GROUND COLLAPSE AT FONTMELL CLOSE ST. ALBANS

Microgravity Survey

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1 INTRODUCTION

In the early hours of 1 October 2015 a large subsidence event resulted in a 12m diameter crown hole appearing on Fontmell Close in St Albans, Hertfordshire at National Grid Reference 515454 208424. The location of Fontmell Close is shown on Figure 1531/1. The crown hole extended across the full width of the carriageway and encroached into residential gardens on both sides of the road, as shown on the site plan (Figure 1531/2). Photographs of the collapse are included on Plates 1 to 5 of this report and Plates 6 to 10 show the collapse partially infilled and gravity acquisition in the area. The collapse presented an immediate threat to nearby residents who were evacuated to a place of safety by the emergency services. The collapse caused utilities to be severed, requiring the utility companies to terminate their apparatus safely. Properties further up Fontmell Close than the collapse and all of those in Bridle Close have lost utilities as a result of the collapse.

Hertfordshire County Council (HCC) responded to the collapse and immediately instructed Ringway (the County's Term Maintenance contractor) to commence a scheme of bulk backfilling using foam concrete. The emergency filling work was required to provide immediate support to the steep sided crown hole so that the hole could be approached and assessed in advance of eventually restoring utilities and the road surface reinstatement. Bulk filling work commenced on 2 October and was completed to within 0.6m of the surface on 6 October. A total of 535m^3 of foam concrete was pumped into the crown hole.

Within a day of the collapse occurring, HCC and its technical advisor Opus International Consultants (UK) Ltd had devised a strategy to investigate the risk to the public highway in the vicinity of the collapse. The investigation is staged and follows best geotechnical practice. Geotechnology Limited was requested to attend site as a matter of urgency to contribute geotechnical and geophysical expertise to the investigation and arrived on site the following day. The scope of work was defined as a geophysical survey of the public highway from the junction of Fontmell Close and Seymour Road to cover the whole of Fontmell Close and Bridle Close, from footpath to footpath including the road surface. During the survey works an additional area at the temporary point of access in the adjoining playing fields was also defined and added to the survey by St. Albans District Council.

Geotechnology has used the microgravity method to carry out the geophysical survey. The microgravity method is a non-invasive survey method which produces a plan of very small changes in gravity across the study area. There is a strong correlation between the presence of low density ground (including caves, mineworkings, sinkholes, loose fill etc.) and reduced gravity, so this method is an established means of searching for ground that is liable to subside. This method has been used successfully by Geotechnology during a cavity detection survey at Highbarns in Hemel Hempstead for Dacorum Borough Council. It has also been used at many locations over the chalk bedrock belt between Hertfordshire and East Anglia, as well as more widely in other geological settings.

This report describes how the microgravity survey was carried out and provides plans of the data acquisition layout and the processed gravity measurements. An interpretation of the data is provided together with recommendations for follow-up works to confirm the findings of the study.

2 THE SITE

Fontmell Close is located in a residential area to the northeast of St Albans. Fontmell Close is a cul-de-sac that provides access to Bridle Close, another cul-de-sac. Residential properties along Fontmell Close comprise brick built two storey semi-detached, link and detached dwellings and a small number of bungalows. Most properties have front and rear gardens and driveways. Properties along Bridle Close are mostly detached with front and rear gardens. Both Fontmell Close and Bridle Close are topographically level. Access to Fontmell Close is off Seymour Road.

The immediate surrounding area comprises residential properties to the north and east and open recreational areas to the south (Bernard's Heath) and west. To the rear of the southern-most properties on Bridle Close is a densely wooded area which forms a buffer between the residential street and Bernard's Heath to the south. The ground within the wooded area is distinctly undulating and very different to the surrounding flat ground. Brief inspection of the wooded area has revealed a small (<1.5 m high) retaining wall at the bottom of some gardens which back onto the woods.

Beyond the recreational area to the west are buildings belonging to Heathlands School, St Albans Ambulance Station, St Albans Judo Club and Pioneer Skatepark.

3 SITE HISTORY

To improve understanding of the site history and potential implications for the current situation, Geotechnology has purchased historical maps from Envirocheck, part of the Landmark Information Group, on 6 October 2015 (Order Ref: 73374978). This order requested electronic copies of all historical maps held by Landmark which resulted in the supply of maps dating from 1878 (see Appendix 1). This review is based on the available plans. To assist with the review and interpretation of the historical maps the on-line Envirocheck Analysis tool was utilised to overlay selected black and white historical maps onto the coloured current Ordnance Survey (OS) plan. Extracts from this analysis, focussed on the area immediately surrounding the collapse, are presented in Figures 3 through to 10.

The earliest plan from 1878 (Figure 1531/3) shows several clay pits of various extent and shape, two Brick Kilns, two Lime Kilns and three shafts. One of the larger clay pits is located where Fontmell Close and Bridle Close are later developed, and where the current collapse occurred. Other clay pits, to the west, are coincident with the areas later developed into recreational areas, properties off Heath Farm Lane and Heathlands School. Collectively, the features shown on the earliest historical map suggests that clay, and possibly the underlying chalk, was being extracted.

By 1898 (Figure 1531/4), the clay pits, brick kilns, lime kilns and shafts are no longer shown as features on the map but instead, some of the pits are marked as Old Clay Pits. Although the pits are referred to as Old Clay Pits the map suggests that some of those in the west were extended towards those in the East between 1878 and 1898. To the southwest of Heathlands School a Tallow Works is also shown.

In the early part of the twentieth century, the historical maps document the construction of residential properties in the area and refer to the Tallow Works as Ariston Works (Suet and Tallow). In the immediate vicinity of the current collapse, the residential development commences along Sandridge Road to the east of the collapse (see Figure 1531/5) and later along Seymour Road to the north (see Figure 1531/6). On the 1939 edition (Figure 1531/6), the residential properties are shown to the south, east and north of a tear dropped feature which is coincident with the large clay pit seen in this area on the earlier 1878 map but which was not on the 1898 plan, where the ground appeared to have been infilled. The tear drop shape of the feature and embankment markings suggest that it is orientated approximately southeast – northwest and deeper in the northwest; it is mapped as an excavation or depression in an area that appears to have been infilled.

By the mid twentieth century, the tear drop feature is less distinct as are many of the other Old Clay Pits, presumably because they have been infilled. One of the earliest recorded uses of this infilled land is a Builder's Yard, shown on the 1963 plan (see Figure 1531/7), in a position where Bridle Close is later developed. The works to the northwest are also no longer marked on this map but a Well is shown in the area to the immediate southwest of what becomes Bridle Close.

Over the next decade, the immediate area around the current collapse is further developed with the loss of the Builder's Yard and the creation of Fontmell Close and Bridle Close and associated residential properties. The 1973 map (see Figure 1531/9) does still however reveal outlines and depressions associated with the former clay pits to the south and southwest in the current recreation areas and to the north of the properties off Heath Farm Lane. Since this time, very little has changed in the immediate area.

The historical maps provide a useful insight into the development of ground conditions. Collectively, the features (clay pits, brick kilns, shafts and lime kilns) shown on the earliest historical maps suggest that clay and possibly chalk was being extracted. Clay extraction appears to have been occurring in open excavations (clay pits), whilst the underlying chalk appears to have been worked through underground workings served by shafts to the west of the site. At this stage it is unclear if the shafts shown on the early edition maps were used for mine entry or as air shafts to provide fresh air into the underground workings. It is however, reasonable to postulate that the chalk miners would have chosen the easiest route to the chalk which may have been through the base of an existing clay pit. If this were the case, the shafts could be air shafts and the former clay pits, potential points of entry to the underlying chalk.

Following the extraction activity, other industries developed and with time the excavations were infilled. As a consequence, some existing structures have been developed over previously infilled land.

4 CONCEPTUAL SITE MODEL

Geotechnology has been commissioned to carry out a geophysical survey of the roads around the collapse in order to focus the ground investigation by identifying any areas of anomalously low mass. In order to start the process of understanding the ground, which in turn assists the interpretation of the gravity results, an initial desk study has been carried out. This study has examined published historical Ordnance Survey maps which have been overlaid onto the current site plan. This has confirmed anecdotal evidence from residents that the site was once a clay pit that had been backfilled.

The published Geological maps for the area reveal that outside the clay pits the surface is underlain by a layer of unconsolidated sand and gravel (Kesgrave subgroup) of unspecified depth (though likely to be 2 metres or so). Beneath this is a layer of Reading Beds clay, again of unspecified thickness. The clays of the Reading Beds are known to be the locally productive source of brick clay with a clay rich sand at its base known as the Upnor Beds. Beneath the Reading Beds is a substantial thickness of Chalk bedrock. The geological information is consistent with the development of the clay pits, which appear to have been excavating clays from the Reading Beds for brick making.

The depth to the Chalk bedrock is not known. However, there are two lines of evidence to suggest that the chalk lies at a depth of about 9m below existing ground level: firstly a series of dynamic probe results kindly shown to Geotechnology by a householder within the site and secondly an account in the Herts Advertiser on 19 April 1890, recounted in Dr Chris Reynolds' comprehensive account of the history of Bernard's Heath, published on line.

The dynamic probe results were driven into the ground within the area of a clay pit and therefore it would be expected that the probe was driven through backfill to the base of the pit and then into the underlying natural strata. The logs show a sequence of variable but generally very weak ground to a depth of typically 9m after which the ground becomes strong. This is interpreted as being the base of the backfill (and hence the base of the clay pit). It is likely that the brickmakers would dig the clay reserve until it ran out, which would be the Upnor Beds directly over the chalk surface. Accordingly, a working hypothesis is that the base of the clay pits is close to the top of the chalk bedrock and that this interface is at about 9m below ground level.

Dr Reynolds' account of the history of the area includes an extract from the local newspaper published in 1890. This article concerns the death of a child who drowned in the clay pits on Bernard's Heath; the article complains about the dangerous pits "some of which are 30 feet deep". This article indicates that the pits were flooded and also that their depth was 9.1m deep. The article then indicates that to make the area safe the pits were infilled with waste from St Albans in the early 20th century. At this time, waste from the area would not be like modern waste – it would be expected that the waste comprised principally ash, together with bone, glass and metal without the large concentrations of organic food waste, plastic, paper and textiles seen in today's waste streams.

