

29 July 94	4BLM	NW1/4, sec 30, T48N, R4E Shoshone Co.	Polaris Pk.	Not on 1998 BLM map.
29 July 94	5BLM	NE1/4, sec 24, T48N, R3E Shoshone Co.	Polaris Pk.	Group of 3. Springer says all portals are caved.
20 July 94	24FS	NW1/4, sec 34, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Portal caved. Name: National Mine
30 July 94	23BLM	SW1/4, sec 22, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Portal caved. Foundation of buildings. Opening timbers on ground, caved outward. Name: Metropolitan
16 Aug 95	36BLM	SW1/4, sec 22, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Unable to locate opening. Likely: Western Star.
16 Aug 95	37BLM	SW1/4, sec 22, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Opening, 12 X15, bats unlikely. Name: Globe Mine
16 Aug 95	38BLM	W1/4, sec 22, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Portal caved. Unnamed mine.
16 Aug 95	39BLM	NW1/4, sec 22, T48N, R3E Shoshone Co., up Big Cr.	Polaris Pk.	Not on 1998 BLM map.
01 Aug 94	27FS	NW1/4, sec 31, T48N, R2E Shoshone Co., up Pine Cr	Twin Crags	5 foot portal near waste pile. Dry. Could be netted.
01 Aug 94 22 Mar 95 08 Jan 96	28BLM*	NW1/4, sec 31, T48N, R2E Shoshone Co., near road	Twin Crags	Portal east side, along road. Mine curves to south. Track exits. Partial old door covers opening, roof collapsing near portal. Good night and winter roost. Needs to be gated. Name: International Mine.
01 Aug 94 22 Mar 95 08 Jan 96		Sampled by netting in evening		-----Myotis present----- Winter survey. No bats. Winter survey. No bats.

30 Aug 96	28BLM*	Sampled by netting in evening -----		Myotis present-----
19 Mar 97		Start of Advanced StowAway temperature studies-----		Winter survey. No bats..
11 Aug 97		Sampled by harp trap in evening-----		Myotis present-----
1 Aug 94	29BLM*	SW1/4, sec 31, T48N, R2E Shoshone Co., near road	Twin Crag	Opening above road. About 50 feet long. Internal survey.No water on floor.Good night roost Name:Patricia Adit.
01 Aug 94		Sampled by netting in evening-----		Myotis present-----
22 Mar 95				Winter survey. No bats.
08 Jan 96				Winter survey. No bats.
01 Aug 94	30BLM*	SW1/4, sec 31, T48N, R2E Shoshone Co., across Pine	Twin Crag	Two openings, one 6 feet, one 25 feet curves downward to water filled tunnel. Name: unknown
01 Aug 94		Sampled by netting in evening-----		Myotis present-----
08 Jan 96				Winter survey. No bats.
19 Aug 95	40BLM	SE1/4, sec 13, T47N, R1E Shoshone Co., near Middle Fork.	Twin Crag	Did not attempt to climb slope. No visible spoils. Not on 1998 map.
19 Aug 95	41BLM	SW1/4, sec 13, T47N, R1E Shoshone Co., east side Middle Fork, Pine Creek.	Twin Crag	Portal in rock face about 6 ft tall. Water prevented penetration beyond 1000 ft. No bats. Potential night roost? Likely: Equitable prospect.
19 Aug 95	42BLM	NW1/4, sec 14, T47N, R1E Shoshone Co., south of West Fork, Pine Creek.	Twin Crag	Portal is caved. Likely: West Fork King Prospect.
19 Aug 95	43BLM	SE1/4, sec 08, T47N, R1E Kootenai Co., near Twin Crag at about 5900 feet	Twin Crag	Portal, 4 by 7 feet is open. Track inside. Exited after penetrating 400 feet due to gas alarm. No evidence of bats. Name: Palisade Adit.
19 Aug 95	44BLM	SE1/4, sec 08, T47N, R1E Kootenai Co., near Twin Crag	Twin Crag	Did not locate. Name: Palisade mine shaft.

30 July 94	13PL	NW1/4, sec 28, T48N, R4E Shoshone Co., along Lake Creek Road, rt. side.	Wallace	Small partly boarded mine portal along road below Galena Mine, on standby, south. Could be netted.
30 July 94	14PL	SW1/4, sec 30, T48N, R5E Shoshone Co., So. of I-90	Wallace	Collapsed just inside opening. Water flowing out. Partly covered with vegetation. Name: Western Silver-Lead
30 July 94	21PL	NW1/4, sec 19, T48N, R4E Shoshone Co., up Canyon Cr.	Wallace	Portal collapsed. Name: Silver Verde Mae? Not shown on USGS map.
30 July 94	22	E1/4, sec 24, T48N, R4E Shoshone Co., up Canyon Cr.	Wallace	Mine collapsed behind garage door covering. Name: Canyon Silver.
18 Aug 95				Collapse behind door allows adit check. Caved.

Figure 1. Localities considered during surveys of mines for bats, 1994. Numbers adjacent to open circles are sites, as listed in Table 1.

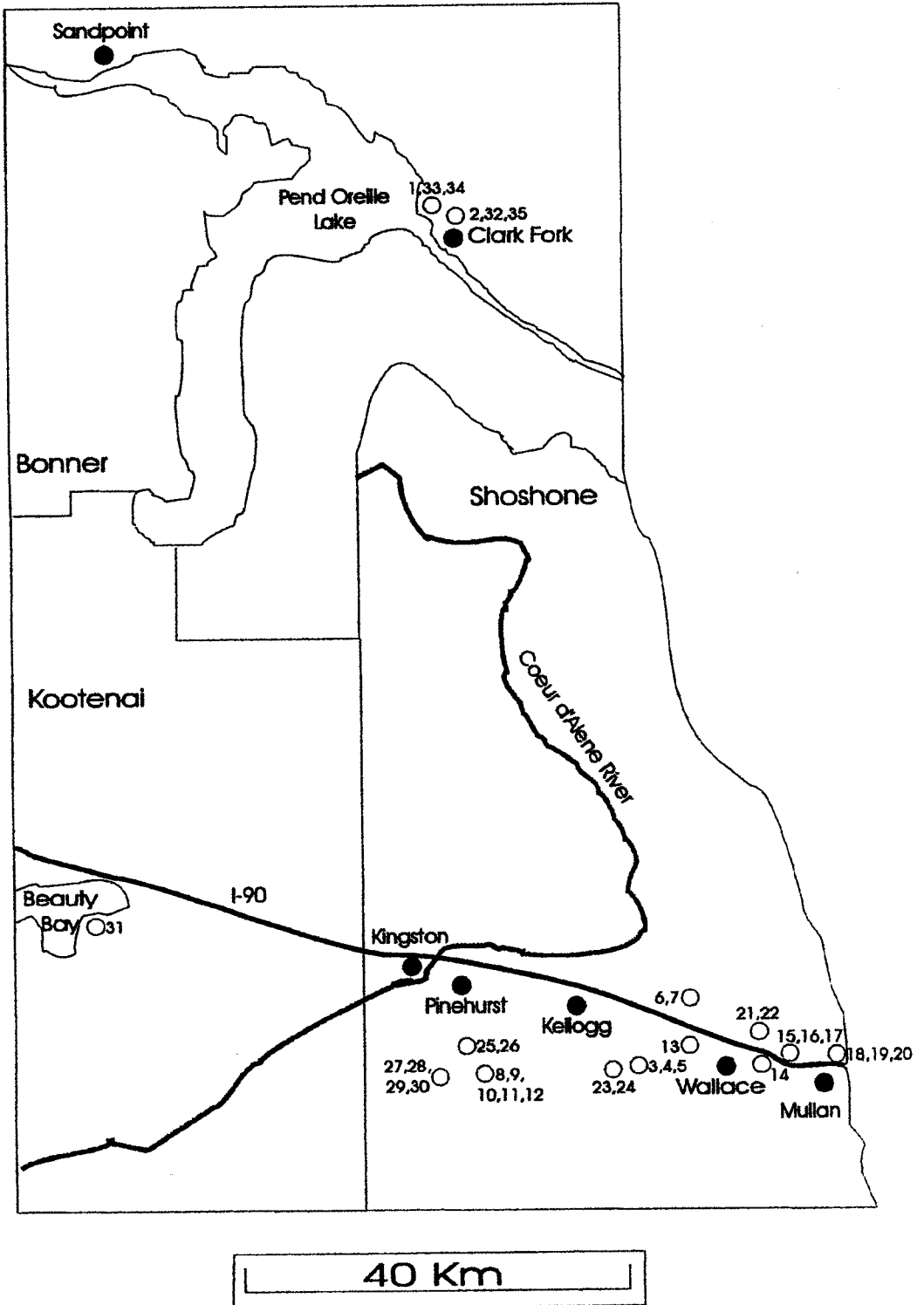


Figure 2. Localities considered during surveys of mines for bats after 1994. Numbers adjacent to open circles are sites as listed in Table 1.

