

Resection Codes used in Survnet

Below is a sample of resection data from SurvCE. Our processing software parses the measurement data from the comment lines.

The SP record is necessary to get the point number and description of the resection point. We look for a “-Resection” comment following an SP record. If we find one, we do not use the SP record as control – we discard it after parsing the point number and description information. We then get the measurement data from the comment lines.

Many clients remove the SP records so they will not be used as control. If the SP record has been removed we have to ignore the resection data. I do not think they have done it yet but I will find out.

```
SP,PN5,N 9999.9911,E 10000.0217,EL1999.9986,--H&T
--Resection:HI5.210
--Reading 1(D):FP4,AR0.0000,ZE86.4652,SD95.3000--Nail,HR4.630
--Reading 1(R):FP4,AR179.5951,ZE273.1244,SD95.3400--Nail,HR4.630
--Reading 2(D):FP2,AR25.5454,ZE96.2412,SD105.6800--Nail,HR4.790
--Reading 2(R):FP2,AR205.5450,ZE263.3524,SD105.6800--
Nail,HR4.790
--Reading 3(D):FP3,AR95.5021,ZE97.2335,SD85.7600--Nail,HR4.640
--Reading 3(R):FP3,AR275.5015,ZE262.3603,SD85.7600--Nail,HR4.640
--Points Used:4,2
--StDev:N0.0015,E0.0011
--Dist RMS:0.0002
--Ang RMS(Sec):0.8112
--Elev RMS:0.0057
```

GPS VECTOR RECORDS

The BP record is the Base Point record. The only data you need to get from this record are the AG (Antenna to Ground) and the PA (Phase Center to Antenna). You will add them together to get the Phase Center to Ground value. THE UNITS OF THE ELLIPSOID ELEVATION, PA AND AG ARE ALWAYS IN METERS.

You will get the rod height of the rover from the LS record prior to the vector records. The LS,HR value is from phase center to the ground, we do not show the antenna offset in this record. WARNING, THE UNITS CAN BE FEET OR METERS; YOU WILL HAVE TO LOOK AT THE MO RECORD (UN) TO TELL.

The vector information is in the G records:

G0 - Date, time, Base ID
G1 - Base point number, Rover point number, Delta X, Delta Y, Delta Z
G2 - Variance X, Variance Y, Variance Z
G3 - Covariance XY, Covariance XZ, Covariance YZ

The DX, DY and DZ values are phase center to phase center. ALL THE VALUES ARE ALWAYS IN METERS.

Example:

```
BP,PNcrab1,LA35.502397212133,LN-  
78.465493267268,EL67.5701,AG1.689,PA0.114,--  
--Antenna Type: [RTK GPS Antenna+Receiver] APS-3, Vertical  
--DT04-30-2009  
--TM14:51:43  
LS,HR1.8021  
GPS,PNcrab1,LA35.502397212162,LN-78.465493267226,EL67.570107,--  
new ngs base - ellipsoid z  
--GS,PN5,N 231869.3410,E 629301.7520,EL65.7680,--new ngs base -  
ellipsoid z  
LS,HR1.8813  
GPS,PN1,LA35.501950788905,LN-78.465594283445,EL61.537350,--hub 1  
--GS,PN6,N 231731.7034,E 629276.7048,EL59.6560,--hub 1  
G0,03/30/2009 14:52:16Base ID read at rover: 10  
G1,BPcrab1,PN1,DX-10.146,DY-79.160,DZ-115.077  
G2,VX0.00853556,VY0.01412729,VZ0.01509829  
G3,XY-0.00001658,XZ0.00000670,YZ-0.00015920  
--HRMS:0.011, VRMS:0.020, STATUS:FIXED, SATS:11, PDOP:1.8  
--DT04-30-2009  
--TM14:52:28
```