The result of this initial desk study research is that a conceptual understanding of the site can be developed. This is much like the understanding many of the residents already have though certain technical aspects can be added. The site development can be described as follows:

- Geological processes lay down a layer of chalk overlain with a layer of clay (with sand at its base)

- Natural processes lay down a thin layer of sand and gravel over the clay and the area becomes recognisable as Bernard's Heath
- In the 1800's the clay on Bernard's Heath is recognised as brick clay and it is exploited by digging a series of steep sided pits after first scraping off the sand and gravel
- Through the 1800's the clay digging continues at several locations on the Heath including the area that is now beneath Fontmell Close and Bridle Close
- The clay pits were excavated though the full thickness of the good clay deposit to a depth of 30 feet or about 9 metres, with a floor that is at or close to the underlying chalk bedrock
- Brickmaking continued at the site until the reserve was expired or the economics of brick production made brickmaking unfeasible and the clay pits were abandoned
- A tragic incident in 1890 led to public pressure to make the area safer and as a result the pits were infilled with town waste, probably in an uncontrolled manner
- By 1898 the pits were largely filled, though not completely filled, as the OS plan of the time shows
- By 1924 a depression is shown within the site though there is no explanation for its cause
- By 1963 the site was occupied by a builder's yard and even though common boundaries can be seen the site is now largely brought to current level, probably with additional imported building waste and ballast.
- Fontmell Close and Bridle Close were developed over the backfilled clay pit by 1973 and anecdotal evidence indicates that some foundations were on piles
- Anecdotal evidence indicates that since construction, a number of properties have suffered subsidence with a number of properties being underpinned with piles

This history of the site development allows a conceptual geological cross section to be produced, as shown on Figure 1531/11. It is within this geological setting that the road collapse has occurred.

The conceptual geological model does not in any way explain the appearance of a single large collapse at this location. Careful overlaying of early edition OS plans onto the current site plan confirms that the collapse lies within the area of the clay pit yet this process has appeared as a discrete, localised feature rather than as subsidence extending more generally across the whole of the area underlain by backfilled clay pit.

The collapse has a surface area of 128.6m^2 which equates to an average diameter of 12.8m. The hole has been backfilled with 535m^3 of foam concrete to bring the concrete level to an average of 0.6m below surrounding ground level. Thus the collapse has a total volume of 603m^3. If the collapsed ground was thought of as the lower half of a sphere with a diameter of 12.8m it would have a volume of 549m^3 which is so close to the actual volume used that this is considered to be a good approximation. Accordingly, the collapse has dropped the ground surface by 7m (6.4m diameter plus 0.6m from surface). The conclusion is that the base of the collapse is only a short distance above the chalk bedrock.

The ground has undergone a process of catastrophic collapse and this process can only occur when there is an open void within the ground into which the ground can fall. The volume of that open void is now known to be 603m^3 which could simply be thought of as a spherical void of 10.5m diameter in the ground beneath the collapse. This could be thought of as a vertical cylinder or other shapes but in the absence of any further information as an initial conceptual void model this is suitable.

Collapse features can also occur when acute ground settlement is associated with water leaks or inundation by groundwater. Water within the ground has the capacity to remove material from within the ground only when it has an outflow (for example into a cave) or when it is able to compact the ground by making the material denser. This last process often leads to settlement of the sort experienced previously in the area. With a total thickness of backfill at this site of 9m and a collapse 7m deep it is difficult to imagine that this process of densification is responsible for this particular collapse. This being the case the cause of the collapse is likely to be some form of open void within the ground.

Open voids in soils or backfill are highly unstable and do not sustain themselves for long before collapsing, whereas open voids in more competent materials such as bedrock can remain viable for long periods of time before suddenly collapsing. It is known that the bedrock beneath this site is chalk, a stratum that is susceptible to the development of caves, cavities, fissures and swallow-holes due to dissolution over geological timescales. Chalk is also a material which is widely exploited for the production of lime for both agriculture and building by excavating surface pits and underground mines. The presence of a naturally occurring cavity caused by dissolution is certainly one possible mechanism to explain a large open void in the ground beneath the collapse.

The early edition Ordnance Survey plans do not indicate a chalk mine or chalk pit at the site, though several shafts are indicated nearby at the site of the Fire Station. Both at the brickworks at the Fire Station and the brickworks at Fontmell Close a limekiln is indicated. These would require chalk for lime burning. The conceptual geological model suggests that at the base of the clay pits chalk would either be exposed or would be very close to the base of the pits. Excavating chalk within the clay pit is a rational means to feed a limekiln at the site and therefore this has to be a strong possibility to explain the presence of a large void within the ground.

Excavations within the chalk are often undertaken from Dene Holes. These are excavations with the shape of an inverted funnel – narrow at the top and then widening out to the point where instability could be problematic. More sophisticated mining was carried out by driving sloping tunnels into the chalk until a productive band of good quality chalk was hit, thereafter following the band of chalk in a network of tunnels. Chalk workings in the Hertfordshire area that have previously been investigated by Geotechnology could comfortably allow 600m^3 to be lost into shallow workings.

Research of published sources together with unpublished evidence and anecdotal evidence from local residents has allowed a preliminary understanding of the site context to be developed. Examination of the collapse geometry and filling records in combination with the conceptual site model leads to the conclusion that the ground has collapsed into a self-supporting void in the ground. The collapse has progressed to a depth of some 7m which is just above the full depth of the clay pits. It is thought most likely that the void that led to the collapse was a feature at or just below rockhead. Both a natural solution feature or a mineworking in the chalk bedrock are plausible explanations for such a void, but the presence of a limekiln at the site during the late 19th century would support the hypothesis of an unrecorded chalk working.

5 MICROGRAVITY DATA ACQUISITION

5.1 Data Acquisition Equipment

5.1.1 Gravity Meter

A Scintrex CG-5 automated gravity meter was used to acquire microgravity data. The instrument is a highly sensitive digital gravity meter which observes the displacement of a mass suspended on a quartz spring at a frequency of 6 Hz for preset periods. During much of the survey period the survey acquisition conditions allowed the acquisition quality criteria to be met at 60 seconds. Thus, each gravity value is based upon a statistical distribution of 360 individual readings. However, high winds during two days caused excessive ground vibration and degraded the signal to noise ratio. Accordingly, at these times the observation period extended to 90 seconds, and the dataset comprised 540 individual readings.

5.1.2 Survey Equipment

Topographic surveying was carried out by site staff using a Topcon QS Robotic Total Station. The high resolution instrument is able to establish co-ordinates and elevations to a precision of $\pm$ 2mm, which is appropriate for microgravity surveys.

The 2.5 metre orthogonal grid was set out using the kerb as a baseline; observation stations were set out using marked chains and spray paint and then surveyed with the QS total station.

5.1.3 Field Computers

A field laptop computer was used to download data gathered by the gravity meter and the QS total station. Gravity data was downloaded using the proprietary Scintrex download utility (SCTUTIL) and was converted into the format required by the Geotechnology quality control software.

Both the gravity and topographic data-sets were combined within GravReduce, an automated field processing and quality control package, developed by Keele University in collaboration with Geotechnology Limited, for the field control of microgravity data.

5.2 Data Acquisition Procedures

5.2.1 Topographic Survey and Setting-Out

The kerbs in Fontmell Close and Bridle Close proved to be useful baselines and so the gravity profiles were set-out parallel to the kerb lines as shown on Figure 1531/12. Gravity observation stations were set-out at 2.5m intervals along each profile, with the start point for each profile being a line drawn normal to the road direction. A line/station nomenclature was used to identify the gravity observations, with the profiles named Line 1, 2, 3 and so on and the gravity observations along each profile numbered Station 0, 1, 2 and so on.

At the commencement of the survey the area directly around the collapse was fenced off until Ringway could complete the infilling with foam concrete. Accordingly, there was not access to all parts of the site. In order to commence works without delay it was decided to split the survey into 4 discrete parts. The following section describes the sub-division of the site which is illustrated on Figure 1531/12.

The first part of the survey is the 4 profiles along Bridle Close. These are numbered Lines 01, 02, 03 and 04 and commence at the front of Numbers 16 and 18 Fontmell Close with Station 0 and progress up the entire length of Bridle Close.

The second part of the survey is the northwestern end of Fontmell Close and these profiles are labelled Lines 11, 12, 13 and 14. Gravity observations along each of the lines commenced adjacent to survey line 04 which runs along Bridle Close, and station numbers increase in a northwesterly direction.

The third part of the survey comprised a part of the adjacent playing field and was carried out as this is now a critical point of temporary access. In this area survey lines are labelled 21, 22, 23, 24, 25, 26, 27 and 28 and the observation stations increase from north to south.

The final part of the survey is Fontmell Close from its junction with Bridle Close to its junction with Seymour Road. This part includes the area directly around the collapse and includes data from within the collapse. Access to this area was not possible until the foam concrete had set and accordingly this area was acquired last. The profiles are labelled Lines 31, 32, 33 and 34 with the stations increasing from Bridle Close toward Seymour Road.

Topographic control was established by setting out a series of 13 Survey Control Stations around the site. Each Control Station was surveyed using a Topcon GRS differential GPS network rover to establish Ordnance Survey national grid coordinates for each point. Having set out the survey control, each point was surveyed to Ordnance Datum with millimetre precision using the QS total station. Key features such as kerb lines, trees, inspection covers and street furniture were recorded where appropriate, as well as the outline of the collapse and the associated cracking around the collapse.