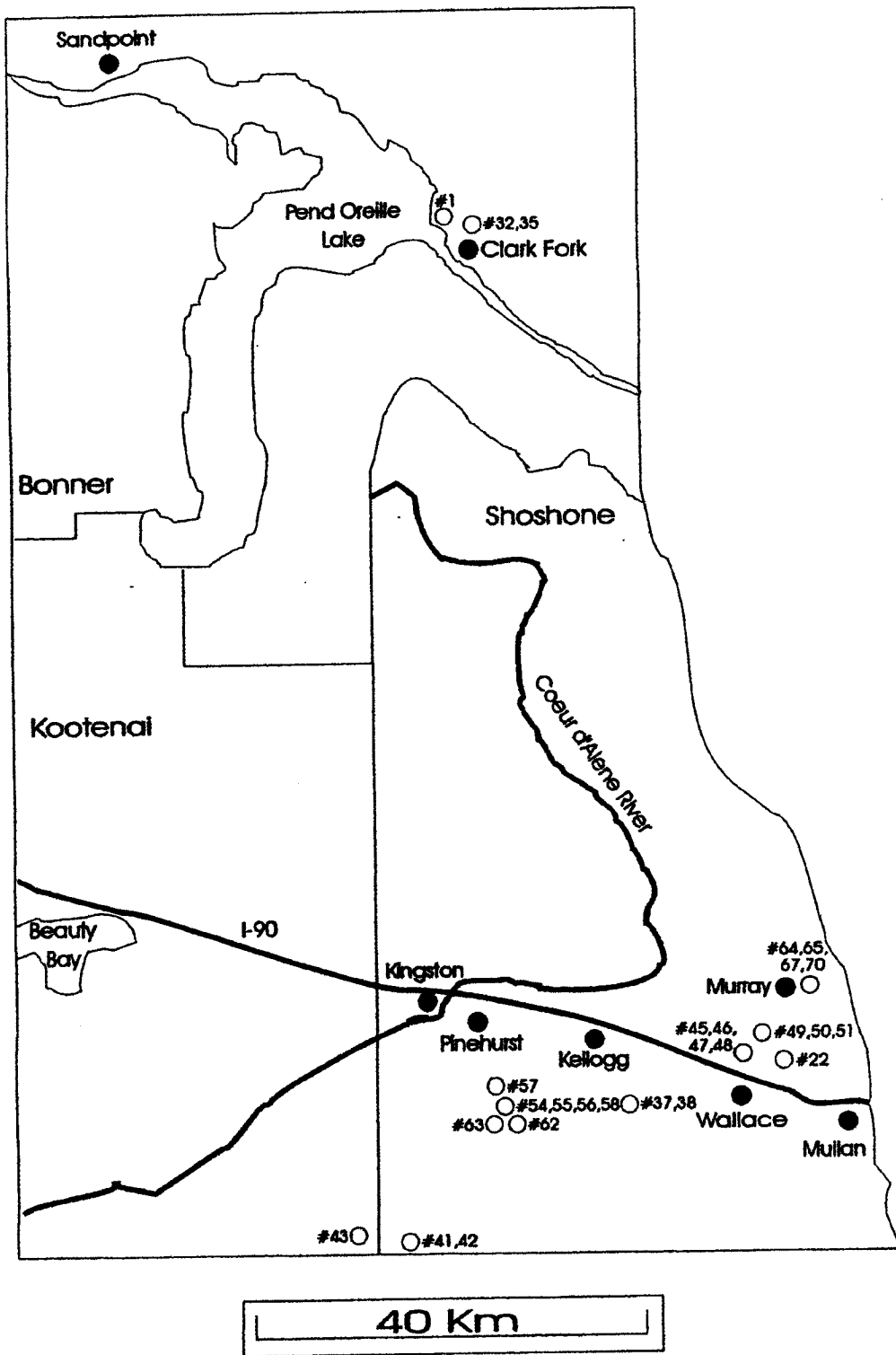
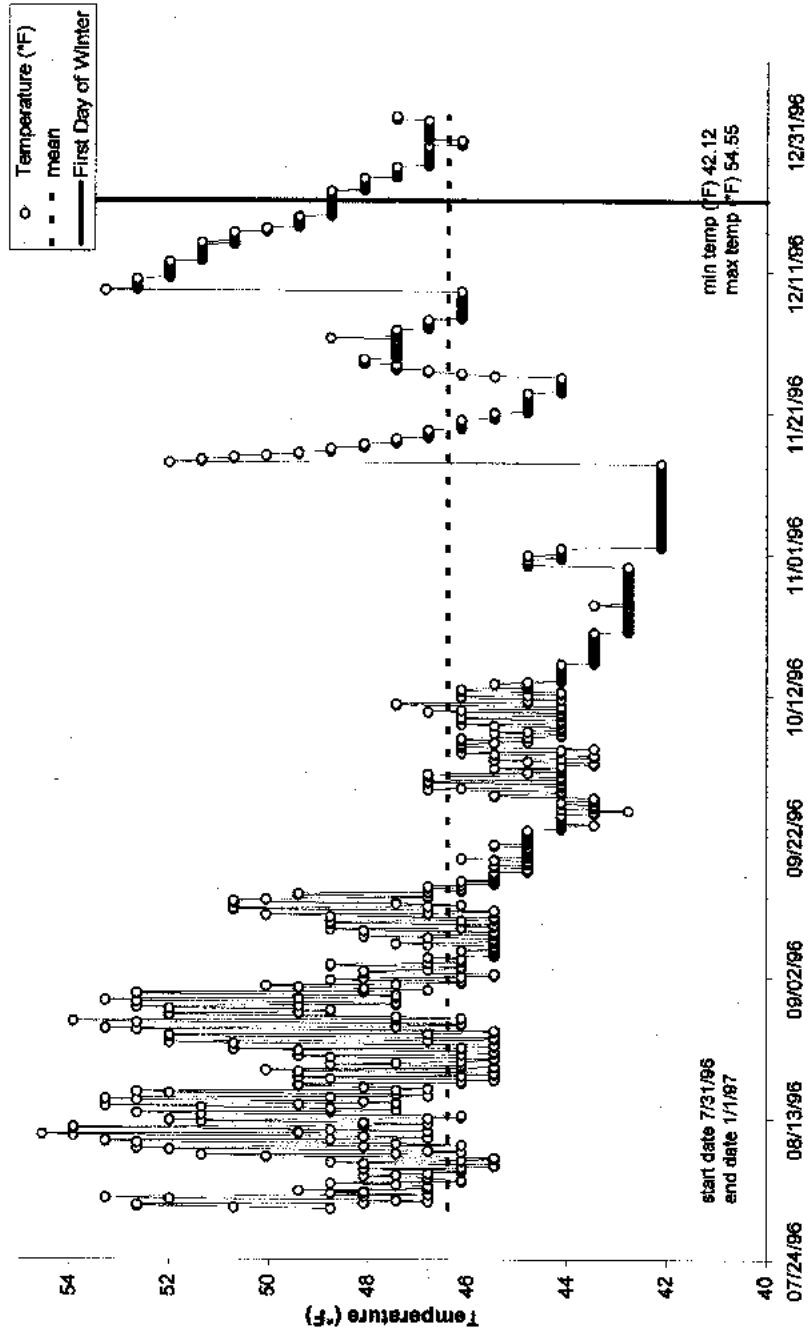


Figure 4a-e. Plots from individual StowAway loggers at location #1 in the International Mine (see Figure 3 for position). Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner. Logger #5111 is included in the sequence for review but has been eliminated from interpretation because it was likely affected by moisture at the end of its recording interval (see Keller 1997a).

Figure 4a



International #1 (July-January, 1996-97) SIN 5111

Figure 4b

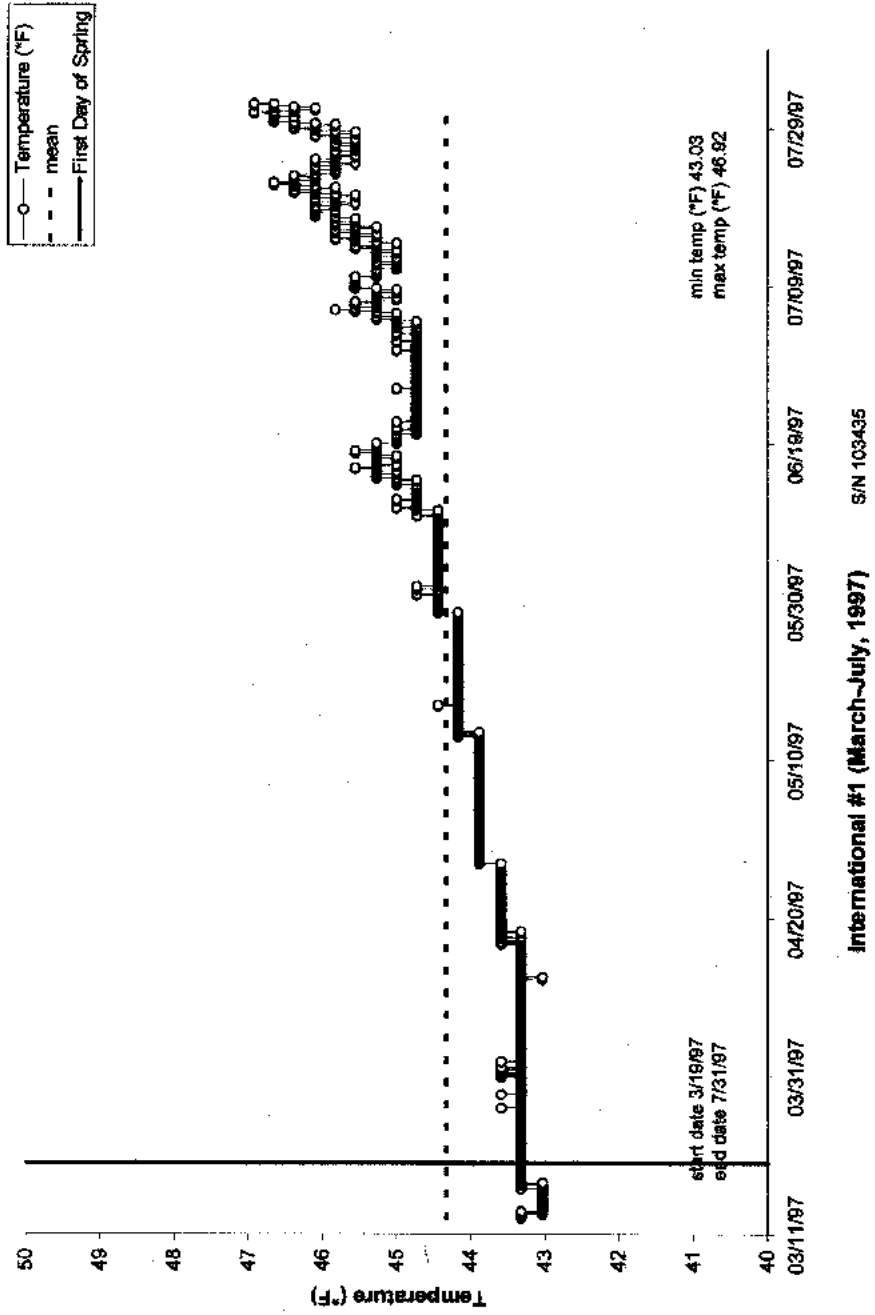


Figure 4c

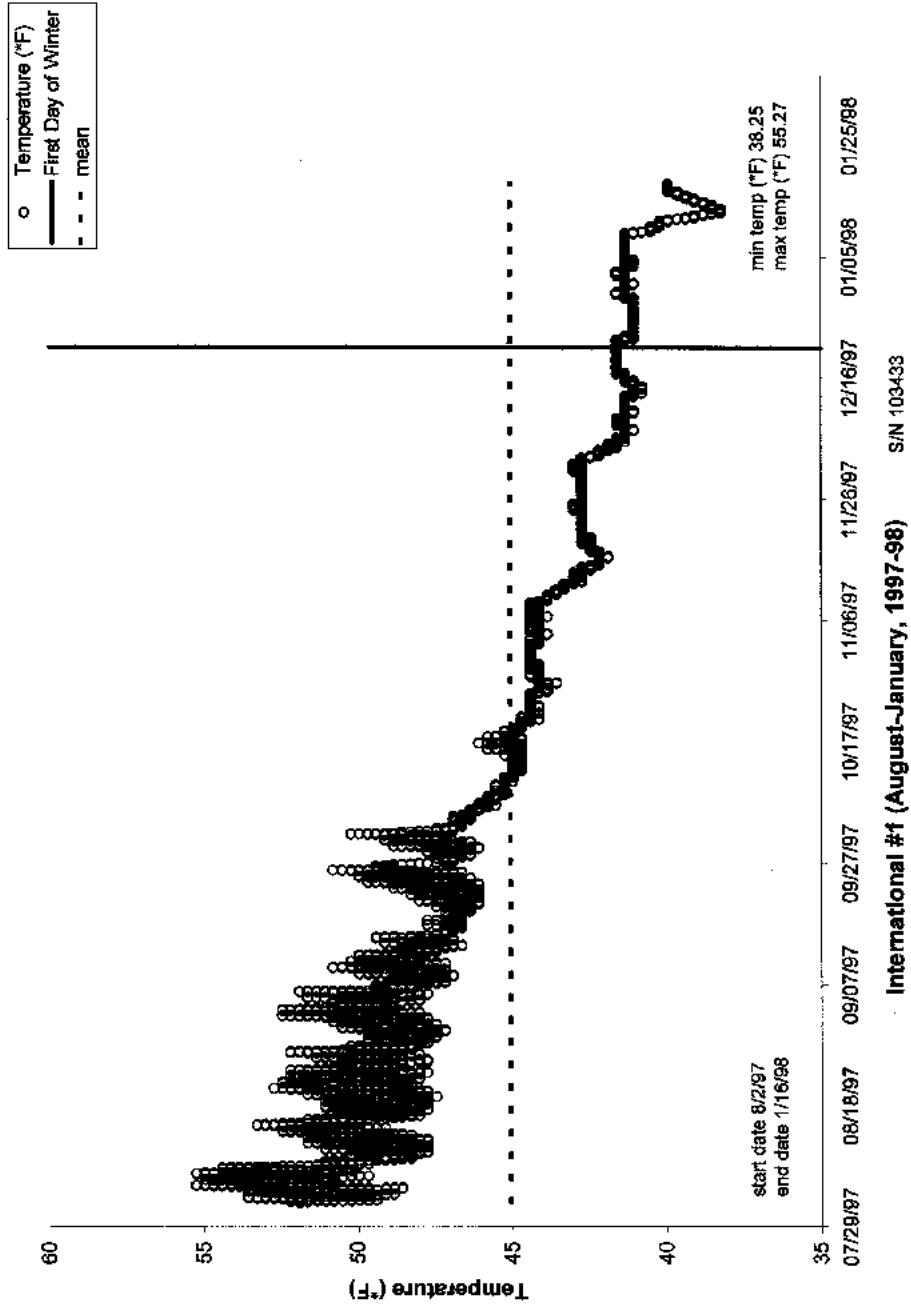
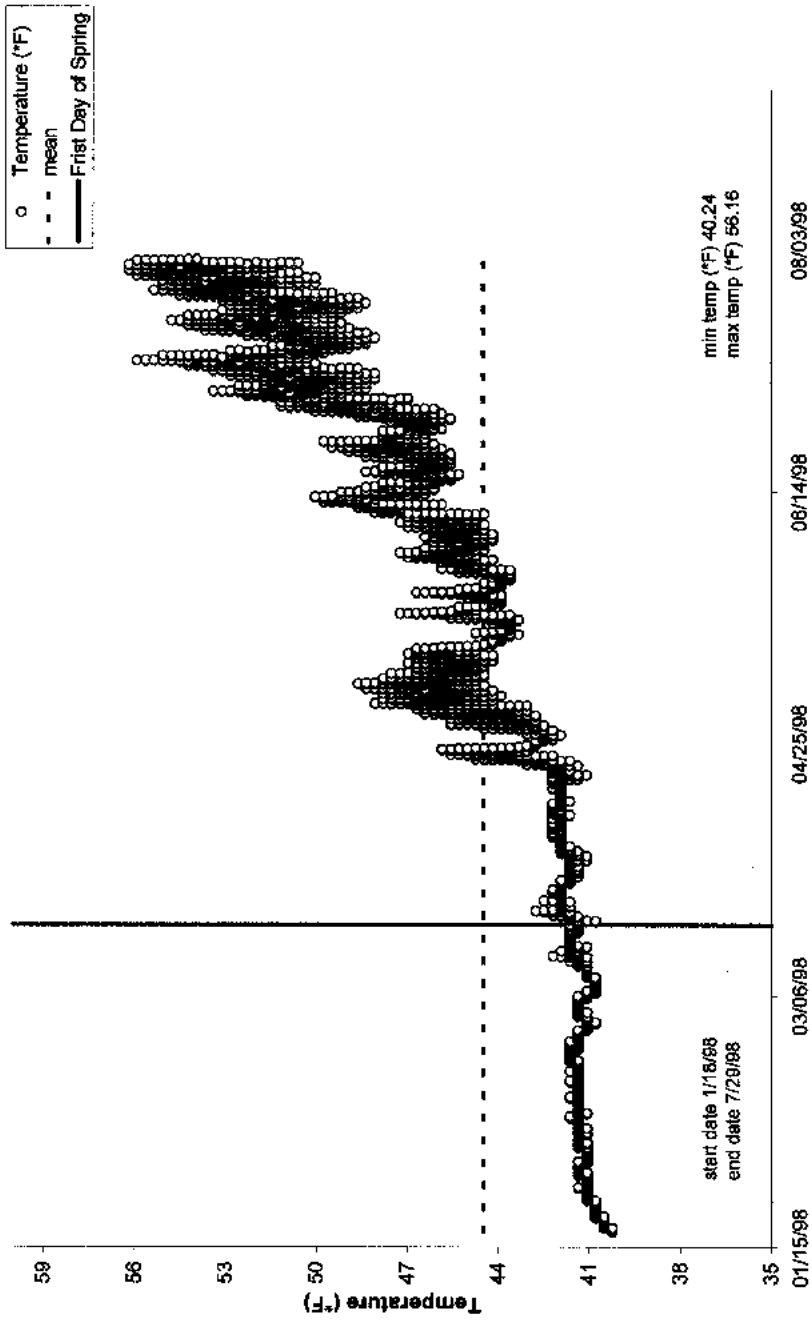


