a while and sorry for the delay but I am nearly complete with the Unalaska Airport SWPPP. Also, please note the name change, I am now Lindberg and no longer Hillman.

Per our discussion about the review of SWPPPs and the lacking federal nexus for ESA section 7 consultation (see attached Homer Airport ESA Consultation), I have attached the SWPPP, and watershed map. They are nearly final and ready for coverage under the MSGP. I know that you are extremely busy and I do not expect a rigid timeline for review or anything. When you are able to provide comments or suggestions we will certainly incorporate them in to the plan.

Also note, this airport has proposed construction. The start and complete dates for this work I believe won't be until next year or so at which time we will adjust the SWPPP according to the changes after construction is complete. The construction would have its own SWPPP under the CGP.

Also for all of our SWPPPs, which I am slowly working through – the full initial SWPP will be posted at <http://dot.alaska.gov/stwdav/swppp.shtml> when the SWPPP is finalized. Over time this may not reflect the most accurate information on the SWPPP but we have a review process in place to update the online document when major changes are needed/made and after the SWPPP 5 year review.

Thanks,

Jen

Jen (Hillman) Lindberg
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

From: Hillman, Jennifer A (DOT)
Sent: Friday, April 22, 2011 1:12 PM
To: Kimberly_Klein@fws.gov
Subject: RE: Concurrence - Unalaska Airport Operations

Kimberly,

All things stormwater went on hold temporarily for a while there but in answer to your question of the federal nexus this is used to satisfy the SWPPP requirement for DEC authorization under the APDES. This SWPP is not associated with the proposed airport modifications but for existing operations, once construction is complete (and I do believe there will be modifications to the storm water control measures that are currently in place) I will modify the SWPPP to reflect these changes.

The statement "Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G". Was a statement from the draft SWPPP, there are no current permits from the USFWS, with the exception I believe to control/prevent birds and wild animals from residing on the airport because of the animal/aircraft collision dangers. It was a preemptive statement that we would follow conditions for both control wildlife on the airport and mitigating where necessary impacts to endangered species.

I don't think there is a federal nexus at this point except maybe that we utilize FAA funding in portions of our general maintenance and operations of airports. However, the stormwater plan is not a condition of this funding. Is that enough to trigger a section 7?

Effluent Limits for deicing activities under the MSGP states that airports shall not exceed 100 tons of urea and 100,000 gallons of potassium acetate for de-icing activities without conducting analytical sampling for impacts. The Unalaska Airport uses approximately 55 tons of urea and 10,000 gallons of potassium acetate. When possible, mechanized anti-icing activities are utilized in lieu of chemical de-icers. Water is diverted through grassy swales and a settling basin before entering waterways. DOT&PF has determined that airport operations would not impact ESA listed species.

Please let me know if you have any questions or concerns regarding this determination or recommendations for mitigation.

Thank you,

Jen Hillman
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

From: Kimberly_Klein@fws.gov [mailto:Kimberly_Klein@fws.gov]

Sent: Wednesday, August 11, 2010 3:59 PM

To: Hillman, Jennifer A (DOT)

Subject: RE: Concurrence - Unalaska Airport Operations

Jennifer,

Greg forwarded your message to me, as he has moved to a new position at the Regional Office and will no longer be focused on the Endangered Species Act. Please send your ESA questions to me or Ellen Lance (ellen_lance@fws.gov).

I have a few questions for you that will help determine the best course of action to avoid and minimize impacts to threatened and endangered species. In your letter below, you state: "Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G". Can you tell me what you propose to do? Is the proposed action the issuance of the Storm Water Pollution Prevention Plan? If so, will this plan be used to satisfy the SWPPP requirement for DEC

authorizations under the APDES program? Will it also be used for other purposes, i.e. to satisfy FAA requirements? If so, what are those requirements? Also, what certification or permit is granted by the USFWS? is this the Section 7 review, or another authorization?

I ask these questions to clarify the proposed action as well as to determine what to do next. Since EPA delegated the NPDES program to DEC, projects that only require review of SWPPPs for NPDES authorization no longer are eligible for exemption from violation of the Endangered Species Act under Section 7 unless another federal party is involved. Federal involvement can include permits, federal funding, or federal property. It can be highly beneficial to identify the "federal nexus" and engage the Section 7 process, as the federal entity can designate nonfederal representatives, and can receive coverage for potential violations of ESA resulting from the operation of the airport. In addition, it allows all of us to work together to minimize impacts to threatened and endangered species.

This situation is a bit unique because of the proposed airport expansion. The preparation and adoption of the SWPPP and Countermeasure Plan are likely to have a federal nexus through the FAA because the operations are dependant on the physical configuration, which is proposed to change in the near future. Thus, the SWPPP can be considered an interdependent and interrelated action and should be incorporated into the Section 7 review of the airport expansion project. To that end, it would be very helpful to understand if and how the SWPPP is proposed to change as a result of the expansion project. Will the SWPPP address construction activities? Are there any differences between the way storm water will be treated in the pre- vs. post-construction phases? Will the SWPPP provide coverage for the expansion area after construction is complete? Is a draft plan available for review? What is your timeline for issuing and activating the plan?

In summary, I will first need to determine the federal nexus, then get a bit more information to determine how best to proceed.

Call or hit reply and we will work together to figure this out.
I look forward to hearing from you,

Kimberly Klein
Endangered Species Biologist
USFWS/AFWFO
605 W. 4th Ave. Room G-61
Anchorage, AK 99501
(907) 271-2066

"Hillman,
Jennifer A
(DOT)" <>

To greg_balogh@fws.gov

cc

07/12/2010 11:25
AM

SubjectConcurrence - Unalaska Airport Operations

Greg,

I am currently working on the Storm Water Pollution Prevention Plan and the Spill Prevention control and

Countermeasure Plan for general operations at the Unalaska Airport, maintained and operated by the DOT.

Operations Description

The Unalaska Airport is located in the City of Unalaska, AK, on Amaknak Island in the Aleutian Islands (See MakBayMap). The facility consists of one 3,900-foot-long asphalt-surfaced runway (12/30). Paved aprons with leased areas are located to the north and south of the eastern portion of the runway. The DOT&PF equipment and maintenance building is located on the northern apron. Outside activities include equipment fueling, runway maintenance, and deicing and sanding activities. Diesel fuel and gasoline for equipment and vehicle fueling are located in 1,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Runway maintenance is limited to repainting runway markings (once a year) and sealing stress cracks in the asphalt surface (as necessary). These activities are performed in accordance with DOT&PF procedures and require dry weather. Deicing activities include mechanical plowing and the application of liquid urea, pelletized urea, and liquid E36 (potassium acetate) on airport surfaces.

Drainage patterns for the Unalaska Airport are shown on Figure 1. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of vegetated drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area. A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow.

ESA Listed Species and Determination

The Steller's Eider and the Northern Sea Otter, both listed as a threatened species, ranges include Unalaska. Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G.

DOT&PF has determined that airport activities may affect but is unlikely to adversely affect Steller's Eiders and the Northern Sea Otter.

Thank you,

Jen Hillman
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

Lindberg, Jennifer A (DOT)

From: Lindberg, Jennifer A (DOT)
Sent: Wednesday, June 29, 2011 10:51 AM
To: Kimberly_Klein@fws.gov; Barbara.Mahoney@noaa.gov
Subject: RE: Concurrence - Unalaska Airport Operations
Attachments: CR SWPPP Unalaska.doc; Appendix A_Unalaska Watershed Map.pdf; RE: Homer Airport ESA Consultation

Kimberly and Barbara,

It has been a while and sorry for the delay but I am nearly complete with the Unalaska Airport SWPPP. Also, please note the name change, I am now Lindberg and no longer Hillman.

Per our discussion about the review of SWPPPs and the lacking federal nexus for ESA section 7 consultation (see attached Homer Airport ESA Consultation), I have attached the SWPPP, and watershed map. They are nearly final and ready for coverage under the MSGP. I know that you are extremely busy and I do not expect a rigid timeline for review or anything. When you are able to provide comments or suggestions we will certainly incorporate them in to the plan.

Also note, this airport has proposed construction. The start and complete dates for this work I believe won't be until next year or so at which time we will adjust the SWPPP according to the changes after construction is complete. The construction would have its own SWPPP under the CGP.

Also for all of our SWPPPs, which I am slowly working through – the full initial SWPP will be posted at <http://dot.alaska.gov/stwdav/swppp.shtml> when the SWPPP is finalized. Over time this may not reflect the most accurate information on the SWPPP but we have a review process in place to update the online document when major changes are needed/made and after the SWPPP 5 year review.

Thanks,

Jen

Jen (Hillman) Lindberg
Environmental Impact Analyst
DOT&PF
(p) 269-0714
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Sent: Friday, April 22, 2011 1:12 PM
To: Kimberly_Klein@fws.gov
Subject: RE: Concurrence - Unalaska Airport Operations

Kimberly,

All things stormwater went on hold temporarily for a while there but in answer to your question of the federal nexus this is used to satisfy the SWPPP requirement for DEC authorization under the APDES. This SWPP is not associated with the proposed airport modifications but for existing operations, once construction is complete (and I do believe there will be modifications to the storm water control measures that are currently in place) I will modify the SWPPP to reflect these changes.

The statement "Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G". Was a statement from the draft SWPPP, there are no current permits from the USFWS, with the exception I believe to control/prevent birds and wild animals from residing on the airport because of the animal/aircraft collision dangers. It was a preemptive statement that we would follow conditions for both control wildlife on the airport and mitigating where necessary impacts to endangered species.

I don't think there is a federal nexus at this point except maybe that we utilize FAA funding in portions of our general maintenance and operations of airports. However, the stormwater plan is not a condition of this funding. Is that enough to trigger a section 7?

Effluent Limits for deicing activities under the MSGP states that airports shall not exceed 100 tons of urea and 100,000 gallons of potassium acetate for de-icing activities without conducting analytical sampling for impacts. The Unalaska Airport uses approximately 55 tons of urea and 10,000 gallons of potassium acetate. When possible, mechanized anti-icing activities are utilized in lieu of chemical de-icers. Water is diverted through grassy swales and a settling basin before entering waterways. DOT&PF has determined that airport operations would not impact ESA listed species.

Please let me know if you have any questions or concerns regarding this determination or recommendations for mitigation.

Thank you,

Jen Hillman
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

From: Kimberly_Klein@fws.gov [mailto:Kimberly_Klein@fws.gov]
Sent: Wednesday, August 11, 2010 3:59 PM
To: Hillman, Jennifer A (DOT)
Subject: RE: Concurrence - Unalaska Airport Operations

Jennifer,

Greg forwarded your message to me, as he has moved to a new position at the Regional Office and will no longer be focused on the Endangered Species Act. Please send your ESA questions to me or Ellen Lance (ellen_lance@fws.gov).

I have a few questions for you that will help determine the best course of action to avoid and minimize impacts to threatened and endangered species. In your letter below, you state: "Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G". Can you tell me what you propose to do? Is the proposed action the issuance of the Storm Water Pollution Prevention Plan? If so, will this plan be used to satisfy the SWPPP requirement for DEC

authorizations under the APDES program? Will it also be used for other purposes, i.e. to satisfy FAA requirements? If so, what are those requirements? Also, what certification or permit is granted by the USFWS? is this the Section 7 review, or another authorization?

I ask these questions to clarify the proposed action as well as to determine what to do next. Since EPA delegated the NPDES program to DEC, projects that only require review of SWPPPs for NPDES authorization no longer are eligible for exemption from violation of the Endangered Species Act under Section 7 unless another federal party is involved. Federal involvement can include permits, federal funding, or federal property. It can be highly beneficial to identify the "federal nexus" and engage the Section 7 process, as the federal entity can designate nonfederal representatives, and can receive coverage for potential violations of ESA resulting from the operation of the airport. In addition, it allows all of us to work together to minimize impacts to threatened and endangered species.

This situation is a bit unique because of the proposed airport expansion. The preparation and adoption of the SWPPP and Countermeasure Plan are likely to have a federal nexus through the FAA because the operations are dependant on the physical configuration, which is proposed to change in the near future. Thus, the SWPPP can be considered an interdependent and interrelated action and should be incorporated into the Section 7 review of the airport expansion project. To that end, it would be very helpful to understand if and how the SWPPP is proposed to change as a result of the expansion project. Will the SWPPP address construction activities? Are there any differences between the way storm water will be treated in the pre- vs. post-construction phases? Will the SWPPP provide coverage for the expansion area after construction is complete? Is a draft plan available for review? What is your timeline for issuing and activating the plan?

In summary, I will first need to determine the federal nexus, then get a bit more information to determine how best to proceed.

Call or hit reply and we will work together to figure this out.
I look forward to hearing from you,

Kimberly Klein
Endangered Species Biologist
USFWS/AFWFO
605 W. 4th Ave. Room G-61
Anchorage, AK 99501
(907) 271-2066

"Hillman,
Jennifer A
(DOT)" <>

To greg_balogh@fws.gov

cc

07/12/2010 11:25
AM

SubjectConcurrence - Unalaska Airport Operations

Greg,

I am currently working on the Storm Water Pollution Prevention Plan and the Spill Prevention control and

Countermeasure Plan for general operations at the Unalaska Airport, maintained and operated by the DOT.

Operations Description

The Unalaska Airport is located in the City of Unalaska, AK, on Amaknak Island in the Aleutian Islands (See MakBayMap). The facility consists of one 3,900-foot-long asphalt-surfaced runway (12/30). Paved aprons with leased areas are located to the north and south of the eastern portion of the runway. The DOT&PF equipment and maintenance building is located on the northern apron. Outside activities include equipment fueling, runway maintenance, and deicing and sanding activities. Diesel fuel and gasoline for equipment and vehicle fueling are located in 1,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Runway maintenance is limited to repainting runway markings (once a year) and sealing stress cracks in the asphalt surface (as necessary). These activities are performed in accordance with DOT&PF procedures and require dry weather. Deicing activities include mechanical plowing and the application of liquid urea, pelletized urea, and liquid E36 (potassium acetate) on airport surfaces.

Drainage patterns for the Unalaska Airport are shown on Figure 1. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of vegetated drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from Watershed C flows to a series of catch basins and subsurface culverts into a detention area. A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow.

ESA Listed Species and Determination

The Steller's Eider and the Northern Sea Otter, both listed as a threatened species, ranges include Unalaska. Airport maintenance and operations follows BMPs, SWPPP and SPCC plan and follows certifications and permits granted by the FAA, DEC, USFWS and ADF&G.

DOT&PF has determined that airport activities may affect but is unlikely to adversely affect Steller's Eiders and the Northern Sea Otter.

Thank you,

Jen Hillman
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

Lindberg, Jennifer A (DOT)

From: Kimberly_Klein@fws.gov
Sent: Monday, May 23, 2011 11:46 AM
To: Hillman, Jennifer A (DOT)
Subject: RE: Homer Airport ESA Consultation

Hi Jen,

Transfer of the NPDES to APDES removes the nexus for Section 7 consultation, but we are still able to provide Technical Assistance to ADEC, especially in situations where there may be impacts to threatened or endangered species due to a ADEC action. While we cannot provide any protection from liability if harm or take of a listed species were to occur, we can provide recommendations to help you to reduce the chances that the permit or authorization would result in take.

I realize this is a subtle difference and would be happy to help clarify. Call or reply with questions. Thanks.

Kimberly Klein
Endangered Species Biologist
USFWS/AFWFO
605 W. 4th Ave. Room G-61
Anchorage, AK 99501
(907) 271-2066

▼ "Hillman, Jennifer A (DOT)" <jennifer.hillman@alaska.gov>

"Hillman, Jennifer A (DOT)"
<jennifer.hillman@alaska.gov>

Tolynnda_kahn@fws.gov

05/23/2011 11:18 AM

ccKimberly_Klein@fws.gov

SubjectRE: Homer Airport ESA Consultation

Hello Lynnda,

I have not completed the SWPPP for the Homer Airport. I intend to resume work on this once I am able, likely the beginning of June.

I am confused about the FWS consultation process because I have been told that since it is now APDES and not EPA there is no federal nexus and FWS will not review these stormwater plans.

When I complete the stormwater plan I can send a copy your way but I know you all are super busy and I don't want to create a ton of extra unnecessary work for you. Let me know what the next steps are.

Jen

From: Lynnda_Kahn@fws.gov [mailto:Lynnda_Kahn@fws.gov]
Sent: Friday, May 20, 2011 11:17 AM
To: Hillman, Jennifer A (DOT)
Cc: Kimberly_Klein@fws.gov
Subject: Fw: Homer Airport ESA Consultation

Hi Jennifer,

I am looking for an update on this matter.

I'd appreciate it if you could respond and let me know where things stand with your Homer Airport SWPPP and plans to proceed.

Thanks.

Lynnda ><{{{>.,.-\.,, ><((((> ..-\.,,.-\.,, ><((((> .,-\.,,.-\.,, ><{{{>

Lynnda Kahn
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Conservation Planning Assistance
43655 Kalifornsky Beach Rd.
Soldotna, AK 99669-8296
(907) 260-0131 (Office)
(907) 262-7145 (Fax)

----- Forwarded by Lynnda Kahn/R7/FWS/DOI on 05/20/2011 11:14 AM -----

Kimberly Klein/R7/FWS/DOI To
Lynnda Kahn/R7/FWS/DOI@FWS
02/24/2011 01:39 PM cc
Subject
Re: Homer Airport ESA Consultation

Hi Lynnda, I never heard anything back from DOT regarding Homer airport SWPPP. Are you interested and able to follow up? Let me know if I can help.

Kimberly Klein
Endangered Species Biologist
USFWS/AFWFO
605 W. 4th Ave. Room G-61
Anchorage, AK 99501
(907) 271-2066
▼Lynnda Kahn/R7/FWS/DOI

Lynnda Kahn/R7/FWS/DOI To
Kimberly Klein/R7/FWS/DOI@FWS
02/23/2011 01:43 PM cc

PM

Subject

Re: Homer Airport ESA
Consultation

Hey Kimberly, can you give me an update on this?
Did ADOT ever get back with you regarding your response?

Lynnda

▼ Kimberly Klein/R7/FWS/DOI

**Kimberly
Klein/R7/FWS/DOI**

To

"Hillman, Jennifer A (DOT)"
<jennifer.hillman@alaska.gov>

01/06/2011 05:10

cc

PM

Lynnda
Kahn/R7/FWS/DOI@FWS

Subject

Re: Homer Airport ESA
Consultation

Jennifer,

Thank you for your inquiry regarding threatened and endangered species that may be impacted by storm water management at operations at the Homer airport. The US Fish and Wildlife. The following species are found in nearshore marine waters near Homer: the North American breeding Steller's eider (*Polysticta stelleri*, listed as threatened in 1997), Kittlitz's murrelet (*Brachyramphus brevirostris*, listed as a candidate species in 2004), and yellow-billed loon (*Gavia adamsii*, listed as a candidate species in 2009). Steller's eiders occur near Homer in winter. Kittlitz's murrelets nest in coastal mountains around Kachemak Bay and may be found here year-round. Yellow billed loons migrate through the area and may overwinter, but are not known to regularly frequent the area or occur here in large numbers.

Your proposal to issue the Homer airport SWPPP could result in adverse impacts to species listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq., as amended, ESA). The discharge of storm water containing chemicals such as solvents, deicers, and petrochemicals could cause contamination of marine waters. Accidents or mismanagement of these types of chemicals could likewise contaminate areas used by wildlife. High concentrations of contaminants are directly harmful to sea birds and may degrade habitat. Contaminants can have long-term indirect effects when incorporated into the food chain: marine invertebrates take up contaminants and are in turn ingested by ESA-listed species.

The US Fish and Wildlife Service can review your project and provide technical assistance and recommendations to reduce potential impacts to these species. Please let me know if you would like technical assistance for evaluating and reducing the potential impacts from the issuance of the Homer airport SWPPP. I will be happy to help as much as I can. Thank you.

Kimberly Klein
Endangered Species Biologist
USFWS/AFWFO
605 W. 4th Ave. Room G-61
Anchorage, AK 99501
(907) 271-2066

▼ "Hillman, Jennifer A (DOT)" <jennifer.hillman@alaska.gov>

"Hillman, Jennifer A (DOT)" To
<jennifer.hillman@alaska.gov> Kimberly_Klein@
cc
12/06/2010 09:49 AM Subject
Homer Airport ES
Consultation

Ms. Klein,

ADOT&PF is creating a Stormwater Pollution Prevention Plan for our operations at the Homer Airport – a near final Draft is attached as well as a draft watershed map and area map. The drainages are accurate but there missing buildings and other minor changes that need to be made. In order to understand any potential impacts from airport operations ADOT&PF is requesting a list of endangered species and designated Critical Habitat in the airport area, in order to make a determination for impacts for coverage under the MSGP.

Drainage patterns for the Homer Airport are shown on the attached Watershed Map. In general, stormwater runoff from the runway, taxiways, and apron areas enters grassy low areas and ditches via sheet flow. Runoff travels in vegetated ditches around the perimeter of runways and aprons with concentrated flows leaving the airport on the southwest and western end.

Please let me know if you have any questions,

Jen Hillman
Environmental Impact Analyst
DOT&PF
(p) 269-0714
(c) 952-9473

[attachment "CR SWPPP Homer.doc" deleted by Kimberly Klein/R7/FWS/DOI] [attachment

"Homer SWPPP.PDF" deleted by Kimberly Klein/R7/FWS/DOI] [attachment "Homer Area Map.jpg" deleted by Kimberly Klein/R7/FWS/DOI]

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ANCHORAGE OFFICE OF AVIATION LEASING

SEAN PARNELL, GOVERNOR

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, AK 99519-6900
(907) 269-0450 FAX: (907) 243-5092

October 27, 2009

Dear Airport Tenant:

As you may already be aware, the U.S. Environmental Protection Agency (EPA) regulations on stormwater runoff from specific industrial operations have been revised. The EPA Multi-Sector General Permit (MSGP) specifies stormwater management requirements for industrial operations, including Air Transportation (Sector S). As required by these EPA regulations, the Department of Transportation and Public Facilities (DOT&PF) has applied for the EPA general stormwater permit for operation of the airport and common areas. The primary requirement is to write a storm water pollution prevention plan (SWPPP).

The SWPPP we have developed only covers DOT&PF activities, not your activity. Therefore, it is your responsibility to research and determine if a stormwater permit is required for your operations and if so, to comply with the EPA rules and the Clean Water Act. Failure to comply could result in a significant penalty.

To assist you in determining your responsibilities, we have attached an EPA fact sheet. You will also need to review the regulations at <http://cfpub.epa.gov/npdes/stormwater/msgp.cfm>. Each regulated tenant must develop a SWPPP, apply for permit coverage, and implement the SWPPP. The MSGP permit requires various inspections and training requirements. For you information, Alaska is located within Region 10 for EPA.

If you decide that you are regulated and intend to file for the permit, please check with your airport manager as it is recommended that we coordinate our SWPPPs. Also, if you perform deicing, the airport manager will be contacting you regarding a monthly reporting requirement.

If you prepare a SWPPP, please send a copy of the final plan to our office. Thank you.

Sincerely yours,



Tina Schimschat
Chief, Central Region Aviation Leasing

cc: Airport Manager
Matt Decaro, Environmental Analyst (269-0714)
Attachment: EPA Industrial Stormwater Fact Sheet (9 pages)

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to ensure the validity and reliability of the results.