5.2.2 Gravity Meter Set-Up

The gravity meter was brought to the primary base station (outside Number 14 Bridle Close) and allowed to settle for several hours after having first been levelled. During this time, readings were taken at 60 second intervals to monitor background noise. Functionality checks were carried out to determine that the instrument was operating correctly and the drift and tilt sensitivity was adjusted to reduce the need for processing corrections. When the readings showed stable and repeatable values of gravity, it was set-up for acquisition with the following parameters:

Line direction	+
Auto Station Increment	Not Selected
Line separation	1
Station separation	1
Read time	60 seconds
Calibrate after	12 seconds
Continuous tilt correction	Selected
Auto rejection	Selected
Tide correction	Selected
Latitude	51.8 degrees North
Longitude	0.3 degrees West
GMT difference	-1
Seismic filter	Not Selected
Auto record	Not Selected
Drift and Tilt Sensitivity	Calibrated by Geomatrix day before survey

5.2.3 Base Station

Microgravity surveys do not measure absolute gravity directly, but measure the relative gravity between the observation stations and a base station. A base station was selected on a good surface adjacent to a short wall in front of Number 14 Bridle Close and all measurements have been made relative to this.

The daily routine commenced with three observations of gravity at the base station followed by gravity observations at the survey stations. Whilst it is possible to acquire data for long periods before closing with a base station observation, it is established good practice to re-observe the base station at regular intervals. Base station re-observations were made at a time interval of about 1.5 to 2 hours and also at the end of each survey line.

5.2.4 Gravity Meter Deployment

The road is surfaced with blacktop as are the footpaths; accordingly gravity meter set-up conditions were good. The stabilising frame was used to control meter tilts and field procedures ensured that the height difference between the meter and the ground surface remained constant for each observation. In the field area, gravity meter set up was less stable and the stabilising frame was used to control tilts on the soft surface. The relationship between the ground surface and the meter has the potential to vary under such circumstances and accordingly the height of the meter above the measuring nail was measured at each set-up.

5.2.5 Survey Design

Prior to the microgravity survey being commissioned, Geotechnology considered geological conditions at the site. Using this information and the results of previous similar surveys on the same strata, it was considered that a data spacing of 2.5m was able to resolve features at the depth of interest, providing a balance between resolution and cost. Consequently, the survey was designed upon a 2.5m orthogonal grid of gravity observations, which were offset by the curve in the road around the collapse.

5.2.6 Gravity Meter Acquisition Procedure

The gravity meter was deployed daily into the survey area and commenced data acquisition using the following system:

1) Three to five base station observations (or as many as required to meet repeatability threshold)
2) Set-up on first line, first station
3) Level gravity meter to within 5 arc seconds
4) Commence acquisition and observe data statistics after first calibration period (12 seconds)
5) If standard deviation of initial sample exceeds 150 microgals, abort reading and move back to stage 3, otherwise continue
6) Allow meter to acquire for 60 seconds and observe statistics during acquisition. Examine final data statistics. If standard deviation exceeds 100 microgals or if calculated error exceeds 10 microgals or if tilts exceed 10 arc seconds move back to stage 3, otherwise continue
7) At least twice per line re-observe a randomly selected station for quality control checks.

8) Move to next station and repeat observation steps until the line is complete. At regular intervals return to base station and carry out 3 base station observations.

At the end of each working day the instrument was returned to a controlled, quiet environment to remain on charge in a levelled position on a solid surface. Data was downloaded via a USB cable onto a laptop computer for quality control and data reduction. Data points identified as suspect by an examination of the reduced data would have been scheduled for re-observation the following day, but in this dataset no suspect datapoints were identified.

5.2.7 Programme

The fieldwork was carried out between 3 and 11 October 2015. Site work commenced with setting out in accessible parts of the site. The inner cordon, which included the collapse was not considered sufficiently safe for access until 8 October, so work up until this point was focussed on Bridle Close and Fontmell Close above its junction with Bridal Close. Processing and interpretation was carried out over the following week with the final report submitted on 21 October.

5.2.8 Weather and Seismic Conditions

The data acquisition period commenced with exceptional data acquisition conditions. Settled high pressure dominated the weather and the standard deviations of observations until the 13 October were typically 20 microgals or less. Conditions during the middle of the survey deteriorated as a series of weather fronts passed through and this required the duration of each observation to be increased due to wind and heavy showers. The final few days of the survey saw a return to low wind speeds with overcast or bright conditions. This allowed the duration of readings to be returned to the original 60 seconds.

Seismicity was seen during the middle of the survey. The frequency of vibration indicated that this was caused by tele-seismic activity caused by high winds over the UK. The combination of seismic filtering and extended observation periods successfully eliminated the noise from the dataset.

5.2.9 Data Quality Control

A statistical distribution of all 151 repeat readings made during the survey has been developed. The median value of repeatability is 2 microgals. The average repeatability of this dataset is 2.8 microgals. A good dataset will have an average of less than 10 microgals and an exceptional dataset will have an average of less than 5 microgals. As the average for this dataset is less than 5 microgals, this is an exceptional dataset.

A total of 151 repeatability measurements were made to verify the instrument performance by repeating the gravity observation. A minimum of 10% is required to verify the dataset but the 151 measurements made during this study amounts to 24.5% of the data points re-observed.

A further statistical method to verify the dataset is reproducibility. This measures not only the accuracy of the instrument and the operator in taking the observation but also measures the accuracy of the entire set-up process and the surveying. A total of 10 gravity stations were re-visited at the end of the survey and the meter set-up and a comparative observation made. The result of this test is a mean reproducibility of 4.7 microglas and a median

reproducibility of 2.5 microgals. An exceptional dataset will have an average of less than 8 microgals and a median of less than 5 microgals.

The statistical measures of gravity data acquisition accuracy have shown that the dataset is of exceptional quality, a combination of rigorous field procedure combined with extremely fortunate acquisition weather and seismic conditions.

6 DATA PROCESSING

6.1 Gravity Data Reduction

Field microgravity data appears to the instrument operator to be complex and difficult to relate to local geology, due to the effects of earth tides, regional and local gradients, terrain, elevation and anomalies. Data was reduced daily by Geotechnology in order that preliminary processing of the data could be undertaken during the survey to examine quality and also to identify any suspect data points. By examining the gravity results in this way, spurious data points were selected for later re-observation. The simple correction program removed the effects of earth tides and instrument drift from the raw data.

The completed data set for data reduction comprised:

122	base station observations
617	microgravity station values
161	additional quality control values and times
631	X Y and Z co-ordinates

The 617 gravity values were obtained from a total of 331,740 gravity measurements.

With the data expressed in microgals the Earth tide correction was applied from values calculated within the software. Instrument drift was then subtracted on the basis of linear drift between base station observations. The above steps result in an expression of the relative raw gravity between each of the gravity stations and the base station (Appendix 2 and 3).

6.2 Data Corrections

The data was corrected for the Free Air and Bouguer effects as is usual with all microgravity studies. A detailed explanation of these processes is given in the sections below.

6.2.1 Free Air and Bouguer Corrections

The topographic data files were merged with the gravity data, from which the height difference between each of the stations and the base station was calculated.

Gravity varies with distance from the centre of the earth in two ways.

i) The Free-air effect which accounts for the decrease in gravity due to the inverse-square law; gravity reduces by 0.3086 mgals per metre close to sea-level.

ii) The Bouguer effect which compensates for the uniform slab of rock which lies between the reference level and the observing station. The correction for this is $2\pi G\rho t$ where G is Newton's constant of Universal Gravitation (6.67×10^{-11} $m^3kg^{-1}s^{-2}$), ρ is the rock density and t is the height difference between the reference surface and the observing point.

A free air correction was applied to the raw gravity data in proportion to the relative height difference. The relative height and density of local rock were then used to calculate the Bouguer correction, which accounts for the extra mass that is present at stations higher than the base and mass that is missing at stations lower than the base. The gravity value at each station after these two corrections were made is known as the Bouguer gravity anomaly.

The Bouguer and Free-Air corrections were calculated based on a density of 2400 kg/m^3, this value was determined statistically from the data set by obtaining the minimum correlation between gravity and topography. It is possible that this density value may require modification and that the gravity maps be recalculated should the results from the geotechnical borehole and testing programme show near surface densities different to this.

6.2.2 Terrain Correction

Whilst the Bouguer correction removes most of the effect of the rock slab beneath the observation point, the local variations in topography produces gravitational effects which are known as terrain anomalies. These can be very significant in microgravity surveying particularly where the terrain is severe. However, the small difference in elevation across the site and the site's uniform gradient have not unduly influenced the gravity plan. Accordingly, a terrain correction has not been applied to the data.

6.2.3 Building Correction

In surveys of highest accuracy, the gravitational attraction of surrounding buildings can be significant and constitutes an upward gravitational attraction (effectively a reduction in the local value of gravity). The gravity effect of buildings drops away very steeply with significant influence being noted within 1m or so. At this site, with the exception on one house, buildings are present no closer than 10m from the nearest line. Accordingly, there is not expected to be any influence from the buildings and an examination of the data confirms this. Consequently, a building correction has not been applied to this dataset.

6.2.4 Residualising

The Raw Bouguer gravity plan (Figure 1531/13) shows in very great detail the variation in the strength of gravity over a study area. The gravity is a consequence mainly of the Earth's gross field, but also contains contributions from deep and shallow geology. The interpretation of near surface features from a simple Bouguer map is almost impossible due to the very small gravity contribution arising from the near surface compared to the dominant contribution arising from deep geology and the Earth's main field. Decomposing the Bouguer map accurately into its components is the key to successful microgravity surveying.

Separating the components of a gravity map relies on the fact that shallow features produce shorter wavelength anomalies than deeper features. By a process of filtering and/or trend-surface analysis, longer wavelength components can be removed, to leave the gravity contribution from the near surface. The process of splitting the components is termed residualising and is carried out by removing a regional surface, to be left with a residual map.

The data for this project was residualised by carefully examining the Bouguer map to determine the order of regional field which best removes the long-wavelength effect, without seriously degrading the anomaly field. The effect of the function on the power of the anomalies was carefully examined and the residualising function refined. Too high an order of residualising algorithm can result in over-filtering, where only the shallowest features remain in the residual, whilst too low an order does not adequately remove the regional effects.

The residual map included within this report (Figure 1531/14) has been produced by subtracting a 2nd order polynomial surface from the Bouguer gravity to remove the gravitational effects of the regional geology. This low-order surface acts as a high-pass filter which allows wavelengths of less than 60 metres to be passed unaltered whilst removing longer wavelengths.