Figure 4d



International #1 (January-July, 1998) S/N 103434

Figure 4e

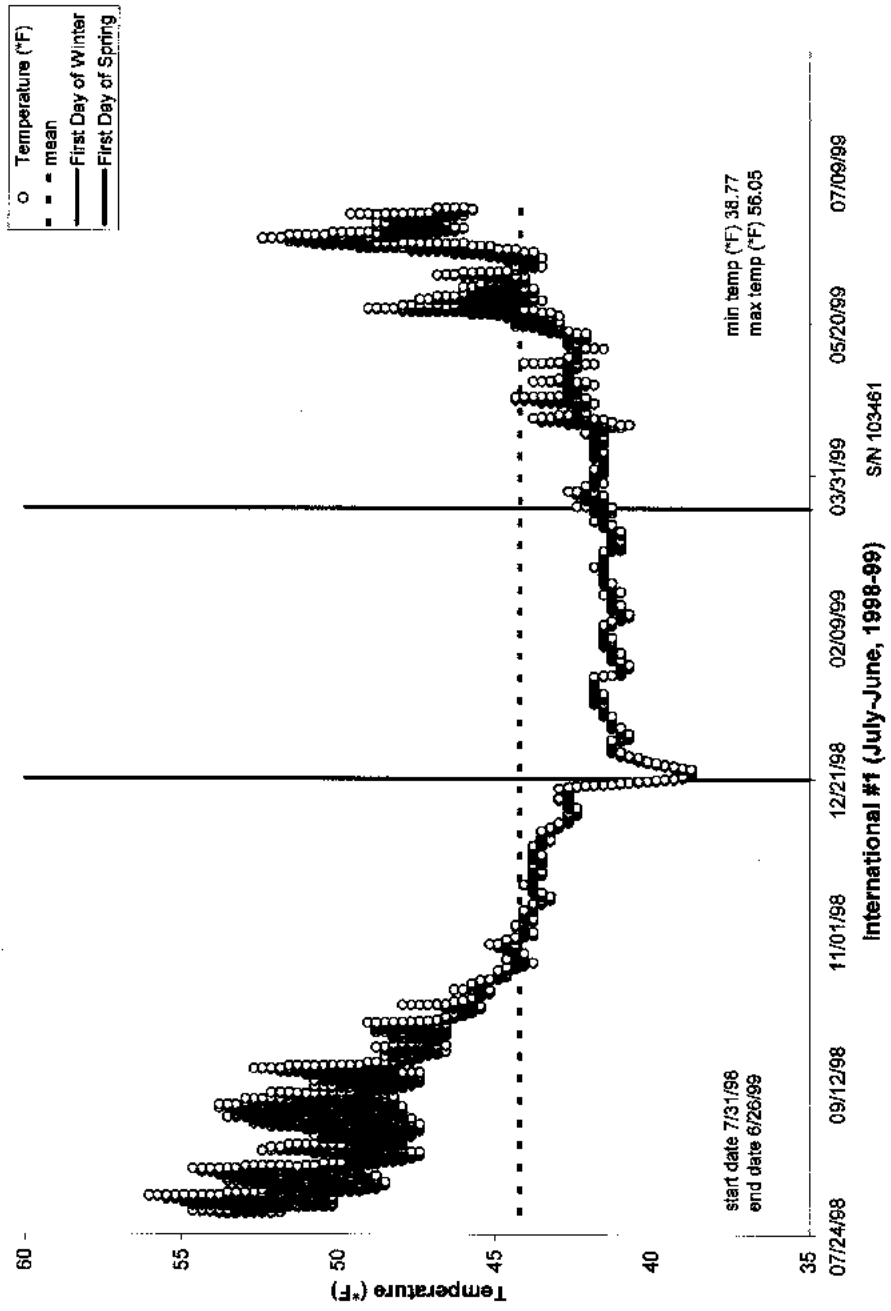


Figure 5a-e. Plots from individual StowAway loggers at location #2 in the International Mine (see Figure 3 for position). Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 5a

