

**Solid Waste Disposal Plan**  
**Usibelli Coal Mine, Inc.**  
**Healy, Alaska**  
**January 26, 2010**  
**Revised January 20, 2011**

## **I. Introduction**

Usibelli Coal Mine, Inc. (UCM) has held a monofill solid waste disposal permit for inert wastes at the Poker Flats mining area since 1980. This solid waste disposal plan has been developed to supplement UCM's application to renew solid waste disposal permit #0531-BA001.

As in past years, the primary waste for UCM's monofill is bottom ash from the Golden Valley Electric Association (GVEA) coal-fired power plants adjacent to the mine. Additional waste generated by UCM includes construction wastes, large and small equipment tires and other inert wastes collected from the maintenance shops and office facilities.

## **II. Applicable Jurisdictions and Land Ownership**

Usibelli Coal Mine, Inc. is located within the Denali Borough in the State of Alaska. Because this is a renewal of an existing solid waste disposal permit, no approval from the Denali Borough is required. However, the Borough has been advised of the existing monofill operation at UCM and of the application for renewal of the permit. UCM will provide the Denali Borough with copies of this renewal application and any other relevant material upon request.

UCM's Surface Mining Permit #01-83-786 issued by Alaska Department of Natural Resources governs UCM operations at the Poker Flats and Two Bull Ridge pits. The solid waste disposal site is located on Alaska Coal Leases ADL #20633 and #21545 (see Exhibit 1, Alaska Department of Natural Resources Lease Abstract)

## **III. Solid Waste Program**

The disposal of non-coal solid waste is permitted under UCM's approved surface mining permit issued by the Alaska Department of Natural Resources as addressed in Section V of the Decisions And Findings For Usibelli Coal Mine, Inc. Poker Flats Mine. A copy of this document was provided with the 2005 renewal application (see Exhibit 4) and is referenced throughout this plan as DNR 1986 followed by the applicable section reference(s).

The primary constituent disposed of at UCM's solid waste disposal site is bottom ash from the GVEA coal power plant. This facility is located about four miles from the disposal facility. Bottom ash from the GVEA plant is periodically excavated, loaded into UCM haul trucks, and transported to the Poker Flats or Two Bull Ridge pit disposal facility. In the future, fly ash as well as bottom ash from the HCCP plant or other UCM coal customer's facilities may also be transported to these same locations.

Ash from the coal power plants is an inert waste. TCLP tests are run annually or whenever the process changes in order to maintain this classification. UCM has regularly submitted the results of EPA Toxicity and EPA TCLP tests to ADEC. A copy of recent test results is included as Exhibit 6.

UCM has taken steps to reduce the amount of solid and other waste generated for disposal and has implemented special handling and disposal procedures for certain types of solid waste. Random inspections are conducted of the shop collection points and the landfills. Formal monthly inspections are conducted at the C&D monofill that includes recording observations on a Visual Monitoring Checklist (see Exhibit 5). The completed checklists are kept on file in the office of the environmental compliance manager.

UCM requires vendors to supply reusable containers whenever possible to reduce the amount of material needing disposal. When disposal at the mine is necessary, containers are drained, cleaned and crushed in accordance with applicable regulations, and metal containers are recycled with other scrap metal. Equipment filters that are not recyclable are hot drained and crushed prior to disposal in the C&D landfill.

No hazardous wastes as identified under 18 AAC 60.087 and 40 CFR 261.3 are disposed of at UCM's facility. Any hazardous waste found in the shop dumpsters or the monofill is promptly removed and properly disposed of by an off-site contractor. Oily rags at UCM are sent off-site for incineration. All lead-acid batteries are returned to vendors.

The majority of office and shop/warehouse paper waste and all putrescible wastes are shipped to the Denali Borough Landfill via Lausen's Dependable Disposal.

UCM's Environmental Compliance Manager keeps operating records on file at the mine site. These records include completed Visual Monitoring Checklists and notes on post closure inspections of closed cells.