7 INTERPRETATION

This investigation has gathered a high resolution quality validated dataset over the survey area. The data has been reduced using proprietary software and a series of profiles showing gravity variations across the site has been produced, as shown on the profile data in Appendix 4. A map of gravity variations across the site has also been produced and this Raw Bouguer Gravity Plan (Figure 1531/13) has then been subjected to further processing to isolate the component of the total gravity that arises from the near surface. This final Residual Gravity Plan is shown on Figure 1531/14.

Taken at its simplest, the residual gravity plan indicates those areas underlain by low density bodies. Low density bodies in the ground are directly overlain by low gravity at the surface, therefore low density bodies lie directly beneath the gravity minima (or anomalies), which are coloured blue or green.

An examination of Figure 1531/14 reveals a pattern of alternating positive and negative anomalies, with higher gravity indicated in red and orange whilst lower gravity is indicated in blue and green. Such a pattern can only arise from a shallow variation in sub-surface density, as all other factors have been eliminated by processing. The magnitude of the variation across the site is generally modest though the magnitude of the principal negative anomaly is significant.

The residual gravity plan is dominated by a very large negative anomaly which lies adjacent and to the northwest of the collapse (Anomaly A). If the existing collapse was caused by a shaft or a near vertical solution feature the gravity anomaly would be centred on the feature, forming a concentric pattern about the centre. However, an examination of the map reveals that the strong negative on the Bridle Close side is not balanced by an equivalent on the Seymour Road side. This eccentricity indicates that the existing collapse is not at the centre of the causative body.

The foam concrete that has been placed into the collapse has generated a small, localised positive anomaly sitting within the large adjacent negative. This indicates that the foam concrete density is somewhat greater than the surrounding ground. It also indicates that there is a significant missing mass on one side of the existing collapse, but not on the other. Unfortunately, the data is limited to the public highway and this precludes a full interpretation of the strong negative anomaly. However, in an attempt to understand the likely depth, position and magnitude of the body causing the anomaly a model of the gravity has been produced. This model is a first approximation and suffers from a lack of data so the depth estimates have been made using a profile selected to pass through the actual data. Interpretation would be improved by additional data obtained within the private property adjacent to the recorded anomaly.

Euler deconvolution has been used as an interpretation tool. This method samples parts of the gravity anomaly profile and, assuming that all the missing mass is concentrated in one body, plots the depth and position of the body. Where a gravity anomaly's shape is consistent with a single low density body the various plotted positions will lay close together. As can be seen from the overlapping blue circles at 150m distance, 19m depth on Figure 1531/15, the multiple plots produced from the principal anomaly all lie at the same location. This is a strong line of evidence to suggest a single low density body is causing the low gravity. The body would be positioned at a depth of 19 metres and would therefore lie within chalk bedrock. Unfortunately, it is not known whether the centre of the anomaly underlies the road (in which case this will be a reasonable model) or the private ground

adjacent to the road. Only further gravity data in private ground will be able to locate the centre of the anomaly.

An additional tool that can be used to assist with the interpretation of gravity data is a Gaussian mass estimate. This method calculates the total volume of gravity lost within an anomaly and calculates the mass that would have to be missing to produce such a loss of gravity. As Figure 1531/16 shows, the initial estimate for missing mass beneath this anomaly is some 3200 tonnes or 1500 m^3. However, this estimate depends upon the extrapolation of gravity values into areas of missing data.

Anomaly B is a modest anomaly lying at the edge of the data at the corner of Fontmell Close and Bridle Close. Little of the anomaly is seen within the data so it is poorly resolved. Without further data an interpretation of the significance of this anomaly is not possible.

Anomaly C is a low magnitude anomaly in the middle of Bridle Close set within an area of higher gravity. The anomaly lies within the area of a recorded clay pit and accordingly it could be expected to be underlain by material of variable compaction. However, an Euler deconvolution of the gravity data has been undertaken to determine the depth of the causative body if all of the missing mass is assumed to be concentrated in a single void or cavity. The results of the modelling reveal that the anomaly does not have the characteristics of an anomaly caused by a single low density body. The fragmented nature of the deconvolution results indicates that a diffuse mass deficiency is the most likely cause of this anomaly. An irregular low density mass of fill material would produce such an anomaly and this is considered to be the most likely explanation for the feature. It should be noted that in the vicinity of this anomaly subsidence has been experienced and anecdotal information suggests that water leakage was considered to be the cause.

Anomaly D is a modest anomaly in the field close to the temporary point of access. It crosses several lines of data but the principal anomaly lies at the edge of the data. Such features can arise from the process of residualising as well as from the presence of actual low density zones. The presence of the feature over several lines of data promotes its importance so the anomaly has been scheduled for investigation. The anomaly does not extend into the single point of access into Bridle Close though the anomaly appears to cross the temporary access road. It is known that this area was part of another clay pit and a well is shown in a similar position on the historical map from 1965. Anecdotal evidence gathered during the survey also indicates that settlement events have required remediation in this area.

Anomaly E is a modest anomaly outside the area of known clay pits. The negative gravity anomaly extends across the carriageway achieving a maximum magnitude of 15microgals. The anomaly does not show the characteristics of a void modelled to represent the ground prior to the existing collapse, but rather appears to be a linear anomaly crossing the data that has been gathered on the road and footpaths. The presence of the anomaly is strongly influenced by extrapolation from the limited dataset. The Euler deconvolution method has been used to investigate whether such an anomaly could be produced from a discrete low density body such as a void. The deconvolution offers no solutions for this anomaly and therefore it is unlikely to have been caused by a discrete void. This anomaly remains ambiguous and investigation is required to further understand the low gravity at this location.

Anomaly F is also a modest anomaly outside the area of known clay pits. The negative gravity anomaly extends across the carriageway achieving a maximum magnitude of 20microgals. The anomaly does not show the characteristics of a void modelled to represent

the ground prior to the existing collapse, but rather appears to be a linear anomaly crossing the data that has been gathered on the road and footpaths. The Euler deconvolution method has been used to investigate whether such an anomaly could be produced from a discrete low density body such as a void. The results of the deconvolution cluster at at a distance of 45m and a depth of 15m as indicated on Figure 1531/15 though several solutions plot away from the cluster. This indicates a more complex cause and shallow variable ground conditions may be an influence as well as a single void at depth. The conceptual model would suggest that any features at this depth lies within the chalk bedrock and accordingly this might reasonably be interpreted as a void or tunnel within the chalk, potentially a chalk mineworking.

Anomaly G is a small magnitude anomaly at the extreme edge of the data. The anomaly could be a result of data processing, a common issue at the extreme edges of linear datasets. The anomaly is unresolved in that only one side of the anomaly is within the data and therefore it is not possible to model the feature or to draw any firm conclusions about its origin.

Anomaly H is an apparently significant anomaly at the junction of Fontmell Close and Seymour Road. This anomaly like Anomaly G lies at the very edge of the dataset, where the process of residualizing commonly achieves a poor fit because of the lack of data. Additional data in Seymour Road would assist in resolving this anomaly. Like Anomaly G the presence of this negative anomaly is suspect.

8 MOVEMENT MONITORING

Following the initial collapse of the sinkhole on Fontmell Close a number of tension cracks were observed in the surrounding ground. Accounts from staff on site during the infilling of the collapse with concrete suggest that some of these cracks have become visibly wider and more extensive since the initial collapse. Both during and after completion of the infilling of the sinkhole loose material from around the edges of the collapse has been seen to fall into the hole. Two concentric exclusion zones have been set up around the hole by Ringway. The outer exclusion zone is accessible to all workers required to carry out works in the area while the inner exclusion zone can only be accessed with special permission and rope access.

Due to concerns regarding the stability of the ground within the exclusion zones around the collapse, Hertfordshire County Council requested that Geotechnology undertake monitoring to determine whether any ground movement is ongoing. This information is to be used to determine the level of risk posed to contractors and utility companies working in the vicinity of the hole. The data will also identify whether permanent or temporary utility lines can be installed over the top of the sinkhole.

In order to measure the movement of the ground within vicinity of the sinkhole a series of 13 monitoring pins were put in place in the tarmac and paved areas. A further 4 pins were placed into the surface of the concrete pumped into the collapse. The initial position of these monitoring pins was then surveyed from a base position outside of the exclusion zone known as ST2 using the Topcon QS Robotic Total Station. The position of ST2 is adjacent to No. 20 Fontmell Close and outside of the influence of the tension cracking. However, additional checks were carried out by backsighting the instrument onto two pins at the opposite end of Bridle Close.

The subsequent monitoring of the pins has been carried out by setting up the Robotic Total Station on the same fixed point at ST2 and backsighting onto the pins at the end of Bridle Close before entering the exclusion zones to acquire readings on the 17 pins. The survey instrument has a maximum accuracy of 2mm, although human input during setups can introduce error to the system. All surveying carried out within the inner exclusion zone has been carried out with the use of a harness and fall arrest system to mitigate the risk posed by further ground collapse.

Following the initial reading to establish the position of the monitoring pins 4 subsequent sets of readings have been taken. Each of these readings has had the original position subtracted from it, in order to give a difference from the starting point. Although Easting, Northing, and Elevation measurements are made each time, analysis has been focussed on the elevation difference as this is most indicative of subsidence. The results from this monitoring are summarised in Table 8-1.