3. The third part of the document discusses the challenges and limitations of data analysis. It notes that while data analysis provides valuable insights, it is not without its own set of challenges, such as data quality issues and the potential for bias.

4. The fourth part of the document provides a summary of the key findings and conclusions. It reiterates the importance of accurate record-keeping and data analysis in making informed decisions and improving organizational performance.

5. Finally, the document concludes with a call to action, encouraging all stakeholders to take responsibility for maintaining accurate records and ensuring the integrity of the data used in decision-making processes.

INDUSTRIAL STORMWATER

FACT SHEET SERIES

Sector S: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities



U.S. EPA Office of Water
EPA-833-F-06-034
December 2006

What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet specifically discusses stormwater discharges from airports, airport terminals, airline carriers, and establishments as defined by Standard Industrial Classification (SIC) Major Group 45. Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

- ◆ Servicing, repairing, or maintaining aircraft and ground vehicles
- ◆ Equipment cleaning and maintenance (including vehicle and equipment rehabilitation mechanical repairs, painting, fueling, lubrication)
- ◆ Deicing/anti-icing operations which conduct the above described activities

The operator and the tenants of the airport that conduct industrial activities as described above and which have stormwater discharges are required to apply for coverage under an NPDES stormwater permit for the discharges from their areas of operation. The airport management and tenants of the airport are encouraged to apply as co-permittees under a permit, and to work in partnership in the development and implementation of a stormwater pollution prevention plan.

Non-stormwater discharges, including discharges from aircraft, ground vehicle and equipment washwaters, dry weather discharges from airport deicing/anti-icing operations, and dry weather discharges resulting from runway maintenance are not required to obtain coverage under an industrial stormwater permit. Dry weather discharges are generated from processes other than those described in the definition of stormwater. The definition of stormwater includes stormwater runoff, snow melt runoff, and surface runoff and drainage.

What does an industrial stormwater permit require?

Common requirements for coverage under an industrial stormwater permit include development of a written stormwater pollution prevention plan (SWPPP), implementation of control measures, and submittal of a request for permit coverage, usually referred to as the Notice of Intent or NOI. The

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at your facility to minimize the discharge of these pollutants in runoff from the site. These control measures include site-specific best management practices (BMPs), maintenance plans, inspections, employee training, and reporting. The procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site. The industrial stormwater permit also requires collection of visual, analytical, and/or compliance monitoring data to determine the effectiveness of implemented BMPs. For more information on EPA's industrial stormwater permit and links to State stormwater permits, go to www.epa.gov/npdes/stormwater and click on "Industrial Activity."

What pollutants are associated with my facilities activities?

Pollutants conveyed in stormwater discharges from air transportation facilities will vary. Generally, the concern with the use of ethylene and propylene glycols is that they exert high oxygen demands when released into receiving waters. Additionally, the concentration of nitrogen and possibly ammonia are the concern with the respect to deicing/anti-icing operations where urea is used. There are a number of factors that influence to what extent industrial activities and significant materials can affect water quality.

- ◆ Geographic location
- ◆ Topography
- ◆ Hydrogeology
- ◆ Extent of impervious surfaces (e.g., concrete or asphalt)
- ◆ Type of ground cover (e.g., vegetation, crushed stone, or dirt)
- ◆ Outdoor activities (e.g., material storage, loading/unloading, vehicle maintenance)
- ◆ Size of the operation
- ◆ Type, duration, and intensity of precipitation events

The activities, pollutant sources, and pollutants detailed in Table 1 are commonly found at air transportation facilities.

Table 1. Common Activities, Pollutants Sources, and Associated Pollutants at Air Transportation Facilities

Activity	Pollutant Source	Pollutant
Aircraft deicing/anti-icing	Runoff of spent deicing chemicals (e.g. ethylene glycol or propylene glycol) from aircraft exteriors	Biochemical oxygen demand (BOD)
Runway deicing/anti-icing	Runoff of spent deicing chemicals (e.g. ethylene or propylene glycol, urea, potassium or sodium acetate, potassium or sodium formate) from deicing areas	BOD, nitrogen, ammonia
Aircraft servicing	Spills or leaks during servicing	Engine oil, hydraulic fluid, fuel, lavatory waste
Aircraft fueling	Spills and leaks during fuel transfer, spills due to "topping off" tanks, runoff from fueling areas, washdown of fueling areas, leaking storage tanks	Jet fuel, fuel additives, oil, lubricants, heavy metals
Aircraft, ground vehicle, and equipment maintenance and washing	Spills and leaks during maintenance	Engine oils, hydraulic fluids, transmission oil, radiator fluids, and chemical solvents
	Disposal of waste parts	Batteries, oil, fuel filters, oily rags
	Spent washwater	TSS, metals, fuel, hydraulic fluid, oil, lavatory waste
Runway maintenance	Materials removed from runway surface	Tire rubber, oil and grease, paint chips, jet fuel
	Chemicals used to clean the runway surface	Chemical solvents

What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from air transportation facilities. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs, which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

BMPs must be selected and implemented to address the following:

Good Housekeeping Practices

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures.

Minimizing Exposure

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure.

Erosion and Sediment Control

BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances, trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

Management of Runoff

Your SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures.

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. Though not specifically outlined in this fact sheet, BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. You must regularly inspect all BMPs to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

Implement BMPs, such as those listed below in Table 2 for the control of pollutants at air transportation facilities, to minimize and prevent the discharge of pollutants in stormwater. Identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings. BMPs listed in Table 2 are broadly applicable to air transportation facilities; however, this is not a complete list and you are recommended to consult with regulatory agencies or a stormwater engineer/consultant to identify appropriate BMPs for your facility.

Table 2. BMPs for Potential Pollutant Sources at Air Transportation Facilities

Pollutant Source	BMPs
Deicing/anti-icing aircraft	<ul style="list-style-type: none"> <input type="checkbox"/> Establish a centralized aircraft deicing station with containment of surface and subsurface drainage. <input type="checkbox"/> To reduce deicing fluid applied: <ul style="list-style-type: none"> - Forced-air deicing systems - Computer-controlled fixed-gantry systems - Infrared technology - Hot water - Varying glycol content to air temperature - Enclosed-basket deicing trucks - Mechanical methods - Solar radiation - Hangar storage - Aircraft covers - Thermal blankets fro MD-80s and DC-9s <input type="checkbox"/> Apply deicing fluid and anti-icer to planes on deicing pads if available. <input type="checkbox"/> Apply anti-icer to aircraft that will be parked overnight to make it easier to remove accumulated snow and ice in the morning. <input type="checkbox"/> Apply anti-icer to aircraft immediately after deicing to provide extended hold-over time prior to take-off. <input type="checkbox"/> Ensure that stormwater inlets are blocked when deicing/anti-icing during dry weather. <input type="checkbox"/> Use mechanical vacuum systems or other devices to collect aircraft deicing runoff from the apron surface for proper disposal. <input type="checkbox"/> Dispose collected aircraft deicing runoff to sanitary sewage facility (if allowed by sewer authority), on-site treatment, or recycle (resell or reuse). <input type="checkbox"/> Use portable tanks, retention and detention ponds for temporary storage of collected deicing runoff. <input type="checkbox"/> Collect contaminated runoff in a wet pond for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations). <input type="checkbox"/> Recover and recycle/dispose of unused deicing fluids in deicing trucks. <input type="checkbox"/> Recover deicing materials when applied during non-precipitation events (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains, etc.) to prevent materials from later contaminating stormwater.

INDUSTRIAL STORMWATER FACT SHEET SERIES

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

Table 2. BMPs for Potential Pollutant Sources at Air Transportation Facilities (continued)

Pollutant Source	BMPs
Deicing/anti-icing runways and pads	<ul style="list-style-type: none"> <input type="checkbox"/> Evaluate and optimize present chemical application rates <input type="checkbox"/> Use sand where possible to enhance friction. <input type="checkbox"/> Plow and broom runways prior to application of deicing chemicals. <input type="checkbox"/> Heat solid deicers and sand prior to application. <input type="checkbox"/> Install and calibrate devices to meter the amount of pavement deicer being applied. <input type="checkbox"/> Emphasize anti-icing operations which minimize the need to deice. <input type="checkbox"/> Install runway ice detection systems ("pavement sensors") to monitor pavement temperatures. <input type="checkbox"/> Pre-wet with liquid deicers to improve adhesion of solid deicers to the iced surface. <input type="checkbox"/> Use deicers which have less of an environmental impact (e.g. sodium formate and potassium acetate as opposed to urea and glycol). <input type="checkbox"/> Ensure proper handling and disposal of unused deicing chemicals in vehicles. <input type="checkbox"/> Use ice detection systems. <input type="checkbox"/> Use airport traffic flow strategies and departure slot allocation systems.
Aircraft, ground vehicle, and equipment maintenance areas (including aircraft service areas)	<p>Good Housekeeping</p> <ul style="list-style-type: none"> <input type="checkbox"/> Eliminate floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. Collected wastes should be properly treated or disposed of by a licensed waste disposal company. <input type="checkbox"/> Prevent and contain spills and drips. <input type="checkbox"/> Do all cleaning at a centralized station so the solvents stay in one area. <input type="checkbox"/> Remove any parts that are dipped in liquid slowly to avoid spills. <input type="checkbox"/> Use drip pans, drain boards, and drying racks to direct drips back into a fluid holding tank for reuse. <input type="checkbox"/> Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. <input type="checkbox"/> Transfer used fluids to the proper container promptly; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. <input type="checkbox"/> Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible. <input type="checkbox"/> Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. <input type="checkbox"/> Prohibit pouring liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. <input type="checkbox"/> Maintain an organized inventory of materials. <input type="checkbox"/> Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials. <input type="checkbox"/> Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries). <input type="checkbox"/> Store batteries and other significant materials inside. <input type="checkbox"/> Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers in compliance with RCRA regulations.

INDUSTRIAL STORMWATER FACT SHEET SERIES

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

Table 2. BMPs for Potential Pollutant Sources at Air Transportation Facilities (continued)

Pollutant Source	BMPs
Aircraft, ground vehicle, and equipment maintenance areas (including aircraft service areas) (continued)	<p>Minimizing Exposure</p> <ul style="list-style-type: none"> <input type="checkbox"/> Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities. <input type="checkbox"/> If operations are uncovered, perform them on a concrete pad that is impervious and contained. <input type="checkbox"/> Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills. <input type="checkbox"/> Check vehicles closely for leaks and use pans to collect fluid when leaks occur. <p>Management of Runoff</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use berms, curbs, grassed swales, or other diversion measures to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area. <input type="checkbox"/> Collect the stormwater runoff from the cleaning area and provide treatment or recycling. <input type="checkbox"/> Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. DO NOT discharge washwater to a storm drain or to surface water. <p>Inspections and Training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Inspect the maintenance area regularly to ensure BMPs are implemented. <input type="checkbox"/> Train employees on waste control and disposal procedures. <input type="checkbox"/> Inspect the maintenance area regularly for proper implementation of control measures. <input type="checkbox"/> Train employees on proper waste control and disposal procedures.
Aircraft, ground vehicle, and equipment cleaning areas	<ul style="list-style-type: none"> <input type="checkbox"/> Perform all cleaning operations indoors. <input type="checkbox"/> Confine activities to designated areas outside drainage pathways and away from surface waters. <input type="checkbox"/> If washing outdoors, cover the cleaning operation and ensure that all washwaters drain to the intended collection system. <input type="checkbox"/> Use phosphate-free biodegradable detergents. <input type="checkbox"/> Contain and recycle washwaters. <input type="checkbox"/> Collect stormwater runoff from the cleaning area and provide treatment or recycling. <input type="checkbox"/> Inspect cleaning area regularly to ensure BMPs are implemented and maintained. <input type="checkbox"/> Train employees on proper washing procedures.
Aircraft, ground vehicle, and equipment storage areas	<ul style="list-style-type: none"> <input type="checkbox"/> Store aircraft, ground vehicles and equipment indoors. <input type="checkbox"/> Cover the storage area with a roof. <input type="checkbox"/> Store aircraft, ground vehicles, and equipment awaiting maintenance in designated areas only. <input type="checkbox"/> Park leaking deicing trucks in contained areas. <input type="checkbox"/> Install perimeter drains, berms, and dikes around storage areas to limit run-on. <input type="checkbox"/> Use absorbents for dry cleanup for spills and leaks. <input type="checkbox"/> Use drip pans under all vehicles and equipment for the collection of fluid leaks. <input type="checkbox"/> Clean pavement surface to remove oil and grease without using large amounts of water.

INDUSTRIAL STORMWATER FACT SHEET SERIES

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

Table 2. BMPs for Potential Pollutant Sources at Air Transportation Facilities (continued)

Pollutant Source	BMPs
Aircraft, ground vehicle, and equipment storage areas (continued)	<ul style="list-style-type: none"> <input type="checkbox"/> Regularly sweep area to minimize debris on the ground. <input type="checkbox"/> Provide dust control if necessary. When controlling dust, sweep and/or apply water or materials that will not impact surface or ground water. <input type="checkbox"/> Inspect the storage yard for filling drip pans regularly to ensure BMPs are implemented. <input type="checkbox"/> Train employees on procedures for storage and inspection items.
Material storage areas	<ul style="list-style-type: none"> <input type="checkbox"/> Store materials indoors. <input type="checkbox"/> Maintain good integrity of all storage containers (e.g., used oils, hydraulic fluids, spent solvents, waste aircraft fuel). <input type="checkbox"/> Create a centralized storage area for waste materials. <input type="checkbox"/> Cover and/or enclose chemical storage areas (including temporary cover such as a tarp that prevents contact with precipitation). <input type="checkbox"/> Provide secondary containment around chemical storage areas. <input type="checkbox"/> If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge. <input type="checkbox"/> Locate storage areas away from high traffic areas and surface waters. <input type="checkbox"/> Inspect storage tanks and piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks and perform preventive maintenance. <input type="checkbox"/> Plainly label all containers. <input type="checkbox"/> Maintain an inventory of fluids to identify leakage. <input type="checkbox"/> Provide fluid level indicators. <input type="checkbox"/> Properly dispose of chemicals that are no longer in use. <input type="checkbox"/> Store and handle reactive, ignitable, or flammable liquids in compliance with applicable local fire codes, local zoning codes, and the National Electric Code. <input type="checkbox"/> Provide drip pads/pans where chemicals are transferred from one container to another to allow for recycling of spills and leaks. <input type="checkbox"/> Develop and implement spill plans or spill prevention, containment, and countermeasure (SPCC) plans, if required for your facility. <input type="checkbox"/> Train employees in spill prevention and control and proper materials management.
Airport fuel system and fueling areas	<ul style="list-style-type: none"> <input type="checkbox"/> Conduct fueling operations (including the transfer of fuel to tank trucks) on an impervious or contained pad and under a roof or canopy where possible. Covering should extend beyond spill containment pad to prevent rain from entering. <input type="checkbox"/> When fueling in uncovered area, use concrete pad (asphalt is not chemically resistant to the fuels being handled). <input type="checkbox"/> Develop and implement a system to report any spill exceeding 5 feet in any direction or which has entered the storm drainage system. <input type="checkbox"/> Use drip pans and absorptive materials beneath aircraft during fueling operations where leaks or spills of fuel can occur and where making and breaking hose connections. <input type="checkbox"/> Use fueling hoses with check valves to prevent hose drainage after filling. <input type="checkbox"/> Insure that storm water valves, plugs and similar appurtenances are closed during fuel transfer operations.

INDUSTRIAL STORMWATER FACT SHEET SERIES

Sector 5: Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities

Table 2. BMPs for Potential Pollutant Sources at Air Transportation Facilities (continued)

Pollutant Source	BMPs
Airport fuel system and fueling areas (continued)	<ul style="list-style-type: none"> <input type="checkbox"/> Provide spill kits on all fuel trucks, at fueling stations, in each hangar and at strategic locations. Each kit should have at a minimum, loose absorbent, pails, broom and shovel. Store used materials in individual sealed container and labeled to ensure proper handling and disposal as a hazardous material. <input type="checkbox"/> Keep spill cleanup materials readily available. <input type="checkbox"/> Clean up spills and leaks immediately. <input type="checkbox"/> Use dry cleanup methods for fuel areas rather than hosing down the fuel area. Sweep up absorbents as soon as spilled substances have been absorbed. <input type="checkbox"/> Use spill and overflow protection devices. <input type="checkbox"/> Minimize run-on of stormwater into the fueling area by grading the area such that stormwater only runs off. <input type="checkbox"/> Collect stormwater runoff and provide treatment or recycling. <input type="checkbox"/> Provide curbing or posts around fuel pumps to prevent collisions from vehicles. <input type="checkbox"/> Regularly inspect and perform preventive maintenance on fuel storage tanks to detect potential leaks before they occur. <input type="checkbox"/> Inspect the fueling area for leaks and spills. <input type="checkbox"/> Do not allow "topping off" of the fuel in the receiving equipment. <input type="checkbox"/> Train personnel on vehicle fueling BMPs.
Storing liquid fuels	<ul style="list-style-type: none"> <input type="checkbox"/> If area is uncovered, connect sump outlet to sanitary sewer (if allowed by the sewer authority) or an oil/water separator, catch basin filter, etc. If connecting to a sanitary sewer check with the system operator to ensure that the discharge is acceptable. If implementing separator or filter technologies ensure that regular inspections and maintenance procedures are in place. <input type="checkbox"/> Develop and implement spill plans. <input type="checkbox"/> Train employees in spill prevention and control. <p>Above ground tanks</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide secondary containment, such as dikes, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). <input type="checkbox"/> If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge. <input type="checkbox"/> Use double-walled tanks with overflow protection. <input type="checkbox"/> Keep liquid transfer nozzles/hoses in secondary containment area. <p>Portable containers/drums</p> <ul style="list-style-type: none"> <input type="checkbox"/> Store drums indoors when possible. <input type="checkbox"/> Store drums, including empty or used drums, in secondary containment with a roof or cover (including temporary cover such as a tarp that prevents contact with precipitation). <input type="checkbox"/> Provide secondary containment, such as dikes or portable containers, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). <input type="checkbox"/> Clearly label drum with its contents.
Deicing chemical loading areas	<ul style="list-style-type: none"> <input type="checkbox"/> Store bulk aircraft deicing fluids in contained areas. <input type="checkbox"/> Load deicing trucks in contained areas.

What if activities and materials at my facility are not exposed to precipitation?

The industrial stormwater program requires permit coverage for a number of specified types of industrial activities. However, when a facility is able to prevent the exposure of ALL relevant activities and materials to precipitation, it may be eligible to claim no exposure and qualify for a waiver from permit coverage.

If you are regulated under the industrial permitting program, you must either obtain permit coverage or submit a no exposure certification form, if available. Check with your permitting authority for additional information as not every permitting authority program provides no exposure exemptions.

Where do I get more information?

For additional information on the industrial stormwater program see www.epa.gov/npdes/stormwater/msgp.

A list of names and telephone numbers for each EPA Region or state NPDES permitting authority can be found at www.epa.gov/npdes/stormwatercontacts.

References

Information contained in this Fact Sheet was compiled from EPA's past and current Multi-Sector General Permits and from the following sources:

- ◆ City of Phoenix, Street Transportation Department. 2004. Best Management Practices for Section 5 - Vehicle Maintenance Equipment Cleaning, or Deicing at Air Transportation Facilities. <http://phoenix.gov/STREETS/vehmnt2.pdf>
- ◆ Orange County, California, Watershed & Coastal Resources Division. "Airplane Maintenance and Repair." www.ocwatersheds.com/StormWater/documents_bmp_existing_development.asp
- ◆ Pierce County Washington Public Works and Utilities. 2002. "Stormwater Pollution Prevention Manual: A Guide to Best Management Practices for Industries, Businesses, and Homeowners." www.co.pierce.wa.us/pc/services/home/environ/water/wq/bmpmanual.htm
- ◆ Switzenbaum, et. al., 1999. Workshop: Best Management Practices for Airport Deicing Stormwater: Publication 173. www.umass.edu/tei/wrrc/WRRC2004/pdf/Switz173.pdf
- ◆ U.S. EPA. 1992. Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. EPA 832-R-92-006 www.epa.gov/npdes/stormwater
- ◆ U.S. EPA, Office of Science and Technology. 1999. Preliminary Data Summary of Urban Stormwater Best Management Practices. EPA-821-R-99-012 www.epa.gov/OST/stormwater/
- ◆ U.S. EPA, Office of Water. 2002. Source Water Protections Practices Bulletin: Managing Aircraft and Airfield Deicing Operations to Prevent Contamination of Drinking Water. EPA-816-F-02-018. www.epa.gov/safewater/sourcewater/pubs/fs_swpp_deicingair.pdf
- ◆ U.S. EPA, Office of Wastewater Management. *NPDES Stormwater Multi-Sector General Permit for Industrial Activities (MSGP)*. www.epa.gov/npdes/stormwater/msgp

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Appendix J – Staff Title and Responsibilities

Title	Staff Name
DISTRICT SUPERINTENDENT	Troy Larue
AIRPORT MANAGER	Steve Berninger
AIRPORT MANAGER ALTERNATE	Dale Ruckman
CENTRAL REGION M&O ENVIRONMENTAL SPECIALIST	Jennifer Lindberg

Appendix K – SPCC Plan

Spill Prevention Control and Countermeasure Plan

Alaska Department of Transportation and Public Facilities
Anchorage, Alaska

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

Unalaska State Airport and Facilities

Unalaska, Alaska

May 2011

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Appendices

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- B: Substantial Harm Determination
- C: Facility Inspection Checklists
- D: Record of Discharge Prevention Briefings and Training
- E: Records of Tank Integrity and Pressure Tests
- F: Emergency Contacts
- G: Discharge Notification Form
- H: Discharge Response Equipment Inventory
- I: Agency Notification Standard Report
- J: Tank Specifications

LIST OF ACRONYMS AND ABBREVIATIONS

ARFF	Airport Rescue and Fire Fighting
AST	Aboveground Storage Tank
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation and Public Facilities
M&O	Maintenance and Operations
NPDES	National Pollutant Discharge Elimination System
PE	Professional Engineer
RA	Regional Advisor
SPCC	Spill Prevention, Control, and Countermeasure
STI	Steel Tank Institute
SWPPP	Stormwater Pollution Prevention Plan
UST	Underground Storage Tank

INTRODUCTION

Purpose

The purpose of this Spill Prevention, Control, and Countermeasure (SPCC) Plan is to describe measures implemented by Alaska Department of Transportation and Public Facilities (ADOT&PF) to prevent oil discharges from occurring, and to prepare ADOT&PF to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge at the Unalaska State Airport and Facilities.

This Plan has been prepared to meet the requirements of Title 40, *Code of Federal Regulations*, Part 112 (40 CFR part 112), and supersedes the plan developed in 2000 to meet provisions in effect since 1974.

In addition to fulfilling requirements of 40 CFR part 112, this SPCC Plan is used as a reference for oil storage information and testing records, as a tool to communicate practices on preventing and responding to discharges with employees, as a guide to facility inspections, and as a resource during emergency response. It is the policy of ADOT&PF to prevent the discharge of oil and hazardous substances and to provide for prompt and coordinated response to contain and cleanup spills, should they occur.

ADOT&PF has determined that this facility does not pose a risk of substantial harm under 40 CFR part 112, as recorded in the "Substantial Harm Determination" included in Appendix B of this Plan.