#### **IV. Location, Design and Construction**

The solid waste disposal facilities are located in sandstone spoil material in either the Poker Flats or the Two Bull Ridge pits. The sites can be accessed via the mine haul roads, allowing maximum flexibility to accommodate both mining operations and receiving of solid waste. The sites are in areas that have had coal removed and have been backfilled with the original overburden material. As the fills are completed, they are covered by additional spoil material, re-contoured and reclaimed according to UCM's approved surface mining permit (see the site and closure plans Exhibit 8).

Coal ash is disposed of along with other backfill material in mined-out pit areas. As the ash is defined as inert and non-leaching, there is no need to design cells specifically for ash. The location of the current ash dump area is given in Fig. 1. By using active overburden dumps as disposal areas, the ash is covered within a reasonable time frame with up to 200 feet of cover. This would not be possible with one or two isolated disposal sites. Due to the volume of material, these sites would consume a large amount of acreage that would not be reclaimed for an extended period of time.

The areas where coal ash is disposed will conform to the re-contouring and reclamation requirements of UCM's approved surface mining permit. Coal ash is covered by other backfill to control windblown material.

Inert C&D waste other than coal ash is disposed of in cells in the Poker Flats mining area (see Figure 3). Over the life of the facility, multiple refuse cells will be constructed and utilized. Landfills are located in active mining areas, which facilitates access and provides ample resources for backfilling operations. The refuse cells are constructed using mine equipment. A typical C&D refuse cell is 50 feet wide and about 12 feet deep (see Exhibit#5). Coal Ash cells are incorporated into the large overburden removal and backfilling operation in the active pit areas. The geometry of these pits is variable and they are much larger than the C&D monofill. Surface runoff is diverted away from the cells. Water is diverted away from the operating face and exposed refuse by sloping and ditching the floor of each cell.

A skid-mounted sign is located at the active refuse cell. The sign lists pertinent rules for the facility, directs users to the active dumping point, and refers any questions concerning operations to UCM's Environmental Compliance Manager.

The refuse cells are located at the base of the pits. It is assumed that the closest groundwater level is the water table, which approximates the level of Hoseanna Creek at about 1300 feet. Since the elevation of the pit bottom under the Phase II refuse cells (which is the lowest in elevation) is at about 1525, the distance between groundwater and the lowest refuse cell exceeds 200 feet.

## V. Operation

### 1. Public access

Public access to the mine is controlled by a set of secured gate systems that preclude entry onto the premises by unauthorized personnel. UCM is the only user of the facility. The facility's permit number is posted on mine identification signs located at our secured gates (See Figure 6).

### 2. Operating hours

UCM runs 2 shifts per day 7 days per week. Loads may be hauled to the landfill at any time.

### 3. Attendant on duty

While there is not an attendant stationed at the landfill, all UCM personnel responsible for depositing solid waste in the monofill are trained by Environmental Compliance Manager. Annual refresher training on RCRA regulations is conducted with all UCM field employees.

### 4. Method of collecting and bringing waste to the site

Wastes from the UCM shops and office facilities are collected at several stations around the property and then transported to the monofill area by pickup or small dump truck. Coal ash from the GVEA power plants is transported to the ash dump by UCM haul trucks.

### 5. Visibility of the facility

The monofill facility is located within the mine site and is not visible to the public.

6. Equipment used on site to manage and reduce waste volume

Other than the crushing of filters when they are processed prior to disposal, no special equipment such as balers, shredders, etc. is used to manage or reduce volume.

7. Scavenging

No scavenging is allowed.

8. Frequency and depth of cover

Monofilled materials are covered monthly or more often as needed to control windblown material. A minimum cover of two feet of material is placed over all monofill waste. The solid waste is compacted as it is covered by large earthmoving equipment.

9. Maximum width and height of monofill

The maximum width of a working refuse cell face is 50 feet. The maximum height of an active refuse cell face is 20 feet.