Table 8-1 Survey Pin Monitoring Results

Pin ID	Initial Measurement			10/10/2015	11/10/2015	13/10/2015	15/10/2015
	Easting	Northing	Elevation	Δ Elevation	Δ Elevation	Δ Elevation	Δ Elevation
			mAOD	M	m	m	m
MP1	515436.118	208430.993	122.159	-0.002	-0.001	-0.002	-0.005
MP2	515436.617	208430.364	122.138	0.000	0.000	-0.001	-0.004
MP3	515440.207	208425.888	121.990	0.001	0.000	-0.003	-0.005
MP4	515443.626	208425.224	122.090	0.002	0.002	0.001	-0.003
MP5	515444.245	208425.293	122.104	0.001	0.001	0.000	-0.004
MP6	515450.083	208424.622	122.016	0.002	0.002	0.000	-0.006
MP7	515450.980	208428.573	122.100	0.005	0.002	0.001	-0.003
MP8	515464.919	208428.514	121.867	-0.005	-0.001	0.000	-0.005
MP9	515465.029	208419.719	122.085	-0.004	-0.003	-0.003	-0.008
MP10	515447.685	208417.115	122.512	0.007	-0.002	-0.003	-0.007
MP11	515453.834	208413.280	122.713	-0.008	-0.002	-0.002	-0.007
MP12	515463.687	208432.092	121.940	0.003	0.001	0.002	-0.003
MP13	515469.370	208426.995	121.893	0.001	0.000	-0.001	-0.005
MP14	515453.494	208421.919	121.141	0.000	-0.001	-0.004	-0.011
MP15	515458.190	208425.485	121.149	-0.002	-0.005	-0.010	-0.011
MP16	515460.811	208422.758	121.237	0.000	-0.005	-0.008	-0.010
MP17	515456.753	208419.138	121.223	-0.007	-0.009	-0.017	-0.015

The data gathered to date reveals no dramatic change in the elevation of the pins over the course of the week with a maximum elevation difference of 17mm. Whilst, there is observable change in the levels of pins MP1-MP13 the change moves in both a positive and negative direction with a maximum difference from the initial position of 8mm. Pins MP14-MP17 show a significantly different pattern, as there is a consistent decrease in elevation in each of the pins with the exception of the final reading on MP17 with maximum movements of 10, 11, and 15mm.

While elevation changes have been recorded in pins MP1-MP13 the alternation between increased levels and decreased levels suggests that survey noise introduced during the surveying procedure is responsible for this change rather than a true change in levels. The changes observed in MP14-MP17 on the other hand do appear to be indicative of some minor settlement as a consistent decrease in levels can be seen of a greater magnitude than those seen in the other pins. This is to be expected as all 4 pins are located on the concrete infill which is exerting significant pressure on the loose materials at the base of the collapse resulting in settlement.

On this basis it is not recommended that permanent utilities be placed across the concrete infill in the sinkhole. Temporary overland mains should be run along the ground around the sinkhole until settlement of the concrete can be conclusively shown to have stopped.

These conclusions have been based on a relatively small dataset gathered over the course of one week and can only be used to determine that there is no measureable movement of the ground surrounding the collapse at the moment. The data should not be used to verify the long term stability of the area. In order to determine the long term stability of the area monitoring should continue to be carried out at regular intervals.

9 CONCLUSIONS

A microgravity survey of the highway and footpaths has been undertaken in the vicinity of the collapse using an acquisition grid designed to sense shallow to moderately deep features. A quality verified dataset for both gravity and topography has been produced and this has been processed using software and techniques developed by Geotechnology for microgravity datasets. Though the process of residualising the data (to remove the influence of deeper geology) is imperfect because of the ribbon like dataset over much of the survey, it is considered to be a reasonable approximation. Further gravity data acquired to provide coverage more generally within the area would improve the understanding of gravity distribution and would improve the process of residualising. However, the available processed dataset is considered sufficiently reliable for interpretation and conclusions to be drawn.

The key issue for the Highways Authority is to determine whether there are further features beneath Fontmell Close or Bridle Close that could give rise to ground movement like that experienced on 1 October. To answer this question the magnitude and shape of an open void with the same volume as the collapse has been calculated so that it can be compared with anomalies detected in this survey. The results of the calculation reveal that an open spherical void with the same volume as the collapse at the base of the brickpit (9m) would produce an anomaly of some 60microGals. Within the survey there are a number of gravity anomalies but only one (Anomaly A) has similar characteristics to the model of the void causing the existing collapse. This anomaly lies adjacent to the existing collapse.

Three of the anomalies, Anomalies A, B and C, lie within the area known to have been worked for brick clay. This area is expected to show variable gravity and Anomaly C in particular shows the characteristics of loose material near surface. Attempts to model this as a single body such as a void reveal inconsistent depth estimates, suggesting that a single void is not the cause of this feature. Anomaly B lies at the edge of the dataset and little useful modelling can be undertaken as it is poorly resolved. Its proximity to Anomaly A however should be noted.

Anomalies E and F are of modest amplitude and lie in an area where no clay extraction is known to have taken place. Anomaly E remains ambiguous as advanced processing has been unable to produce a consistent model of the feature. Anomaly F, which is of similar magnitude to Anomaly E exhibits an anomaly shape that can be interpreted as arising from a single discrete body of missing mass. Automated processing indicates that if this was the case the body would lie at a depth of some 15m below ground level.

Three further anomalies are present on the plan, at the extremities of the data. It is considered likely that Anomalies G and H are a function of data processing at the edge of the datasets, though additional data may resolve this. Anomaly D lies within the field adjacent to Bridle Close and may be a result of processing at the edge of the dataset, though it is noted that the anomaly passes through a number of lines of data and therefore remains a potential target.

A number of overall conclusions from the study of available documented sources, published geological data, unpublished reports, anecdotal evidence, gravity mapping and survey can be drawn:

- The 12.8m diameter collapse on 1 October resulted in the loss of approximately 620m^3 of ground into what would have been an underlying self-supporting void. A

hemispherical collapse feature is a reasonable geometrical model for the resulting hole, with a depth of 7m.

- The collapse occurred within the boundary of a backfilled clay pit that had been excavated for brickmaking and backfilled with waste from the area.
- Poor quality backfill has little capacity to support open voids and the likelihood of the self-supporting void being present in the backfill material is low. It is noted that the hole resulting from the collapse is some 7m deep whilst the old clay pits are thought to be about 9m deep.
- A short distance beneath the base of the productive clay beds the strata change to chalk bedrock. A limekiln is known to lie within the site and this would require chalk as a raw material for lime production.
- There is a history of settlement problems in properties in the vicinity of the collapse and a number of properties were either constructed originally on piles or have subsequently been piled. This is consistent with poor quality backfill materials experiencing variable settlement.
- The collapse event of 1 October is unlike uneven settlement experienced locally as a result of variable backfill. A collapse event resulting in the loss of ground into a single discrete void is uncommon and normally associated with self-supporting voids or cavities that are either natural or man-made.
- This study has quantified the gravity characteristics of a self-supporting void to determine whether other such features are present beneath Fontmell Close or Bridle Close. One such feature has been identified, Anomaly A, which lies adjacent to the collapse.
- Gravity mapping has not resolved the feature fully as it extends a large distance in all directions and the data acquisition has been limited to the highway and footpaths. If it is assumed that the feature is centred on the road/footpath then computer modelling suggests the void is larger than the existing collapse volume and lies at a depth of 19m, which is expected to be within the chalk bedrock.
- A series of other smaller anomalies are present beneath the roads and these may be explained by variable backfill and processing effects at the edge of a dataset. However, one anomaly has been identified in Fontmell Close which modelling reveals could arise from a discrete void at a depth of 15m. This is also expected to lie within the chalk bedrock.
- Self-supporting voids are feasible in chalk bedrock. Such voids are the result of natural dissolution (swallow-hole features) or chalk mining.
- There is no documented evidence of chalk mining at the base of this clay pit though the presence of a limekiln here is evidence of chalk use. The conditions appear to be suitable for chalk extraction in the bedrock beneath the base of the pit. Gravity surveying indicates that voids are present within the chalk bedrock and therefore chalk excavation is the most likely explanation for the cause of the void that led to the collapse.
- The gravity mapping suggests that this type of feature is present beneath only one part of the road, directly adjacent to the existing feature. A second anomaly at the top of Fontmell Close (Anomaly F) has revealed characteristics that suggest there could be smaller scale voiding within the chalk.
- Natural dissolution features can produce similar anomalies and therefore whilst considered less likely these remain possible causes of the existing collapse and the gravity anomalies identified.
- The study of ground conditions by reviewing documented sources and sensing with gravity has been able to develop plausible explanations for the collapse and has identified other parts of the road where low density features in the ground are present. This data should now be used as a basis for designing an appropriate ground investigation.

10 INVESTIGATION RECOMMENDATIONS

Currently, there is little information available on ground conditions beneath the roads: the initial desk study has allowed a conceptual understanding to be developed, the soils within the collapse have been examined and a set of dynamic probe results from an adjacent house have been viewed. This is insufficient to understand how ground conditions may influence the road and therefore intrusive ground investigation is required. The ground investigation should be designed to determine the geological context of the site with boreholes extending up to 25m into the ground, positioned so that ground within and outside the old clay pits is examined.

Follow-up intrusive ground investigation works are required to determine the cause of the negative gravity anomalies identified in this report. Negative gravity anomalies are comparative: they are identifiable as they sit next to the normal surrounding gravity: as part of understanding the cause of the negative anomalies it is also necessary to investigate areas of high or normal gravity. The investigation recommendations in this report therefore include positions to place the site into geological context, over negative gravity anomalies and over normal gravity.

There are a number of methods conventionally used to carry out ground investigation around loose or voided ground and the methods have various advantages and disadvantages. This report provides recommendations on the location of investigation points but it is expected that a detailed ground investigation specification will be developed by the County Highways geotechnical advisor with input from Geotechnology.

Safety during investigation works is paramount and the risks of investigating potentially voided ground should not be overlooked. The conventional approach to working over potentially voided ground has developed from the methods used to investigate mineshafts – steel frameworks are constructed on the ground surface. In the event of a collapse of the ground the operators and rig remain safe on the platform. The size of the platform has to be designed to span any feasible collapse making its use on large diameter features impractical.

An alternative method of investigating potentially voided ground is to carry out inclined drilling. Using drill rigs to bore holes at 45 degrees to the vertical the ground in front of the rig is probed. If this is found to be solid, the rig moves forward and the process is repeated. Thus a sequence of inclined holes progressively approaching the suspect ground is used to confirm ground conditions and to demonstrate security for the rig and operators. This method is feasible when using specialist drilling rigs, but techniques based upon boring or dynamic testing (such as the dynamic probe) cannot be used in this way.