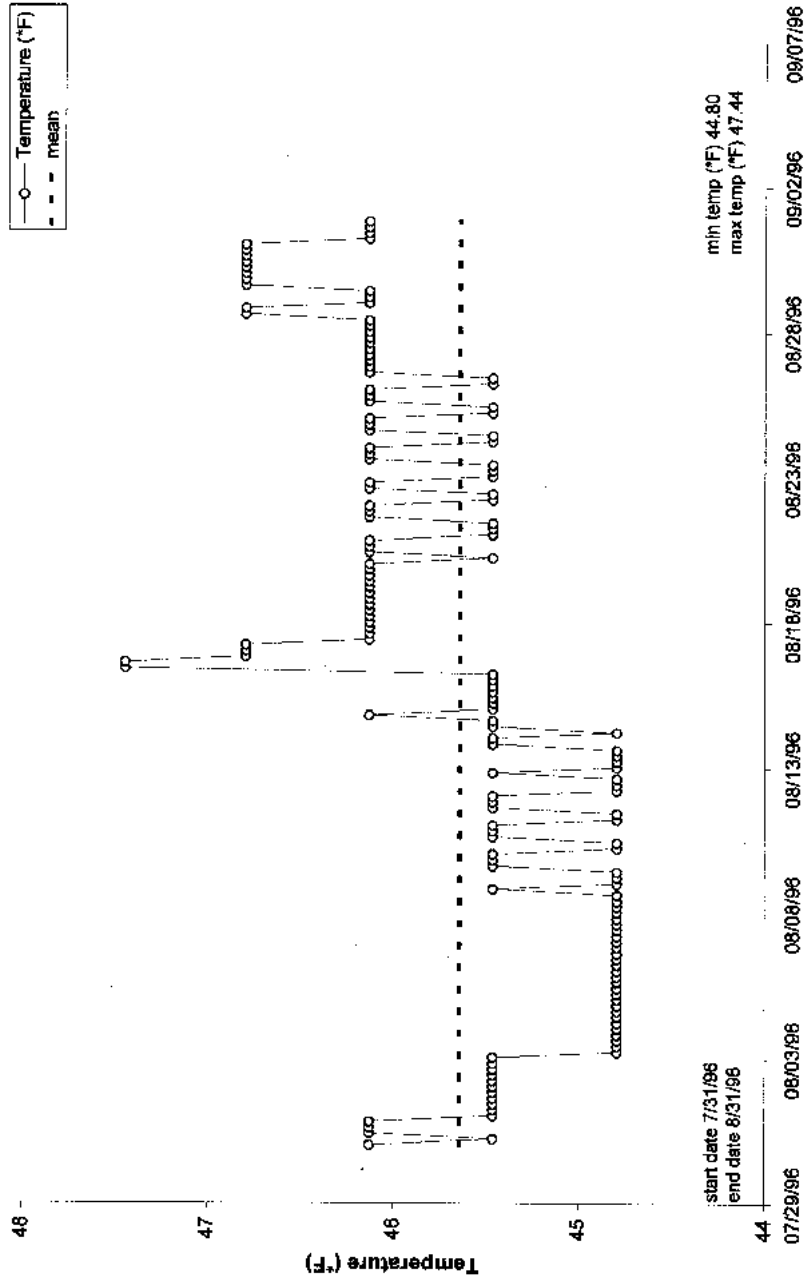


Figure 5b

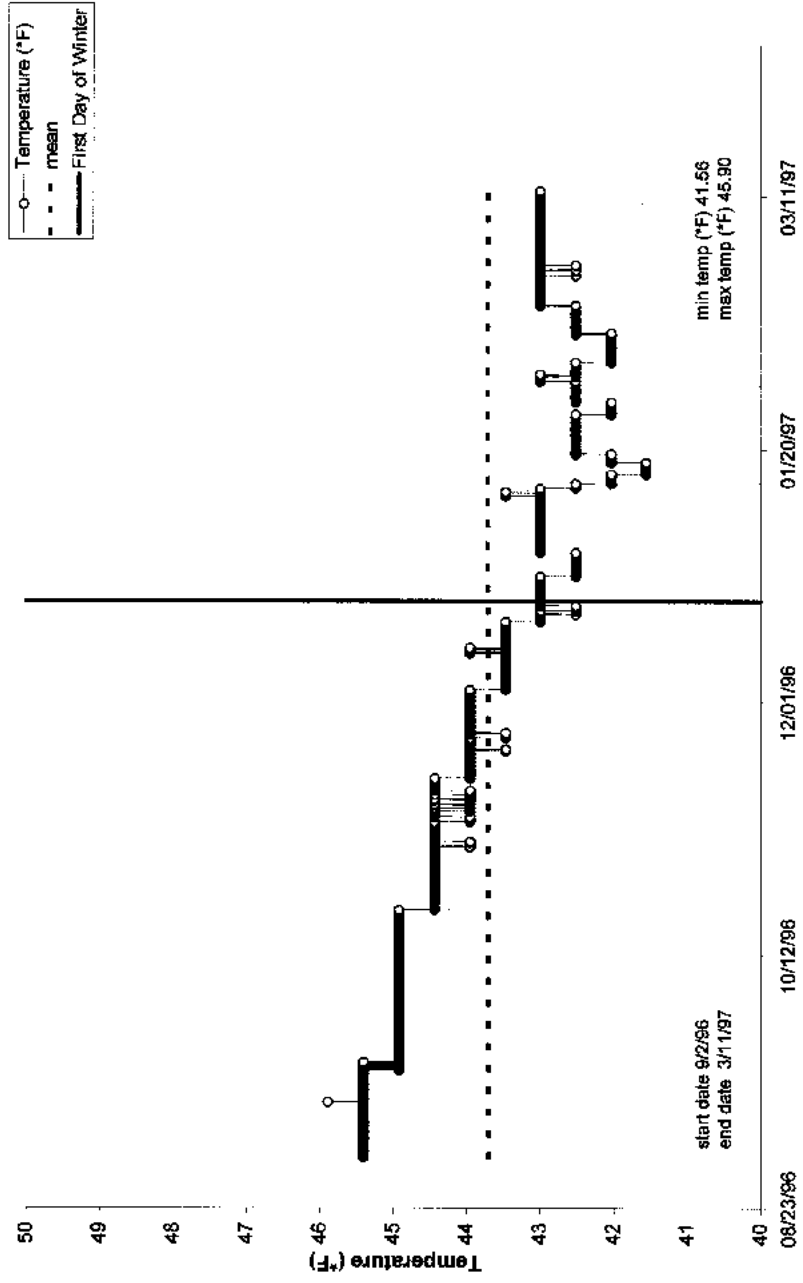


Figure 5c

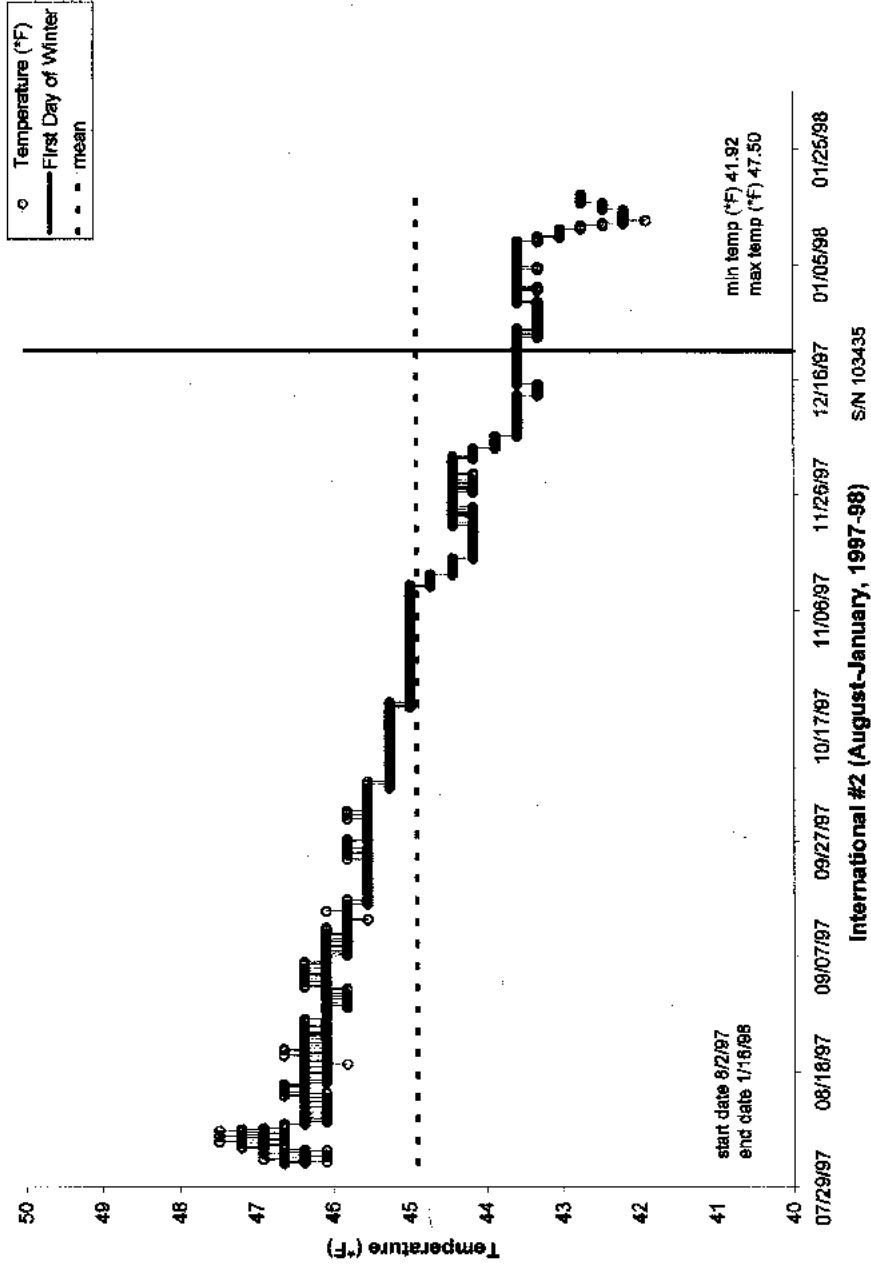


Figure 5d

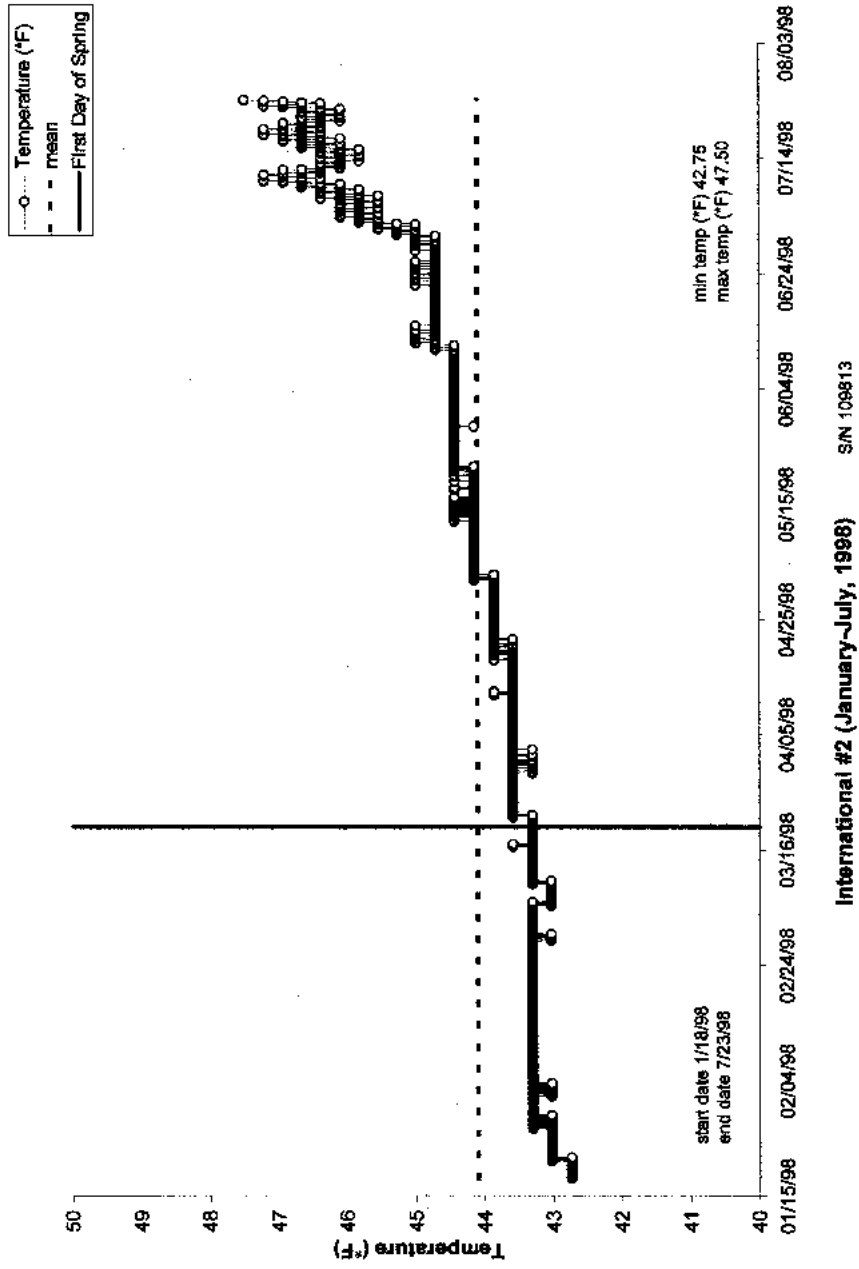


Figure 5c

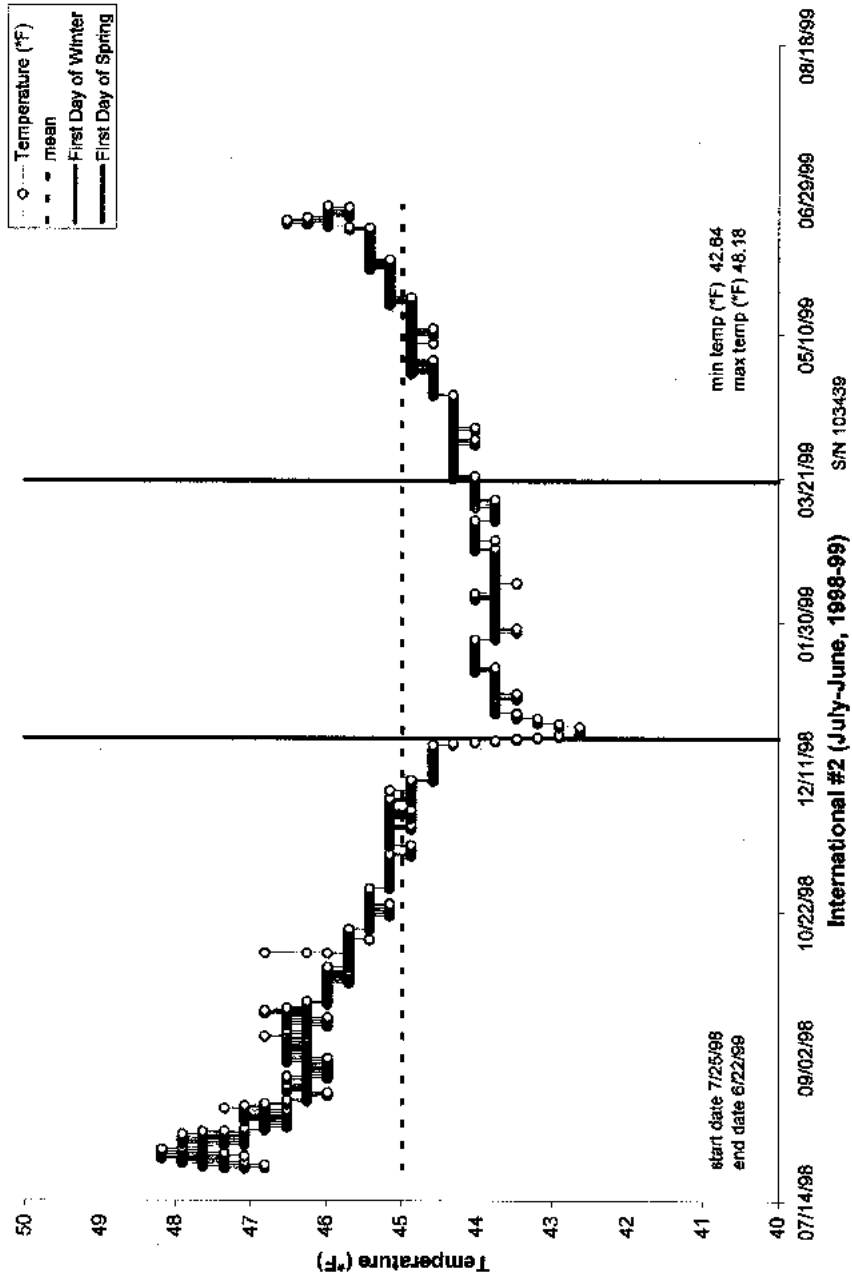


Figure 6a-c. Plots from individual StowAway loggers at location #3 in the International Mine (see Figure 3 for position). Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 6a

