

Digital Data Capture in Geological Field Work

A Joint Project of the BC Geological Survey and the University of Victoria

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Topics

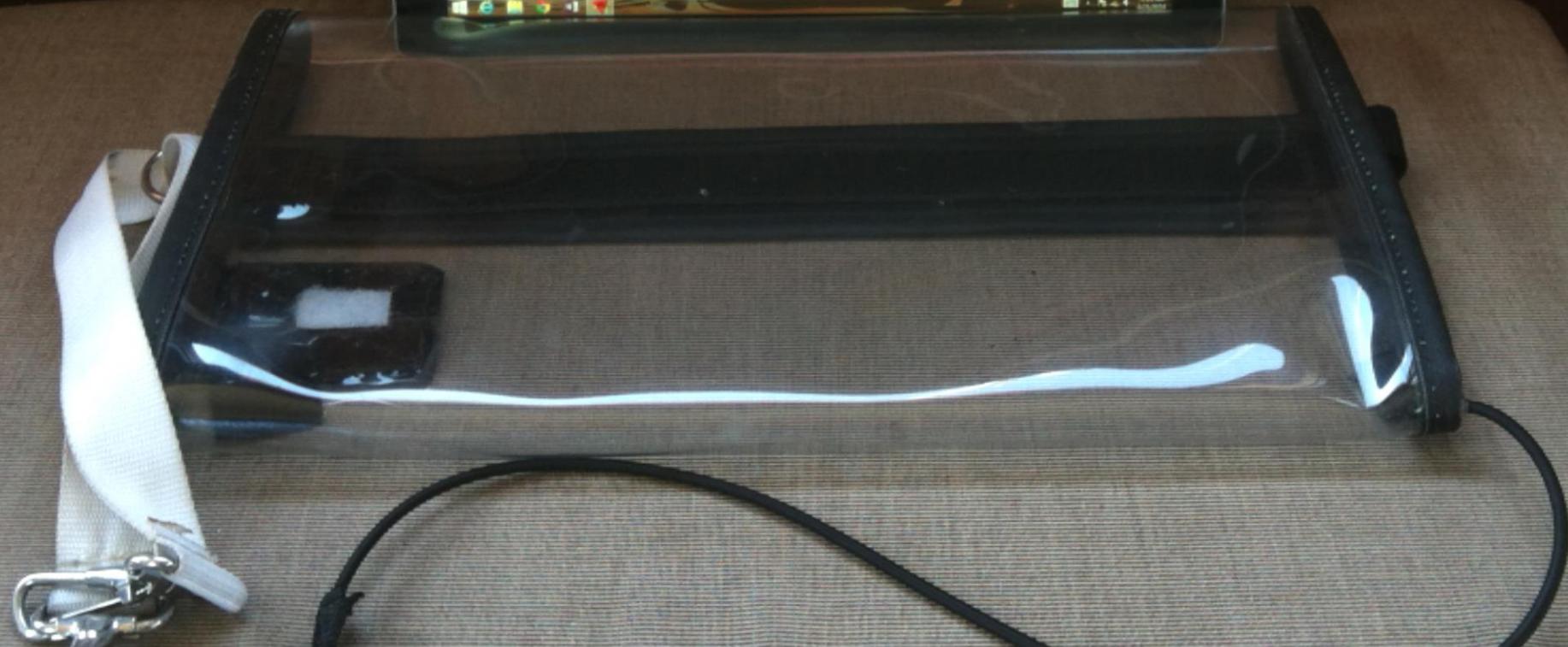
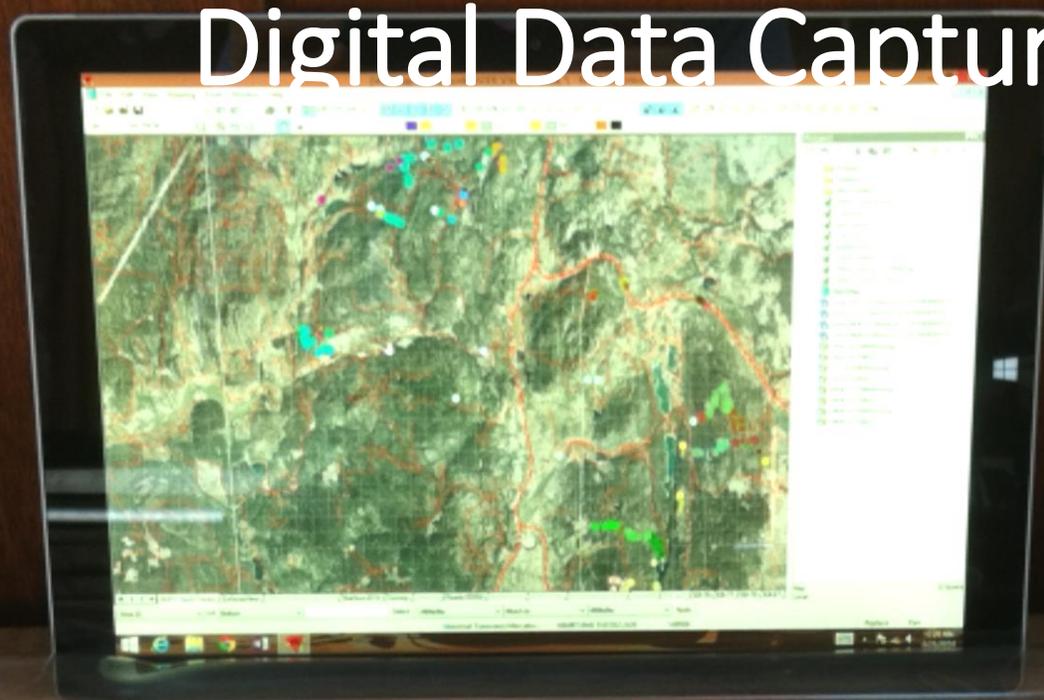
- Materials
- Benefits of digital mapping
- The future