The ground investigation is likely to comprise a combination of techniques, including drilling, boring and dynamic testing, some of which will need to recognise a degree of risk that requires special measures to be implemented to ensure safety during the works. It should also be recognised that when investigating ground that may be voided there is a small but plausible risk of precipitating movement. The consequences of this outcome should be considered early in the ground investigation design as such an outcome could affect not only the carriageway and footpaths but potentially private ground on either side. This complex matter has to be addressed as the investigation works are essential to determine whether any further voids exist and whether ground treatment is required to stabilise the carriageway.

Figure 1531/17 shows a suggested layout for the investigation of the gravity features revealed by the microgravity survey. Each location has been assigned to examine ground conditions beneath either anomalously low gravity or gravity highs. The locations are labelled numerically.

It has been recommended that some of the holes are boreholes, advanced using percussion methods. These holes lie in areas of higher gravity and will produce disturbed and undisturbed samples for geological description (and potentially testing). In-situ strength testing may also be undertaken in these holes. These holes are designed to contribute a better understanding to the conceptual geological model of the site. These may be supplemented with dynamic probe holes to better define the edges of the old clay pits.

Some of the holes are indicated to be vertical drill holes. These holes are to be drilled into the ground to examine ground conditions and look for loose or voided ground. Where the holes are located over an anomaly that may be linear (e.g. Anomaly F) the holes should be drilled as a series of holes following the alignment indicated.

Holes close to the principal anomaly present the greatest risk to workers, the public and properties. This feature needs to be investigated carefully and it is recommended that inclined drilling is used. Accordingly, the drill holes should follow the line indicated commencing at the outer hole, progressively working toward the anomaly.

The numbers do not rank the importance of the holes and are assigned simply in anomaly label order. The depths have been recommended on the basis of the deepest possible interpretation of each gravity anomaly.

Number	Anomaly	Depth(m)	Reason
BH1	-	15	Geological Context
BH2	-	15	Geological Context
BH3	-	15	Geological Context
BH4	-	15	Geological Context
BH5	-	15	Geological Context
BH6	-	15	Geological Context
VDH1	H	20	Negative Anomaly
VDH2	E	20	Negative Anomaly Series of Holes
VDH3	F	20	Negative Anomaly Series of Holes
VDH4	C	20	Negative Anomaly Series of Holes
VDH5	B	25	Negative Anomaly
VDH6	D	20	Negative Anomaly
IDH1	-	35	Edge of Collapse
IDH2	-	35	Edge of Collapse
IDH3	A	35	Negative Anomaly Series of Holes

It should be noted that there are a significant number of buried utilities within this survey area. The utility search information has been used to position gravity observations away from chambers and other features that could give rise to gravity anomalies. The recommended investigation positions shown on Drawing 1531/17 and scheduled above have not been located so as to avoid buried utilities. There is flexibility of 1.5m in all directions from the indicated location and detailed utility search work will be required to carry out the investigation works safely. If a detailed utility search of the area immediately around a recommended investigation point fails to reveal a safe position, Geotechnology may be able to reschedule the hole elsewhere within the same anomaly.

Ongoing repeat surveys of the monitoring pins will be of benefit to quantify ground movement and this could continue until road reinstatement.

This report is based upon a microgravity dataset that is confined to the highway and adjacent footpath. It has been accepted that this constrains the microgravity results and gravity surveying over a wider area would lead to improved interpretation.

Plate 1: Oblique Aerial Photograph of Collapse

Plate 2: Oblique Aerial Photograph of Collapse

Plate 3: Oblique Aerial Photograph of Collapse

Plate 4: Side of Collapse 1 Oct 2015

Plate 5: Side of Collapse 1 Oct 2015

Plate 6: Partially Filled Collapse 3 Oct 2015

Plate 7: Microgravity Data Acquisition 4 Oct 2015

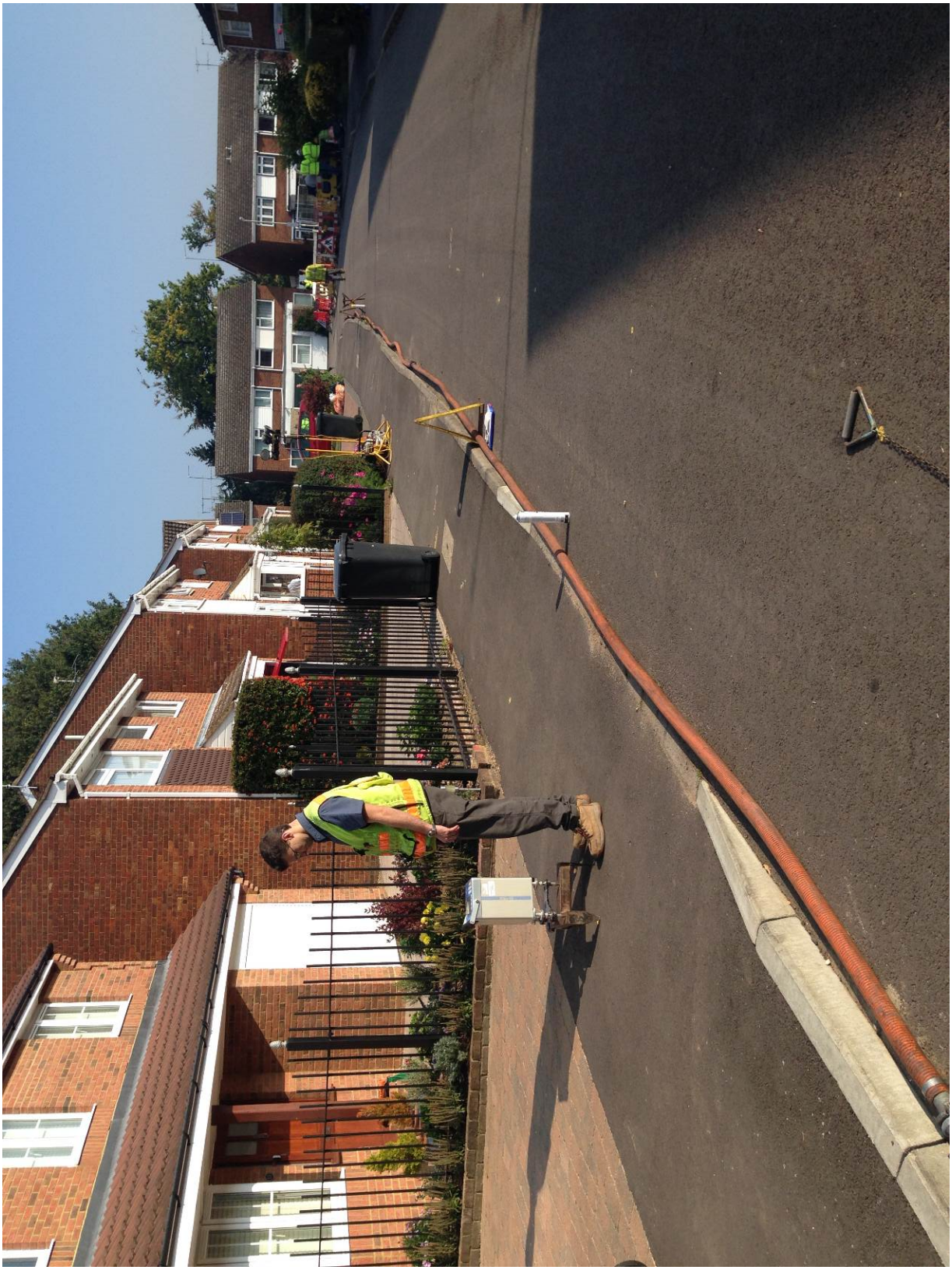

Plate 8: Partially Filled Collapse 6 Oct 2015

Plate 9: Microgravity Data Acquisition 11 Oct 2015

Plate 10: Rope Access Microgravity Data Acquisition 11 Oct 2015

Figure 1531/1 Site Location Plan

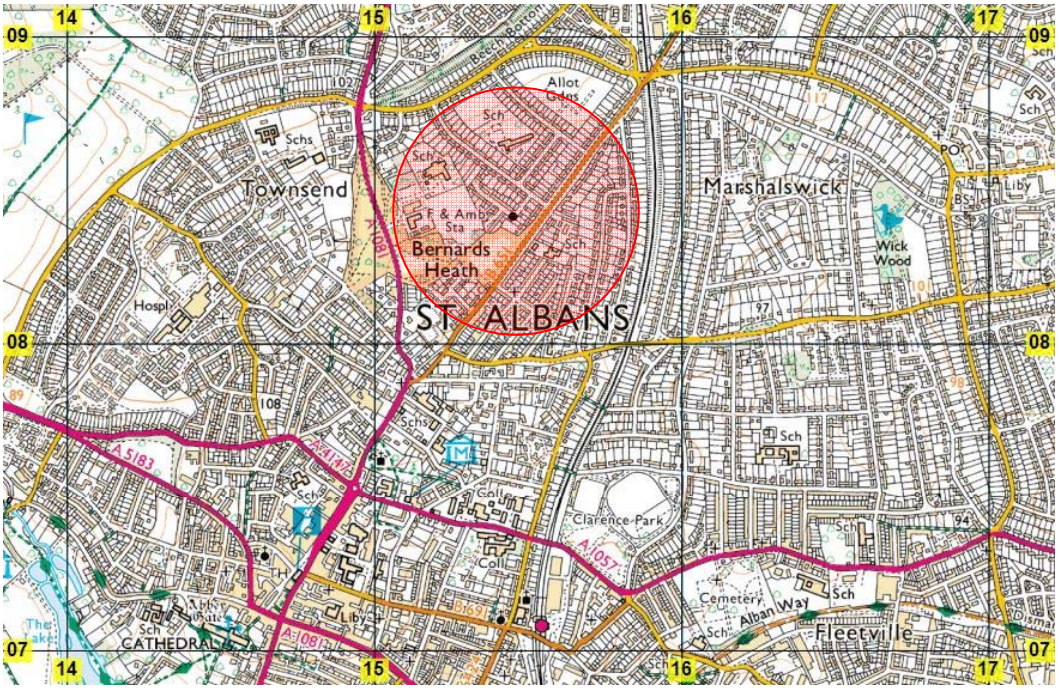

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Figure 1531/2 Site Plan Showing Ground Collapse