This Plan has been developed for ADOT&PF above ground storage tanks (ASTs) at the Unalaska State Airport and Facilities and provides guidance on activities that ADOT&PF must perform to comply with the SPCC rule:

- Complete monthly and annual site inspections as outlined in the Inspection, Tests, and Records section of this Plan (Section 3.7) using the inspection checklists included in Appendix C.
- Perform preventive maintenance of equipment, secondary containment systems, and discharge prevention systems described in this Plan as needed to keep them in proper operating conditions.
- Conduct annual employee training as outlined in the Personnel, Training, and Spill Prevention Procedures section of this Plan (Section 3.8) and document them on the log included in Appendix E.
- If either of the following occurs, submit the SPCC Plan to the EPA Region 10 Regional Administrator (RA) and the Alaska Department of Environmental Conservation (ADEC), along with other information as detailed in Section 5.4 of this Plan:

- The facility discharges more than 1,000 gallons of oil into or upon the navigable waters of the U.S. or adjoining shorelines in a single spill event; or
- The facility discharges oil in quantity greater than 42 gallons in each of two spill events within any 12-month period.
- Review the SPCC Plan at least once every five (5) years and amend it to include more effective prevention and control technology, if such technology will significantly reduce the likelihood of a spill event and has been proven effective in the field at the time of the review. Plan amendments, other than administrative changes discussed above, must be recertified by a Professional Engineer on the certification page in Section 1.2 of this Plan.
- Amend the SPCC Plan within six (6) months whenever there is a change in facility design, construction, operation, or maintenance that materially affects the facility's spill potential. The revised Plan must be recertified by a Professional Engineer (PE).
- Review the Plan on an annual basis. Update the Plan to reflect any "administrative changes" that are applicable, such as personnel changes or revisions to contact information, such as phone numbers. Administrative changes must be documented in the Plan review log of Section 1.4 of this Plan, but do not have to be certified by a PE.

Part 1: Plan Administration

1.1 Management Approval and Designated Person (40 CFR 112.7)

ADOT &PF is committed to preventing discharges of oil to navigable waters and the environment, and to maintaining the highest standards for spill prevention control and countermeasures through the implementation and regular review and amendment to the Plan. This SPCC Plan has the full approval of ADOT&PF. ADOT&PF has committed the necessary resources to implement the measures described in this Plan.

The Airport Manager is the Designated Person Accountable for Oil Spill Prevention at the facility and has the authority to commit the necessary resources to implement this Plan.

Authorized Facility Representative (facility response coordinator): Steve Berninger
Signature: *Steve Berninger*
Title: Unalaska Airport
Date: 5/11/11 Manager

1.2 Professional Engineer Certification (40 CFR 112.3(d))

The undersigned Registered Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the *Code of Federal Regulations* (40 CFR part 112) and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR part 112; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility. [40 CFR 112.3(d)]

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR part 112. This Plan is valid only to the extent that the facility owner or operator maintains, tests, and inspects equipment, containment, and other devices as prescribed in this Plan.

Signature

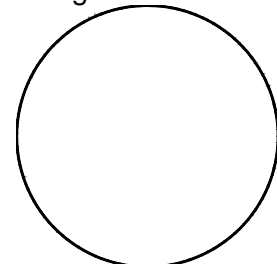
Professional Engineer Registration Number

Name

Title

Company

Date



1.3 Location of SPCC Plan (40 CFR 112.3(e))

In accordance with 40 CFR 112.3(e), a complete copy of this SPCC Plan is maintained at the Unalaska Maintenance facility in the office building as part of the Storm Water Pollution Prevention Plan (SWPPP). The office is attended whenever the facility is operating.

1.4 Plan Review (40 CFR 112.3 and 112.5)

1.4.1 Changes in Facility Configuration

In accordance with 40 CFR 112.5(a), ADOT&PF periodically reviews and evaluates this SPCC Plan for any change in the facility design, construction, operation, or maintenance that materially affects the facility's potential for an oil discharge, including, but not limited to:

- commissioning of containers;
- reconstruction, replacement, or installation of piping systems;
- construction or demolition that might alter secondary containment structures; or
- changes of product or service, revisions to standard operation, modification of testing/inspection procedures, and use of new or modified industry standards or maintenance procedures.

Amendments to the Plan made to address changes of this nature are referred to as technical amendments, and must be certified by a PE. Non-technical amendments can be done (and must be documented in this section) by the facility owner and/or operator. Non-technical amendments include the following:

- change in the name or contact information (i.e., telephone numbers) of individuals responsible for the implementation of this Plan; or
- change in the name or contact information of spill response or cleanup contractors.

ADOT&PF must make the needed revisions to the SPCC Plan as soon as possible, but no later than six months after the change occurs. The Plan must be implemented as soon as possible following any technical amendment, but *no later than six months* from the date of the amendment. The Airport Manager is responsible for initiating and coordinating revisions to the SPCC Plan.

1.4.2 Scheduled Plan Reviews

In accordance with 40 CFR 112.5(b), ADOT&PF will review this SPCC Plan at least once every five years (in the past, such reviews were required every three years). Revisions to the Plan, if needed, are made within six months of the five-year review. A registered Professional Engineer certifies any technical amendment to the Plan, as described above, in accordance with 40 CFR 112.3(d). This Plan is dated *May 2011*. The next plan review is therefore scheduled to take place on or prior to *May 2016*.

1.4.3 Record of Plan Reviews

Scheduled reviews and Plan amendments are recorded in the Plan Review Log (Table 1-1). This log must be completed even if no amendment is made to the Plan as a result of the review. Unless a technical or administrative change prompts an earlier review of the Plan, the next scheduled review of this Plan must occur by *November 2016*.

1.5 Cross-Reference with SPCC Provisions (40 CFR 112.7)

This SPCC Plan does not follow the exact order presented in 40 CFR part 112. Section headings identify, where appropriate, the relevant section(s) of the SPCC rule. Table 1-2 presents a cross-reference of Plan sections relative to applicable parts of 40 CFR part 112.

Table 1-1: Plan Review Log

By	Date	Activity	PE certification required?	Comments
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* Previous PE certifications of this Plan are summarized below.

Date	Scope	PE Name	Licensing State and Registration No.

Table 1-2: SPCC Cross-Reference

Provision	Plan Section	Page
112.3(d)	Professional Engineer Certification	3
112.3(e)	Location of SPCC Plan	4
112.5	Plan Review	4 Table 1-1
112.7	Management Approval	3
112.7	Cross-Reference with SPCC Rule	Table 1-2
112.7(a)(3)	Part 2: General Facility Information Appendix A: Site Plan and Facility Diagram	8 Appendix A
112.7(a)(4)	5.4 Discharge Notification	25 Appendix G Appendix I
112.7(a)(5)	Part 5: Discharge Response	23
112.7(b)	3.4 Potential Discharge Volumes and Direction of Flow	11
112.7(c)	3.5 Containment and Diversionary Structures	14
112.7(d)	3.6 Practicability of Secondary Containment	15
112.7(e)	3.7 Inspections, Tests, and Records	15 Appendix C
112.7(f)	3.8 Personnel, Training and Discharge Prevention Procedures	17
112.7(g)	3.9 Security	17
112.7(j)	3.10 Conformance with Applicable State and Local Requirements	18
112.8(b)	4.1 Facility Drainage	19
112.8(c)(1)	4.2.1 Construction	20
112.8(c)(2)	4.2.2 Secondary Containment	20
112.8(c)(4)	4.2.3 Corrosion Protection	20
112.8(c)(6)	4.2.4 Inspection Appendix B - Facility Inspection Checklists	20 Appendix B
112.8(c)(8)	4.2.5 Overfill Prevention System	21

ADOT&PF Unalaska Airport and Facilities SPCC Plan, Unalaska, Alaska

Provision	Plan Section	Page
112.8(c)(10)	4.2.6 Visible Discharges	21
112.8(d)	4.3 Transfer Operations, Pumping and In-Plant Processes	22
112.20(e)	Certification of Substantial Harm Determination	Appendix B

* Only selected excerpts of relevant rule text are provided. For a complete list of SPCC requirements, refer to the full text of 40 CFR part 112.

Part 2: General Facility Information

Name:	Alaska Department of Transportation and Public Facilities, Unalaska Airport and Facilities
Address:	PO Box 213 Unalaska, Alaska 99685 (907) 487-4952
Type:	Airport and Facilities
Owner/Operator:	Alaska Department of Transportation and Public Facilities P.O. Box 196900 4111 Aviation Avenue Anchorage, Alaska 99519
Primary contact:	Steve Berninger, Airport Manager Work: (907) 581-1786 Cell (24 hours): (907) 359-1786

2.1 Facility Description (40 CFR 112.7(a)(3))

2.1.1 Location and Activities

The Unalaska Airport is located in the City of Unalaska, AK, on Amaknak Island in the Aleutian Islands (Appendix A). The facility consists of one 3,900-foot-long asphalt-surfaced runway (12/30). Paved aprons with leased areas are located to the north and south of the eastern portion of the runway. The DOT&PF equipment and maintenance building is located on the northern apron. Outside activities include equipment fueling, runway maintenance, and deicing and sanding activities. Diesel fuel and gasoline for equipment and vehicle fueling are located in 1,000-gallon, 4,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Runway maintenance is limited to repainting runway markings (once a year) and sealing stress cracks in the asphalt surface (as necessary). These activities are performed in accordance with DOT&PF procedures and require dry weather. Deicing activities include mechanical plowing and the application of liquid urea, pelletized urea, and liquid E36 (potassium acetate) on airport surfaces.

Drainage patterns for the Unalaska Airport are shown on figure(s) in Appendix A. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from the western portion Watershed C flows to a series of catch basins and subsurface culverts into a detention area. Additionally, a culvert in the eastern portion of watershed C crosses under the end of the runway/safety area and drains into a vegetated area before entering a second culvert which drains to Dutch Harbor (Outfall C). A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow.

2.1.2 Oil Storage

Oil storage at the facility consists of six ASTs:

- three heating fuel tanks: a 1,000-gallon diesel heating oil tank located at the north corner of the maintenance station and two 300-gallon heating fuel tanks located on the north side of the employee housing adjacent to the maintenance facility;
- three fueling tanks all on the south corner of the maintenance facility: 1,000-gallon diesel fuel tank, a 500-gallon gasoline fueling tank and a 4,000-gallon low sulfur diesel tank; and
- Variable quantities of 55 gallon drums for vehicle maintenance stored in-doors (see Figure 2).

The capacities of oil containers present at the site are listed below and are also indicated on the facility diagram in Figure 2. All containers with capacity of 55 gallons or more are included. The capacity of the oil/water separator is not included in the total storage capacity for the facility since it is used to treat storm water and as a means of secondary containment for areas of the facility with potential for an oil discharge.

Table 2-1: Oil Containers

ID	Storage capacity	Content	Description
Fixed Storage			
1	1,000	Heating fuel	Double walled aboveground horizontal tank elevated on built-in saddles
2	300	Heating fuel	Single walled aboveground horizontal tank elevated on built-in saddles
3	300	Heating fuel	Single walled aboveground horizontal tank elevated on built-in saddles
4	1,000	Diesel fuel	Double walled aboveground horizontal tank elevated on built-in saddles
5	500	Gasoline	Double walled aboveground horizontal tank elevated on built-in saddles
6	4,000	Low sulfur diesel	Double walled aboveground horizontal tank elevated on built-in saddles
7	250	Waste oil burner	Double walled Black Gold waste oil burner
	55 gallons	Waste oil	Single walled barrels stored indoors

Total Oil Storage: 6,350 gallons

Other containers: Two 75-gallon oil/water separators in the ARFF/Maintenance building.

Note: The oil/water separators are used to treat facility drainage (i.e., wastewater) prior to treatment at the Unalaska municipal waste water treatment. This equipment is used to meet certain secondary containment requirements under 40 CFR part 112, as described later in this Plan. Thus, the capacity of the oil/water separator is not counted towards the facility total storage capacity.

2.2 Evaluation of Discharge Potential

2.2.1 Distance to Navigable Waters and Adjoining Shorelines and Flow Paths

The nearest navigable water bodies that would be impacted by a spill from this facility are South Unalaska Bay and Dutch Harbor. The airport is located adjacent to Dutch Harbor and South Unalaska Bay directly on the water with approximately 50 foot distance from waterways at the shortest point (see Appendix A). A release from any of the Maintenance Facilities would flow northwest through a series of vegetated ditches in Watershed B towards a culvert that runs under the runway to outfall location B (approximately 1,000 feet at the closest point to surface waters). A release on the runways from aircraft or equipment would flow into adjacent vegetated areas in Watersheds A, B and C. A spill on the paved apron near leased buildings would flow west into the detention area in Watershed C. A spill on the far eastern portion of the runway would flow into vegetated ditches and then could eventually enter culverts that drain to Dutch Harbor.

2.2.2 Discharge History

There has been one significant or reportable spill within the last three years. In 2010, 200 gallons of diesel fuel was spilled at the maintenance location in Watershed B. The spill was contained and cleaned by the DOT with the assistance of the DEC. The clean-up process is complete and no hazard remains.

If this facility has a greater than 1,000 gallon release to the water, or two federally reportable spills in a 12 month period, then the SPCC Plan must be submitted to the EPA Regional Administrator and ADEC.

PART 3: Discharge Prevention - General SPCC Provisions

The following measures are implemented to prevent oil discharges during the handling, use, or transfer of oil products at the facility. Oil-handling employees have received training in the proper implementation of these measures.

3.1 Compliance with Applicable Requirements (40 CFR 112.7(a)(2))

This facility uses an oil/water separator as part of its drainage system to contain oil discharged. The separator provides environmental protection equivalent to the requirements under 112.8(b)(3) to use ponds, lagoons, or catchment basins to retain oil at the facility in the event of an uncontrolled discharge. As described in Section 3.5 of this Plan, the operational and emergency oil storage capacity of the oil/water separator is sufficient to handle the quantity of oil expected to be discharged from tank overfills or transfer operations. All tanks are double walled and have overflow protection to prevent spills.

3.2 Facility Layout Diagram (40 CFR 112.7(a)(3))

Figure 1 in Appendix A shows the general location of the facility on a U.S. Geological Survey topographic map. Figure 2 in Appendix A presents a layout of the facility and the location of storage tanks and drums. The diagram also shows the location of storm water drain inlets and the direction of surface water runoff. As required under 40 CFR 112.7(a)(3), the facility diagram indicates the location and content of ASTs.

3.3 Spill Reporting (40 CFR 112.7(a)(4))

The discharge notification form included in Appendix I will be completed upon immediate detection of a discharge and prior to reporting a spill to the proper notification contacts.

3.4 Potential Discharge Volumes and Direction of Flow (40 CFR 112.7(b))

Table 3-1 presents expected volume, discharge rate, general direction of flow in the event of equipment failure, and means of secondary containment for different parts of the facility where oil is stored, used, or handled.

Table 3-1: Potential Discharge Volumes and Direction of Flow

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Heating Fuel Tank – ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	1,000	Gradual to instantaneous	Contained between the building and bluff wall in vegetated area	Double walled construction
Tank overfill	1-55	55 gal/min	Contained between the building and bluff wall in vegetated area	Double walled construction
Pipe failure	1,000	32 gal/min	Contained between the building and bluff wall in vegetated area	Double walled construction
Leaking pipe or valve packing	1,000	3-8 gal/min	Contained between the building and bluff wall in vegetated area	Double walled construction
Heating Fuel Tank – House near ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	300	Gradual to instantaneous	Contained between the building and bluff wall in vegetated area	None
Tank overfill	1 to 55	55 gal/min	Contained between the building and bluff wall in vegetated area	None
Pipe failure	300	10 gal/min	Contained between the building and bluff wall in vegetated area	None
Leaking pipe or valve packing	300	3 gal/min	Contained between the building and bluff wall in vegetated area	None
Heating Fuel Tank – House near ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	300	Gradual to instantaneous	Contained between the building and bluff wall in vegetated area	None
Tank overfill	1 to 55	55 gal/min	Contained between the building and bluff wall in vegetated area	None

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Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Pipe failure	300	10 gal/min	Contained between the building and bluff wall in vegetated area	None
Leaking pipe or valve packing	300	3 gal/min	Contained between the building and bluff wall in vegetated area	None
Diesel Fueling Tank – ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	1,000	Gradual to instantaneous	West to vegetated ditches and eventually to Outfall B	Double walled construction
Tank overfill	1 - 55	55 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Pipe failure	1,000	32 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Leaking pipe or valve packing	1,000	3-8 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Gasoline Fuel Tank- ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	500	Gradual to instantaneous	West to vegetated ditches and eventually to Outfall B	Double walled construction
Tank overfill	1-55	55 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Pipe failure	500	32 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Leaking pipe or valve packing	500	3-8 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Diesel Fueling Tank – ARFF/Maintenance Building				

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Failure of aboveground tank (collapse or puncture below product level)	4,000	Gradual to instantaneous	West to vegetated ditches and eventually to Outfall B	Double walled construction
Tank overflow	1-55	55 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Pipe failure	4,000	32 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Leaking pipe or valve packing	4,000	3-8 gal/min	West to vegetated ditches and eventually to Outfall B	Double walled construction
Waste Oil Burner – ARFF/Maintenance Building				
Failure of aboveground tank (collapse or puncture below product level)	250	Gradual to instantaneous	Stored indoors, flow to oil/water separator	Double walled construction, stored indoors
Tank overflow	1 to 55	55 gal/min	Stored indoors, flow to oil/water separator	Double walled construction, stored indoors
Pipe failure	250	10 gal/min	Stored indoors, flow to oil/water separator	Double walled construction, stored indoors
Leaking pipe or valve packing	250	3 gal/min	Stored indoors, flow to oil/water separator	Double walled construction, stored indoors
Drums – ARFF/Maintenance Building				
Failure of drum (collapse or puncture below product level)	55	Gradual to instantaneous	Oil/water separator in ARFF/Maintenance Building	Oil/Water separator and building
Tank overflow	1-55	3 gal/min	Oil/water separator in ARFF/Maintenance Building	Oil/Water separator and building
Pipe failure	N/A	N/A	N/A	N/A
Leaking pipe or valve packing	N/A	N/A	N/A	N/A

3.5 Containment and Diversionary Structures (40 CFR 112.7(c))

Methods of secondary containment at this facility include a combination of structures drainage systems (e.g., oil/water separator), and land-based spill response (e.g., drain covers, sorbents) to prevent oil from reaching navigable waters and adjoining shorelines:

For bulk storage containers (refer to Section 4.2.2 of this Plan):

- **Double-wall tank construction.**
- **Sorbent material.** Spill cleanup kits that include absorbent material, booms, and other portable barriers are located inside the maintenance building. The spill kits are located within close proximity of the oil product storage and handling areas for rapid deployment should a spill occur. Sorbent material, booms, and other portable barriers are stored for quick deployment in the event of a discharge during loading/unloading activities or any other accidental discharges. The response equipment inventory for the facility is listed in Appendix H of this Plan. The inventory is checked regularly to ensure that used material is replenished.
- **Oil/water separator.** The oil/water separator is designed to separate and retain oil at the facility. The oil/water separator in the ARFF/Maintenance building has a static holding capacity for oil/water mixture of 150 gallons, 100 gallon internal oil storage, and a design flow rate of 75 gallons per minute. Best Management Practices are used to minimize the amount of solids and oil that flow into the oil/water separator. Facility personnel are instructed to avoid and address small spills using sorbents to minimize runoff of oil into the oil/water separator. The oil/water separator is inspected monthly as part of the scheduled inspection to check the level of water within the separator and measure the depth of bottom sludges and floating oils. Floating oil is removed as necessary to maintain capacity.

3.6 Practicability of Secondary Containment (40 CFR 112.7(d))

ADOT&PF management has determined that secondary containment is practicable at this facility.

3.7 Inspections, Tests, and Records (40 CFR 112.7(e))

As required by the SPCC rule, ADOT&PF performs the inspections, tests, and evaluations listed in the following table. Table 3-2 summarizes the various types of inspections and tests performed at the facility. The inspections and tests are described later in this section, and in the respective sections that describe different parts of the facility (e.g., Section 4.2.6 for bulk storage containers).

Table 3-2: Inspection and Testing Program

Facility Component	Action	Frequency/Circumstances
Aboveground container	Test container integrity. Combine visual inspection with another testing technique (non-destructive shell testing). Inspect outside of container for signs of deterioration and discharges.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.

Facility Component	Action	Frequency/Circumstances
Container supports and foundation	Inspect container's supports and foundations.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.

3.7.1 Daily Inspection

A DOT&PF employee generally performs a facility walkthrough each day. This daily visual inspection involves: (1) looking for tank/piping damage or leakage, stained or discolored soils; (2) observing shop drains, ditches, and low lying areas for oil stains and the presence of oil.

3.7.2 Monthly Inspection

The checklist provided in Appendix C and located in Appendix D of the SWPPP is used for monthly inspections by ADOT&PF personnel. The monthly inspections cover the following key elements:

- Observing the exterior of aboveground storage tanks, pipes, and other equipment for signs of deterioration, leaks, corrosion, and thinning.
- Observing the exterior of portable containers for signs of deterioration or leaks.
- Observing tank foundations and supports for signs of instability or excessive settlement.
- Observing the tank fill and discharge pipes for signs of poor connection that could cause a discharge, and tank vent for obstructions and proper operation.
- Verifying the proper functioning of overfill prevention systems.
- Checking the inventory of spill response kits.
- Observing the quantity of accumulated oil within the oil/water separator to ensure within capacity.

All problems regarding tanks, piping, containment, or spill response kits must immediately be reported to the Airport Manager. Visible oil leaks from tank walls, piping, or other components must be repaired as soon as possible to prevent a larger spill or a discharge to navigable waters or adjoining shorelines. Pooled oil is removed immediately upon discovery.

Written monthly inspection records are signed by the Airport Manager and maintained with this SPCC Plan for a period of three years.

3.7.3 Annual Inspection

Facility personnel perform a more thorough inspection of facility equipment on an annual basis. This annual inspection complements the monthly inspection described above and is performed

during the summer (coupled with the SWPPP annual inspection if possible) each year using the checklist provided in Appendix C of this Plan and Appendix H of the SWPPP.

The inspection will preferably take place after a large storm event to observe drainage ditches and oil/water separator functioning.

Written annual inspection records are signed by the Airport Manager and maintained with this SPCC Plan for a period of three years.

3.7.4 Periodic Integrity Testing

In addition to the above monthly and annual inspections by facility personnel, all tanks are periodically evaluated by an outside certified tank inspector.

3.8 Personnel, Training, and Discharge Prevention Procedures (40 CFR 112.7(f))

The Airport Manager is the facility designee and is responsible for oil discharge prevention, control, and response preparedness activities at this facility.

ADOT&PF management has instructed facility personnel in the operation and maintenance of oil pollution prevention equipment, discharge procedure protocols, applicable pollution control laws, rules and regulations, general facility operations, and the content of this SPCC Plan. Any new facility personnel are provided with this same training.

Annual discharge prevention briefings are held by the Airport Manager for all facility personnel involved in oil operations. The briefings are aimed at ensuring continued understanding and adherence to the discharge prevention procedures presented in the SPCC Plan. The briefings also highlight and describe known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices. Facility operators and other personnel will have the opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

Future training exercises will be periodically held to prepare for possible discharge responses.