10. Control Plans

a. Groundwater pollution: Only inert wastes are monofilled - no groundwater pollution is expected.

b. Surface water pollution: Only inert wastes are monofilled - no surface water pollution is expected.

c. Surface drainage and runoff: Surface runoff is diverted away from the monofill cells. Runoff for the entire mine site, within which the monofill facility is located, is controlled by UCM's approved surface mining permit. (See Figure 3)

d. Disease vectors: Only inert wastes are monofilled - no control measures for disease vectors are needed.

e. Wildlife access: Only inert wastes are monofilled - no control measures for wildlife are needed.

f. Litter: Any windblown litter is picked up and disposed of properly.

g. Fires: No burning will take place at the monofill. Any fires at the monofill are extinguished using fire-fighting equipment at the mine site.

h. Odor: Only inert wastes are monofilled - no control measures for odors are needed.

i. Noise: The nearest residence, business, public road or facility is several miles from the facility - no control measures are necessary for noise.

j. Safety: Operation of the monofill is subject to mine safety rules and procedures required for all mine employees and contractors by the Mine Safety and Health Administration.

k. Nuisances: There is no public access to the facility and the nearest residence, business, public road or facility is several miles from the facility - no control measures are needed.

l. Decomposition gases: Only inert wastes are monofilled - no control measures are needed.

## **VI. Geology, Hydrology and Monitoring**

The Poker Flats mine is located within the Suntrana Formation, a repeating sequence of sandstone, clay and coal (Exhibit 4 DNR, 1986, Section VIII). The monofill facilities are located within the Poker Flats and Two Bull Ridge mine pits. The monofill cells are constructed adjacent to the advancing mine cuts in sandstone spoil that has been removed from above and between the mined coal seams. At the facility, the depth between the base of the mining pit and the groundwater table exceeds 200 feet.

It is not expected that any adverse impacts would occur to surface or groundwater resources. (Exhibit 4 DNR, 1986, Sections V, VIII and IX) As part of UCM's surface mining permit, all drainage from the Poker Flats area is treated in a system of sediment ponds (Exhibit 4 DNR, 1986, Section X). The permit requirements for protection of the hydrologic balance include down-gradient groundwater monitoring wells (Exhibit 4 DNR, 1986, Section IX). If necessary, these ground water monitoring wells and the surface-water sediment ponds could be used as sampling sites.

All monofill locations are in active areas of the mine and are monitored daily by UCM personnel. The monofill is inspected monthly by the Environmental Compliance Manager to assure that cover is being applied properly and that the facility is being operated in conformance with the solid waste disposal permit. Because the disposal facility is protected from run-on water and because only inert wastes is disposed, no special groundwater or surface water monitoring is planned.

## **VII. Closure**

At the closure of an individual cell, a minimum of five feet of sandstone cover is placed over the entire cell within 90 days of the last solid waste being placed in the cell. The cover is placed to deter infiltration and to cause surface water to drain away from the area. Each closed cell is inspected every spring and fall and after major precipitation events. Observed conditions such as surface water ponding, erosion, settlement, and leakage is noted in a logbook kept in the office of the environmental specialist. All deficiencies is reported to production department and corrective action taken to repair the deficiencies.

At closure of the mining area, surface reclamation is performed in conformance with UCM's approved surface mining permit, which requires conformance to post-mining topography (Exhibit 4 DNR, 1986, Section I.4), the reestablishment of native vegetation (Exhibit 4 DNR, 1986, Section XVI), and a post mining use for wildlife habitat (Exhibit 4 DNR, 1986, Section XX). In summary, the surface mining permit requires that the area be contoured and that drainage be

controlled to prevent erosion. The area is fertilized and seeded to establish an initial vegetative cover that will further control erosion and which will allow the re-invasion and re-establishment of native species.

**VIII. Financial Assurance**

Financial assurance for monofill operation and closure is covered under the overall financial assurance and bonding provisions required under UCM's approved surface mining permit (Exhibit 4 DNR, 1986, Section VII & Section XIII).