Traditional Mapping Materials

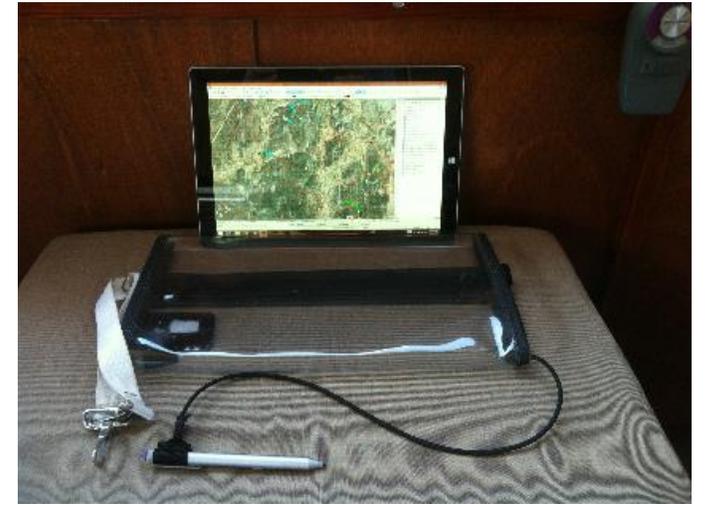


Digital Data Capture



Benefits of Digital Data Capture

- ✓ Easy to use
- ✓ Customizable for situation (ie planning traverses, data layers)
- ✓ Database integration
- ✓ Instant data mapping (structural symbols, rock unit coloration, contacts, labels)
- ✓ Easy data compilation
- ✓ Map creation...Done!



PREFIX IRAV STN SUB STATNUM
 GMc14 2 1 0 GMc14-2-1

WEATHER

DATE AREA
 2014-06-28

EASTING NORTHING ELEVATION GPS ±m
 ± 0

LocationID 9

Lithology Sample Structure MagSus Photo

ROCK NAME: volcanic flow ROCK UNIT: eJKcg

DESCRIPTION: Low lying down dip section with rough surface weathering grey with pink feldspars visible in outcrop scale. In parts glomeroporphyritic. Clasts are largely of same composition but vary in grain size-some are largely aphanitic and some are strongly porphyritic. Some have abundant vesicles (up to 15%) filled partly with zeolite and qz and commonly rimmed by bright green mineral (seladinite?). A brown fine-grained vitreous mineral with somewhat rectangular outlines.