Records of the briefings and discharge prevention training are kept on the form shown in Appendix E and maintained with this SPCC Plan for a period of three years. Additionally, the training form is located within Appendix G of the SWPPP. The Airport Manager may use both the SPCC and SWPPP training forms or just the SWPPP training form to log training.

3.9 Security (40 CFR 112.7(g))

Security issues addressed in the SPCC regulations include vandalism, accidental damage from vehicles or foot traffic, unauthorized or inappropriate access, and safety precautions for

equipment that is not in service. Accordingly, security measures should be implemented to control access, emphasize operational safety, and enhance spill prevention efforts. Specific features referenced in the regulations consist of fences, locks, and lighting.

Tanks are stored in well lit areas to detect spills in darkness with the ARFF building and tank contained within a fenced in area.

When tanks are in non-operating or standby status, valves that allow outward flow of fuel are to be securely closed in non-operating status.

The lighting around tanks is adequate to observe the tanks, see potential spills in darkness, and discourage vandalism. Additionally tanks are located within the boundaries of the airport which is fenced in and not accessible to the public.

3.10 Conformance with State and Local Applicable Requirements (40 CFR 112.7(j))

All bulk storage tanks at this facility are in conformance with local and state laws.

PART 4: Discharge Prevention – SPCC Provisions for Onshore Facilities (Excluding Production Facilities)

4.1 Facility Drainage (40 CFR 112.8(b))

Any potential discharge from ASTs and discharges occurring during loading/unloading operations will be contained by the oil/water separator, drainage ditches or low lying areas. The maintenance station is approximately 200 feet from surface waters and has controls which allow buffering capacity for spills. The facility includes a drainage system and an oil/water separator, which are used as containment for spill sources on paved and indoor areas. This separator provides environmental protection equivalent to ponds, lagoons, or catchment basins required under 40 CFR 112.8(b)(3) and (4), as allowed in 40 CFR 112.7(a)(2). Discharges outside the containment areas, such as those occurring in the fuel dispensing area or while unloading heating oil, will flow by gravity into vegetated ditches and low-lying areas where oil will be retained until it can be pumped out.

4.2 Bulk Storage Containers (40 CFR 112.8(c))

Table 4-1 summarizes the construction, volume, and content of bulk storage containers at the Unalaska Airport and associated facilities.

Table 4-1: List of Oil Containers

Tank	Location	Type (Construction Standard)	Capacity (gallons)	Content	Discharge Prevention & Containment
#1	ARFF/Maintenance	UL listed Above Ground Fire Guard Secondary Containment Storage Tank	1,000	Diesel heating fuel	Double walled tank with liquid level gauge
#2	Housing	UL listed single walled tank	300	Diesel	Isolated from traffic and public access
#3	Housing	UL listed single walled tank	300	Diesel	Isolated from traffic and public access
#4	ARFF/Maintenance	UL listed Above Ground Fire Guard Secondary Containment Storage Tank	1,000	Diesel	Double walled tank with liquid level gauge
#5	ARFF/Maintenance	UL listed Above Ground Fire Guard Secondary Containment Storage Tank	500	Gasoline	Double walled tank with liquid level gauge

#6	ARFF/Maintenance	UL listed Above Ground Fire Guard Secondary Containment Storage Tank	4,000	Diesel	Double walled tank with liquid level gauge
#7	ARFFF/Maintenance	Black Gold Waste Oil Burner	250	Waste oil	Double walled waste oil burner, stored inside
	ARFF/Maintenance	Steel drums	55	Motor oil and used oil	Building serves as containment since floor drains flow into oil/water separator

4.2.1 Construction (40 CFR 112.8 (c)(1))

All oil tanks used at this facility are constructed of steel, in accordance with industry specifications as described above. The design and construction of all bulk storage containers are compatible with the characteristics of the oil product they contain, and with temperature and pressure conditions.

Piping between fixed aboveground bulk storage tanks is made of steel and placed aboveground on appropriate supports designed to minimize erosion and stress.

4.2.2 Secondary Containment (40 CFR 112.8(c)(2))

All ASTs are double walled tanks with overfill protection and liquid level gauges. In the event of a spill, oil will flow to low vegetated areas isolated from waterways until it is able to be retrieved.

The 55-gallon drums are stored indoors when possible and the drain system and oil water separators in the ARFF/Maintenance building serve as a source of secondary containment.

4.2.3 Corrosion Protection (40 CFR 112.8(c)(4))

Most tanks are coated with White Chemline Polyurethane to prevent corrosion. Tanks are monitored and inspected regularly for leaks and wear. All piping is above ground and is made of black iron.

4.2.4 Inspections and Tests (40 CFR 112.8(c)(6))

Visual inspections of ASTs by facility personnel are performed according to the procedure described in this SPCC Plan. Leaks from tank seams, gaskets, rivets, and bolts are promptly corrected. Records of inspections and tests are signed by the inspector and kept at the facility for at least three years.

Annual inspections by certified and contracted individuals are conducted and records of certified tank inspections are kept at the facility for at least three years. Shell test comparison records are retained for the life of the tanks.

Table 4-2 summarizes inspections and tests performed on bulk storage containers (“EE” indicates that an environmentally equivalent measure is implemented in place of the inspection/test, as discussed in Section 3.1 of this Plan).

Table 4-2: Scope and Frequency of Bulk Storage Containers Inspections and Tests

Inspection/Test	Tank ID					
	#1	#2	#3	#4	#5	#6
Visual inspection by facility personnel (as per checklist of Appendix C)	M A	M A	M A	M A	M A	M A
External inspection by certified inspector	20 yr	20 yr	20 yr	20 yr	20 yr	20 yr
Internal inspection by certified inspector	20 yr*	20 yr*	20 yr*	20 yr*	20 yr*	20 yr*
Tank tightness test meeting requirements of 40 CFR 280						

Legend: M: Monthly
 A: Annual
 EE: Inspection not required given use of environmentally equivalent measure (refer to Section 3.1 of this Plan).
 * Or earlier, as recommended by the certified inspector based on findings from an external inspection.
 † Internal inspection may be recommended by the certified inspector based on findings from the external inspection.

The frequency above is based on implementation of a scheduled inspection/testing program. To initiate the program, ASTs will be inspected by the following dates:

- All tanks will be visually inspected monthly beginning August 2011.
- All tanks should undergo an external inspection on or before August, 2012

4.2.5 Overfill Prevention Systems (40 CFR 112.8(c)(8))

All tanks are equipped with a liquid level gauge. General secondary containment is provided in the event of overfills, as described in this Plan.

Facility personnel are present, when possible, throughout the filling operations to monitor the product level in the tanks.

4.2.6 Visible Discharges (40 CFR 112.8(c)(10))

Visible discharges from any container or appurtenance – including seams, gaskets, piping, pumps, valves, rivets, and bolts – are quickly corrected upon discovery.

Oil is promptly removed and disposed of according to the waste disposal method described in Part 5 of this Plan.

4.3 Transfer Operations, Pumping, and In-Plant Processes (40 CFR 112.8(d))

Transfer operations at this facility include:

- The filling of heating oil to storage tanks.
- The filling of operations vehicles.

All piping at this facility is aboveground and cathodically protected against corrosion and is provided with a protective wrapping and coating. All pipes are visually inspected on a monthly basis. Inspection includes aboveground valves, piping, appurtenances, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. Observations are noted on the monthly inspection checklist provided in this Plan. If corrosion damage is found, additional examination and corrective action must be taken as deemed appropriate considering the magnitude of the damage.

Lines that are not in service or are on standby for an extended period of time are capped or blank-flanged and marked as to their origin.

All pipe supports are designed to minimize abrasion and corrosion and to allow for expansion and contraction. Pipe supports are visually inspected during the monthly inspection of the facility.

Warning signs are posted at appropriate locations throughout the facility to prevent vehicles from damaging aboveground piping and appurtenances.

Part 5: Discharge Response

This section describes the response and cleanup procedures in the event of an oil discharge. The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state and federal laws. Immediate action must be taken to control, contain, and recover discharged product.

In general, the following steps are taken:

- Eliminate potential spark sources;
- If possible and safe to do so, identify and shut down source of the discharge to stop the flow;
- Contain the discharge with sorbents, berms, fences, trenches, sandbags, or other material;
- Contact the Airport Manager or his/her alternate;
- Contact regulatory authorities and the response organization; and
- Collect and dispose of recovered products according to regulation.

For the purpose of establishing appropriate response procedures, this SPCC Plan classifies discharges as either “minor” or “major,” depending on the volume and characteristics of the material released.

A list of Emergency Contacts is provided in Appendix F. A list of discharge response material kept at the facility is included in Appendix H.

5.1 Response to a Minor Discharge

A “minor” discharge is defined as one that poses no significant harm (or threat) to human health and safety or to the environment. Minor discharges are generally those where:

- The quantity of product discharged is small (e.g., may involve less than 10 gallons of oil);
- Discharged material is easily stopped and controlled at the time of the discharge;
- Discharge is localized near the source;
- Discharged material is not likely to reach water;
- There is little risk to human health or safety; and
- There is little risk of fire or explosion.

Minor discharges can usually be cleaned up by ADOT&PF personnel. The following guidelines apply:

- Immediately notify the Airport Manager.
- Under the direction of the Airport Manager, contain the discharge with discharge response materials and equipment. Place discharge debris in properly labeled waste containers.
- The Airport Manager will complete the discharge notification form (Appendix G) and attach a copy to this SPCC Plan.
- If the discharge involves between 1 and 10 gallons of oil, the Airport Manager will notify the ADEC in writing within 10 days.
- If the discharge involves between 10 and 55 gallons of oil, the Airport Manager will notify the ADEC within 48 hours.
- If the discharge involves more than 55 gallons of oil, the Airport Manager will notify the ADEC immediately.

5.2 Response to a Major Discharge

A “major” discharge is defined as one that cannot be safely controlled or cleaned up by facility personnel, such as when:

- The discharge is large enough to spread beyond the immediate discharge area;
- The discharged material enters water;
- The discharge requires special equipment or training to clean up;
- The discharged material poses a hazard to human health or safety; or
- There is a danger of fire or explosion.

In the event of a major discharge, the following guidelines apply:

- All workers must immediately evacuate the discharge site via the designated exit routes and move to the designated staging areas at a safe distance from the discharge. Exit routes are included on the facility diagram and posted in the maintenance building, in the office building, and on the outside wall of the outside shed that contains the spill response equipment.
- If the Airport Manager is not present at the facility, the senior on-site person notifies the Airport Manager of the discharge and has authority to initiate notification and response. Certain notifications are dependent on the circumstances and type of discharge.
- The Airport Manager (or senior on-site person) must call for medical assistance if workers are injured.
- The Airport Manager (or senior on-site person) must notify local response teams including fire and police departments, as applicable.
- The Airport Manager (or senior on-site person) must call the spill response and cleanup contractors listed in the Emergency Contacts list in Appendix F.
- The Airport Manager (or senior on-site person) must immediately contact the ADEC.

- The Airport Manager (or senior on-site person) must record the call on the Discharge Notification form in Appendix I and attach a copy to this SPCC Plan.
- The Airport Manager (or senior on-site person) coordinates cleanup and obtains assistance from a cleanup contractor or other response organization as necessary.

If the Airport Manager is not available at the time of the discharge, then the next highest person in seniority assumes responsibility for coordinating response activities.

5.3 Waste Disposal

Wastes resulting from a minor discharge response will be contained in impervious bags, drums, or buckets. The Airport Manager will characterize the waste for proper disposal and ensure that it is removed from the facility by a licensed waste hauler within two weeks, or what is most practicable.

Wastes resulting from a major discharge response will be removed and disposed of by a cleanup contractor.

5.4 Discharge Notification

Any size discharge (i.e., one that creates a sheen, emulsion, or sludge) that affects or threatens to affect navigable waters or adjoining shorelines must be reported immediately to the National Response Center (1-800-424-8802). The Center is staffed 24 hours a day.

A summary sheet is included in Appendix I to facilitate reporting. The person reporting the discharge must provide the following information:

- Name, location, organization, and telephone number
- Name and address of the party responsible for the incident
- Date and time of the incident
- Location of the incident
- Source and cause of the release or discharge
- Types of material(s) released or discharged
- Quantity of materials released or discharged
- Danger or threat posed by the release or discharge
- Number and types of injuries (if any)
- Media affected or threatened by the discharge (i.e., water, land, air)
- Weather conditions at the incident location
- Any other information that may help emergency personnel respond to the incident

Contact information for reporting a discharge to the appropriate authorities is listed in Appendix F and is also posted in prominent locations throughout the facility (e.g. in the maintenance building and the ARFF building).

In addition to the above reporting, 40 CFR 112.4 requires that information be submitted to the United States Environmental Protection Agency (EPA) Regional Administrator and the appropriate state agency in charge of oil pollution control activities (see contact information in Appendix H) whenever the facility discharges (as defined in 40 CFR 112.1(b)) *more than 1,000 gallons of oil in a single event*, or discharges (as defined in 40 CFR 112.1(b)) *more than 42 gallons of oil in each of two discharge incidents within a 12-month period*. The following information must be submitted to the EPA Regional Administrator and to MADEP within 60 days:

- Name of the facility;
- Name of the owner/operator;
- Location of the facility;
- Maximum storage or handling capacity and normal daily throughput;
- Corrective action and countermeasures taken, including a description of equipment repairs and replacements;
- Description of facility, including maps, flow diagrams, and topographical maps;
- Cause of the discharge(s) to navigable waters and adjoining shorelines, including a failure analysis of the system and subsystem in which the failure occurred;
- Additional preventive measures taken or contemplated to minimize possibility of recurrence; and
- Other pertinent information requested by the Regional Administrator.

A standard report for submitting the information to the EPA Regional Administrator and to ADEC is included in Appendix K of this Plan.

Appendix A Site Plan and Facility Diagram

Figure 1: Site Plan.

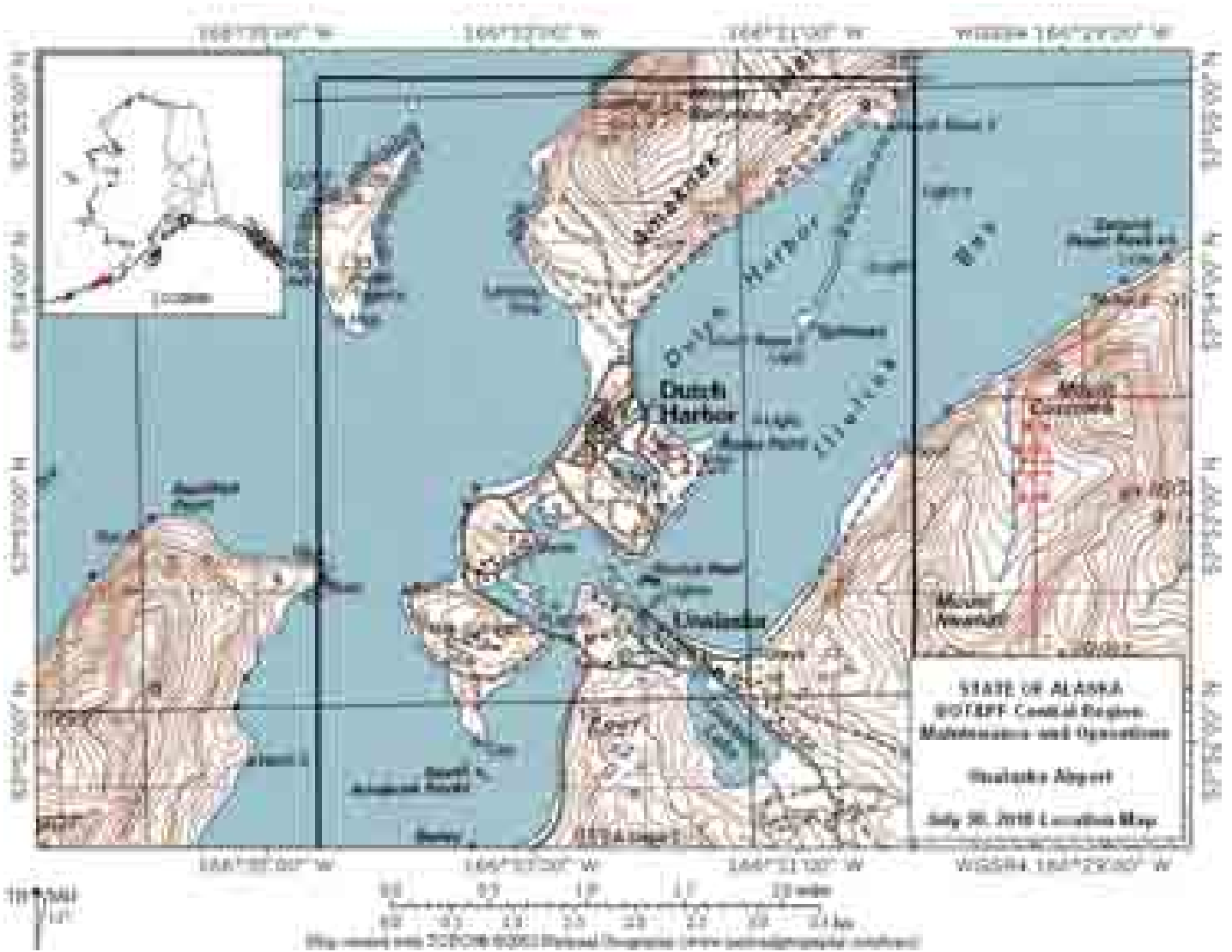
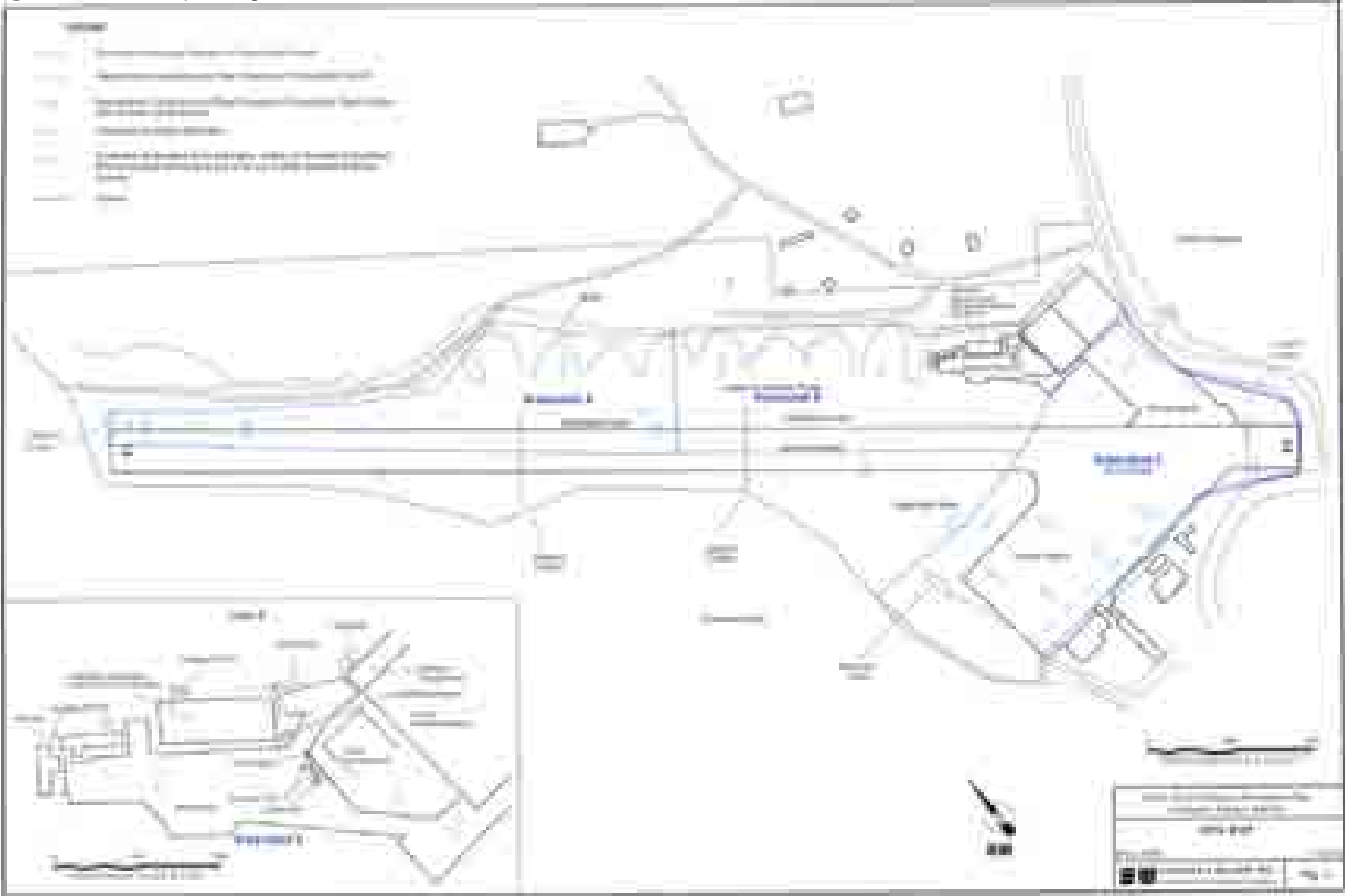


Figure 2: Facility Diagram.



Appendix B Substantial Harm Determination

Facility Name: Unalaska Airport and Facilities

Facility Address: P.O. Box 920525

Unalaska, Alaska 99692

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes

No

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

Yes

No

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR part 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

Yes

No

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR part 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?

Yes

No

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes

No

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature



Unalaska Airport Manager

Title

Steve Berninger

Name (type or print)

Date

5/11/11

APPENDIX C

Facility Inspection Checklists

The following checklists are to be used for monthly and annual facility-conducted inspections. Completed checklists must be signed by the inspector and maintained at the facility, with this SPCC Plan, for at least three years.

Monthly Inspection Checklist

This inspection record must be completed *each month* except the month in which an annual inspection is performed. Provide further description and comments, if necessary, on a separate sheet of paper and attach to this sheet. *Any item that receives “yes” as an answer must be described and addressed immediately.

	Y*	N	Description & Comments
Storage tanks			
<i>Tank surfaces show signs of leakage</i>			
<i>Tanks are damaged, rusted or deteriorated</i>			
<i>Bolts, rivets, or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Vents are obstructed</i>			
<i>Secondary containment is damaged or stained</i>			
<i>Water/product in interstice of double-walled tank</i>			
<i>Dike drainage valve is open or is not locked</i>			
Piping			
<i>Valve seals, gaskets, or other appurtenances are leaking</i>			
<i>Pipelines or supports are damaged or deteriorated</i>			
<i>Joints, valves and other appurtenances are leaking</i>			
<i>Buried piping is exposed</i>			
Oil/water separator			
<i>Oil/water separator > 2 inches of accumulated oil</i>			
<i>Oil/water separator effluent has a sheen</i>			
Security			
<i>Fencing, gates, or lighting is non-functional</i>			
<i>Pumps and valves are locked if not in use</i>			
Response Equipment			
<i>Response equipment inventory is complete</i>			

Date: _____

Signature: _____

Annual Facility Inspection Checklist

This inspection record must be completed *each year*. If any response requires further elaboration, provide comments in Description & Comments space provided. Further description and comments, if necessary, must be provided on a separate sheet of paper and attached to this sheet. *Any item that receives “yes” as an answer must be described and addressed immediately.