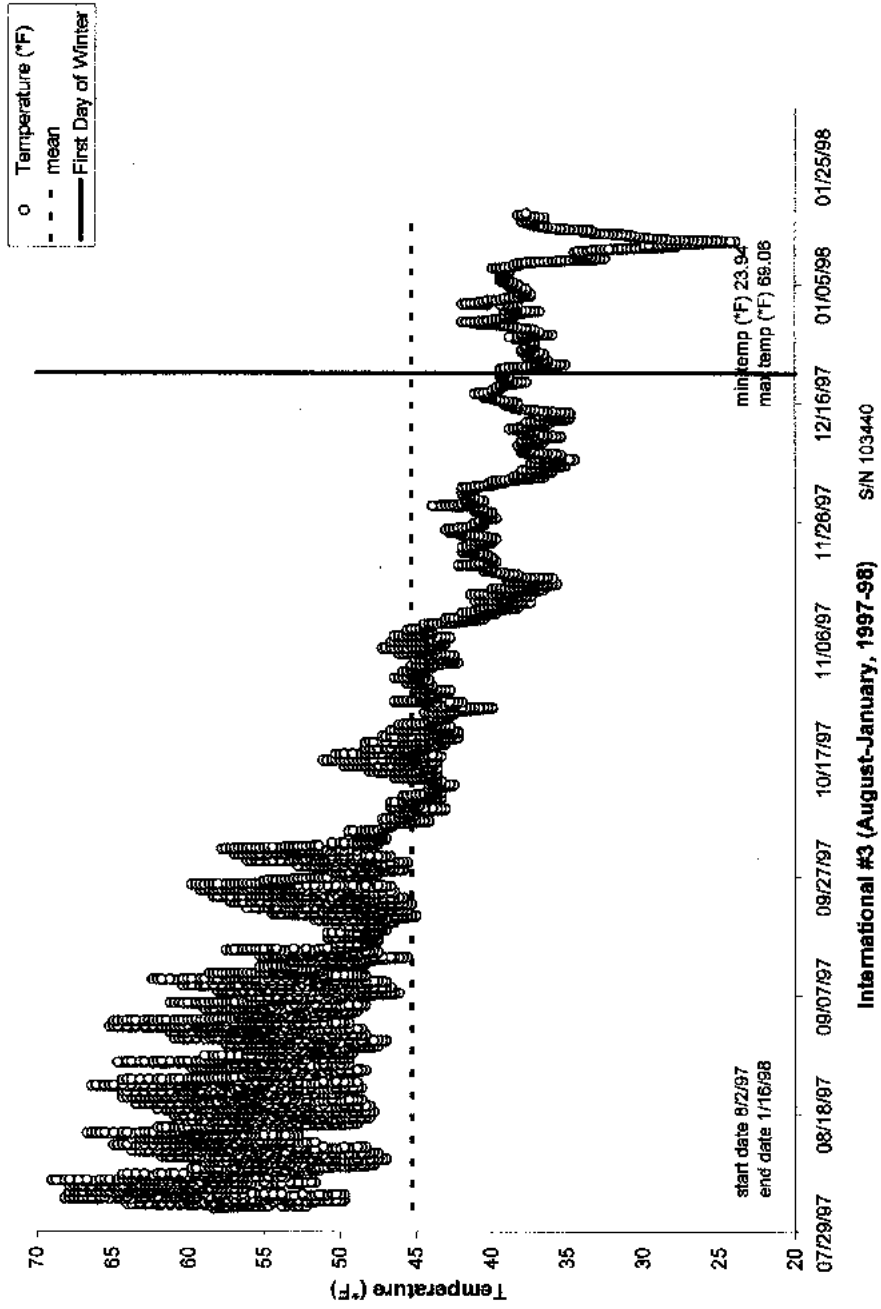


Figure 6b

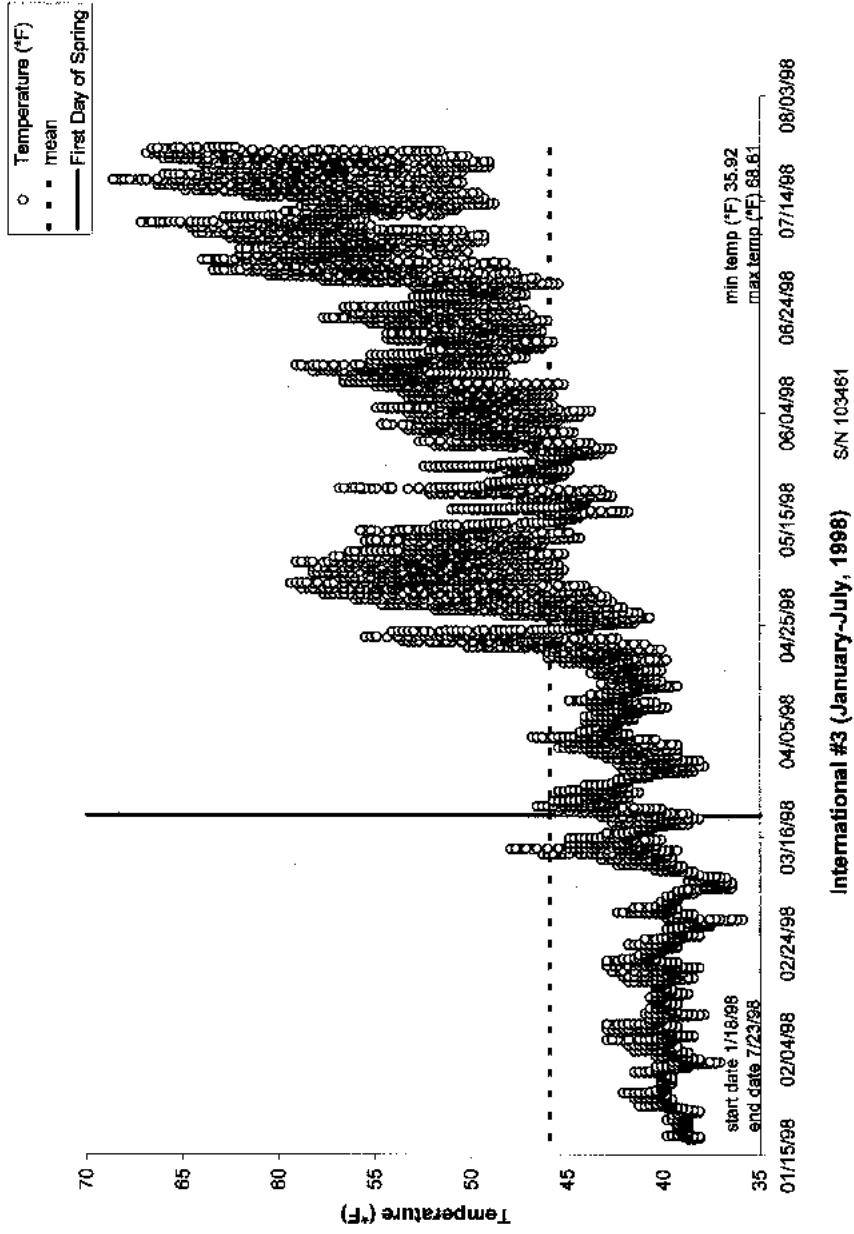


Figure 6c

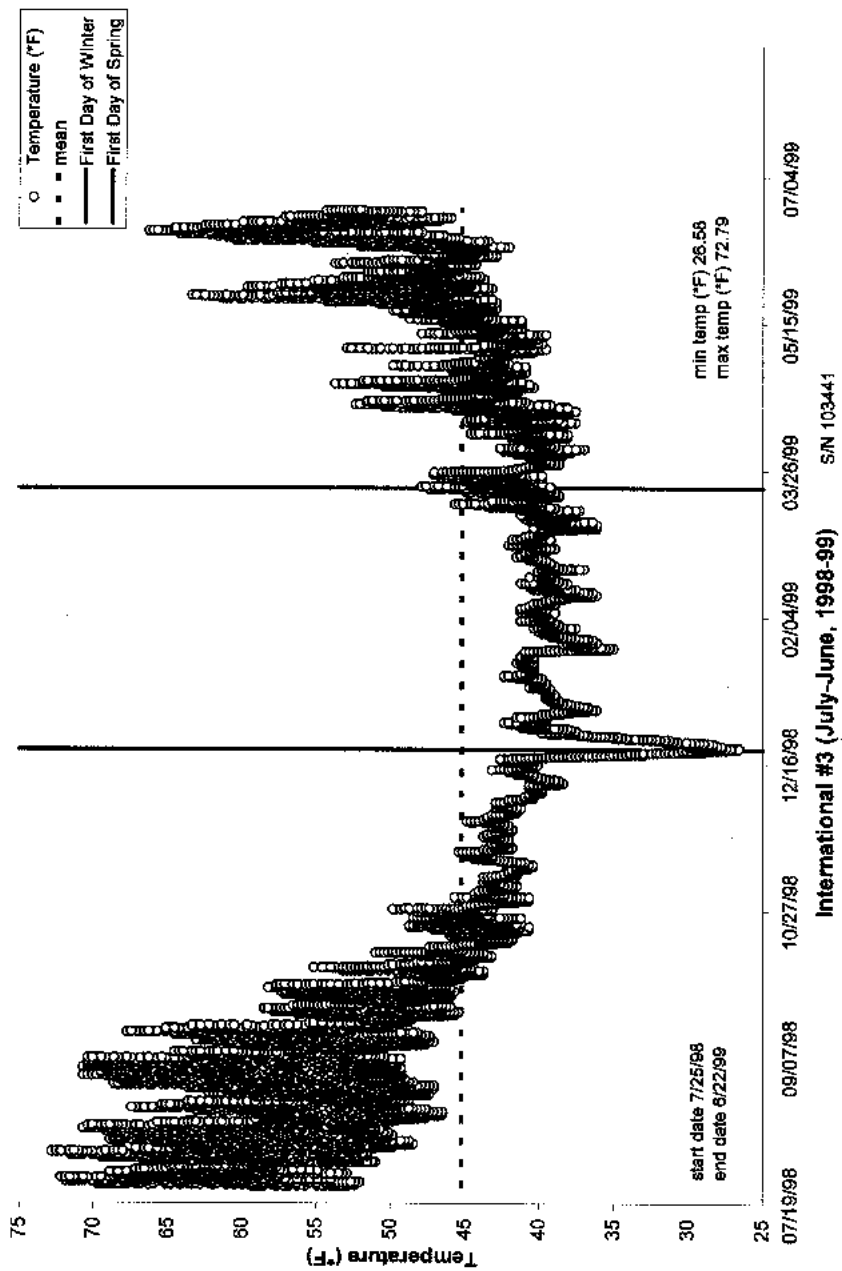


Figure 7a-c. Plots from individual StowAway loggers at location #4 in the International Mine (see Figure 3 for position). Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 7a