Revision 0

1531r1v1d1015 Figure 2

Scale 1:1500

Figure 1531/3 1878 OS 1:2,500 Scale Plan on Current Site Plan

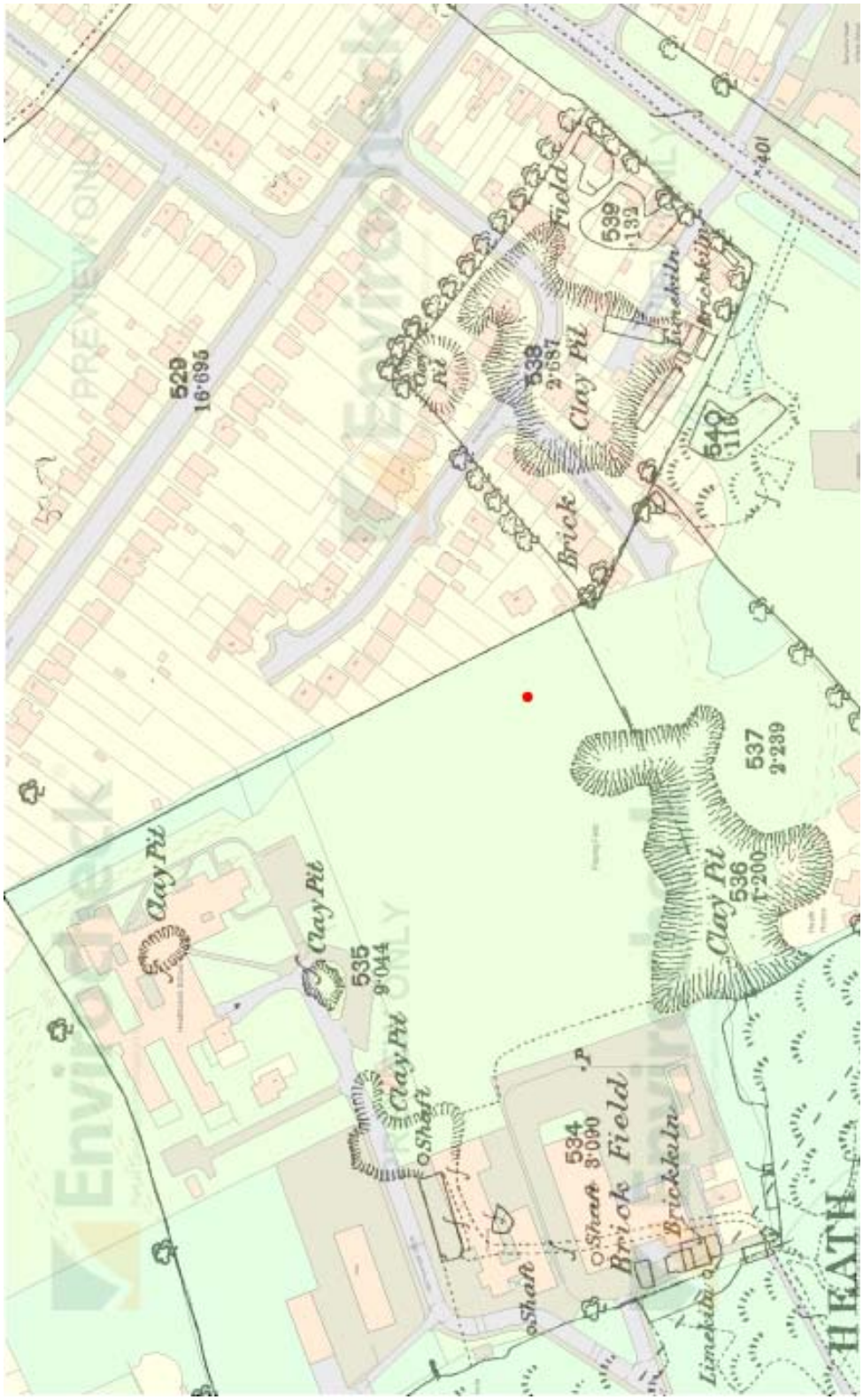


Figure 1531/4 1898 OS 1:2,500 Scale Plan on Current Site Plan

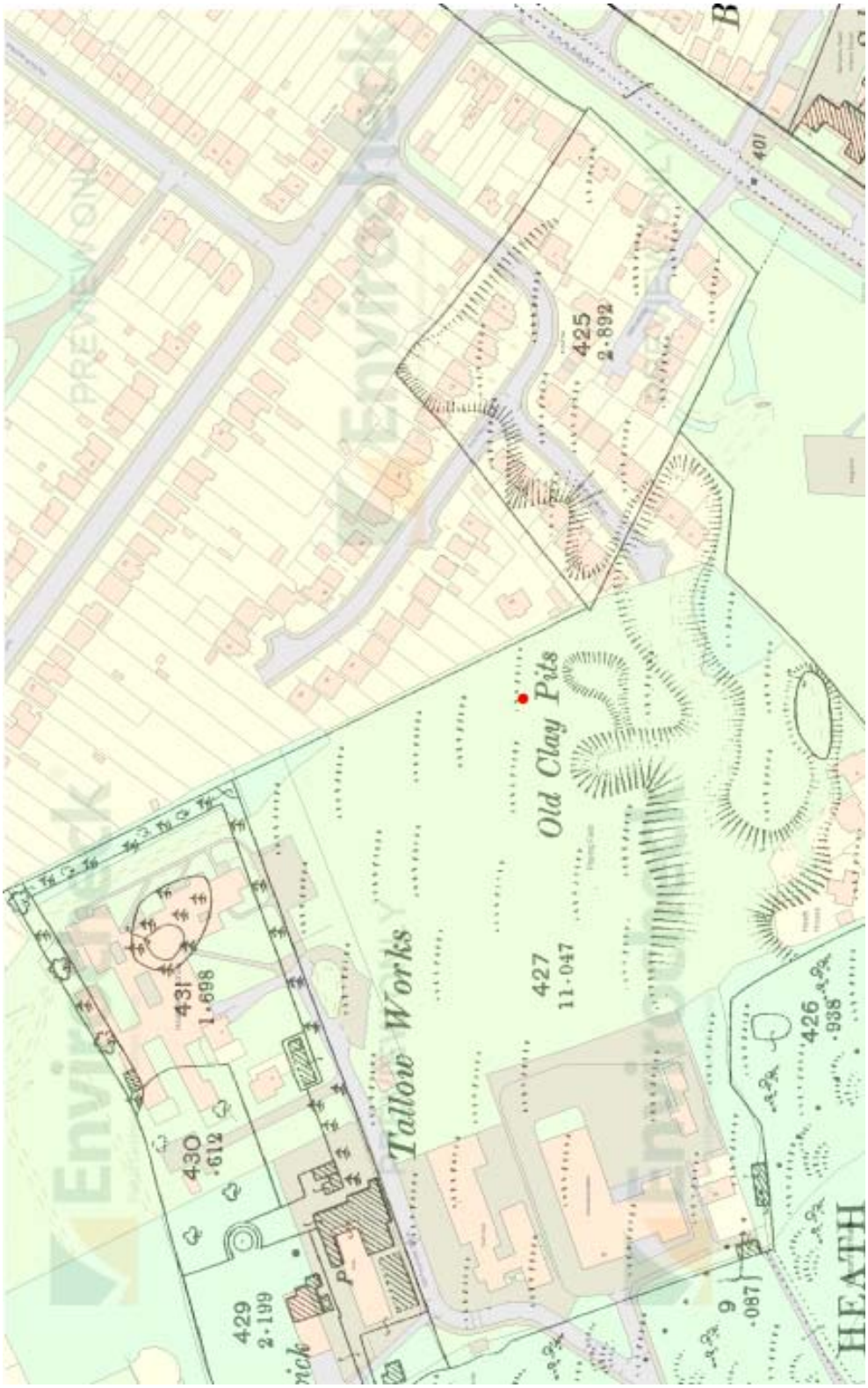


Figure 1531/5 1924 OS 1:2,500 Scale Plan on Current Site Plan

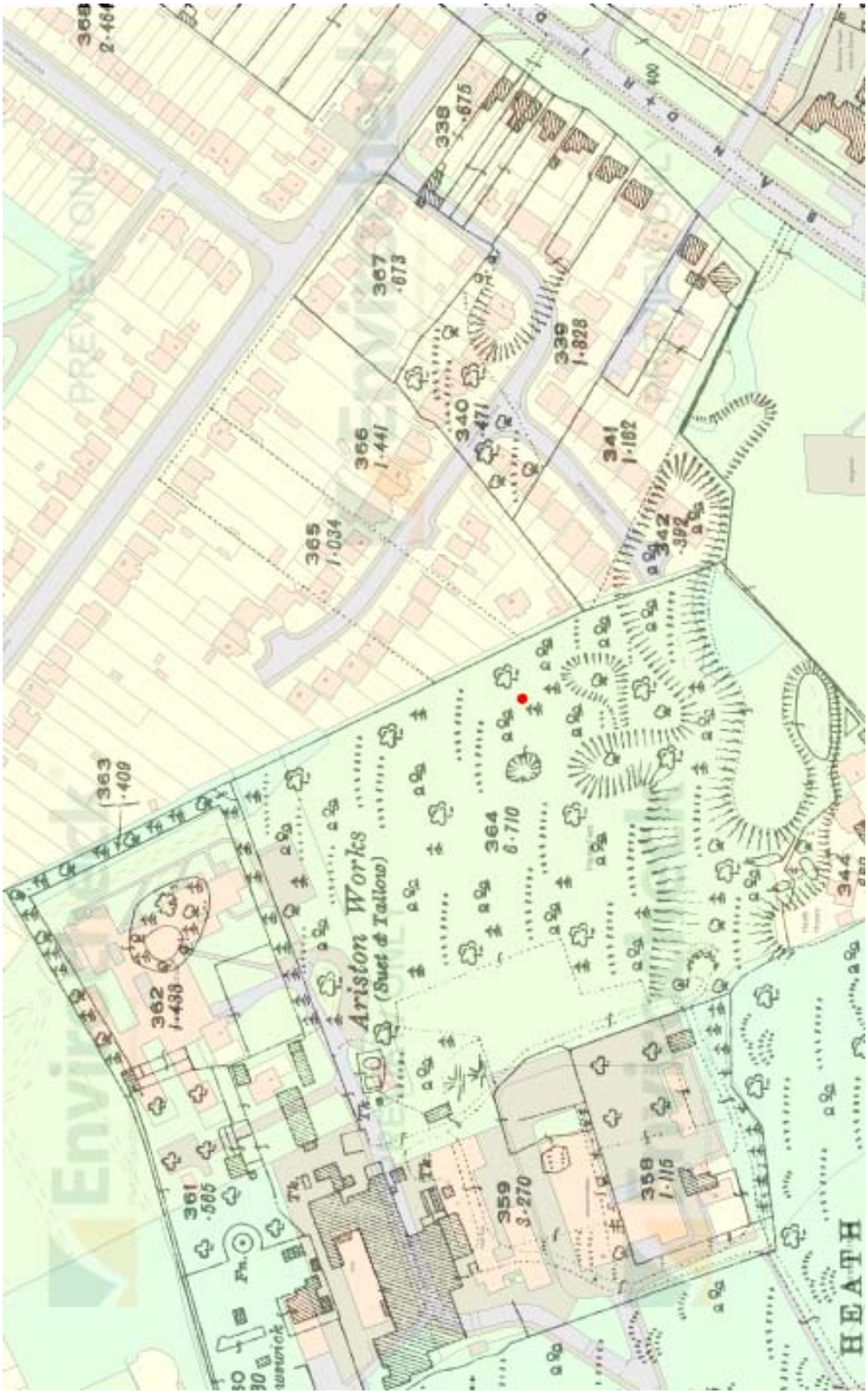


Figure 1531/6 1939 OS 1:2,500 Scale Plan on Current Site Plan