	Y*	N	Description & Comments
Storage tanks			
<i>Tank #1</i>			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted or deteriorated</i>			
<i>Bolts, rivets or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Vents are obstructed</i>			
<i>Tank #2</i>			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted, or deteriorated</i>			
<i>Bolts, rivets, or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Vents are obstructed</i>			
<i>Tank #3</i>			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted, or deteriorated</i>			
<i>Bolts, rivets, or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Vents are obstructed</i>			
<i>Tank #4</i>			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted or deteriorated</i>			
<i>Bolts, rivets or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Vents are obstructed</i>			
<i>Oil is present in the interstice</i>			
<i>Tank #5</i>			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted, or deteriorated</i>			

	Y*	N	Description & Comments
<i>Bolts, rivets, or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Leakage in exhaust from heating coils</i>			
Tank #6			
<i>Tank surfaces show signs of leakage</i>			
<i>Tank is damaged, rusted, or deteriorated</i>			
<i>Bolts, rivets, or seams are damaged</i>			
<i>Tank supports are deteriorated or buckled</i>			
<i>Tank foundations have eroded or settled</i>			
<i>Level gauges or alarms are inoperative</i>			
<i>Leakage in exhaust from heating coils</i>			
Piping			
<i>Valve seals or gaskets are leaking</i>			
<i>Pipelines or supports are damaged or deteriorated</i>			
<i>Joints, valves and other appurtenances are leaking</i>			
<i>Buried piping is exposed</i>			
<i>Out-of-service pipes are not capped</i>			
<i>Warning signs are missing or damaged</i>			
Oil/water separator			
<i>Oil/water separator > 2 inches of accumulated oil</i>			
<i>Oil/water separator effluent has a sheen</i>			
Security			
<i>Fencing, gates, or lighting is non-functional</i>			
<i>Pumps and valves are not locked (and not in use)</i>			
Response equipment			
<i>Response equipment inventory is incomplete</i>			

Annual reminders:

- Hold SPCC Briefing for all oil-handling personnel (and update briefing log in the Plan);
- Check contact information for key employees and response/cleanup contractors and update them in the Plan as needed;

Additional Remarks:

Date: _____

Signature: _____

APPENDIX D

Record of Annual Discharge Prevention Briefings and Training

Briefings will be scheduled and conducted by the facility owner or operator for operating personnel at regular intervals to ensure adequate understanding of this SPCC Plan. The briefings will also highlight and describe known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices. Personnel will also be instructed in operation and maintenance of equipment to prevent the discharge of oil, and in applicable pollution laws, rules, and regulations. Facility operators and other personnel will have an opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

Date	Subjects Covered	Employees in Attendance	Instructor(s)

APPENDIX E

Records of Tank Integrity and Pressure Tests

Attach copies of official records of tank integrity and pressure tests.

APPENDIX F Emergency Contacts

Designated person responsible for spill prevention: *Steve Berninger, Airport Manager*
907-581-1786

EMERGENCY TELEPHONE NUMBERS:

Facility

Steve Berninger, Airport Manager 907-581-1786
(cell) 907-359-1786

Response/Cleanup Contractors

Emergency Response – Unalaska Public Safety 911/ (907) 581-1233
Magone Marine – clean-up contractor (907) 581-1400

Notification

Alaska Department of Environmental Conservation 907-465-5250 or
800-478-9300 (24
hour number)
National Response Center 800-424-8802 (24
hour number)
United States Environmental Protection Agency, Region 10 206-553-1263 (24
hour emergency
number)

APPENDIX G Discharge Notification Form

Part A: Discharge Information				
General information when reporting a spill to outside authorities: Name: Unalaska Airport and Facilities Address: P.O. Box 920525 Unalaska, Alaska 99692 Telephone: (907) 581-1786 Owner/Operator: ADOT&PF P.O. Box 196900 Anchorage, Alaska 99516 Primary Contact: Steve Berninger, Airport Manager Work: (907) 581-1786 Cell (24 hrs): (907) 359-1786				
Type of oil:	Discharge Date and Time:			
Quantity released:	Discovery Date and Time:			
Quantity released to a waterbody:	Discharge Duration:			
Location/Source:				
Actions taken to stop, remove, and mitigate impacts of the discharge:				
Affected media: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • air • water • soil </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • storm water sewer/POTW • dike/berm/oil-water separator • other: _____ </td> </tr> </table>			<ul style="list-style-type: none"> • air • water • soil 	<ul style="list-style-type: none"> • storm water sewer/POTW • dike/berm/oil-water separator • other: _____
<ul style="list-style-type: none"> • air • water • soil 	<ul style="list-style-type: none"> • storm water sewer/POTW • dike/berm/oil-water separator • other: _____ 			
Notification person:	Telephone contact: Business: 24-hr:			
Nature of discharges, environmental/health effects, and damages:				
Injuries, fatalities or evacuation required?				
Part B: Notification Checklist				
	Date and time	Name of person receiving call		
Discharge in any amount				
Steve Berninger, Airport Manager Work: (907) 581-1786 Cell (24 hrs): (907) 359-1786				
Discharge in amount exceeding 10 gallons and <i>not affecting a waterbody or groundwater</i>				
Fire/Emergency Response 911 / (907) 581-1233				

Alaska Department of Environmental Conservation (907)465-5250 or (800)-478-9300 (24 hour no.)		
Discharge in any amount and affecting (or threatening to affect) a waterbody		
Fire/Emergency Response 911 / (907) 581-1233		
Alaska Department of Environmental Conservation (907)465-5250 or (800)-478-9300 (24 hour no.)		
National Response Center (800) 424-8802		

APPENDIX H

Discharge Response Equipment Inventory

The discharge response equipment inventory is verified during the monthly inspection and must be replenished as needed.

Maintenance and Equipment Storage Buildings

- Empty 55-gallons drums to hold contaminated material
- Loose absorbent material
- Absorbent pads
- Neoprene gloves
- Sand bags

APPENDIX I

Agency Notification Standard Report

Information contained in this report, and any supporting documentation, must be submitted to the EPA Region 1 Regional Administrator, and to MADEP, within 60 days of the qualifying discharge incident.

Facility:	<i>Unalaska Airport and Facilities</i>
Operator:	ADOT&PF P.O. Box 196900 Anchorage, Alaska 99516
Name of person filing report:	
Location:	<i>P.O. Box 213 Unalaska, Alaska 99685</i>
Maximum storage capacity:	<i>7,100 gallons</i>
Nature of qualifying incident(s):	
Discharge to navigable waters or adjoining shorelines exceeding 1,000 gallons Second discharge exceeding 42 gallons within a 12-month period.	
Description of facility (attach maps, flow diagrams, and topographical maps):	
<p>The Unalaska Airport is located in the City of Unalaska, AK, on Amaknak Island in the Aleutian Islands (Appendix A). The facility consists of one 3,900-foot-long asphalt-surfaced runway (12/30). Paved aprons with leased areas are located to the north and south of the eastern portion of the runway. The DOT&PF equipment and maintenance building is located on the northern apron. Outside activities include equipment fueling, runway maintenance, and deicing and sanding activities. Diesel fuel and gasoline for equipment and vehicle fueling are located in 1,000-gallon, 4,000-gallon and 500-gallon aboveground storage tanks (ASTs), respectively, on a concrete pad to the south of the equipment and maintenance building. Runway maintenance is limited to repainting runway markings (once a year) and sealing stress cracks in the asphalt surface (as necessary). These activities are performed in accordance with DOT&PF procedures and require dry weather. Deicing activities include mechanical plowing and the application of liquid urea, pelletized urea, and liquid E36 (potassium acetate) on airport surfaces.</p> <p>Drainage patterns for the Unalaska Airport are shown on figure(s) in Appendix A. In general, storm water runoff from the western portion of the runway (Watershed A) and northern apron area (Watershed B) flow to a series of drainage ditches and culverts that ultimately discharge into Unalaska Bay at Outfalls A and B. Storm water runoff from the western portion Watershed C flows to a series of catch basins and subsurface culverts into a detention area. Additionally, a culvert in the eastern portion of watershed C crosses under the end of the runway/safety area and drains into a vegetated area before entering a second culvert which drains to Dutch Harbor (Outfall C). A minimal amount of storm water at the far eastern portion of the runway likely drains into Dutch Harbor via sheet flow.</p>	

Agency Notification Standard Report (cont'd)

Cause of the discharge(s), including a failure analysis of the system and subsystems in which the failure occurred:

Corrective actions and countermeasures taken, including a description of equipment repairs and replacements:

Additional preventive measures taken or contemplated to minimize possibility of recurrence:

Other pertinent information:

Appendix L –Best Management Practices and Typicals

Best Management Practices – Summary Table

Example Typicals for Stormwater Pollution Prevention

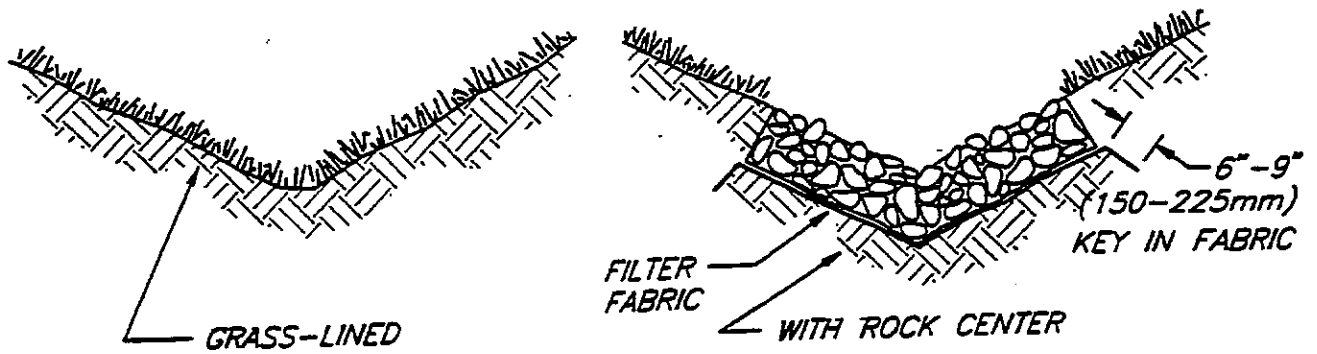
Best Management Practices – Summary Table

Best Management Practice (BMP)	
Minimizing Exposure – Vehicle and Equipment Maintenance Areas	<ol style="list-style-type: none"> 1. Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor other than those to approved disposal methods (including sanitary sewers or treatment facilities, oil/water separators, etc.) 2. Park vehicles and equipment indoor or under a roof whenever possible and maintain proper control of oil leaks/spills. 3. Check vehicles closely for leaks and use pans to collect fluid when leaks occur. 4. Use berms, curbs, grassed swales, or other diversion measures to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area. 5. Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. Do not discharge washwater to a storm drain or to surface water. 6. Inspect the maintenance area regularly to ensure BMPs are implemented. 7. Train employees on waste control and disposal procedures. 8. Inspect the maintenance area regularly for proper implementation of control measures.
Minimizing Exposure – Vehicle and Equipment Storage Areas	<ol style="list-style-type: none"> 1. Store vehicles and equipment indoors. 2. Store vehicles and equipment awaiting maintenance in designated areas only. 3. Use absorbents to cleanup spills and leaks. 4. Use drip pans under all vehicles and equipment for the collection of fluids. 5. Regularly seep area to minimize debris on the ground. 6. Train employees on procedures for storage and inspection items.
Minimizing Exposure –Materials Storage Areas	<ol style="list-style-type: none"> 1. Store materials indoors. 2. Maintain good integrity of all storage containers (e.g., used oil, hydraulic fluids, solvents, waste aircraft fuel). 3. Create a centralized storage area for waste materials. 4. Provide secondary containment around chemical

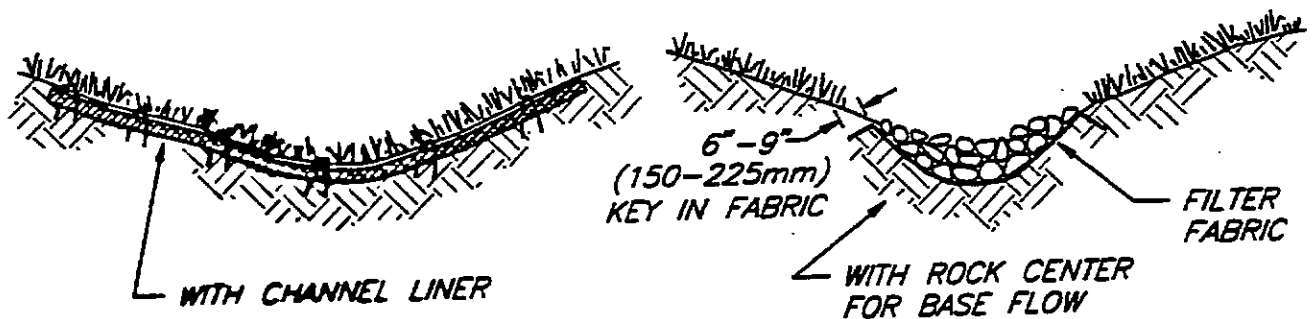
	<p>storage areas.</p> <ol style="list-style-type: none"> 5. Locate storage areas away from high traffic area and surface waters. 6. Inspect storage tanks and piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks and perform preventative maintenance. 7. Plainly label containers. 8. Provide fluid level indicators. 9. Properly dispose of chemicals that are no longer in use. 10. Store and handle reactive, ignitable, or flammable liquids in compliance with applicable local fire codes, local zoning codes, and the National Electric Code. 11. Develop and implement spill plans or spill prevention, containment and countermeasure (SPCC plans). 12. Train employees in spill prevention and proper materials management.
<p>Minimizing Exposure – Fuel System and Fueling Areas</p>	<ol style="list-style-type: none"> 1. Use fueling hoses with check valves to prevent hose draining after filling. 2. Provide spill kits on all fuel trucks, at fueling stations, in each hangar and at strategic locations. Each kit should be properly stocked and maintained. Store used materials in individual sealed container and labeled to ensure proper handling and disposal as a hazardous material. 3. Keep spills cleanup materials readily available. 4. Clean up spills and leaks immediately. 5. Use dry cleanup methods for fuel areas rather than hosing down the fuel area. Sweep up absorbents as soon as spilled substances have been absorbed. 6. Use spill and overflow protection devices. 7. Provide curbing or posts around fuel pumps to prevent collisions from vehicles. 8. Regularly inspect and perform preventative maintenance on fuel storage tanks to detect potential leaks before they occur. 9. Inspect the fueling area for leaks and spills. 10. Do not allow "topping off" of the fuel in the receiving equipment. 11. Train personnel on vehicle fueling BMPs.
<p>Minimizing Exposure – Storing Liquid Fuels</p>	<ol style="list-style-type: none"> 1. Develop and implement spill plans. 2. Train employees in spill prevention and control. 3. For ASTs – use double walled tanks with overflow protection. 4. For ASTs – Keep liquid transfer nozzle/hoses in secondary containment area. 5. Store drums indoors when possible.

	<ol style="list-style-type: none"> Clearly label drums with contents. Clearly label drums with contents.
<p>Good Housekeeping – Vehicle and Equipment Maintenance Areas</p>	<ol style="list-style-type: none"> Prevent and contain spills and drips Perform all cleaning at a centralized station so the solvents stay in one area. Remove any parts that are dipped in liquid slowly to avoid spills. Use drip pans, drain boards, and drying racks to direct drips back into fluid holding tank for reuse. Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. Transfer used fluids to the proper container promptly; do not leave full drip pans or other containers around the shop. Empty and clean drip pans and containers. Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents to for dry cleanup whenever possible. Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. Prohibit pouring liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous waste materials. Label and track the recycling of waste material. Store batteries and other significant materials inside. Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers in compliance with environmental regulations.
<p>Maintenance – Vehicle and Equipment Monitoring and Repairs</p>	<ol style="list-style-type: none"> Regularly inspect vehicles for leaks and maintenance Vehicles are kept in good working condition and monitored for leaks to prevent discharges Leaking equipment is kept indoors until repairs can be made with drip pans and absorbents in place as necessary. Equipments maintenance is conducted indoors All storage containers are monitored for leaks and stored indoors when possible. Fuel tanks are inspected regularly for leaks and integrity.
<p>Management of Runoff</p>	<ol style="list-style-type: none"> Maintain as much vegetation as possible in maintenance areas and areas where stormwater leaves impermeable surfaces. Utilize velocity dissipaters such as; vegetation, rock outfalls, and check dams. Create opportunities for filtration and settling such

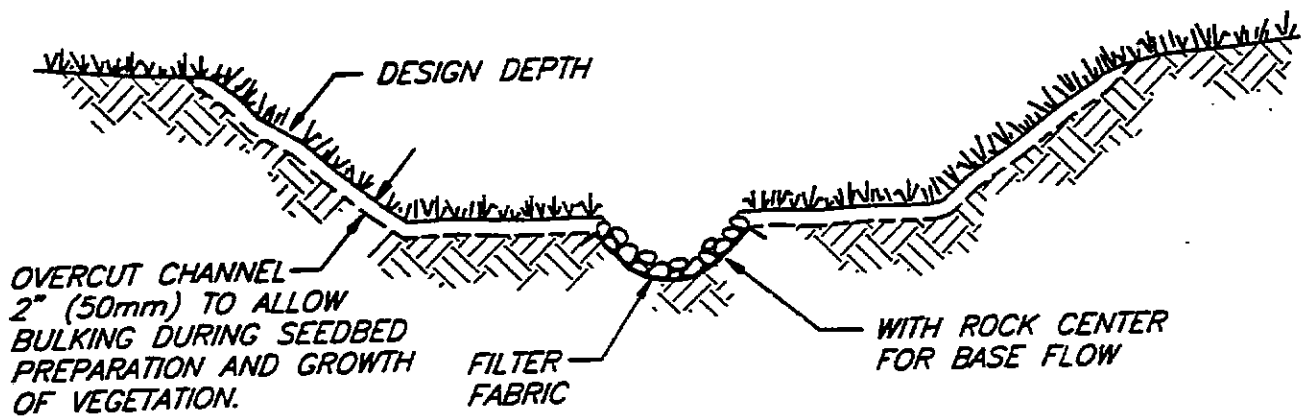
	as gently sloped vegetated ditches.
Waste, Garbage, and Floatable Debris	<ol style="list-style-type: none">1. Waste and debris are stored in cover containers or indoors and removed regularly.2. Maintenance and airport areas are kept clear of debris and clutter.3. The oil water separator is cleaned out annually.4. Human waste and all water is treated through a waste water facility.



**TYPICAL V-SHAPED CHANNEL
CROSS-SECTION**

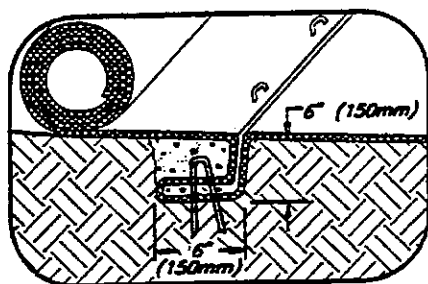
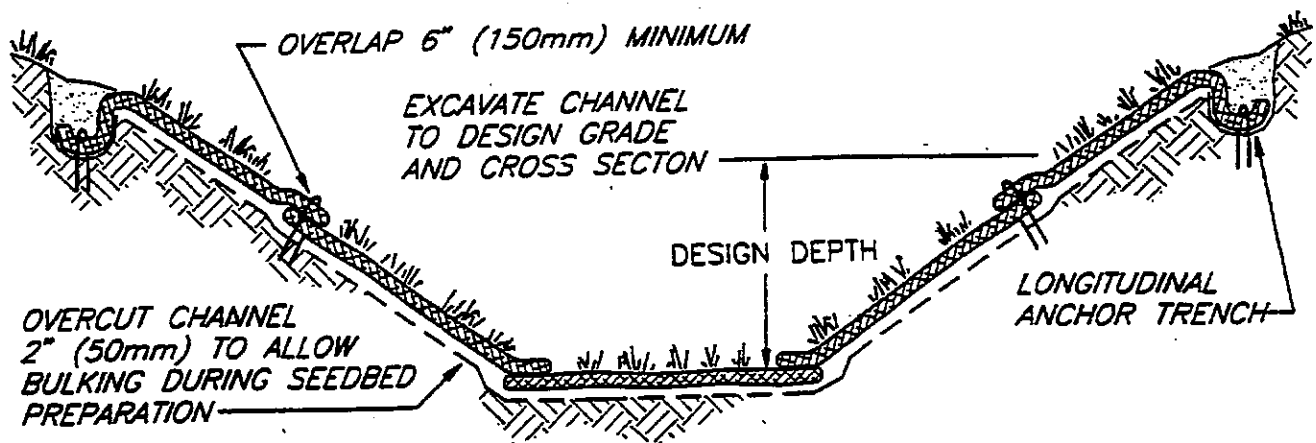


**TYPICAL PARABOLIC CHANNEL
CROSS-SECTION**



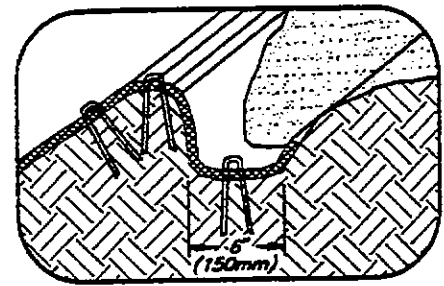
**TYPICAL TRAPEZOIDAL CHANNEL
CROSS-SECTION**

