

APPENDIX F: Cave Survey & Inventory Standards

The following are a set of standards, which must be met by every survey party at Wind Cave National Park.

1) Surveying Standards

a. Accuracy

Loops should have a closure error of less than 2%. If a loop does not meet park standards, the trip leader may be required to return to fix the error.

b. Data Collection

Exploration will be on a “survey as you go” basis. All survey and inventory will follow established park protocols and be recorded on park-provided data forms.

c. Equipment

Standard survey gear (i.e., survey tapes, books, instruments, etc.) will be provided by the park. Cavers wishing to use their own survey gear must have it approved by the Physical Science staff.

d. Duties

The following will be the minimum standards of performance for each of the duties.

Point- Survey tapes or laser range finders will be read to the nearest five-hundredths of a foot (e.g. 10.25 ft). To avoid unnecessary damage to the cave resources, the writing of station names on cave surfaces is not allowed. Survey stations will consist of an unobtrusive Sharpie mark along with a reflective Mylar tag with the written station name. The survey station designation should be clearly written on each Mylar tag.

Instruments - Both compass and clinometer will be read to the nearest half degree. Foresights and backsights will be read and recorded on all shots. The two shots must agree within two degrees of each other. If a double front or back sight is required due to the difficulty of obtaining one of the readings, two different team members should take each of those double shots.

Book – Only park-approved sketchers will be allowed to sketch. All sketches will be done on park provided datasheets. Room and station names will be included on the sketch. If non-standard symbols are used in the sketch a legend will be included. Indications will be made to show what any unsurveyed passage does (e.g.: too tight, 2' x 4', to the “UB” survey, “to the Chimera Room” etc.) Passage dimensions will be drawn to scale, and ceiling heights will be noted at regular intervals. Cross sections should be drawn whenever the passage shape changes significantly, with a minimum of one per page. The sketch should contain as

much floor and ceiling detail as possible without cluttering the sketch. The distance will be recorded in decimal feet, and should be recorded to two decimal places, even those that come out to an even foot (i.e. 11.00, not 11). All compass readings will be followed by one decimal place. All clinometer readings will be preceded by either a "+" or "-" and will be followed by one decimal place.

2) Inventory Standards

The items on the inventory form are not provided as an all-inclusive list of features found in the caves of Wind Cave National Park; they are however a collection of the most commonly found features. Extra effort should be made to document features not included on the list, including notes and a descriptive sketch where necessary, as these are often the most significant features. A book with representative photographs of items on the inventory form is kept in the VIP center. Anyone performing inventory should review and become familiar with these items.

When inventorying as a survey progresses, one person is selected for the job. This must not be the sketcher but can be done by any other member of the survey party. It is very important to record a level and floor description for every station.

General descriptions of the levels are located on a card in the pocket of the inventory book. Items will be referenced to the closest survey station. Tie-in or redundant stations should not be recorded.