## Solid Waste Disposal Permit Renewal #0531-BA001

### Figures

- 1. Location Plan View**
  - Active and Closed Fill Locations
- 2. Poker Flat C&D Landfill**
  - Current and Closed Out Locations
- 3. Active C&D Landfill**
  - Current and Closed Out Locations
- 4. Active Landfill Detail**
  - Cross-section B – B' from Fig. 3
- 5. Landfill Closure Detail**
  - Cross-section A – A' from Fig. 2
- 6. Active Landfill Detail**
  - Lease & ROW Map



Fig. 1 Location Plan View  
Active and Closed Fill Areas

Township 012S Range 007W Meridian F Sheet 1 of 6

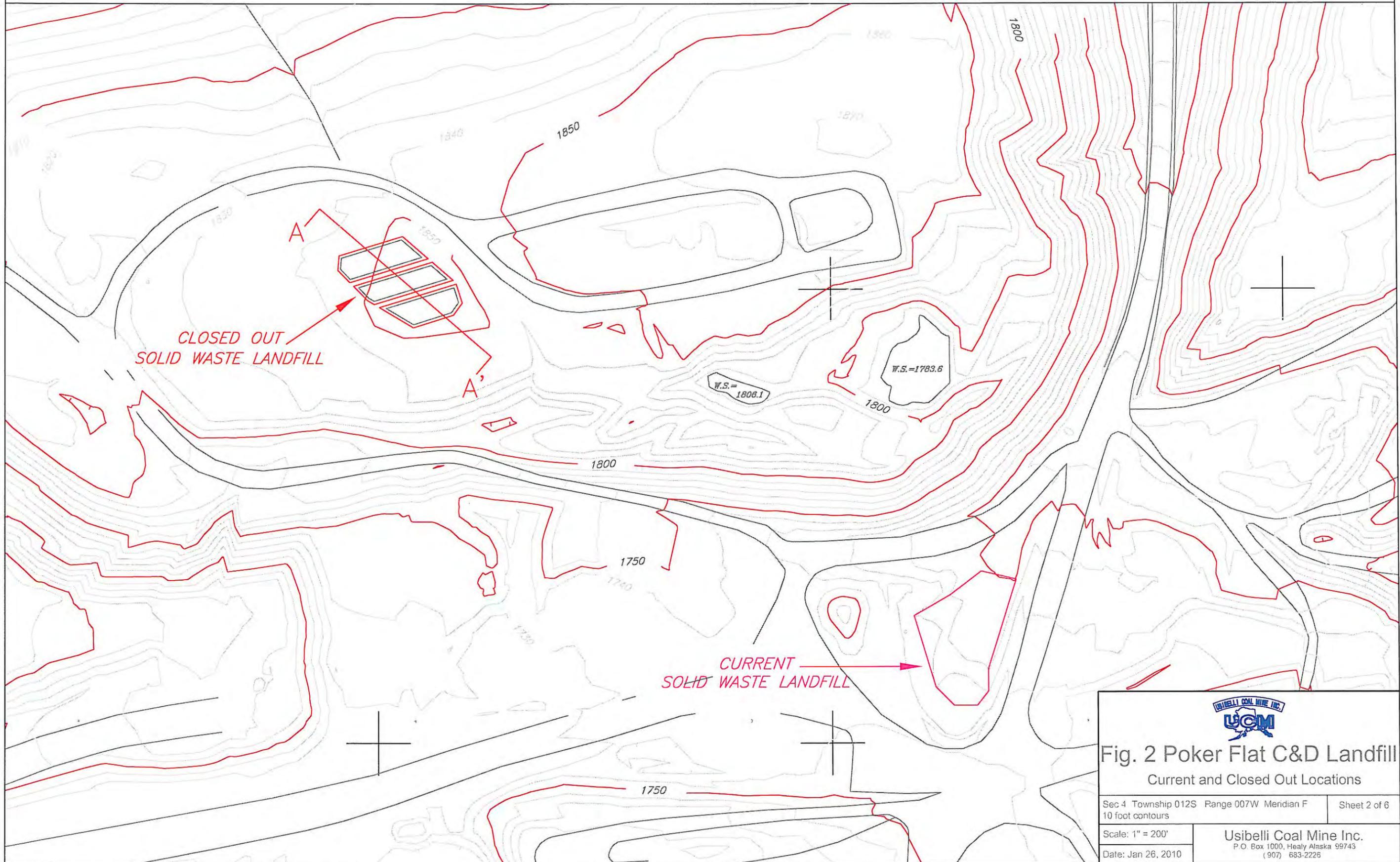
Scale: 1" = 500'  
Date: Jan 26, 2010

Usibelli Coal Mine Inc.  
P.O. Box 1000, Healy Alaska 99743  
(907) 683-2226

E 670,000

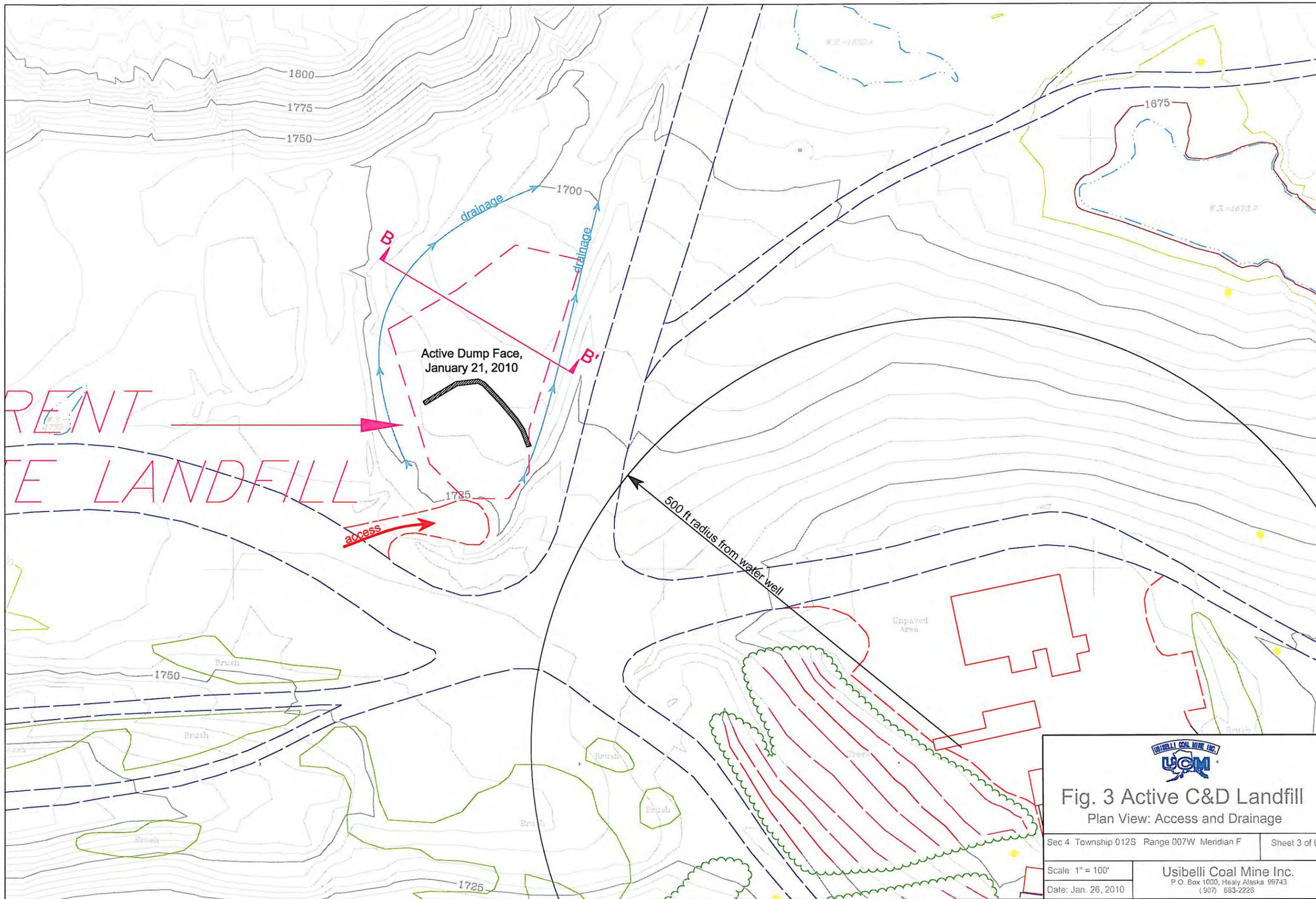
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**Fig. 2 Poker Flat C&D Landfill**  
 Current and Closed Out Locations

Sec 4 Township 012S Range 007W Meridian F	Sheet 2 of 6
Scale: 1" = 200'	Usibelli Coal Mine Inc. P.O. Box 1000, Healy Alaska 99743 (907) 683-2225
Date: Jan 26, 2010	