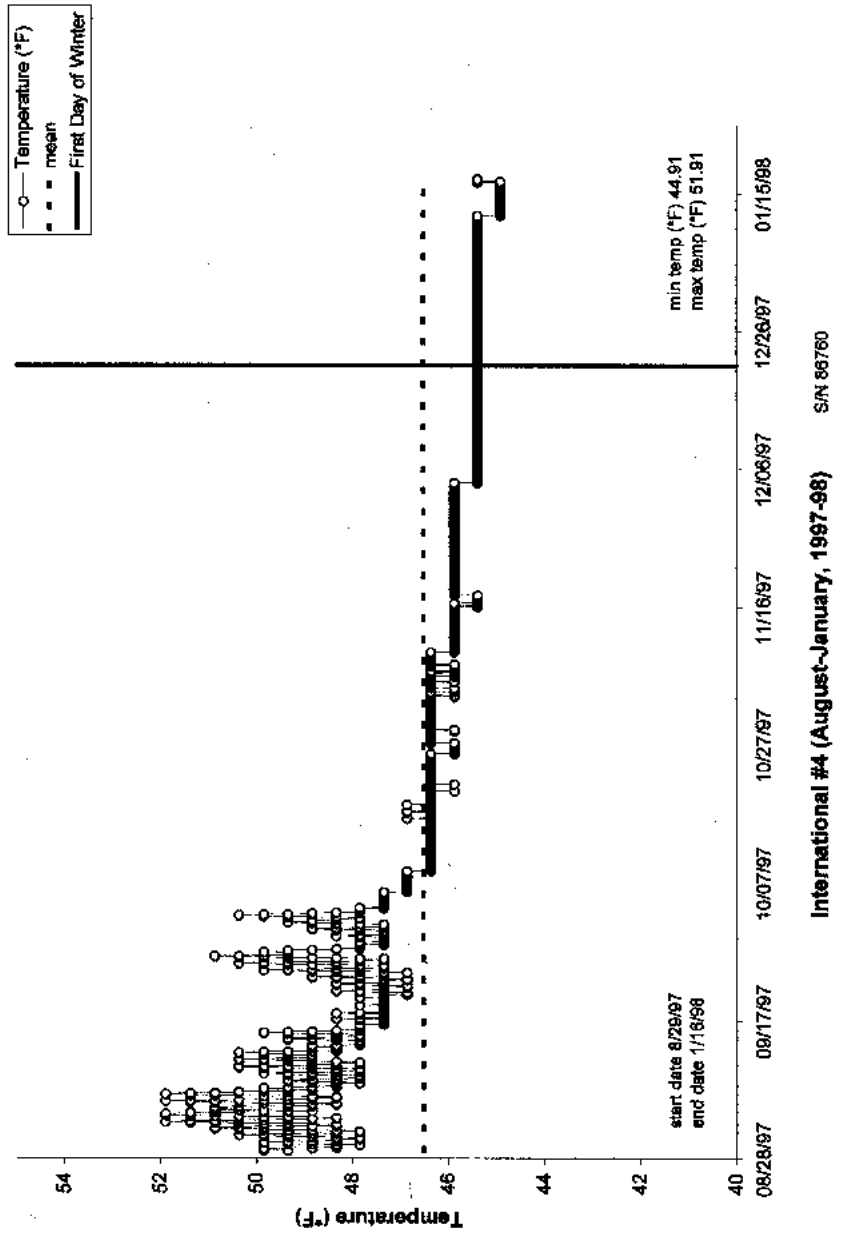


Figure 7b

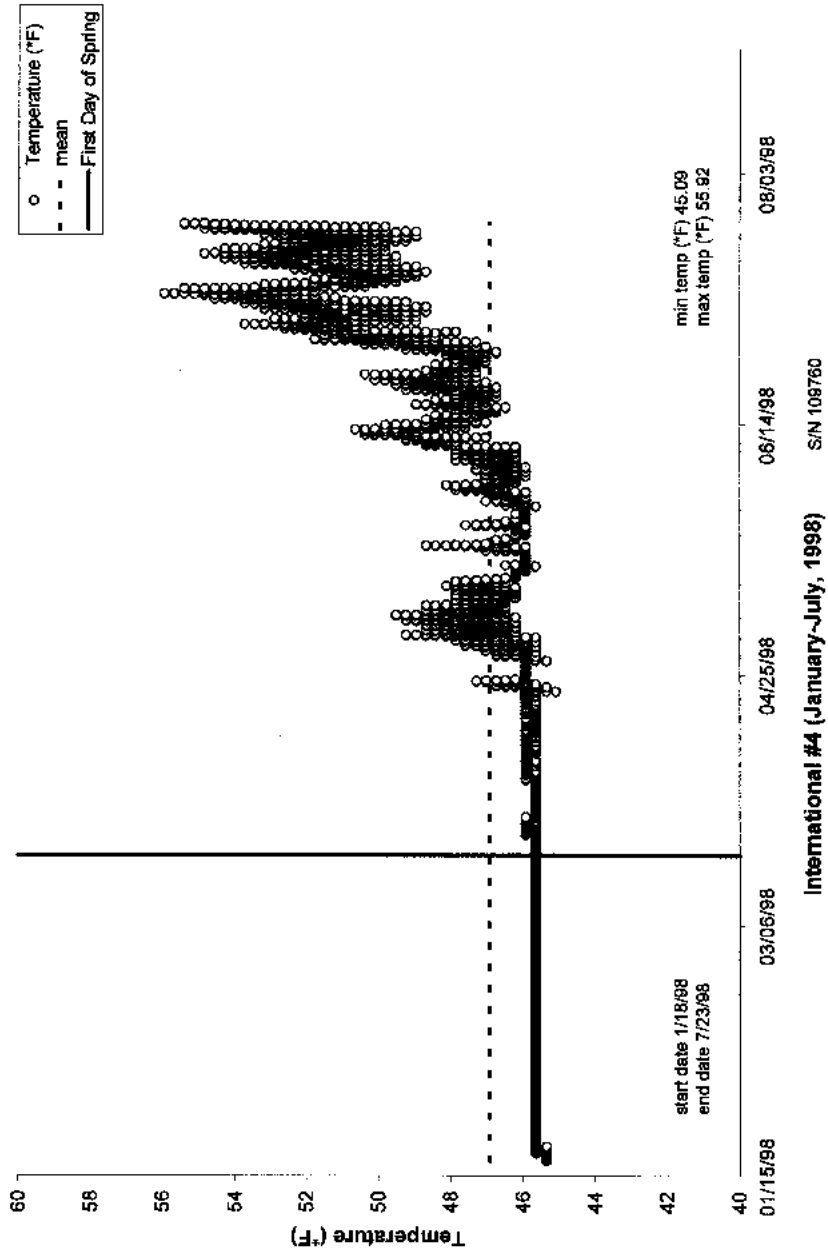


Figure 7c

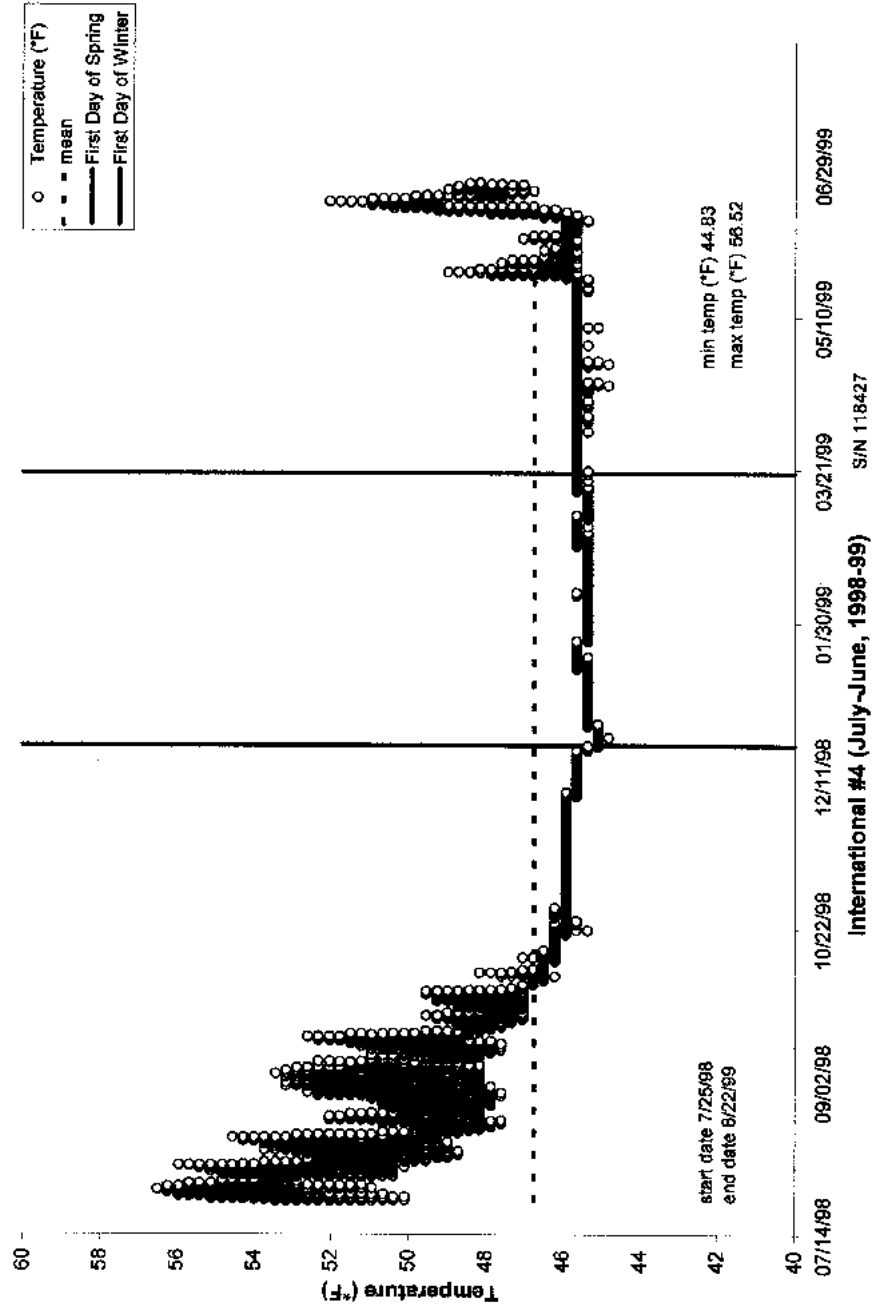


Figure 8a-b. Plots from individual StowAway loggers located 6 inches from the mine back and 270 feet from the portal of the Rock Creek Mine. Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 8a

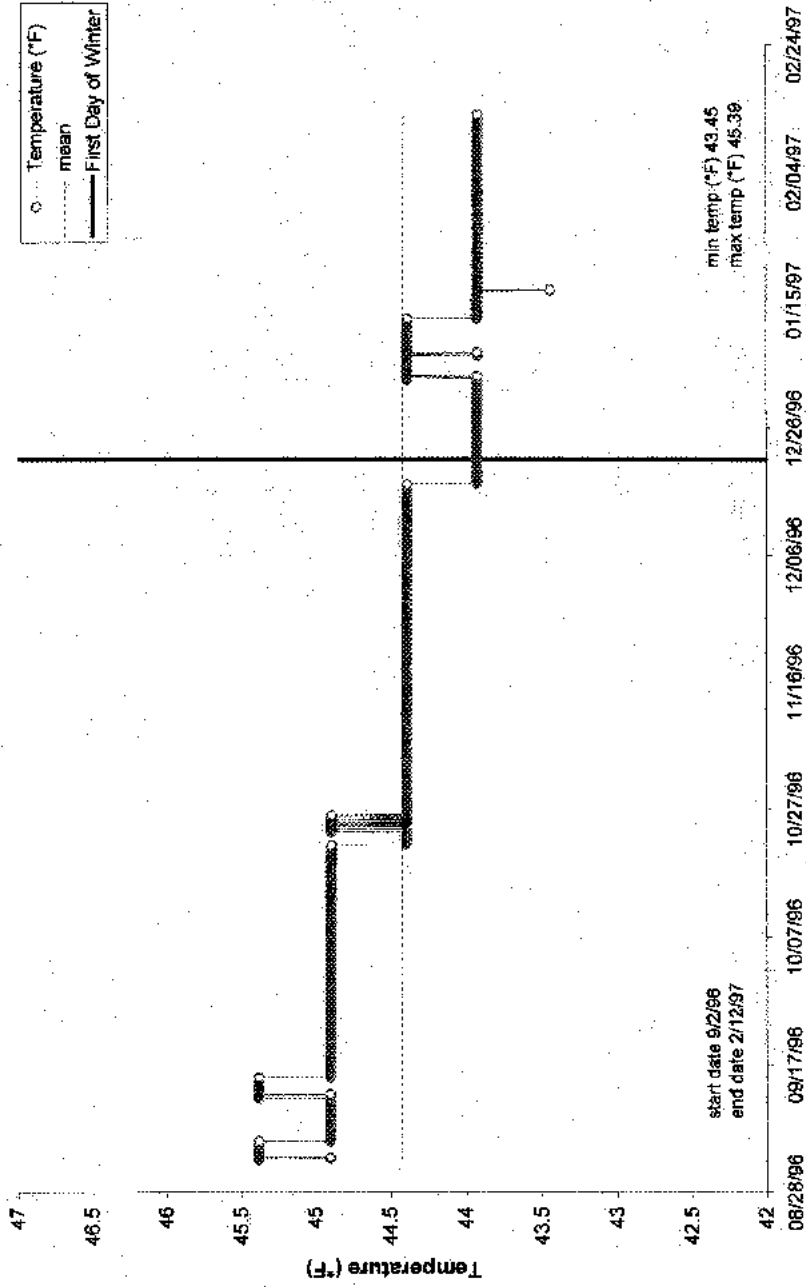
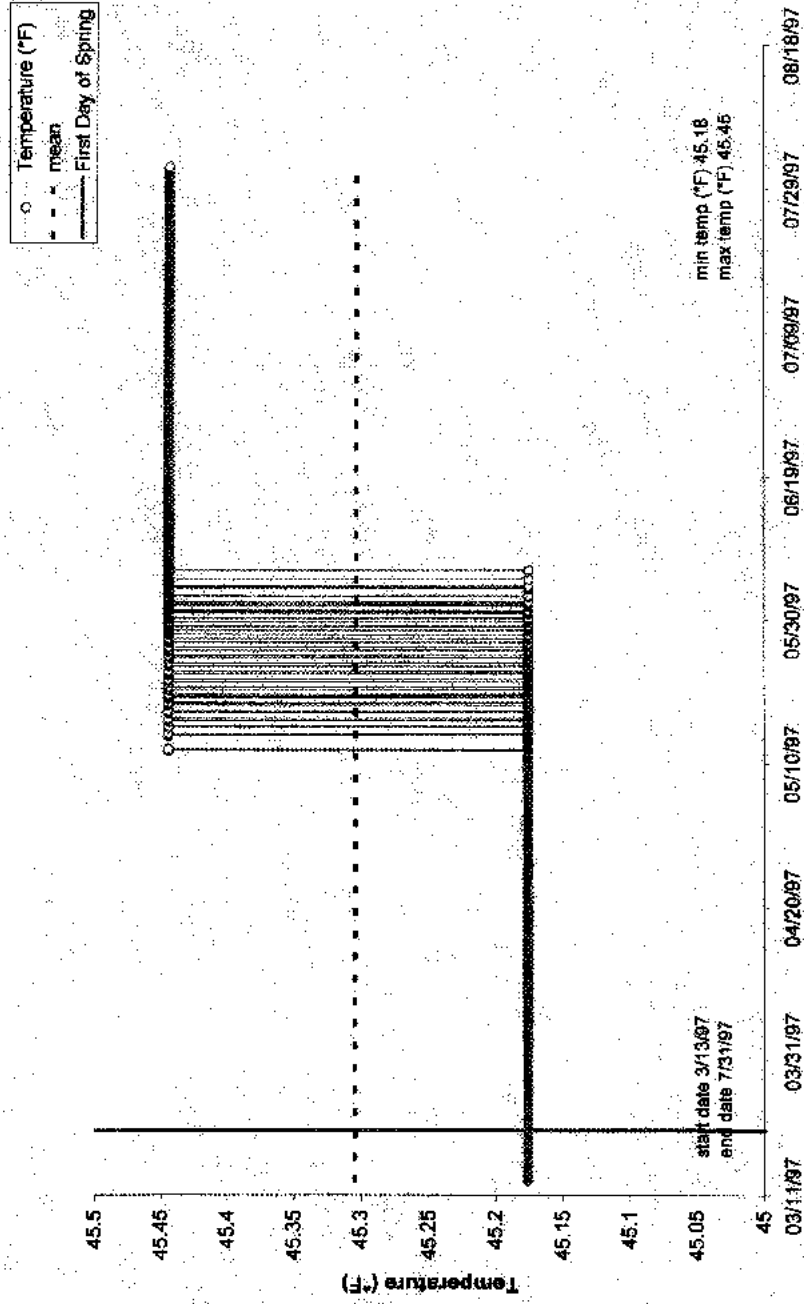