**GRASS-LINED CHANNEL
TYPICAL CROSS SECTIONS**



INTERMITTENT CHECK SLOT

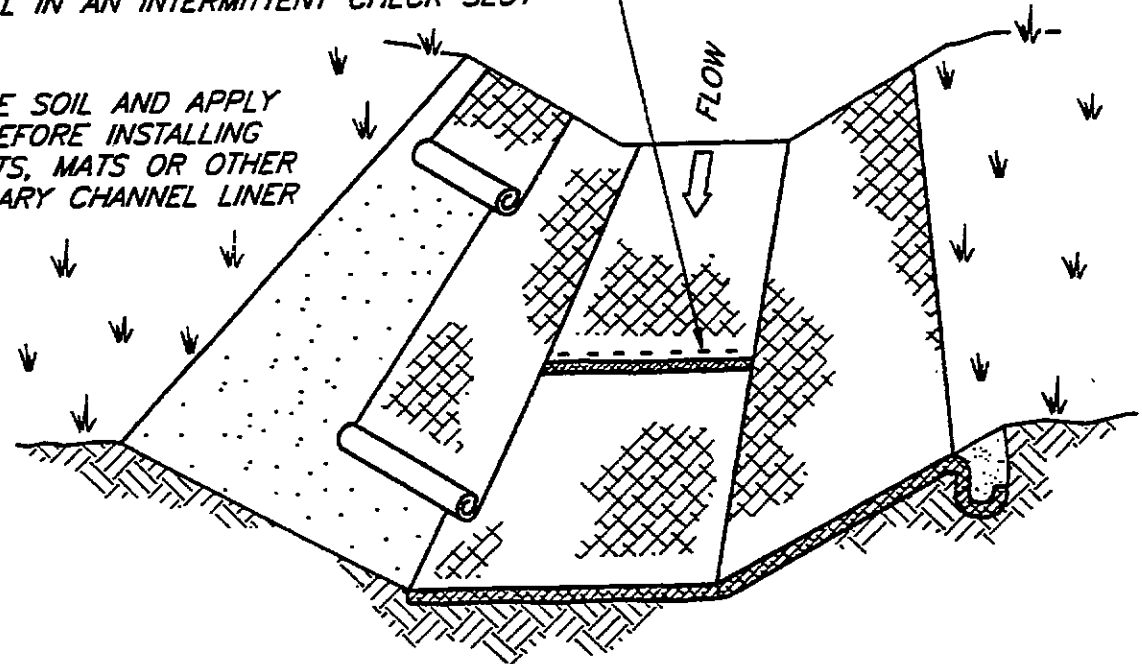
TYPICAL INSTALLATION WITH EROSION CONTROL BLANKETS OR TURF REINFORCEMENT MATS



LONGITUDINAL ANCHOR TRENCH

SHINGLE-LAP SPLICED ENDS OR BEGIN NEW ROLL IN AN INTERMITTENT CHECK SLOT

PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS OR OTHER TEMPORARY CHANNEL LINER SYSTEM

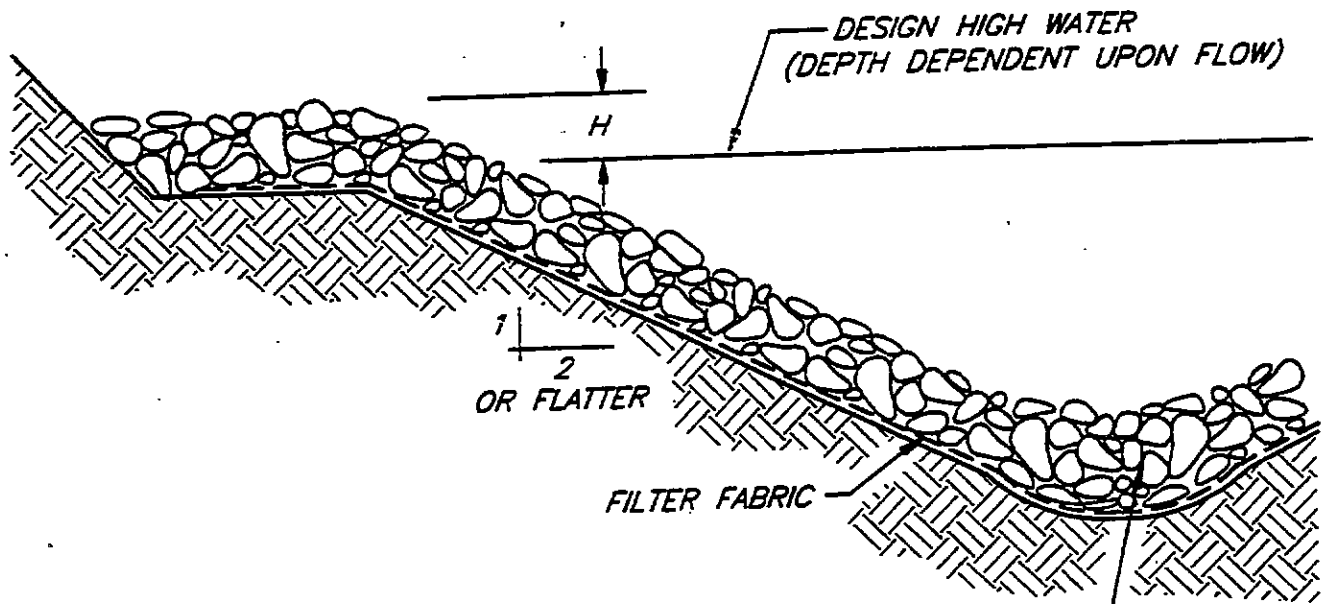


- NOTES:
1. DESIGN VELOCITIES EXCEEDING 2 FT/SEC (0.5m/sec) REQUIRE TEMPORARY BLANKETS, MATS OR SIMILAR LINERS TO PROTECT SEED AND SOIL UNTIL VEGETATION BECOMES ESTABLISHED.
 2. GRASS-LINED CHANNELS WITH DESIGN VELOCITIES EXCEEDING 6 FT/SEC (2m/sec) SHOULD INCLUDE TURF REINFORCEMENT MATS.

NOT TO SCALE

**GRASS-LINED CHANNEL
TYPICAL INSTALLATION**

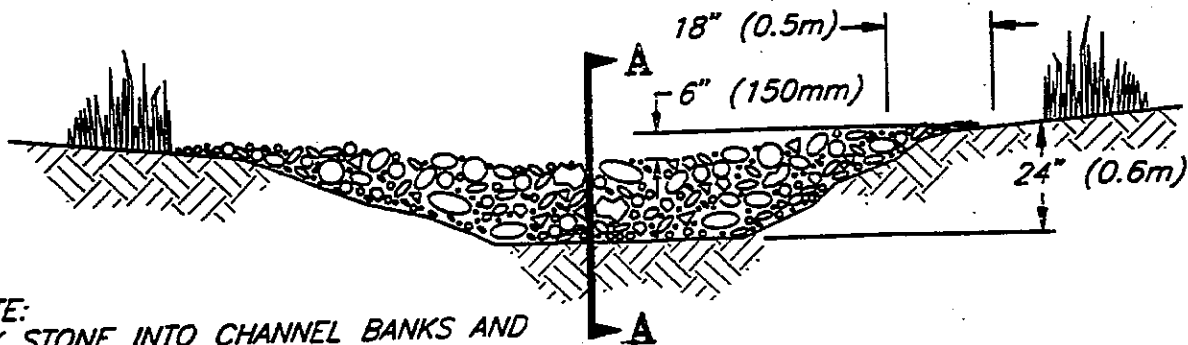
DESIGN HEIGHT (H), WIDTH AND STONE SIZE SHALL
BE DETERMINED BY THE ENGINEER



MINIMUM 6" (150mm) THICK LAYER OF 2" (50mm) MINIMUM
DIAMETER DRAIN ROCK. LARGER STONE SHALL BE USED
DEPENDENT UPON GRADIENT, SOIL TYPE, AND DESIGN FLOW.

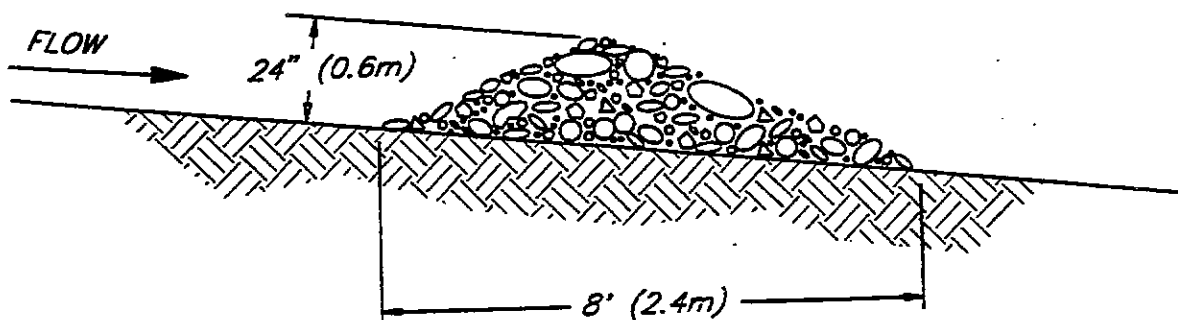
TYPICAL SECTION

**ROCK LINED
CHANNEL**



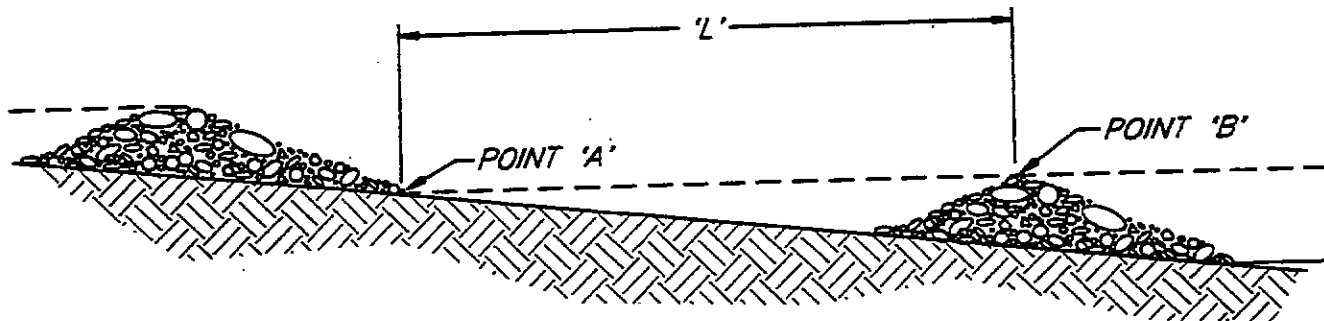
NOTE:
KEY STONE INTO CHANNEL BANKS AND
EXTEND IT BEYOND THE ABUTMENTS A
MINIMUM OF 18" (0.5m) TO PREVENT
FLOW AROUND DAM.

VIEW LOOKING UPSTREAM



SECTION A - A

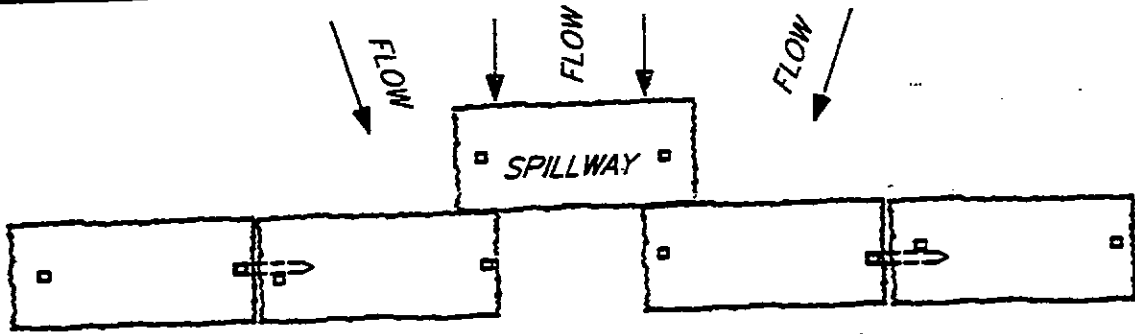
'L' = THE DISTANCE SUCH THAT POINTS 'A' AND
'B' ARE OF EQUAL ELEVATION.



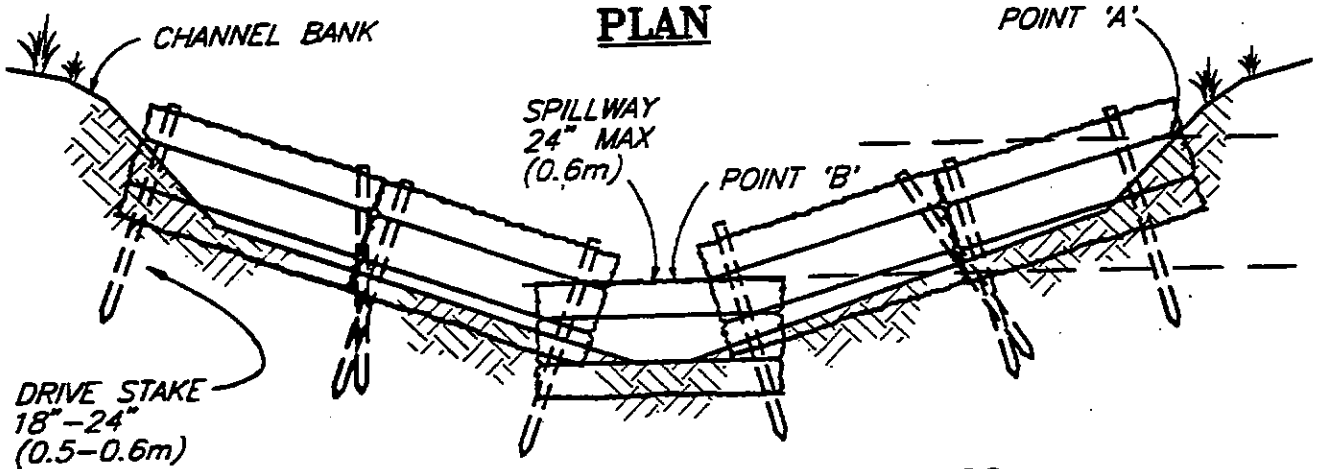
SPACING BETWEEN CHECK DAMS

NOT TO SCALE

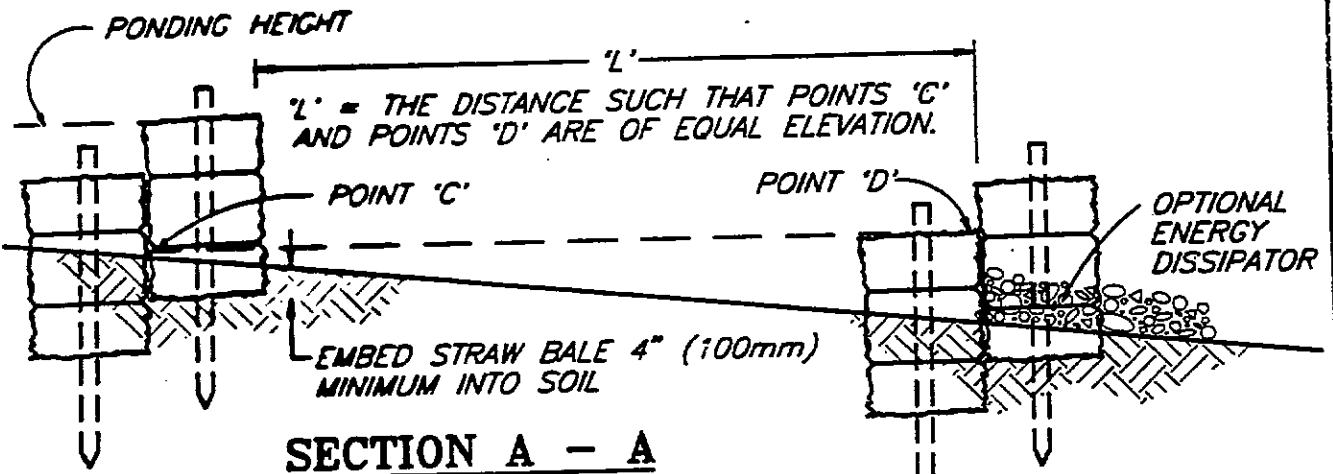
**ROCK
CHECK DAM**



PLAN



VIEW LOOKING UPSTREAM



SECTION A - A
SPACING BETWEEN CHECK DAMS

NOTES:

1. EMBED BALES 4" (100mm) INTO THE SOIL AND "KEY" BALES INTO THE CHANNEL BANKS.
2. POINT 'A' MUST BE HIGHER THAN POINT 'B': (SPILLWAY HEIGHT)
3. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ABUTTING.
4. SPILLWAY HEIGHT SHALL NOT EXCEED 24" (0.6m).
5. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

NOT TO SCALE

**STRAW BALE
CHECK DAM**

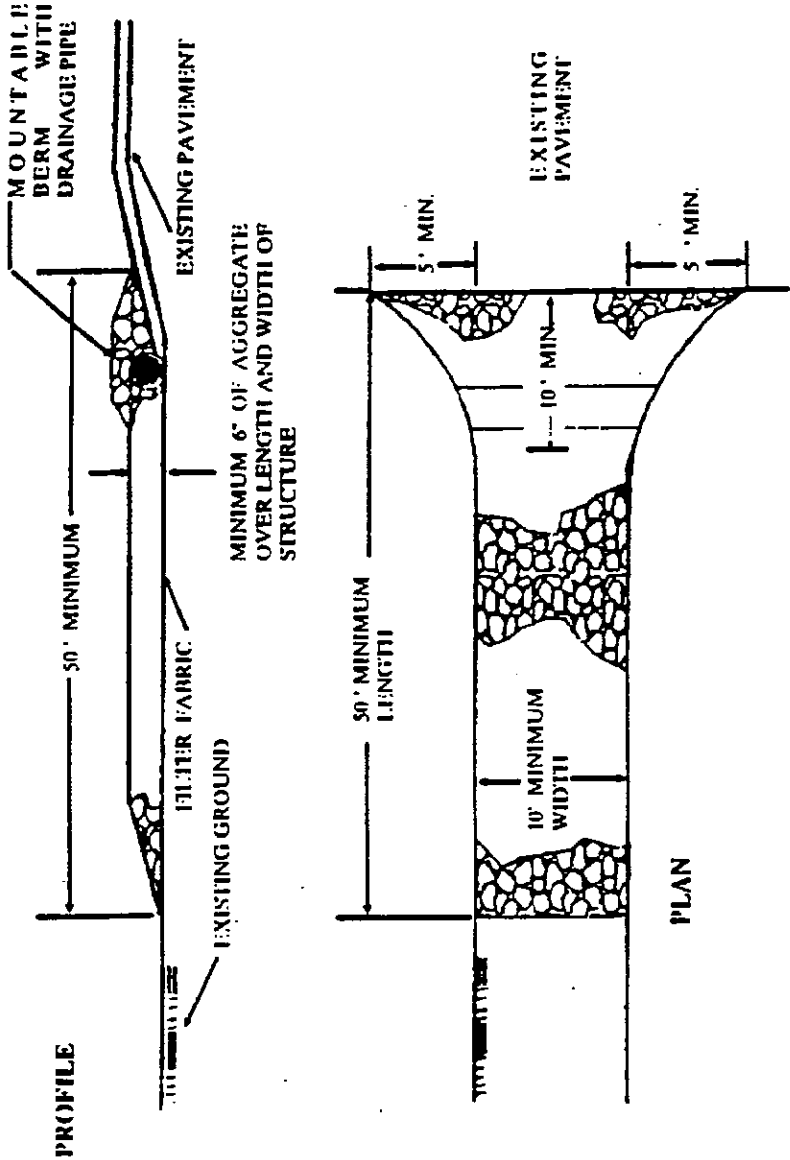


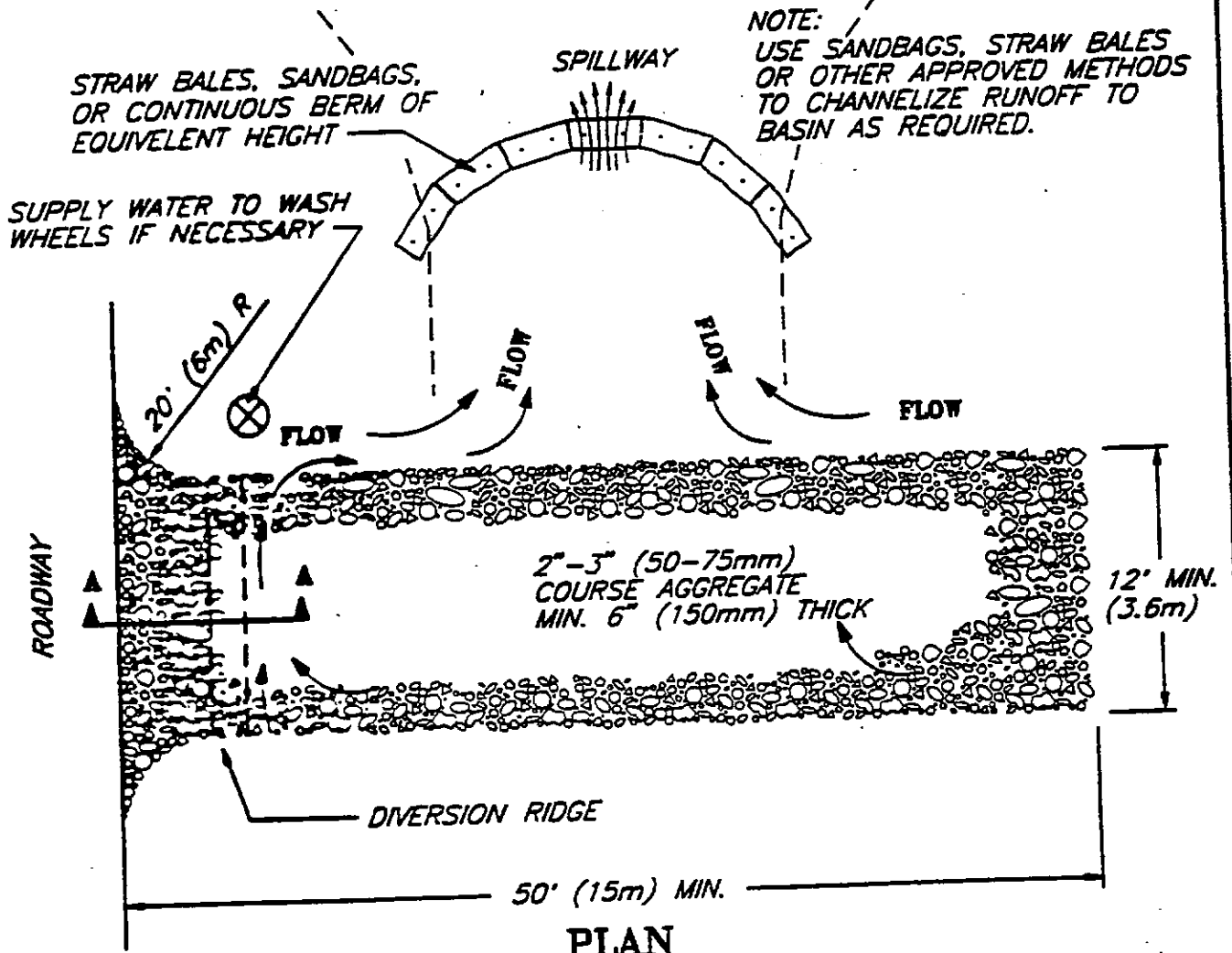
Figure 4-7
Stabilized Construction Exit

DIVERSION RIDGE REQUIRED
WHERE GRADE EXCEEDS 2%

2% OR GREATER



SECTION A - A



STRAW BALES, SANDBAGS,
OR CONTINUOUS BERM OF
EQUIVALENT HEIGHT

NOTE:
USE SANDBAGS, STRAW BALES
OR OTHER APPROVED METHODS
TO CHANNELIZE RUNOFF TO
BASIN AS REQUIRED.

SUPPLY WATER TO WASH
WHEELS IF NECESSARY

ROADWAY

2" - 3" (50-75mm)
COURSE AGGREGATE
MIN. 6" (150mm) THICK

12' MIN.
(3.6m)

DIVERSION RIDGE

50' (15m) MIN.