MINERALOGY/ ALTERATION: 10-20% conspicuous pinkish feldspars-rect to rounded. Rounded ones particularly appear to be composite with intergrowths of qz? No polysyn twinning.

STATNUM: GMc14-2-1 LithologyID: 9

Record: 1 of 1 No Filter Search

Database Integration

Rock Unit Coloration

Format

Field: Unit

Method: Unique Values

Palette: Altitude

Values:

ITrAd	11	[Color]
ITrAgd	28	[Color]
ITrNc	257	[Color]
ITrNd	5	[Color]
ITrNhp	43	[Color]
ITrNh	43	[Color]
ITrNI	46	[Color]
ITrNpx	296	[Color]
ITrNs	257	[Color]
ITrNt	21	[Color]
ITrNv	157	[Color]
ITrNvtf	53	[Color]
ITrTu	3	[Color]
mJOg	76	[Color]
mKSBkhp	9	[Color]
mKSgd	107	[Color]

Preview **OK** **Cancel**

Project

- TRIM_contours_100th_sp_CUT
- TRIM_contours_sp_CUT
- NavMap

Map Local. 27 layers

GPS Console - [NavMap]

Drawing: OGPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude:

Bearing:

Mag bearing:

Mag variation:

Latitude:

Longitude:

Quality:

Speed:

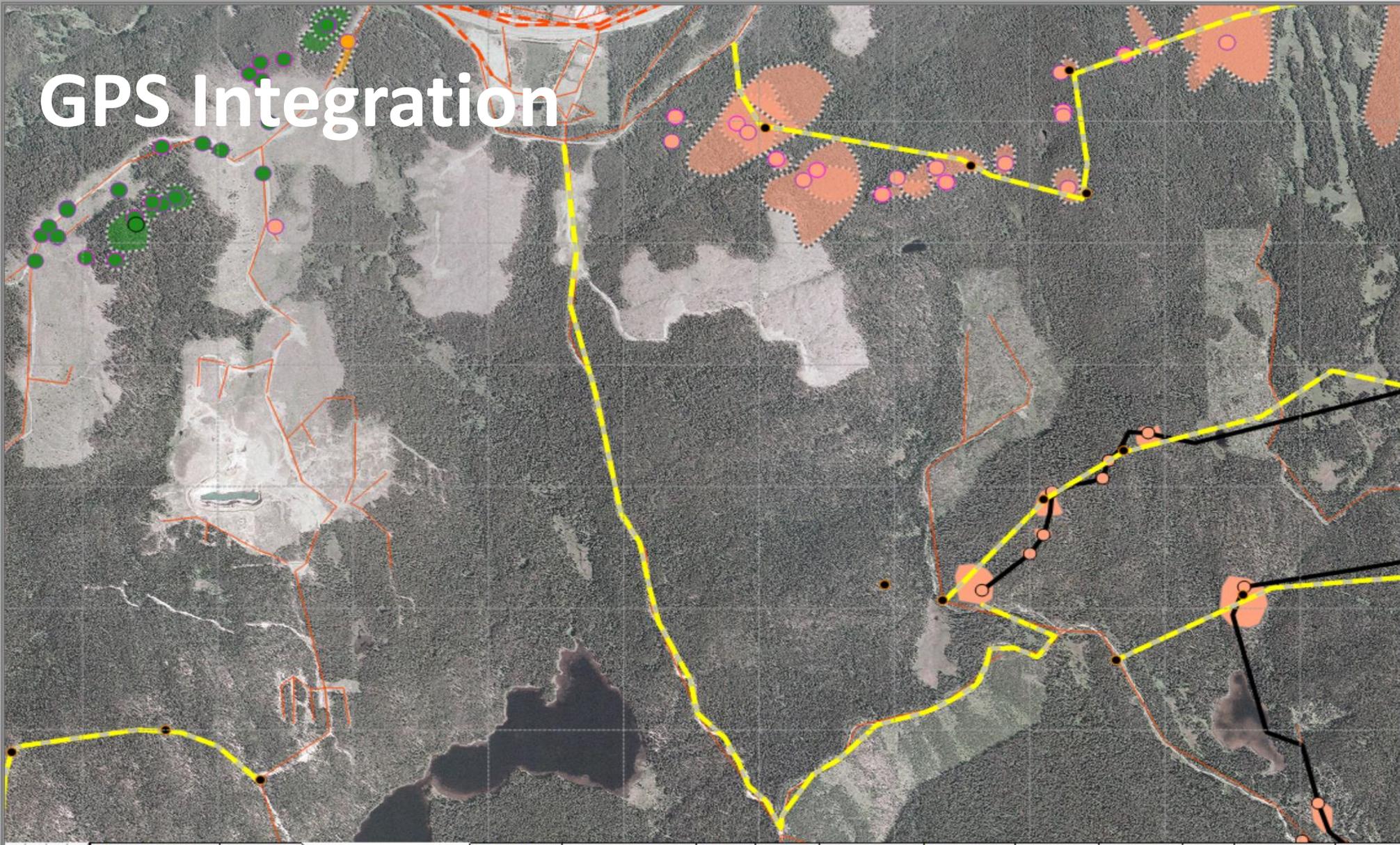
Satellites:

