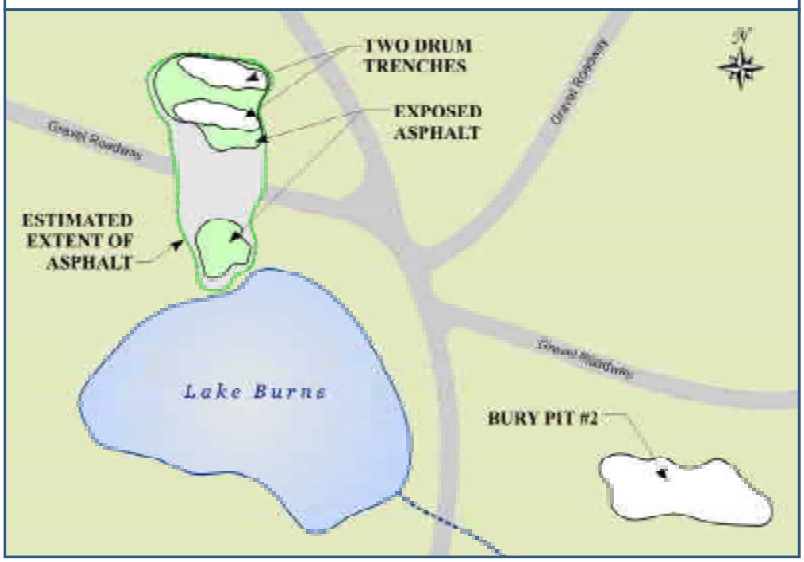
ASPHALT SEEPS

The Asphalt Seeps site likely resulted from disposal of excess asphalt during runway paving activities following World War II. In addition, drums, some of which contain liquids other than asphalt, are buried in three areas across the site. Two drum trenches and several areas of exposed asphalt lie north of Lake Burns. Drums are also buried at Bury Pit No. 2, a permitted landfill east of Lake Burns.

FIGURE 8: ASPHALT SEEPS



Previous Environmental Investigations and Cleanup Actions

At a 1998 public meeting in Cold Bay, an asphalt seep was identified near the runway. Subsequent investigation revealed exposed asphalt southwest of the runway intersection. Several partially exposed drums indicated the presence of two distinct drum trenches at the north end of the site. In 1999, a geophysical survey was performed to investigate the two drum trenches. The survey indicated two regions, each approximately 125-feet long by 25-feet wide, that were interpreted to contain multiple drums and drum clusters at depths from the ground surface to 15-feet deep. A test pit dug in the northern drum trench in 2002 revealed that some of the drums contain liquids other than asphalt. The one drum sampled contained petroleum mineral oil.

The 2002 remedial investigation revealed Bury Pit No. 2. Several pieces of drums are visible in this area, and a geophysical survey confirmed the presence of numerous buried metal objects. Based on the geophysical survey, Bury Pit No. 2 includes an area of buried drums and other metallic debris 230-feet long by 90-feet wide by 15-feet deep.

Extent of Contamination

Investigation of the Asphalt Seeps indicated the average thickness of asphalt is about 6 inches and that the asphalt extends over an area of approximately 150 feet by 350 feet. Soil beneath the two drum trenches is contaminated from the surface to groundwater (approximately 14 feet below ground surface) and includes about 2,500 cubic yards of contaminated soil. The contamination has affected the shallow groundwater beneath the site, but analytical results indicate contaminants have not reached Lake Burns. In addition, soft asphalt poses an entrapment hazard to wildlife.

***Photo**:Geophysical surveys at the Asphalt Seeps. Note the grid laid out on the ground surface was used to track locations and ensure uniform data coverage.*

Considerable uncertainty remains regarding the number of drums present in Bury Pit No. 2. Historical photos show approximately 30 drums present at the bottom of the bury pit. Currently, a number of drums are partially exposed at the ground surface. Stories conflict from those residents present at the time waste was disposed in the bury pit, indicating either that a substantial number of drums were buried or that the bury pit contains mostly metallic debris from Quonset huts. Four test pits excavated around the site did not contain contaminant concentrations above cleanup levels. However, a groundwater sample from a well point adjacent to the bury pit contained residual-range organics and lead at concentrations above cleanup levels. Due to lack of water, it has not been possible to resample this well point.