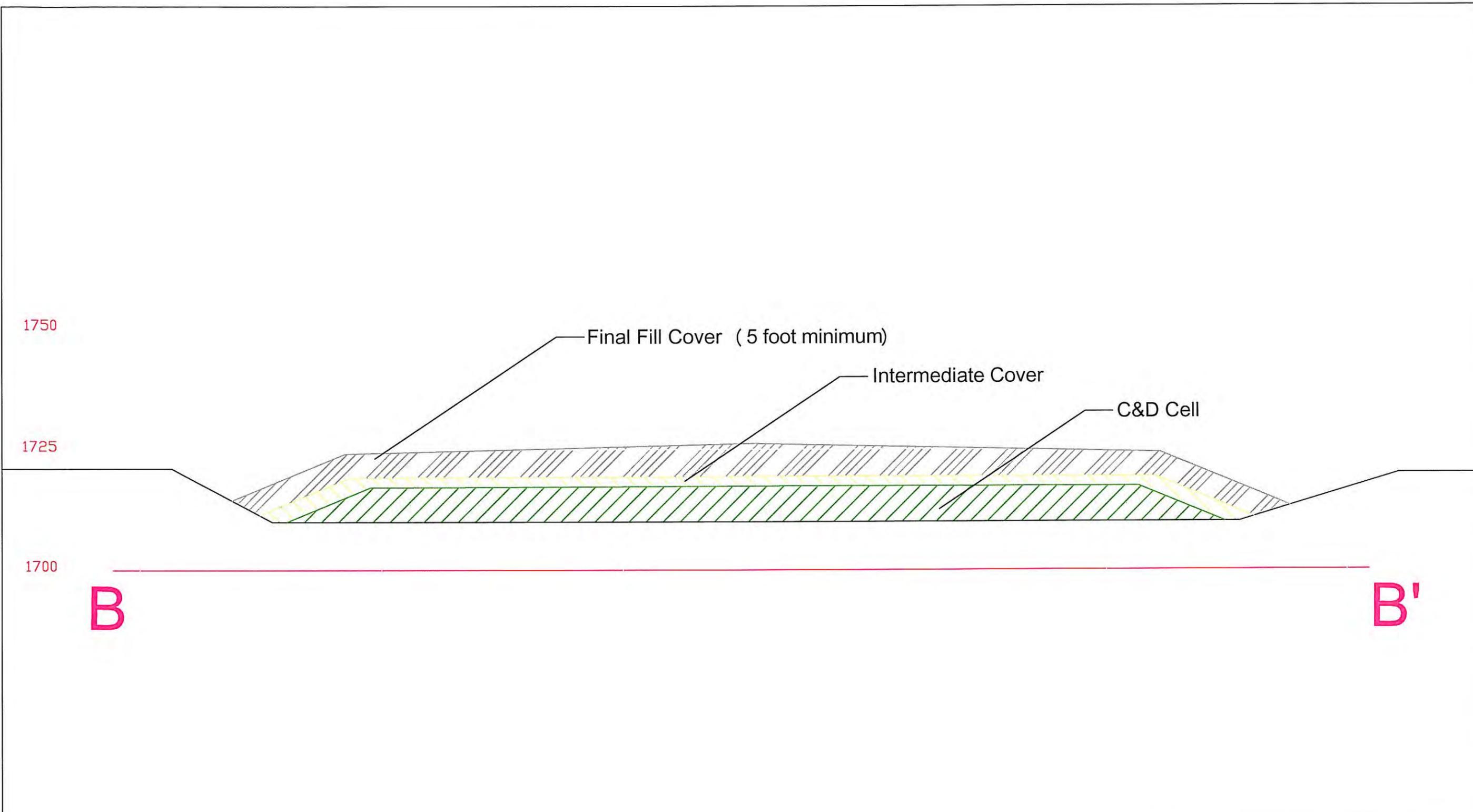


**Fig. 3 Active C&D Landfill**  
 Plan View: Access and Drainage

Sec 4 Township 012S Range 007W Meridian F Sheet 3 of 6