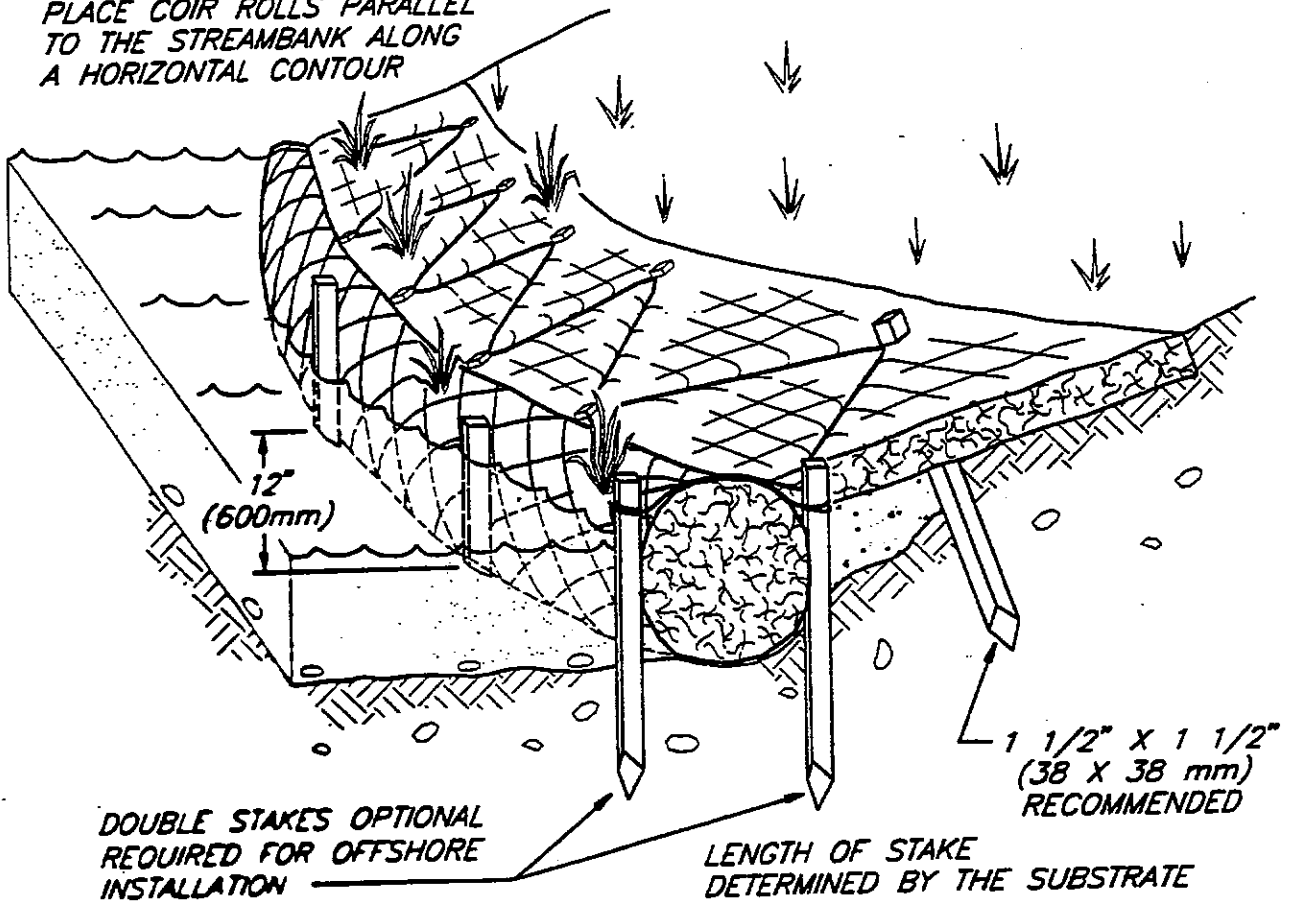
PLAN

NOTES:

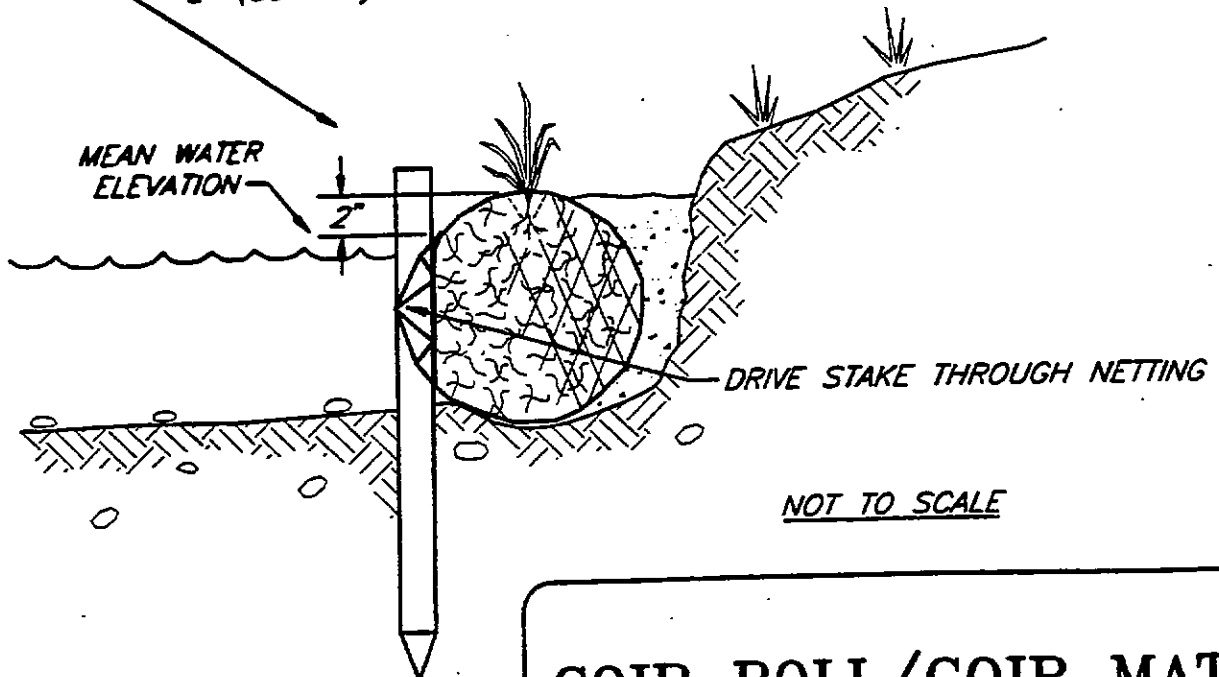
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

**TEMPORARY
GRAVEL
CONSTRUCTION
ENTRANCE/EXIT**

PLACE COIR ROLLS PARALLEL TO THE STREAMBANK ALONG A HORIZONTAL CONTOUR



PLACE COIR ROLL SUCH THAT THE ROLL EXTENDS 2" (50 mm) ABOVE MEAN WATER ELEVATION



COIR ROLL/COIR MATS

GALVANIZED WIRE MESH,
GEOTEXTILE REINFORCEMENT
MATS OR COIR MATS

SIDE VIEW

BIND AND/OR SPIKE
LOGS TOGETHER
ANCHOR ROD 3/4" X 6"
(20mm X 2m)

TYPICAL LOG CRIBBING

SOME BASAL ENDS OF LIVE
BRANCH CUTTINGS SHOULD
REACH UNDISTURBED SOIL
AT THE BACK OF CRIB
STRUCTURE

BACKFILL WITH
ROCK AND SOIL

$W =$ CHANNEL WIDTH

$\frac{W}{2}$ MAXIMUM

MEAN HIGH WATER
PLUS 12" (300mm)

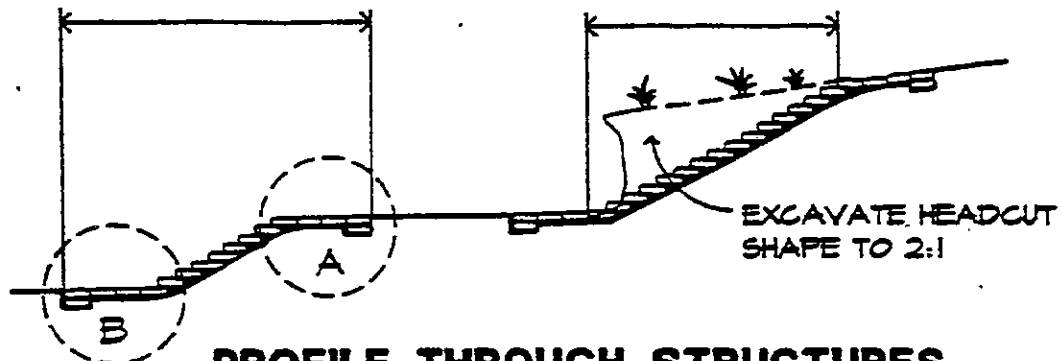
NORMAL
STREAM LEVEL
6" (150mm)

$D =$ EXPECTED DEPTH OF SCOUR
PLUS 2' (0.6m) OR 12" (300mm) MINIMUM

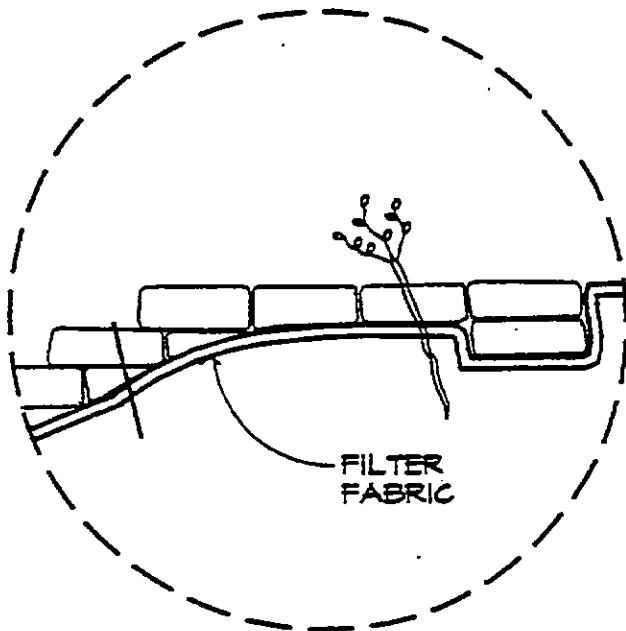
FILTER FABRIC ALONG BASE

TYPICAL GABION DEFLECTOR

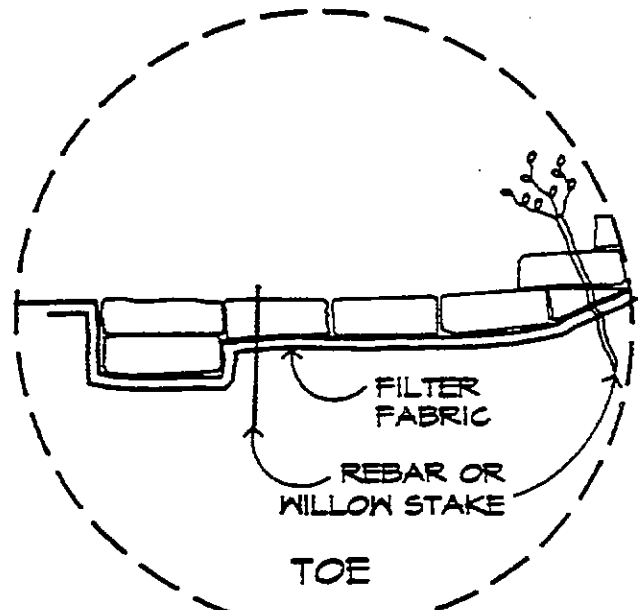
**STREAMBANK
STABILIZATION**



PROFILE THROUGH STRUCTURES

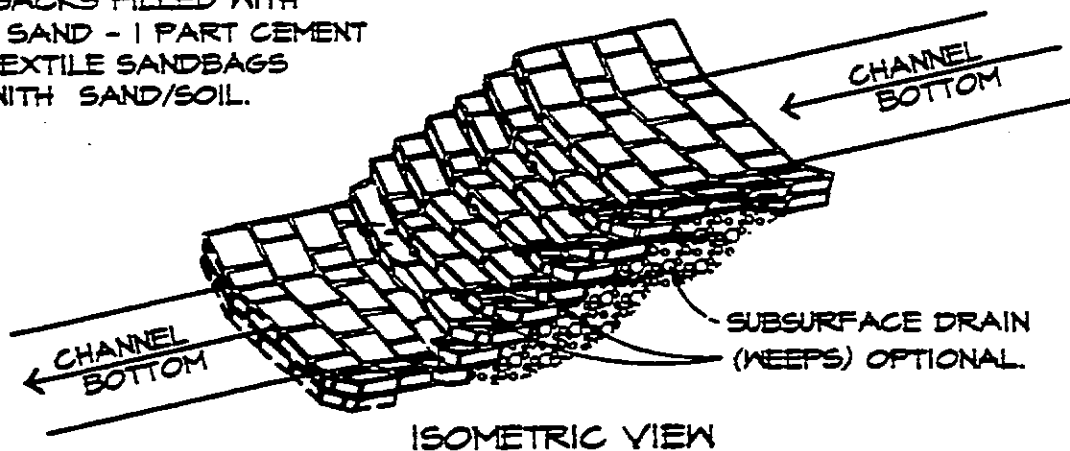


DETAIL - 'A'



DETAIL - 'B'

BURLAP SACKS FILLED WITH 4 PARTS SAND - 1 PART CEMENT OR GEOTEXTILE SANDBAGS FILLED WITH SAND/SOIL.



ISOMETRIC VIEW

SANDBAG HEADCUT STRUCTURE

25:

1. GEOTEXTILE SANDBAGS MAY BE STAKED WITH LIVE WILLOW STAKES, REBAR OR 'SNAP TIE' STAKES SHOULD BE USED WITH CEMENT SANDBAGS.
2. ROCK RIPRAP MAY BE USED IN PLACE OF SANDBAGS.

SANDBAG HEADCUT STRUCTURE

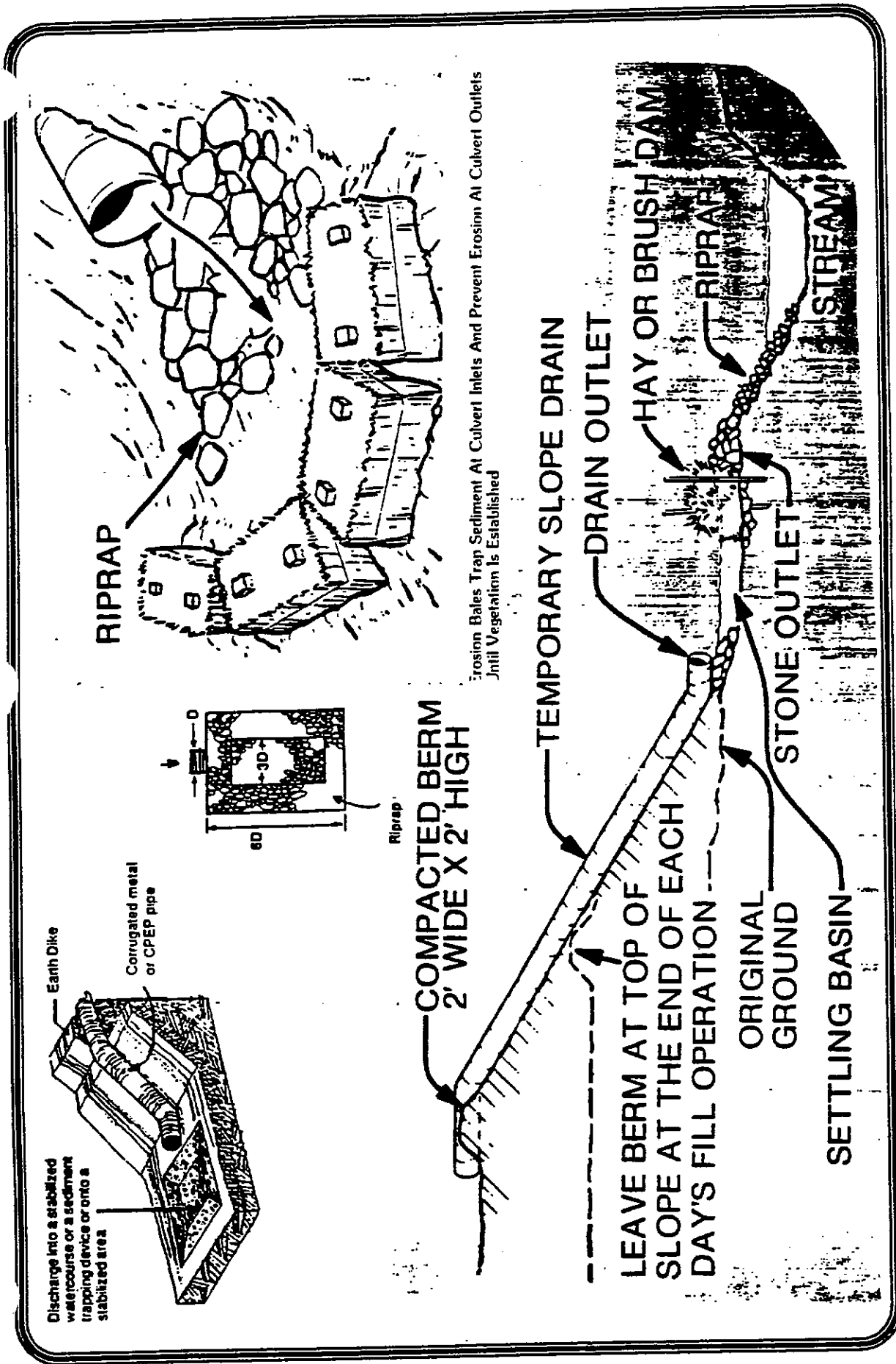
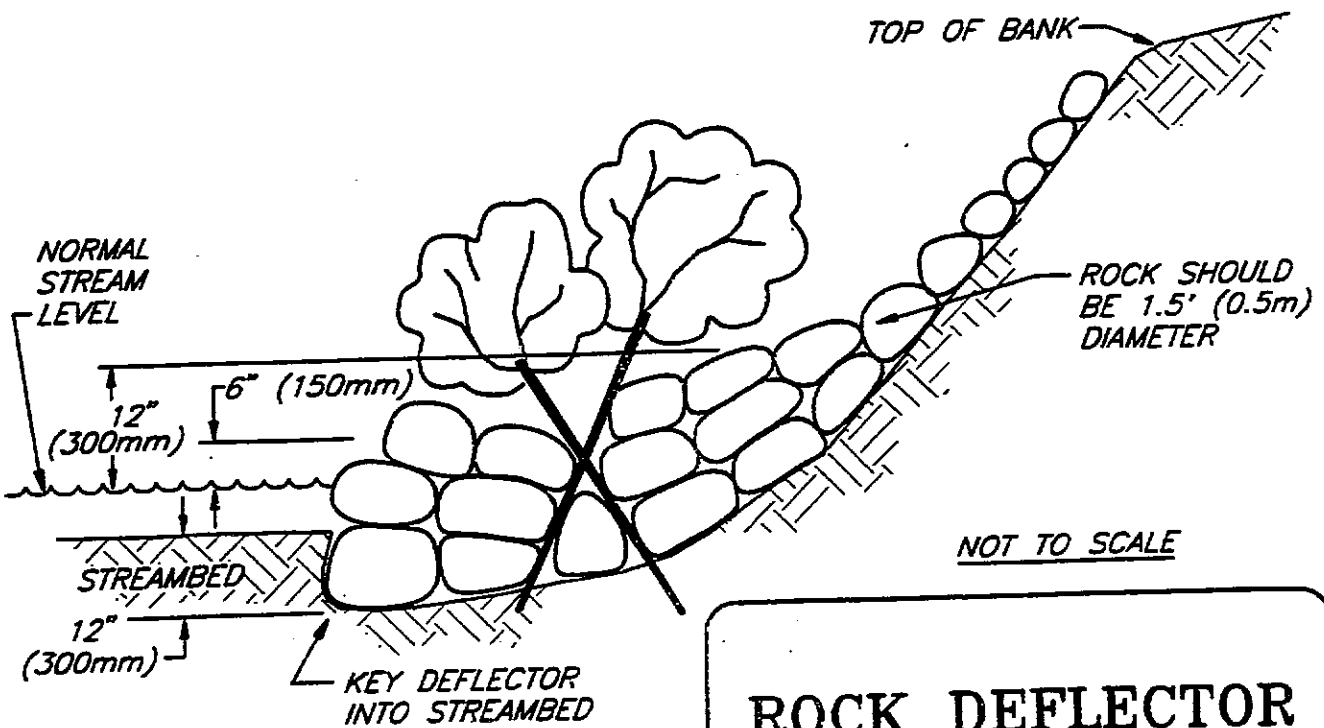
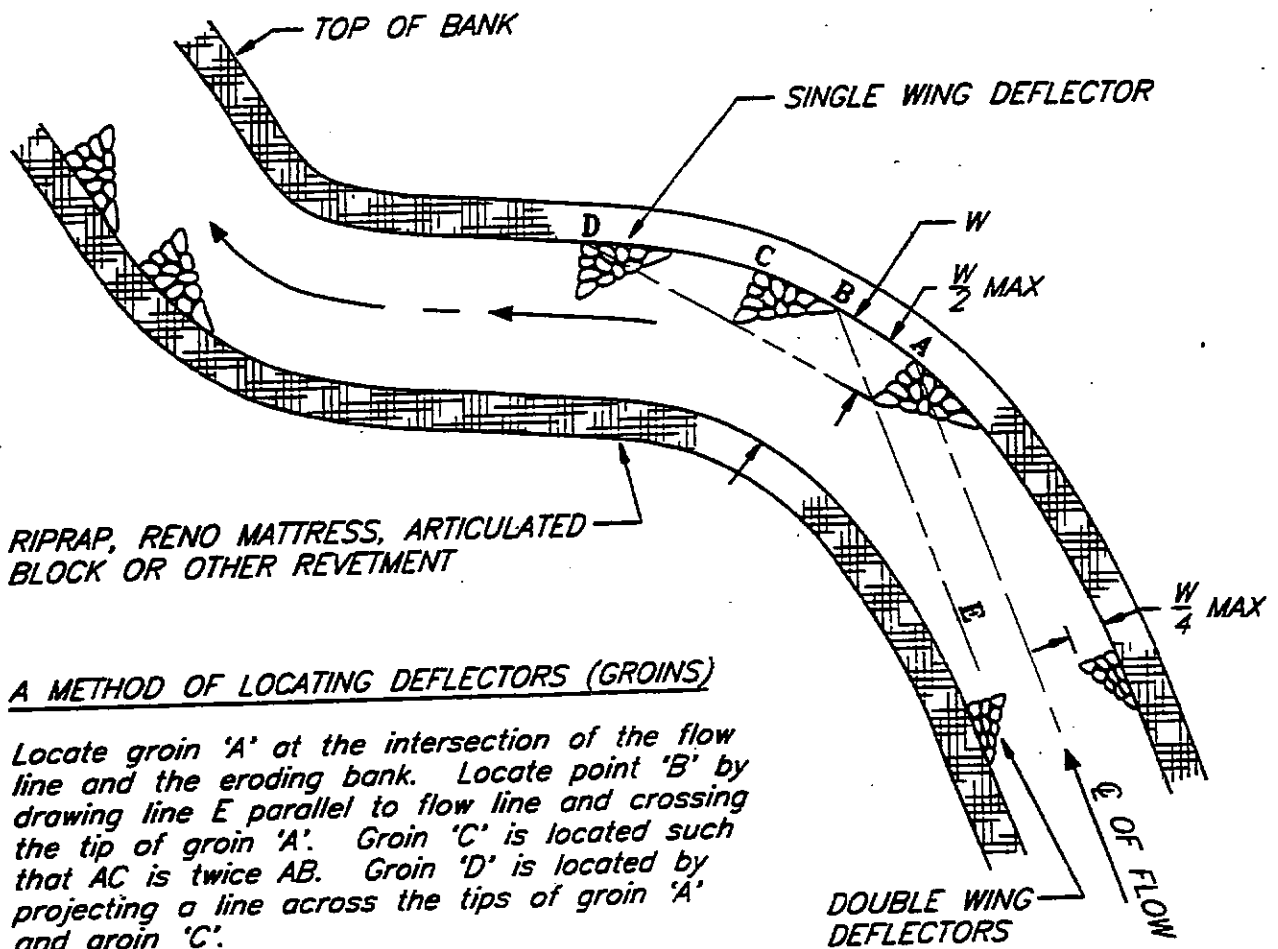
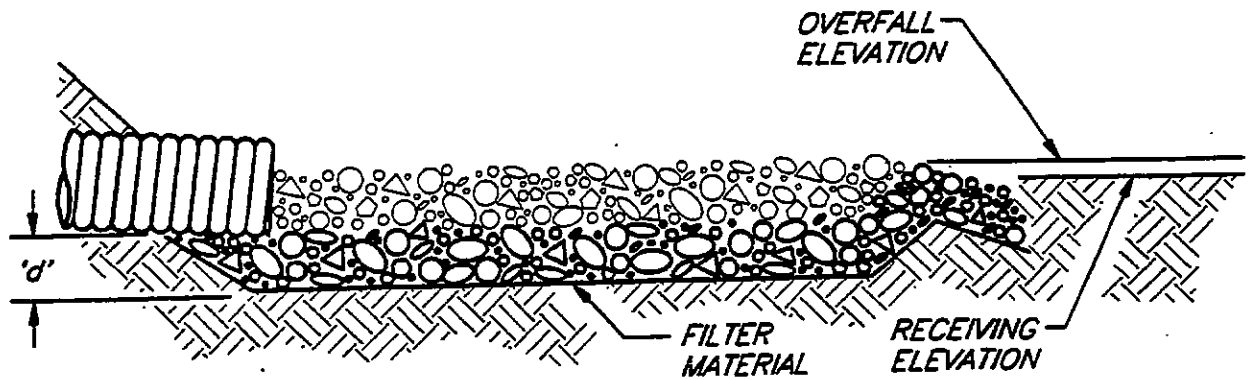