Alternatives Considered for the Asphalt Seeps

- Alternative 1 (ASA 1): No action.
- Alternative 2 (ASA 2): Remove all drums and cap asphalt. Under this alternative, all drums and associated contaminated soil would be removed and a permeable cap would be placed over the asphalt contamination.
- Alternative 2 Modified (ASA 2 Modified): Remove drums from drum trenches, cap exposed asphalt, and monitor Bury Pit No. 2. Under this alternative, all drums from the two drum trenches would be removed. However, Bury Pit No. 2 would not be excavated. A permeable cap would be placed over the asphalt contamination. Monitoring wells would be installed around Bury Pit No. 2 to monitor groundwater quality. The soil cover over Bury Pit No. 2 would be inspected and, if necessary, additional fill material would be placed or surface debris removed.
- Alternative 3 (ASA 3): Remove all drums and exposed asphalt. With this alternative, all drums and their associated contaminated soil would be removed. The exposed asphalt also would be removed.

TABLE 8: COMPARISON OF ALTERNATIVES FOR THE ASPHALT SEEPS

Evaluation Criteria	ASA 1	ASA 2	ASA 2 Modified	ASA 3
Overall Protection of Human Health and the Environment	○	●	●	●
Compliance with applicable or relevant and appropriate requirements	○	●	●	●
Long-Term Effectiveness and Permanence	○	●	◗	●
Reduction in Toxicity, Mobility, and Volume Through Treatment	○	◗	◗	●
Short-Term Effectiveness	◗	◗	◗	◗
Implementability	●	◗	●	◗
Cost (in millions)	$0	$12.02	$7.03	$12.07

● = meets or exceeds criteria ◗ = partially meets criteria ○ = does not meet criteria

Preferred Alternative for the Asphalt Seeps

Alternative ASA 2 modified is the preferred alternative for this site. The no-action alternative would not protect human health and the environment and was eliminated.

Considerable environmental impacts to the surrounding tundra would result from removal of the asphalt. Because the asphalt is immobile and does not pose a threat to groundwater or Lake Burns, placing a permeable soil cap across the site is preferred over removing the asphalt.

Alternatives 2, 2 Modified, and 3 include removal of the drums from the two drum trenches. Alternatives 2 and 3 also would excavate Bury Pit No. 2. With Alternative ASA-2 Modified, a series of monitoring wells would be installed around Bury Pit No. 2 to monitor groundwater quality. Because Bury Pit No. 2 was constructed under an ADEC permit and the site is located within the runway area, it appears likely that the drums associated with Bury Pit No. 2 were empty when they were buried. At this time, the available data does not support excavating Bury Pit No. 2. For these reasons, Alternative ASA-2 Modified is preferred. However, if data collected from the monitoring component of Alternative ASA-2 Modified indicates that Bury Pit No. 2 poses an unacceptable risk to human health or the environment, additional cleanup actions will be considered.

***Permeable Cap**: a layer of soil constructed on top of a site to prevent contact with contaminants.*

STAPP CREEK AND THE EAST-WEST RUNWAY

During World War II, the military stored and distributed aviation gasoline at the Stapp Creek and the East-West Runway areas. The underground storage tanks, associated pipelines, and truck fill stations were used to fuel aircraft.

Previous Environmental Investigations and Cleanup Actions

Stapp Creek. According to as-built drawings, 32 numbered USTs and two truck fill stations originally were constructed at Stapp Creek. In approximately 1984-1985, the majority of these underground storage tanks or USTs were removed. During 1996 and 1997, the locations of 15 USTs were confirmed using visual observations and a magnetometer. During the 1997 removal activities, all 15 tanks were removed and shipped off site for recycling, and the area re-graded. During the 1998 removal activities, a 20-foot section of 8-inch aviation gasoline pipeline crossing Stapp Creek was removed. The remaining pipeline on either side of the creek was capped. Soil samples collected at the ends of the remaining pipelines demonstrated that the pipelines are not current sources of contamination. During the 2002 remedial investigation, all remaining pipelines were traced using an electromagnetic pipe locator and geophysical methods. Two test pits were dug at each potential UST location, unless documentation was available demonstrating that the UST was previously removed. Several isolated areas of soil contamination and one remaining UST (UST 26) were identified.