Disconnected.

Info - [NavMap]

Column	Value
StatNum	MHE14-34-9
Subunit o...	
Unit	mJOg
Feature	
Azimuth	0
Diplunge	0
Reliability	0
Mag sus ...	
Photos	
HandSam...	
ThinSection	
Assay	
Officer	MHE14
ID	1128074
GPS Way...	
Geochron	
Isotoed	

GPS Integration



Project

- TRIM_contours_100th_sp_CUT
- TRIM_contours_sp_CUT
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Map Local. 27 layers

GPS Console - [NavMap]

Drawing: 0GPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude: 603.3 m

Bearing: 50.86 degs

Mag bearing: 50.86 degs

Mag variation: 0 degs

Latitude: 50°6.348' N

Longitude: 120°46.500' W

Quality: fix

Speed: 0 km/h

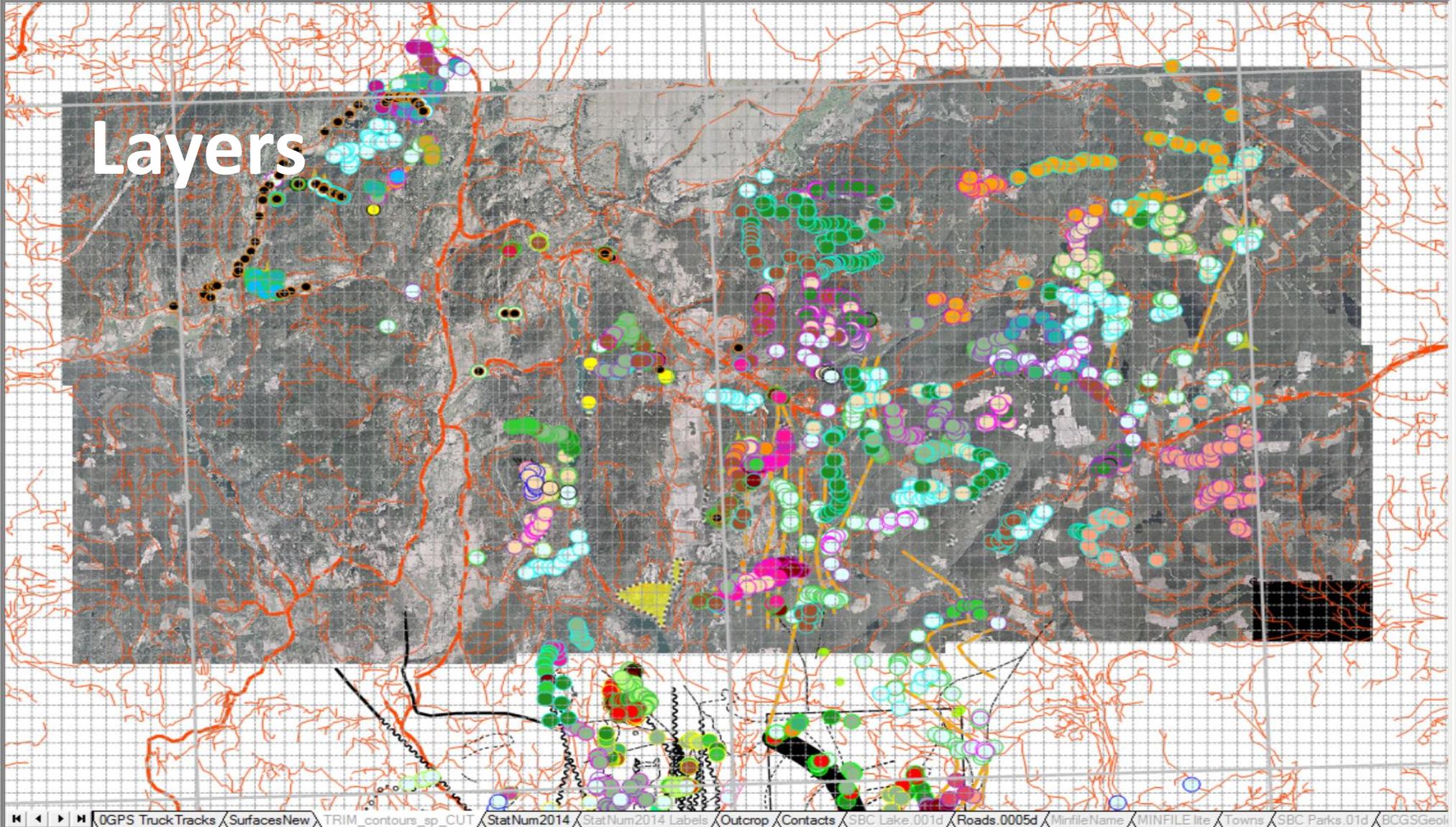
Satellites: 6

Monitoring GPS (NMEA).

Info - [NavMap]

Column	Value
ID	1114821
gid	5451653
mapid	0
map_tile	092H077
type	Intermediate
elevation	860
dsp_type	primaryLine

Layers



Project

- TRIM_contours_100th_sp_CUT
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Map Local. 27 layers

GPS Console - [NavMap]

Drawing: OGPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude:

Bearing:

Mag bearing:

Mag variation:

Latitude:

Longitude:

Quality:

Speed:

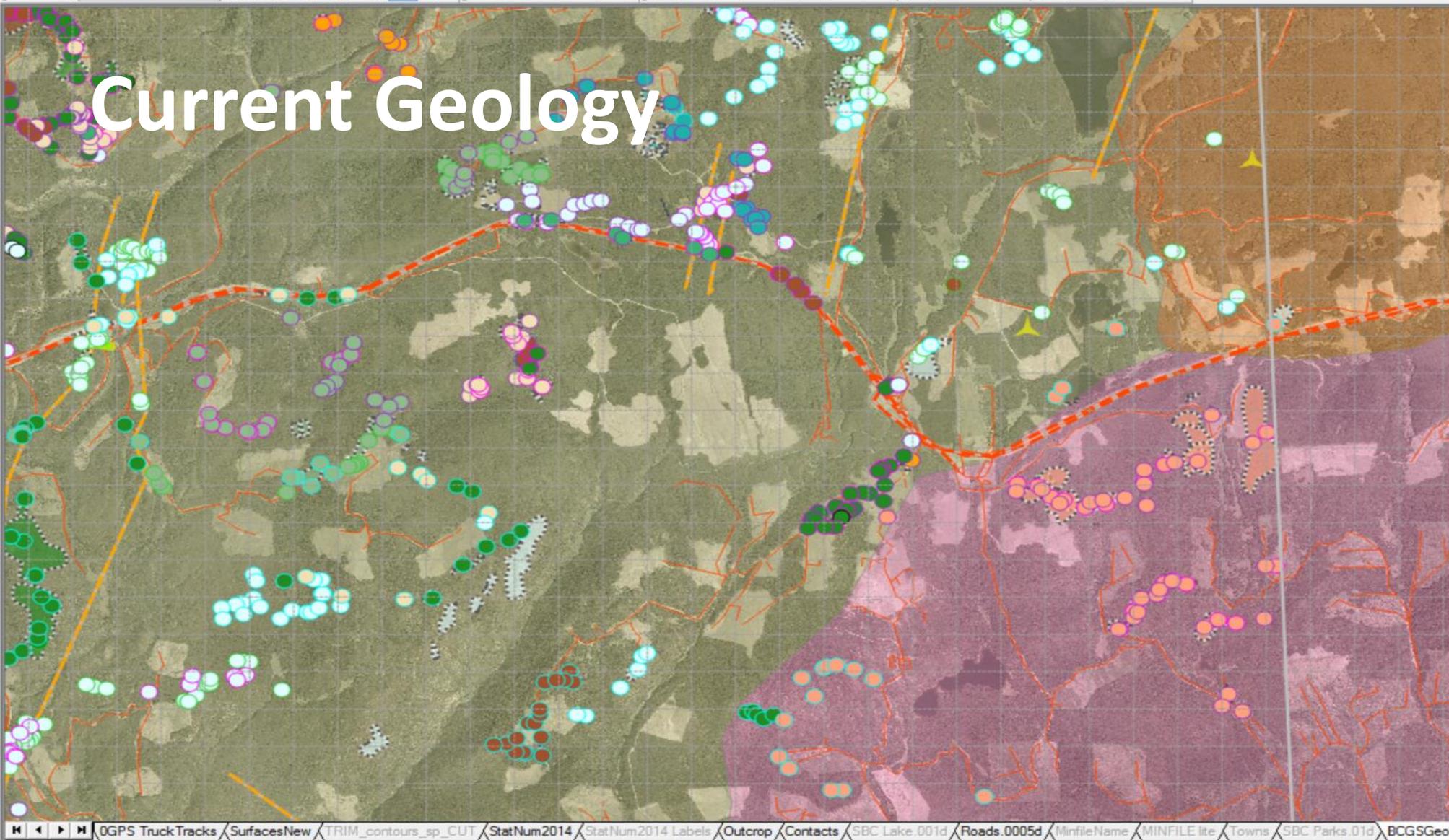
Satellites:

Disconnected.

Info - [NavMap]

Column	Value
ID	1114821
gid	5451653
mapid	0
map_tile	092H077
type	Intermediate
elevation	860
dsp_type	primaryLine

Current Geology



Project

- TRIM_contours_100th_sp_CUT
- TRIM_contours_sp_CUT
- NavMap

Map Local. 27 layers

GPS Console - [NavMap]

Drawing: OGPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude:

Bearing:

Mag bearing:

Mag variation:

Latitude:

Longitude:

Quality:

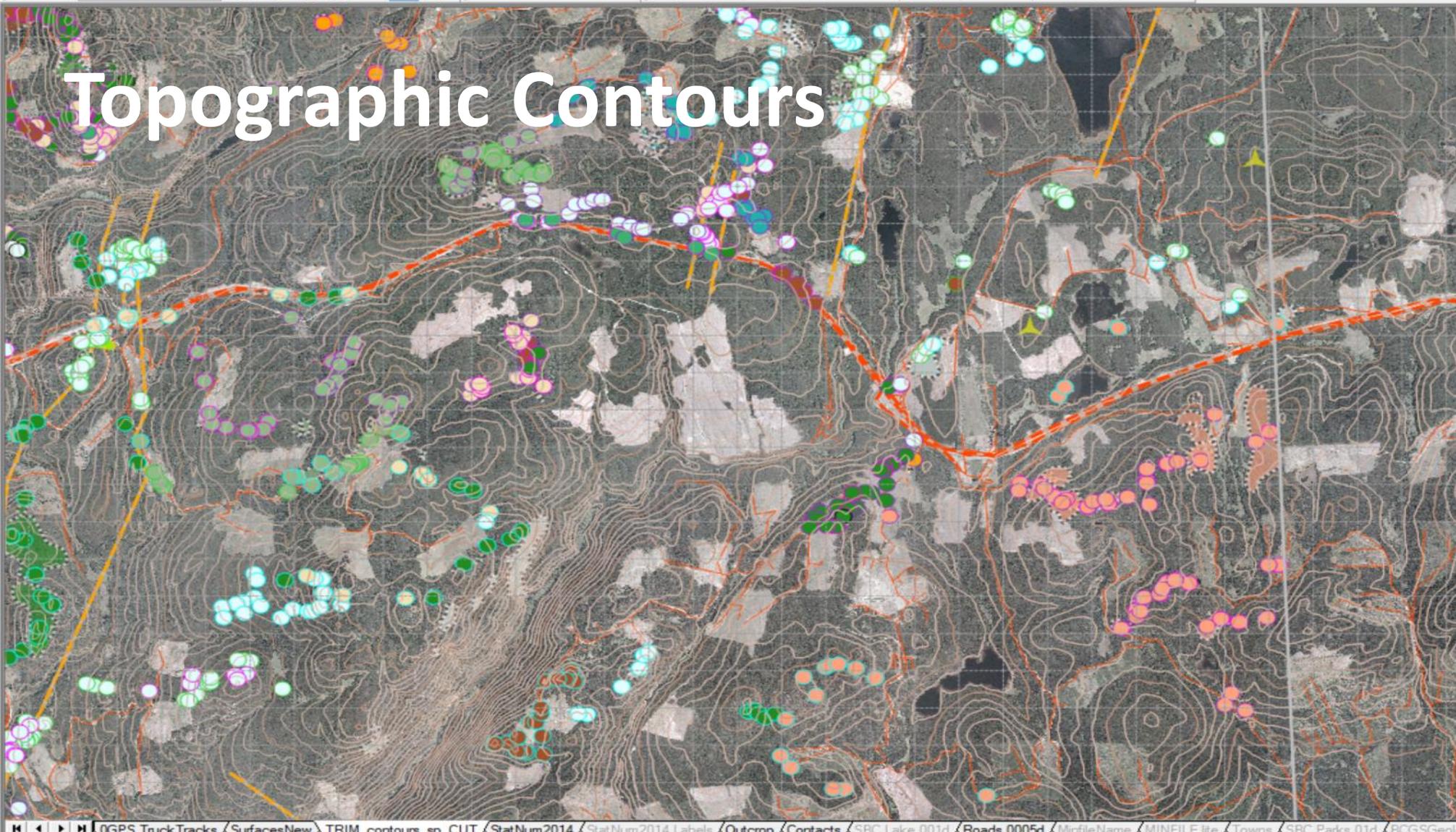
Speed:

Satellites:

Disconnected.

Info - [NavMap]

Column	Value
ID	973265
AREA	1268840
KEYCODE	PZKV_X
TECUNIT	KV
STRAT_U...	PzKvb
ERA	Paleozoic to Mesozoic
PERIOD	Cambrian to Cretaceous
STRAT_AGE	Paleozoic to Cretaceous
STRAT_N...	Unnamed
STRAT_A...	3240
GROUP_...	
FORMATI...	
ROCK_TYPE	basaltic volcanic rocks
ROCK_C...	vb
ROCK_CL...	volcanic rocks
ORIGINA...	Mafic to intermediate volcanics: dark...
AGE MA...	Paleozoic



Topographic Contours

Project

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Map Local 27 layers

GPS Console - [NavMap]

Drawing: OGPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude:

Bearing:

Mag bearing:

Mag variation:

Latitude:

Longitude:

Quality:

Speed:

Satellites:

Disconnected.