Scale: 1" = 100'  
 Date: Jan. 26, 2010

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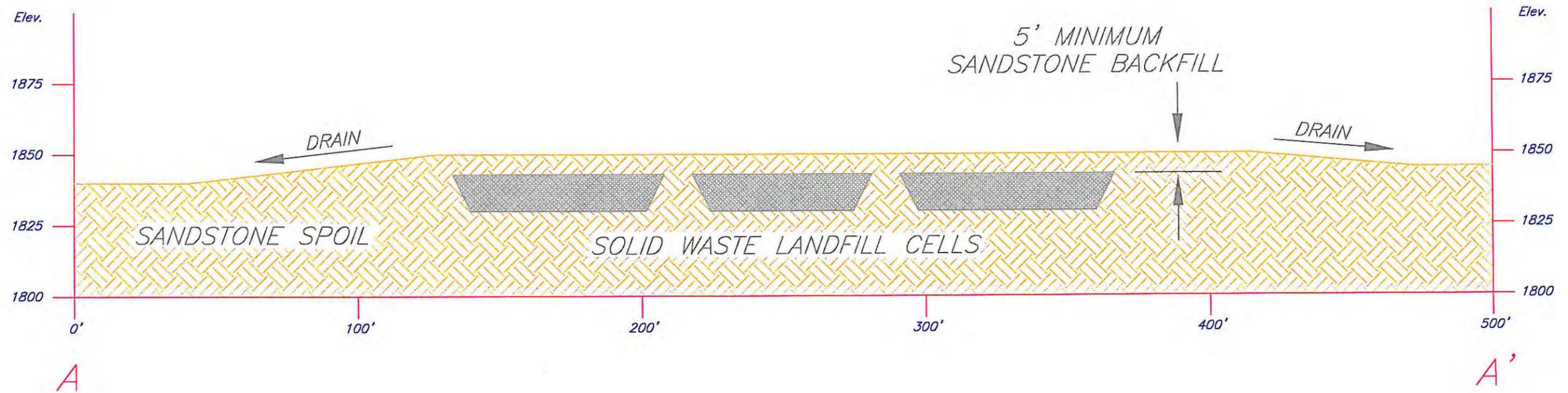