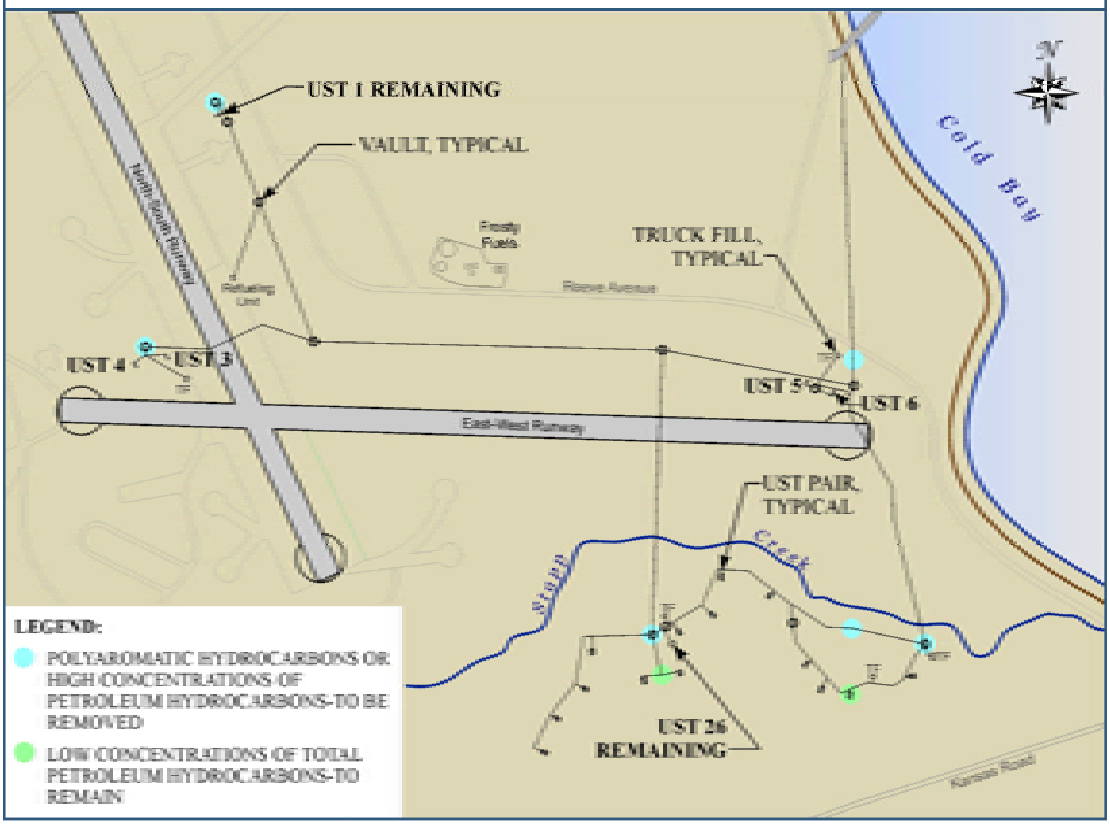
***Photo**: Excavating test pits in the Stapp Creek area. Photo taken looking toward the south, with Mount Frosty in the background.*

East-West Runway. Six USTs and associated valve pits and underground piping were associated with the East-West Runway. UST pairs 3-4 and 5-6 were removed during the 1999 removal actions. As part of the UST removal, the 4-inch pipe connecting the USTs to their associated valve pits was removed, except for the piping pair connected to UST 3 (this piping could not be removed due to underground electrical lines). Excavations were backfilled and the areas were re-graded. UST 1 was located during the 2002 remedial investigation and contains water contaminated with aviation gasoline. Historical drawings indicate that a second UST (UST 2) was located near UST 1 with a valve pit located between the two tanks. The actual construction and piping layout differed markedly from the historical drawings with the valve pit located on top of, not adjacent to, UST 1. The difference in piping configurations, the geophysical survey, and ground surface observations suggest that UST 2 may have never existed. Several isolated areas of contaminated soil also were identified. A geophysical survey and ground surface observations revealed no indication of any other remaining USTs.

Extent of Contamination

There are several isolated areas of contamination remaining in the Stapp Creek and East-West Runway sites (see Figure 9). Sampling during the 2003 investigation indicated that soils in eight areas exceeded cleanup levels. Each of these areas was isolated and contains a small volume of contaminated soil (approximately 2 cubic yards). In addition, two 25,000-gallon USTs remain, one in each area. Both USTs are full of water with elevated levels of petroleum contamination. Because the remaining contaminated soil has relatively low volume and is not concentrated in one area, cleanup alternatives are limited to either removing the soils or preventing exposure to them using institutional controls.

FIGURE 9: STAPP CREEK AND EAST-WEST RUNWAY AREAS



Alternatives Considered for the Stapp Creek and East-West Runway Sites

Alternatives developed for Stapp Creek do not include actions to remove or monitor contamination associated with two of the eight isolated soil samples. The total volume of contaminated soil associated with these two samples is estimated to be 4 cubic yards. No further action is proposed to address these areas. Although the concentrations detected are above the Method 2 migration to groundwater standard (250 mg/kg diesel-range organics), given the low concentration of diesel-range organics detected (293 mg/kg and 361 mg/kg, respectively) and the limited volume of soil affected, the contamina-