Info - [NavMap]

Column	Value
ID	1114821
gid	5451653
mapid	0
map_tile	092H077
type	Intermediate
elevation	860
dsp_type	primaryLine

OGPS TruckTracks \SurfacesNew \TRIM_contours_sp_CUT \StatNum2014 \StatNum2014 Labels \Outcrop \Contacts \SBC Lake.001d \Roads.0005d \MirfileName \MINFILE lite \Towne \SBC Parks.01d \BCGSGeol

Area (l) not Bottom Select AllMirfile Attach to AllMirfile Apply

Universal Transverse Mercator... 687636.4244 5522363.8509 1:55000

LandSat



Project

- TRIM_contours_100th_sp_CUT
- TRIM_contours_sp_CUT
- NavMap

Map: Local. 27 layers

GPS Console - [NavMap]

Drawing: 0GPS TruckTracks

Refresh: 1 secs

Datum: World Geodetic 1984 (WGS84)

Altitude:

Bearing:

Mag bearing:

Mag variation:

Latitude:

Longitude:

Quality:

Speed:

Satellites:

Disconnected.

Info - [NavMap]

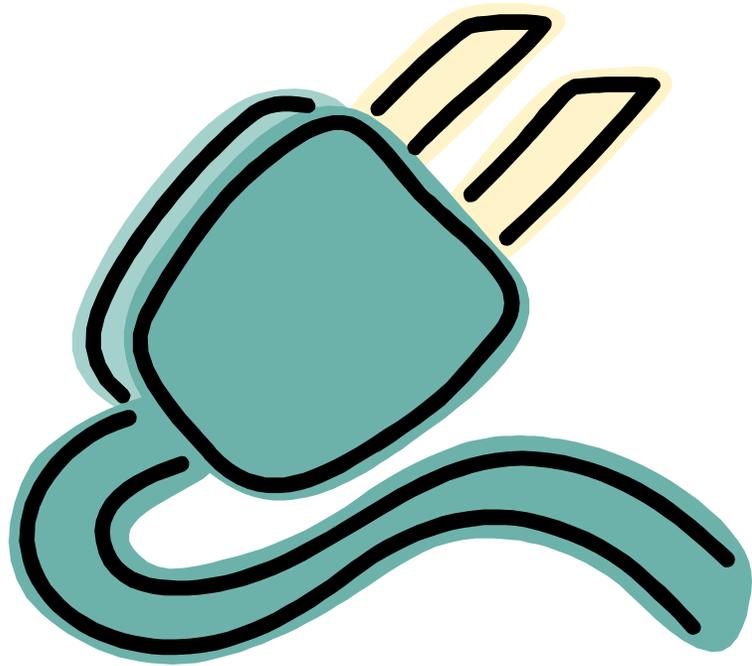
Information panel for the current map layer.

Why Digital Data Capture?

- ✓ Data at your fingertips
- ✓ Multiple drawings for traverse planning, roads, topographic overlays etc...
- ✓ Modifications can be made easily in the field
- ✓ Database for easy note taking and GIS integration
- ✓ Syncing of data from mapping crews
- ✓ Less time spent transferring data to build a map and data table
- ✓ Instantaneous map creation: Saving you TIME, ENERGY, and \$\$\$



Obstacles



The Future

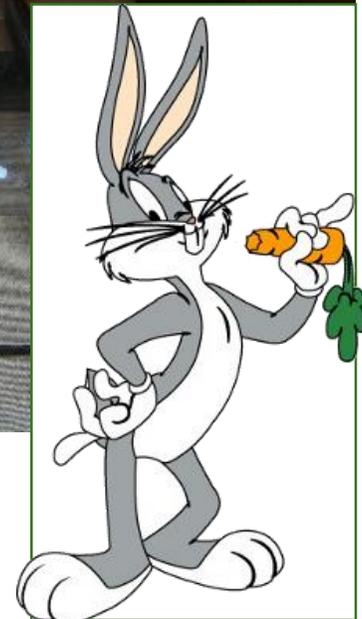
- Real-time data sharing and map generation
 - Data backups
 - Safety!

Out with the old...



http://looneytunesshow.wikia.com/wiki/Yosemite_Sam

In with the new...



http://en.wikipedia.org/wiki/Bugs_Bunny