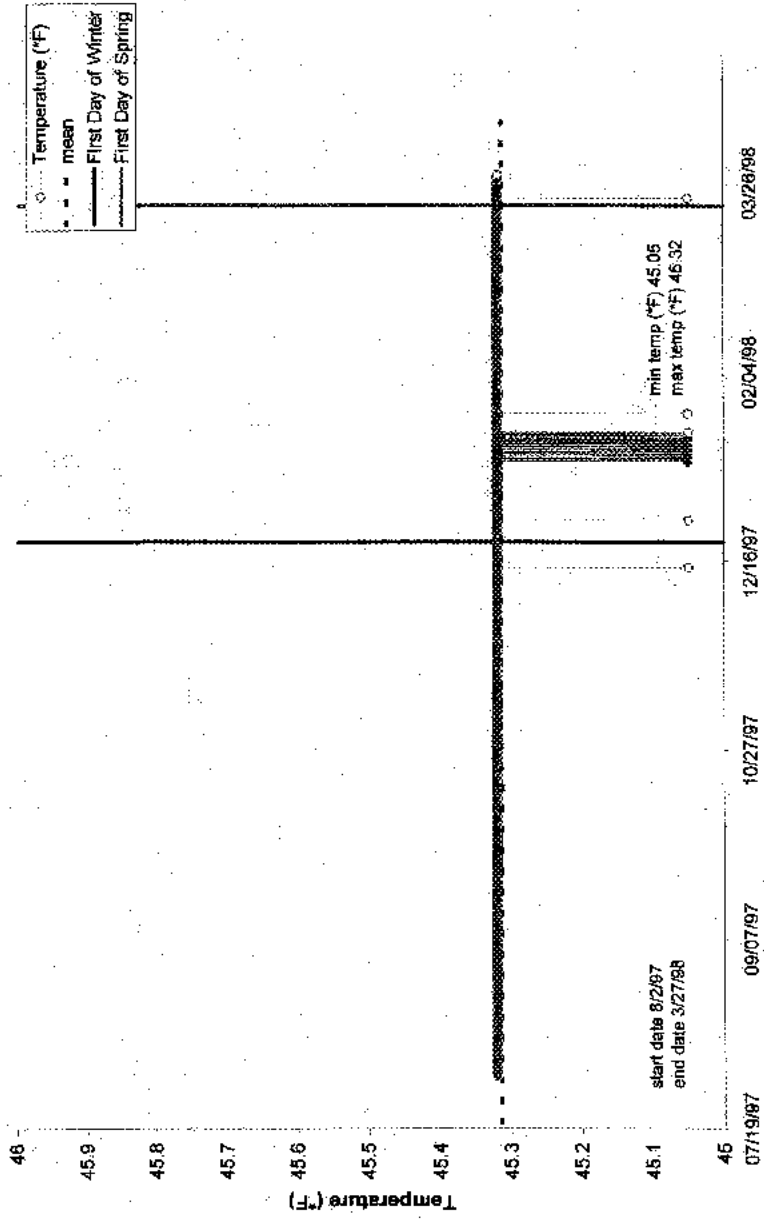
Figure 8b



Rock Creek Mine (March-August, 1997) S/N 103441

Figure 9a-b. Plots from individual StowAway loggers located 6 inches from the mine back and 525 feet from the portal of the Rock Creek Mine. Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 9a



Rock Creek, 525 feet from portal (August-March, 1997-98) S/N 103436

Figure 9b

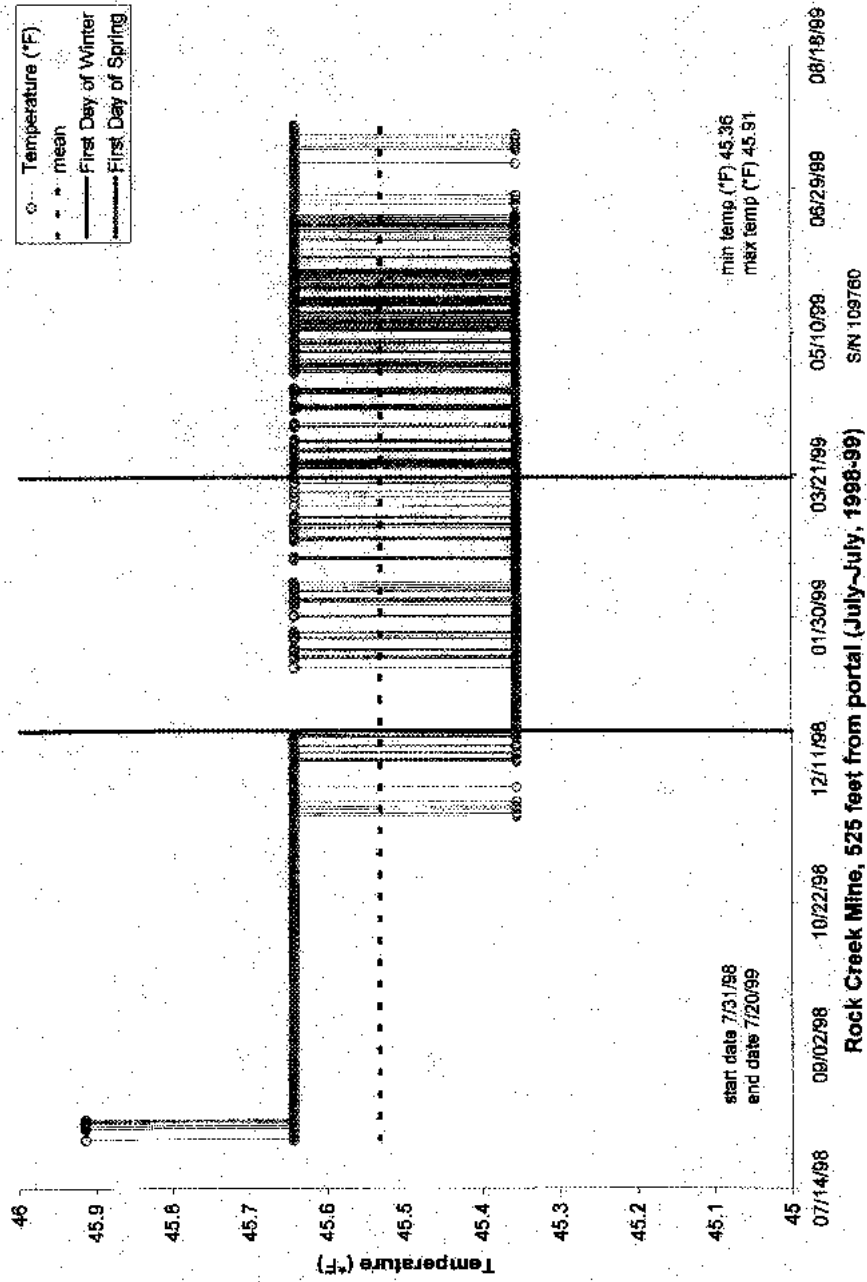
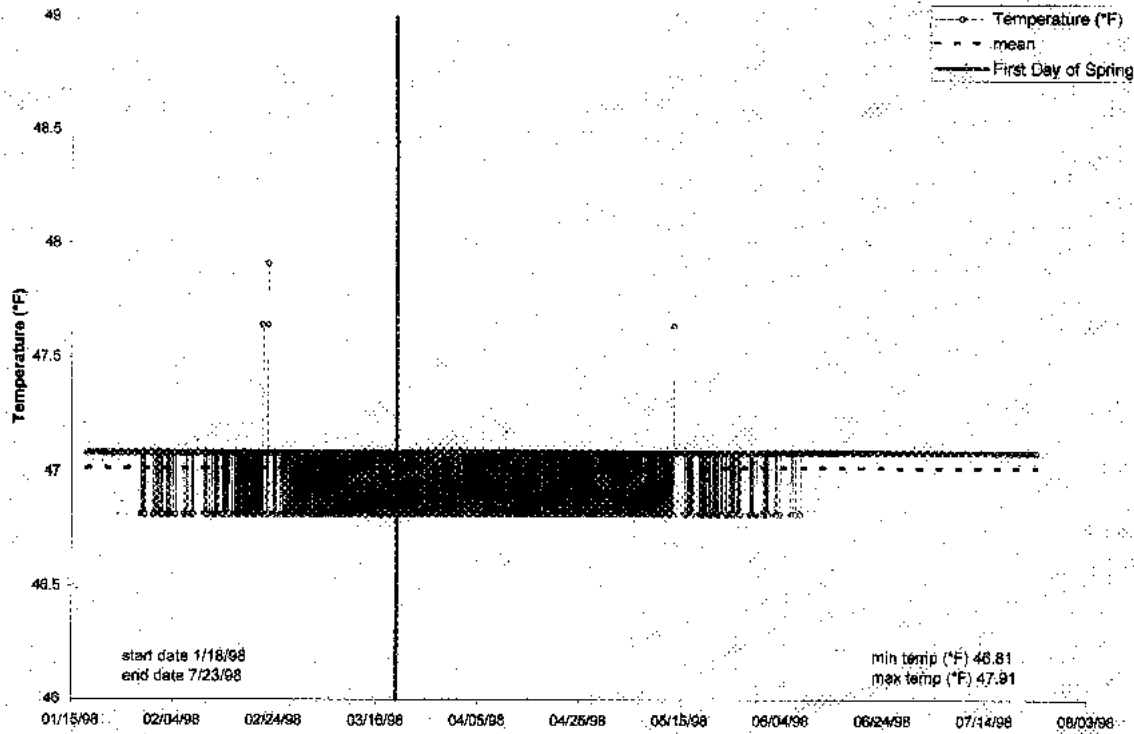


Figure 10a-b. Plots from individual StowAway loggers located 6 inches from the mine back and 550 feet from the portal of the Big It Mine. Data are plotted in degrees Fahrenheit. The mean is indicated with a dashed line. The start of winter (December 21) and the start of spring (March 20) are indicated with vertical bars to indicate the traditional interval of winter. Maximum and minimum values within any plotted graph are provided in the right corner.