**Fig. 4 Active Landfill Detail**  
 Cross-section B - B' from Fig. 3

Sec 4 Township 012S Range 007W Meridian F Sheet 4 of 6

Scale: 1" = 20'  
 Date: Jan 26, 2010

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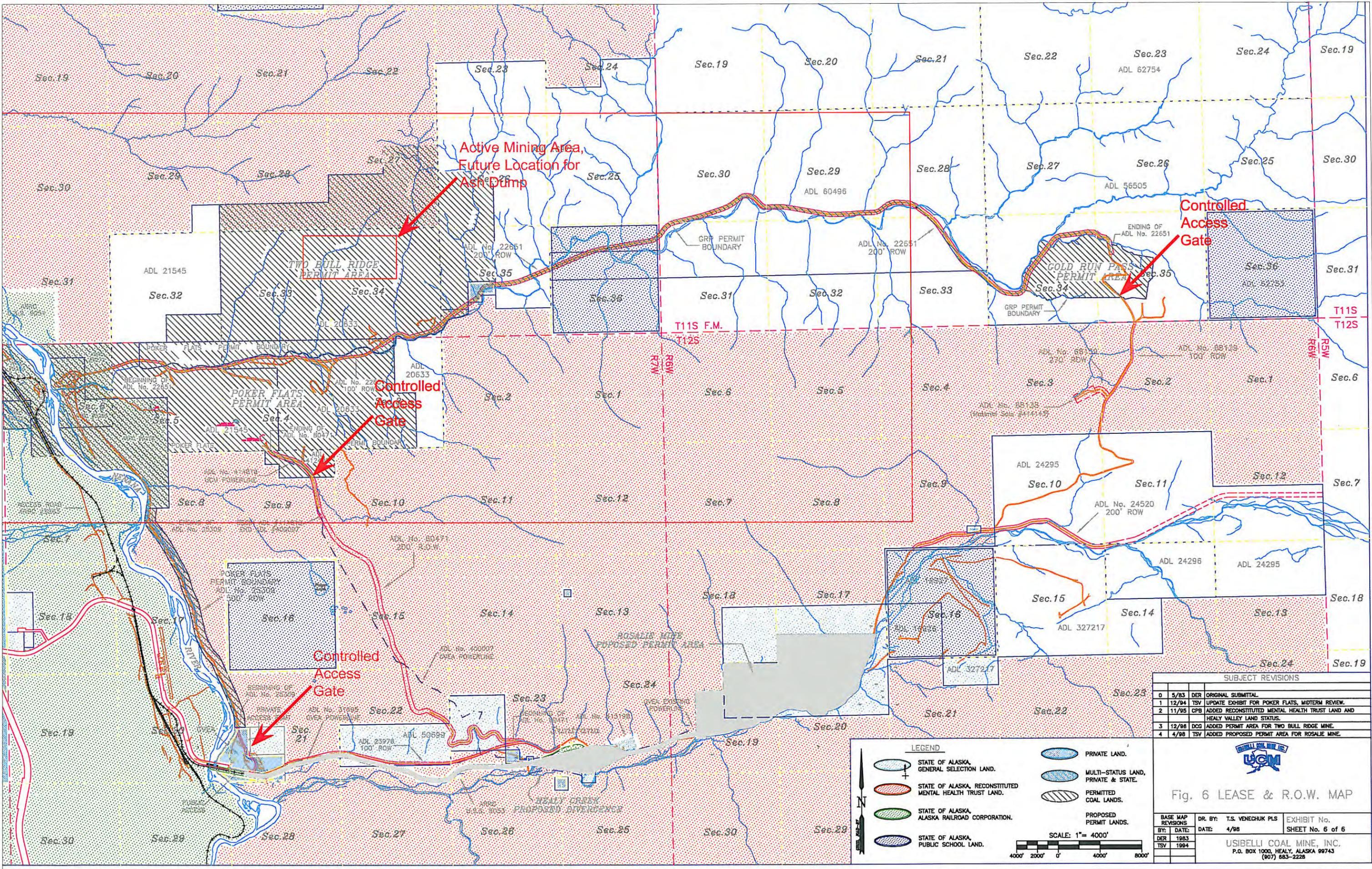
**Fig. 5 Landfill Closure Detail**  
Cross Section A - A' From Fig. 2

Sec 4 Township 012S Range 007W Meridian F Sheet 5 of 6

Scale: 1" = 40'

Date: Jan. 26, 2010

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Active Mining Area,  
Future Location for  
Ash Dump

Controlled  
Access  
Gate

Controlled  
Access  
Gate

Controlled  
Access  
Gate

**LEGEND**

- STATE OF ALASKA, GENERAL SELECTION LAND.
- STATE OF ALASKA, RECONSTITUTED MENTAL HEALTH TRUST LAND.
- STATE OF ALASKA, ALASKA RAILROAD CORPORATION.
- STATE OF ALASKA, PUBLIC SCHOOL LAND.
- PRIVATE LAND.
- MULTI-STATUS LAND, PRIVATE & STATE.
- PERMITTED COAL LANDS.
- PROPOSED PERMIT LANDS.

SCALE: 1" = 4000'

4000' 2000' 0' 4000' 8000'

SUBJECT REVISIONS			
0	5/83	DER	ORIGINAL SUBMITTAL
1	12/94	TSV	UPDATE EXHIBIT FOR POKER FLATS, MIDTERM REVIEW.
2	11/95	CPB	ADDED RECONSTITUTED MENTAL HEALTH TRUST LAND AND HEALY VALLEY LAND STATUS.
3	12/98	DCG	ADDED PERMIT AREA FOR TWO BULL RIDGE MINE.
4	4/98	TSV	ADDED PROPOSED PERMIT AREA FOR ROSALIE MINE.

**USIBELLI COAL MINE, INC.**

Fig. 6 LEASE & R.O.W. MAP

BASE MAP REVISIONS	DR. BY: T.S. VENECHUK PLS	EXHIBIT No.
BY: DATE:	DATE: 4/98	SHEET No. 6 of 6
DER 1983		
TSV 1994		

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