Figure 4-11
Outlet Protection



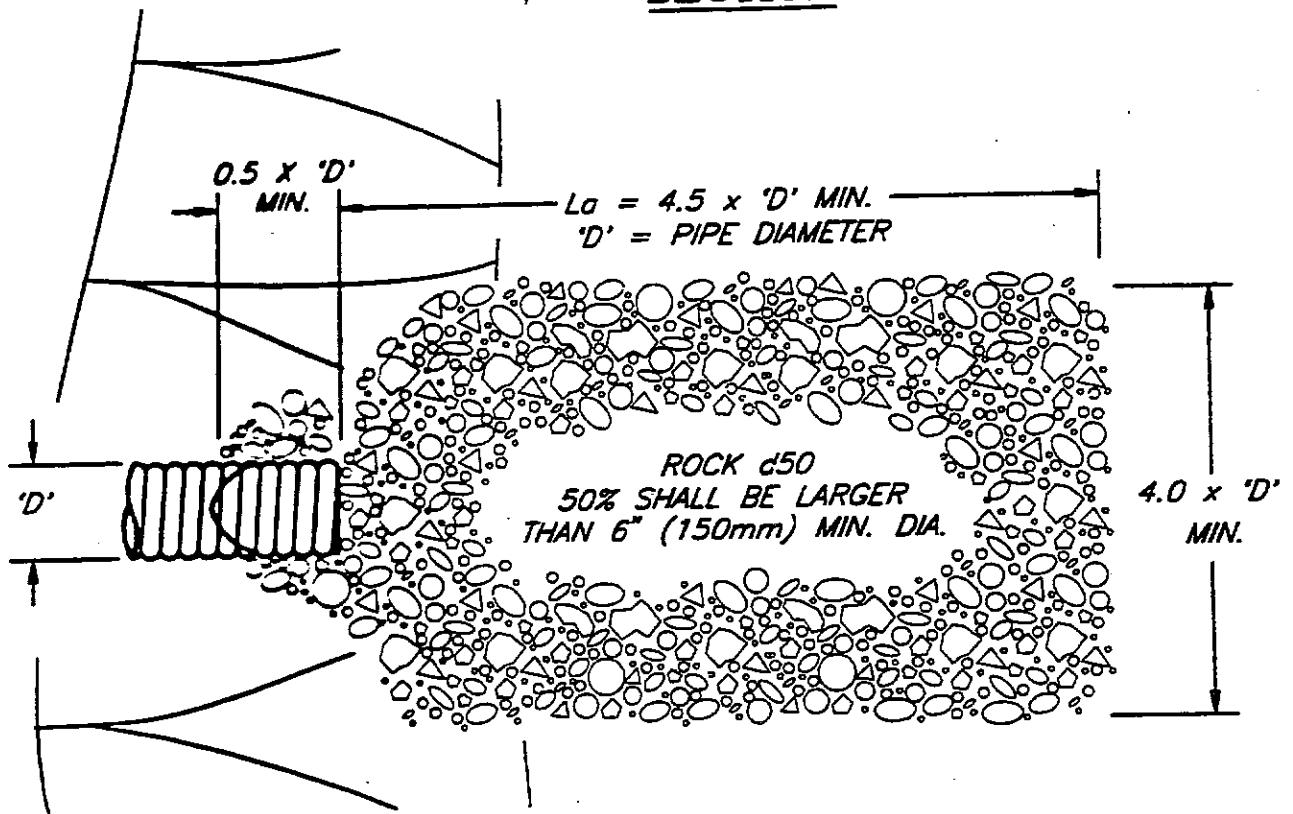
ROCK DEFLECTOR

1996 JOHN McCULLAH



THICKNESS ('d') = 1.5 x MAX. ROCK DIAMETER - 6" (150mm) MIN.

SECTION



PLAN

NOTES:

1. ' L_a ' = LENGTH OF APRON. DISTANCE ' L_a ' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

**ENERGY
DISSIPATOR**



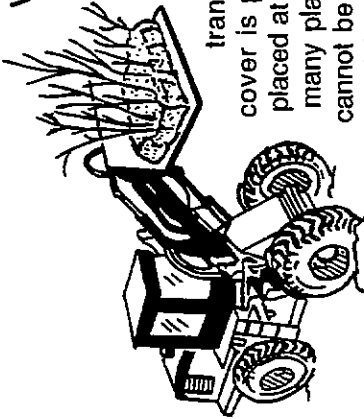
TRANSPLANTING

Transplanting is a revegetation technique that removes a plant, or plants containing roots and shoots from one site to be replanted at another. Transplanting can take several forms generally distinguished by size: vegetation mats, plugs, sprigs and transplants (single plants). All forms require careful selection and handling in order for the transplanting effort to be successful. Refer to *Streambank Revegetation Plant Species Selection List* for plant material suggestions.

Locate a donor site and obtain permission to harvest plants. In cases where plants are going to be destroyed by construction, consider salvaging the plants that would otherwise be lost. The conditions of the donor site need to be relatively similar to those at the transplanting site. The best time to transplant is when plants are dormant. It is essential that the plant materials do not dry out while in transport and after planting. Transplanting efforts can be mechanized.

VEGETATIVE MAT

A vegetative mat is the largest transplant. Dimensions of the mats vary from one to several feet square and may contain woody and/or herbaceous vegetation. The greatest benefit of this transplanting technique is that vegetative cover is provided immediately after the mat is placed at the new location. The mats often contain many plant species, especially native plants that cannot be obtained elsewhere. Often, the cost will be for labor and machinery for moving and installing the mat.

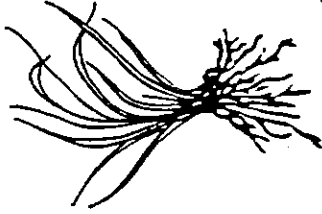


Harvest a vegetative mat by cutting the shoots and root/soil mass into a block. The root/soil mass is cut as deeply as possible. The mat is then lifted from the ground by hand or with mechanized equipment and transported to the planting site.

Prepare the planting site by creating a depression in the soil that will accommodate the dimensions of the mat. The sides of the mat should be covered by soil. If the mat is placed directly on the surface with other mats immediately adjacent to each other, make sure that the edges of the mat are not left exposed to the air which would cause damage to the roots. If needed, soil should be placed in the spaces between mats to cover the roots.

PLUGS

Plugs are smaller than vegetative mats and not necessarily, contain only one plant species. They can be harvested from a donor community using tools and transported easily to the planting site. They are particularly well suited for planting in wetlands, including grass rolls or being divided into sprigs.

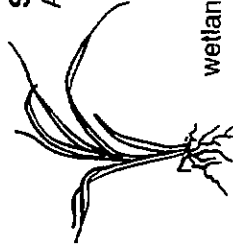


Dig a plug with a shovel. A plug may range from a few inches in diameter. It is important to include as many roots and as much soil as possible with each plug.

Plant plugs so that the new soil level matches the soil level of the donor site. If the planting site is dry, the plug should be planted in the center of a small depression that will catch and retain water. The soil around the plug should be pressed firmly into place.

SPRIGS

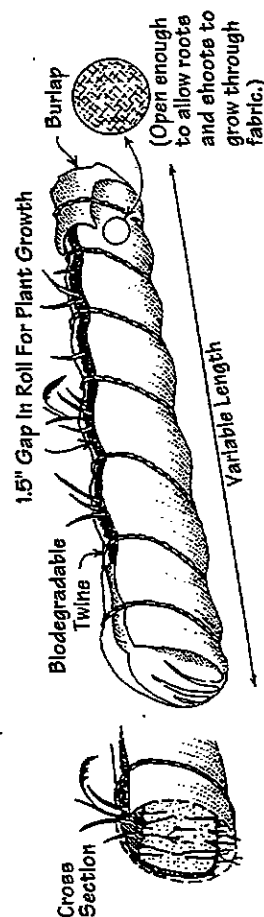
A sprig is the smallest transplant unit, consisting of a single shoot and roots. Grasses and sedges are often transplanted as sprigs. Species with a rhizomatous (underground stem) growth form are most suited for sprigging. Sprigs are often planted in wetlands or into coir logs.



Prepare a sprig from a small plug that contains one plant species. The plug can be separated into sprigs either at the donor site or the planting site. The important point is to keep the plant material moist, removed from direct sunlight and wind while preparing the sprigs and transporting them to the planting site. Harvest only the number of sprigs that can be planted the same day.

Plant a sprig by sticking a shovel in the ground perpendicularly; push it forward to create a small opening; place the sprig in the opening, remove the shovel and then firm the ground around the sprig. Care should be taken to ensure that the entire root system is covered by soil. A more extensive discussion of the sprigging is found in *Beach Wildrye: Planting Guide for Alaska* (Wright, 1994).

GRASS ROLLS

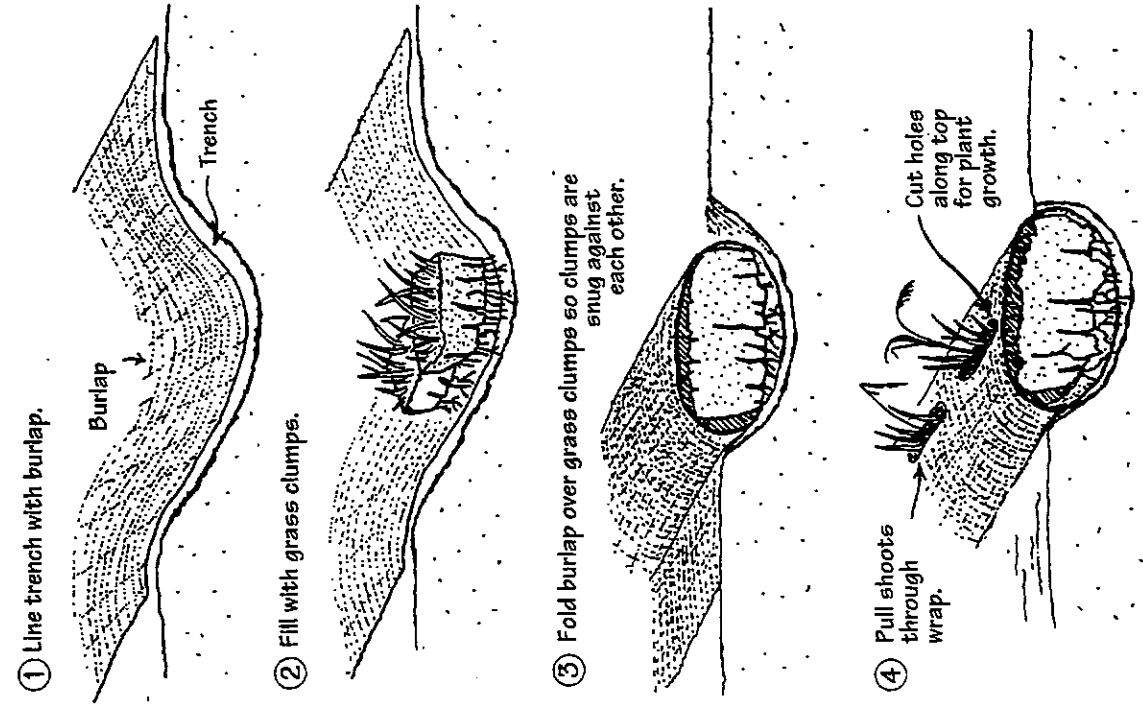


Grass rolls are often used to revegetate shorelines and streambanks where grasses and grass-like plants have been the primary vegetation type and where seeding is impractical due to fluctuating water levels or other site conditions. Clumps of grass sod are placed tightly together, side by side with shoots pointing up, in a sausage like structure and held together with burlap and twine. The roll is then anchored in place. This technique reintroduces herbaceous vegetation to a site while simultaneously providing some structural stability. Ultimately, the sod will form a dense root system along the streambank and provide structural protection to the site. When the grasses die back at the end of each growing season, their leaves hang over the streambank and provide rearing habitat for fish.

Construct a grass roll by laying out a length of burlap; place clumps of sod tightly together in the middle of the burlap. Bluejoint reedgrass, *Calamagrostis canadensis*, is the primary grass used for this technique and should be collected from sites away from streambanks. Beach wildrye, *Leymus mollis*, has also been used for streambank plantings, and although it produces a strong rhizome it does not form the dense sod characteristic of Bluejoint.

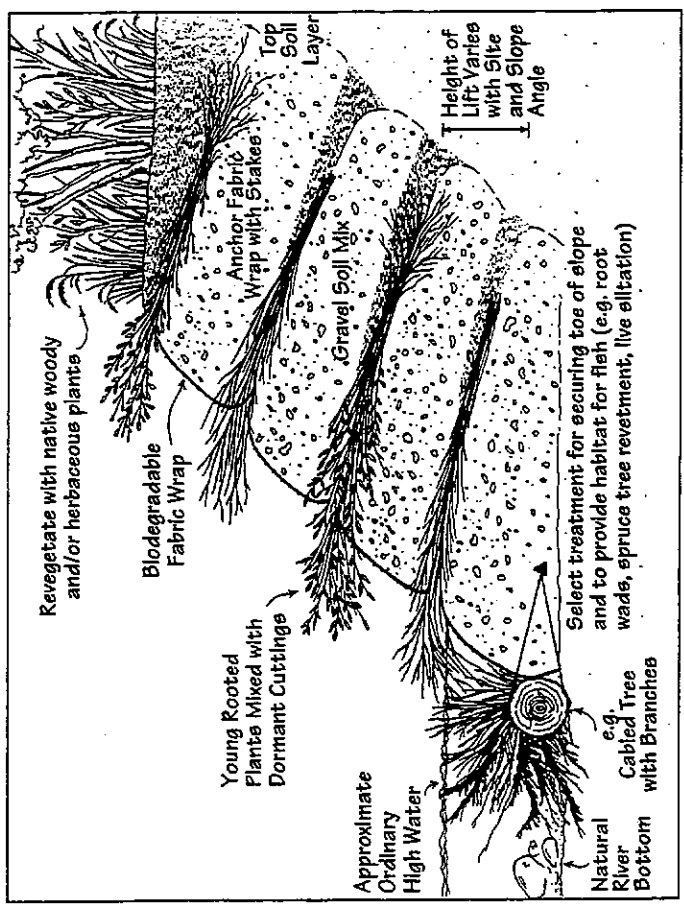
Wrap the sides of the burlap over the sod clumps to make a sausage-like roll. Tie the roll every few inches with twine. Cut holes in the burlap wrap to expose the sod shoots. Try to create the grass roll onsite so that the length of the roll or rolls match the length of the area being planted.

Constructing Grass Rolls





HEDGE BRUSH LAYERING



Hedge brush layering is a revegetation technique which combines layers of plant material, both dormant cuttings and rooted plants, with soil to revegetate and stabilize a streambank. Greater plant diversity can be provided with a hedge brush layer than with a simple brush layer. Rooted plants of species that do not root readily, such as alder, scouler and bebb willow, can be included in the plant layer. A mixture of species may allow the revegetation project to blend with existing vegetation.

Branches and transplants are placed on horizontal benches that follow the contour of the slope and provide reinforcement to the soil. The transplants will add stability quickly as their roots become anchored. Relatively steep slopes can be stabilized with this technique if a biodegradable revegetation fabric is used to hold the soil in place between the plant layers. The front of the wrapped soil layer can be lightly seeded with grasses to increase soil stability while the woody plants become established. Overhanging branches provide fish habitat.

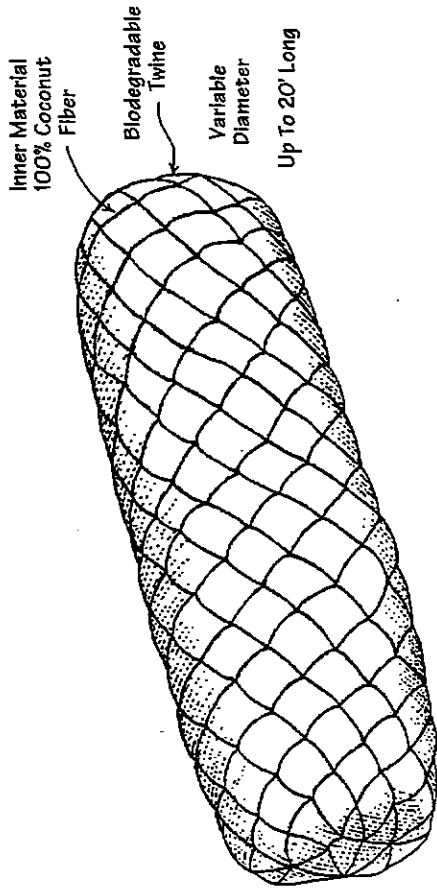
Select plant species suitable for site conditions (see *Stream Revegetation Plant Species Selection List, Shrubs and Trees*). For results dig transplants in spring or late summer and plant them the day. If possible root prune the plants several weeks prior to transplant. Select plants less than 5 to 6 feet tall and root prune the plants to the shovel width. After the plant has been dug for transplanting, trim branches to compensate for root loss.

Collection, storage and planting information is described in the *Dormant Cuttings and Transplanting* sections. A hedge layer, which uses all rooted plants can be planted throughout the growing season from spring through early fall.

Choose a technique to secure the toe of the slope. Begin layering at the bottom of the slope. Along a water body, the first layer is typically installed at the ordinary high water (OHW) level. Brush layers may be installed below OHW to provide cover and fish habitat. These plants probably will not root and become established.

Excavate the first bench two to three feet deep so that it angles slightly down and into the slope (see *Hedge Brush Layering/Brush Layering, Step by Step*). Lay branches and transplants on the bench, slightly crisscrossing them. Place the cut ends of the branches and the roots of the transplants into the slope with the tips or shoots extending beyond the edge of the bench **no more than 1/4 the total branch length**. Plant 20 to 25 stems per yard. Higher density plantings are needed for more erosive sites and if the diameter of the plant material is small. Fill the newly planted bench with desired bank height is reached. The spacing between layers will vary with the erosion potential of the site. Sites with a shallow slope and low erosion potential can have wider spacing than sites with a steep slope and higher erosion potential. This technique can be easily mechanized, layer by layer, if it is installed during construction of a fill slope. On cut slopes and existing banks each layer must be excavated.

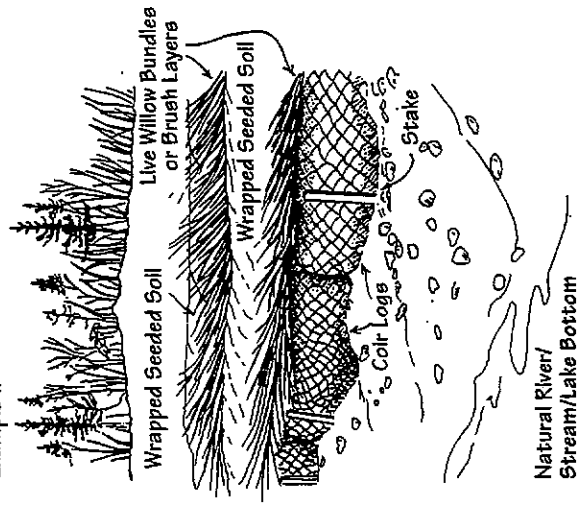
Hedge brush layering is a variation of brush layering (see *Brush Layering*).



Coir logs are constructed of interwoven coconut fibers that are bound together with biodegradable netting. Commercially produced coir logs come in various lengths and diameters. The product needs to be selected specifically for the site. Fiber logs composed of other sturdy biodegradable materials may function equally as well.

Applications for coir logs occur in many streambank, wetland and upland environments. The log provides temporary physical protection to a site while vegetation becomes established and biological protection takes over. The logs can provide a substrate for plant growth, protect plants growing adjacent to the log, can be used as a transition from one revegetation technique to another, and used to secure the toe of a slope. Both the upstream and downstream ends of the coir log(s) need to transition smoothly into a stable streambank to reduce the potential to wash out.

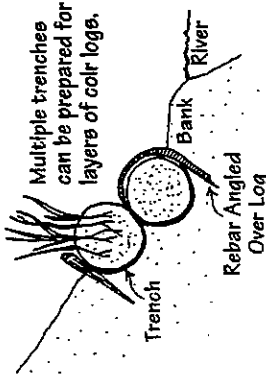
Example 1.



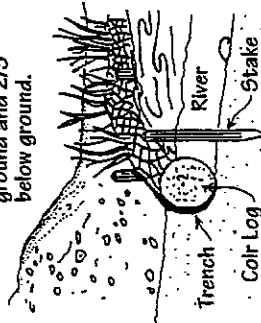
Install the logs to ensure contact with soil along the entire length. In most cases, excavate a shallow trench to partially bury the log. At no time should the coir log span any open space that may occur between rocks, logs or uneven ground. Tie logs together that have been placed end to end and stake into place. Flowing streams, particularly those carrying ice during breakup, could rip the log out of the streambank, if it is not adequately anchored. Wooden stakes, curved rebar and earth anchors have all been used to securely anchor these logs.

Sod or sprig coir logs when they are placed in locations that will provide adequate moisture for plant growth. Small holes can be created in the surface of the logs and sprigs, or small plugs of suitable plant species can be transplanted into the log (see *Streambank Revegetation Plant Species Selection List, Grasses and Sedges*). These plantings should be fertilized (see *Fertilizer section*).

Example 2.
Logs biodegrade as plant roots develop.



Coir Log is 1/3 above ground and 2/3 below ground.



Partially buried coir log with live siltation immediately behind.