Figure 10b



Big It Mine (January-July, 1998)

S/N 103439

Figure 10a

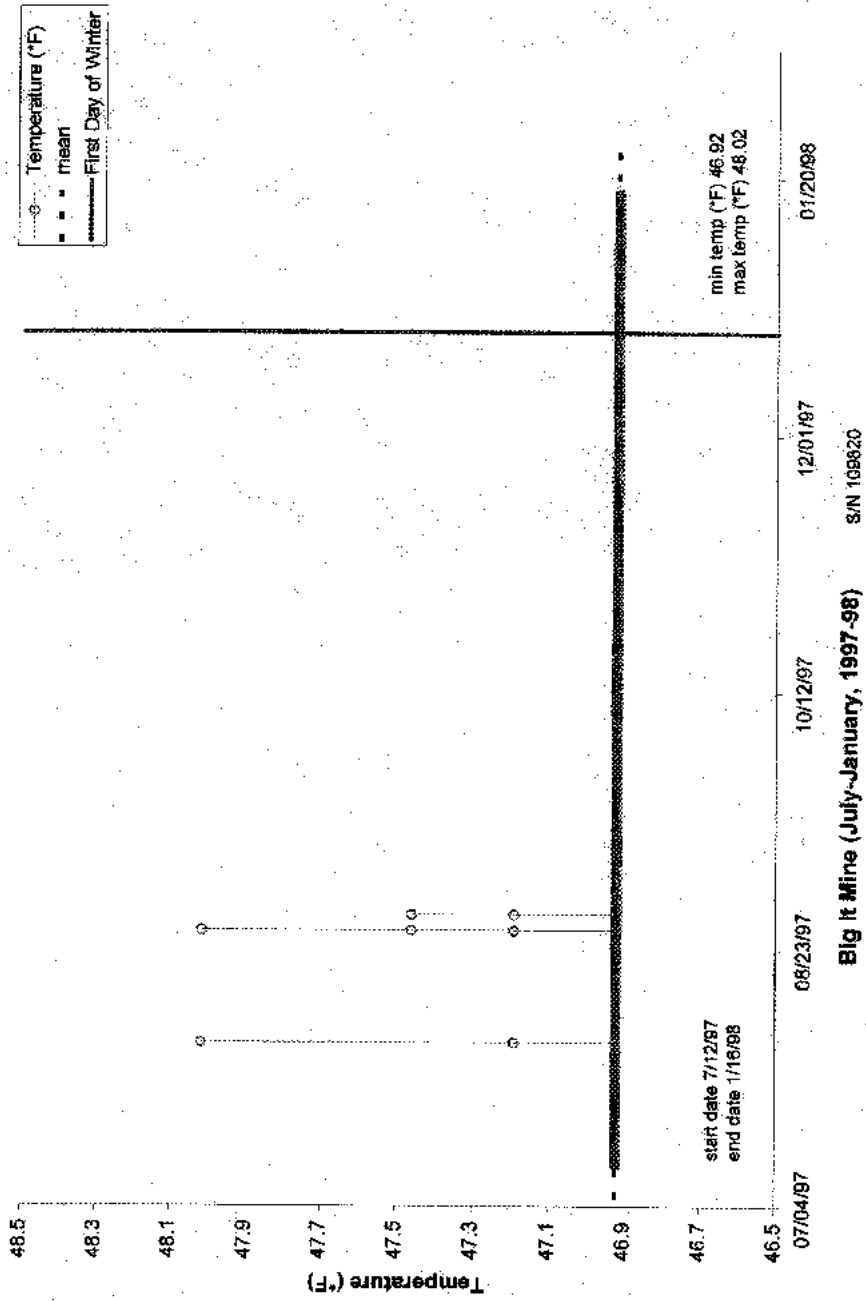
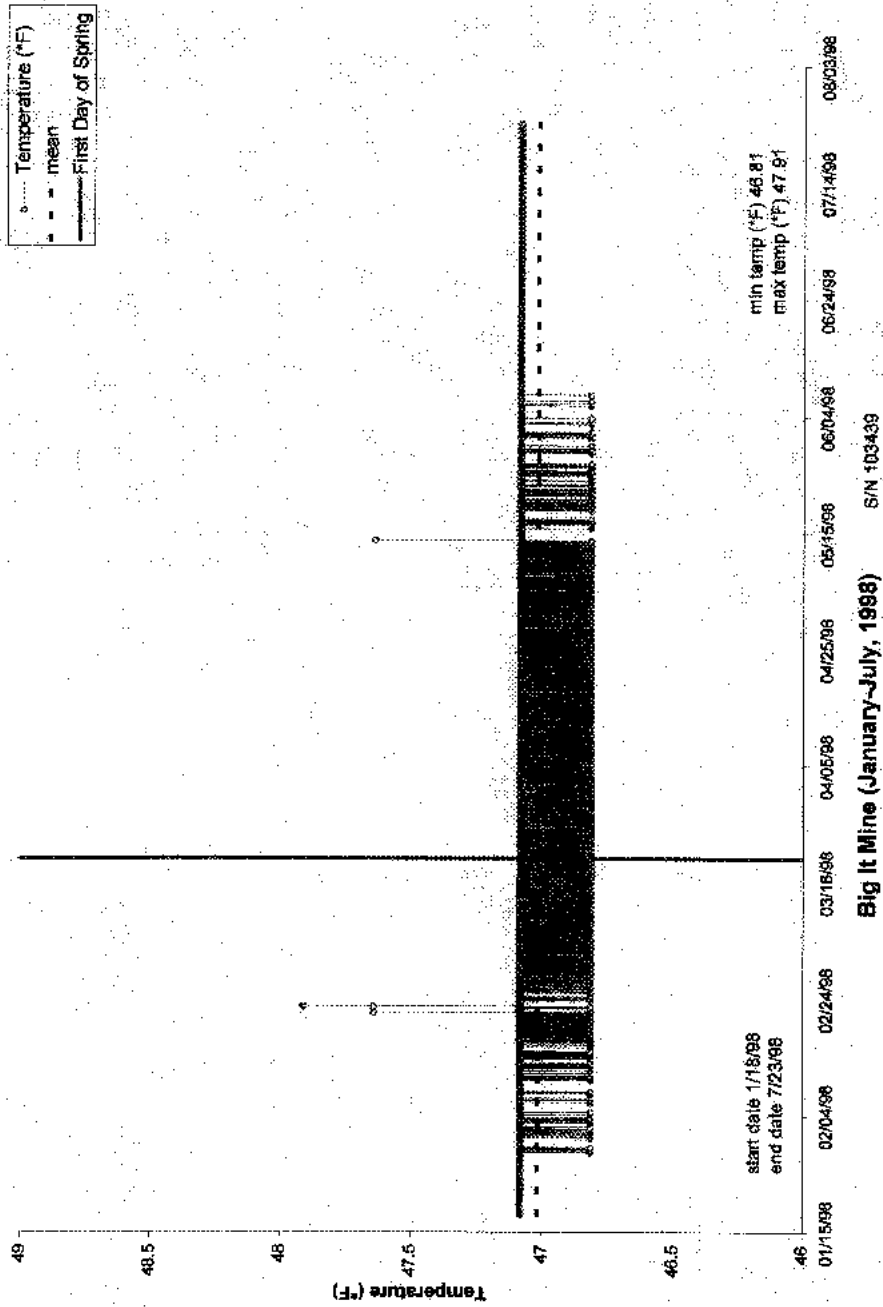
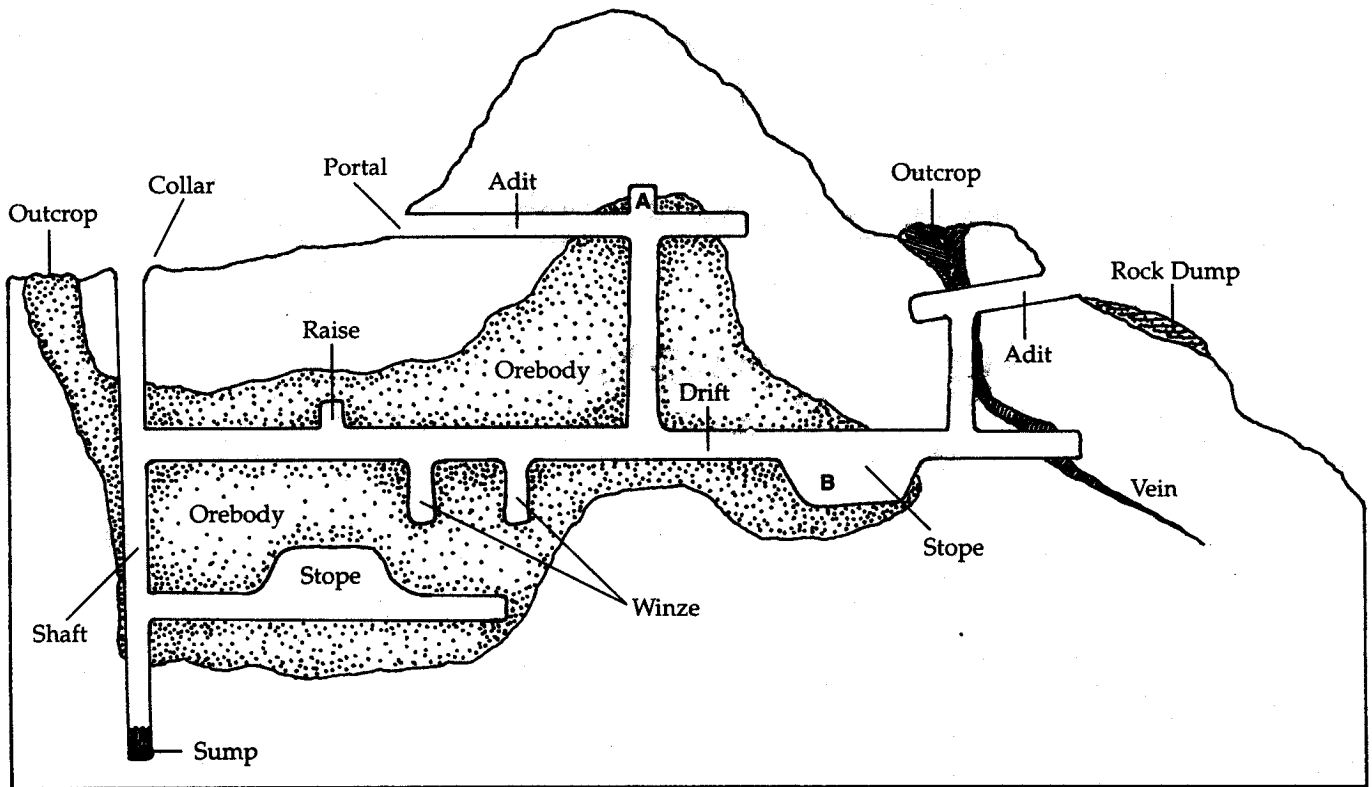


Figure 10b



Appendix A. Figure 1. Typical mine features and terminology. In this diagram, it was assumed that the highest and lowest air temperature would be located at position A and B respectively. Reprinted with permission from Bats and Mines, a publication of Bat Conservation International (BCI). For more information about bats or membership in BCI, please visit the BCI web site at www.batcon.org or write or call BCI, P.O. Box 162603, Austin, Texas 78716, USA, (512) 327-9721.



Mining Terminology

Adit — A horizontal mine passage driven from the surface for the working or de-watering of a mine.

Bald Raise — A raise with no drifts or horizontal workings.

Drift — A horizontal underground mine passage following a vein.

Orebody — A mineral deposit that is being mined for its metals.

Outcrop — That part of a stratum or vein that appears on the earth's surface.

Portal — A horizontal mine entrance.

Raise — A vertical or inclined opening driven upward from one mine level to connect with the level above, or used to explore the ground above a level.

Shaft — A vertical mine opening from the surface into a mine.

Stope — An underground cavity made by the removal of ore. An overhand stope is made by working upward from a mine level, and an underhand stope is made by working downward beneath a mine level.

Sump — A hole dug at the bottom of a mine shaft to collect water.

Vein — A fault in the ground that contains valuable minerals.

Winze — A vertical or inclined opening sunk downward from inside a mine for the purpose of connection with a lower level, or for exploring the ground beneath a lower level.