Figure 1531/7 1963 OS 1:2,500 Scale Plan on Current Site Plan

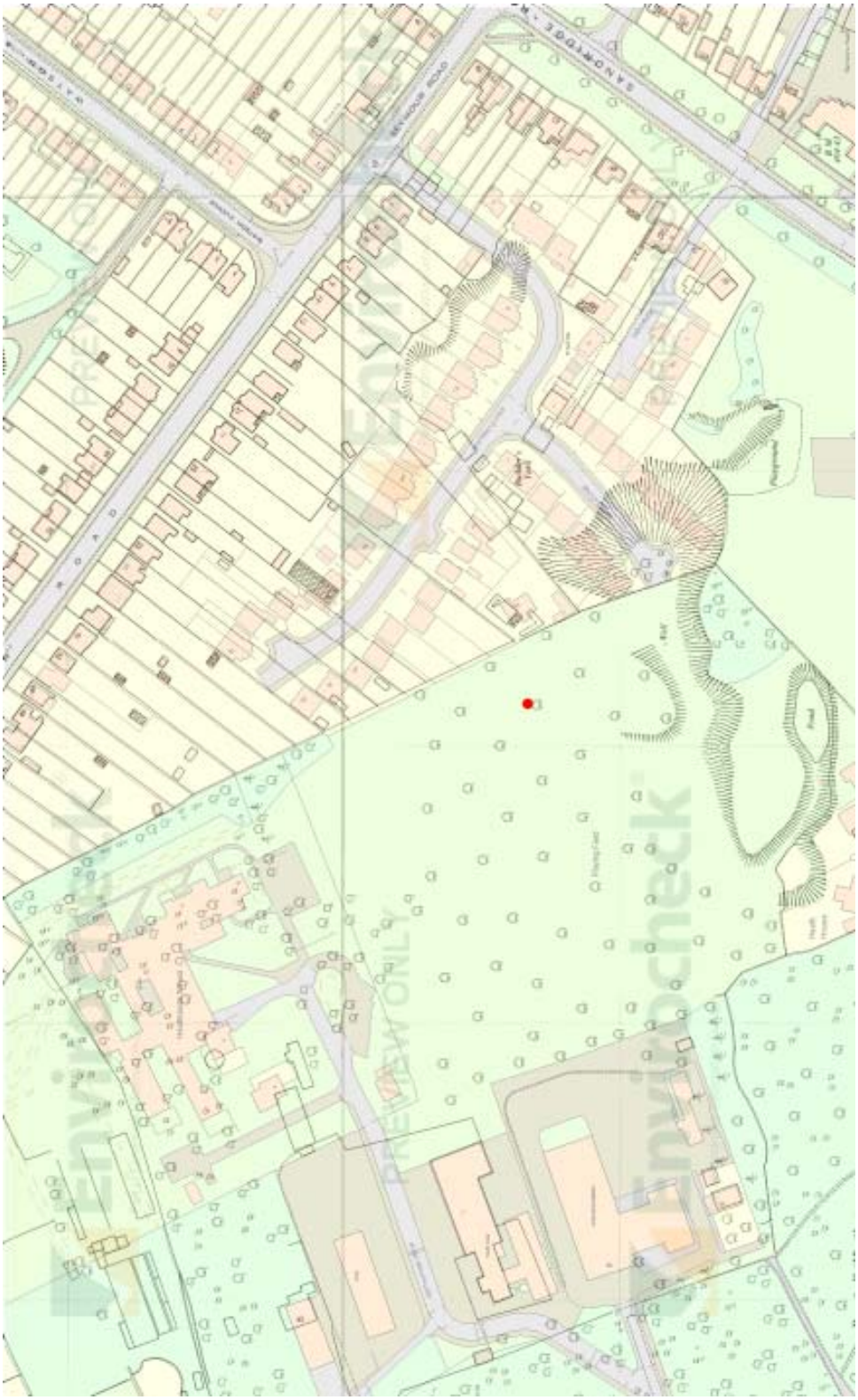

SANDYMOOR ROAD
Sandymoor Drive
Sandymoor Drive
Sandymoor Drive

Figure 1531/8 1965 OS 1:2,500 Scale Plan on Current Site Plan

Figure 1531/9 1973 OS 1:2,500 Scale Plan on Current Site Plan

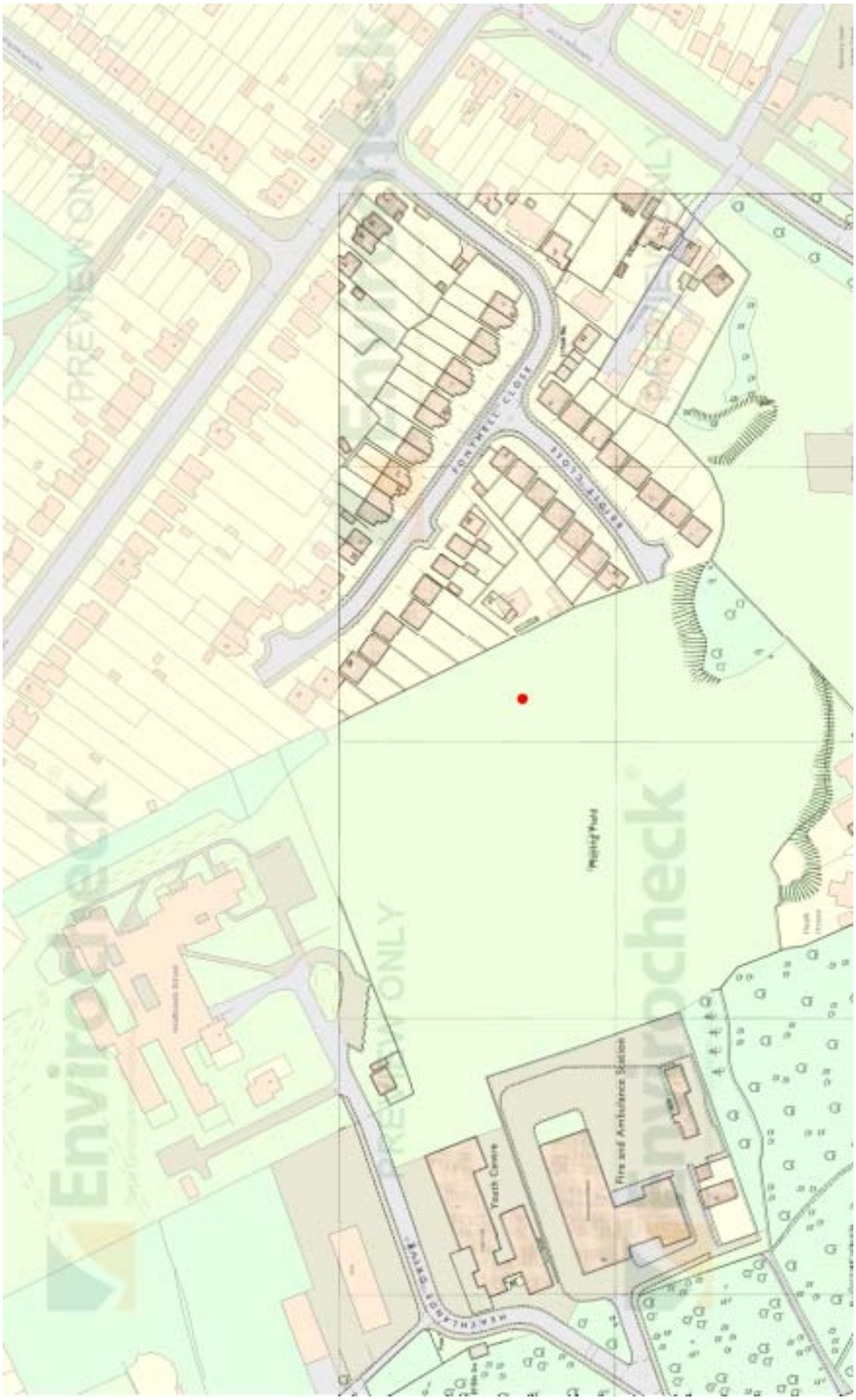


Figure 1531/10 1991 OS 1:2,500 Scale Plan on Current Site Plan

Figure 1531/11 Conceptual Geological Model

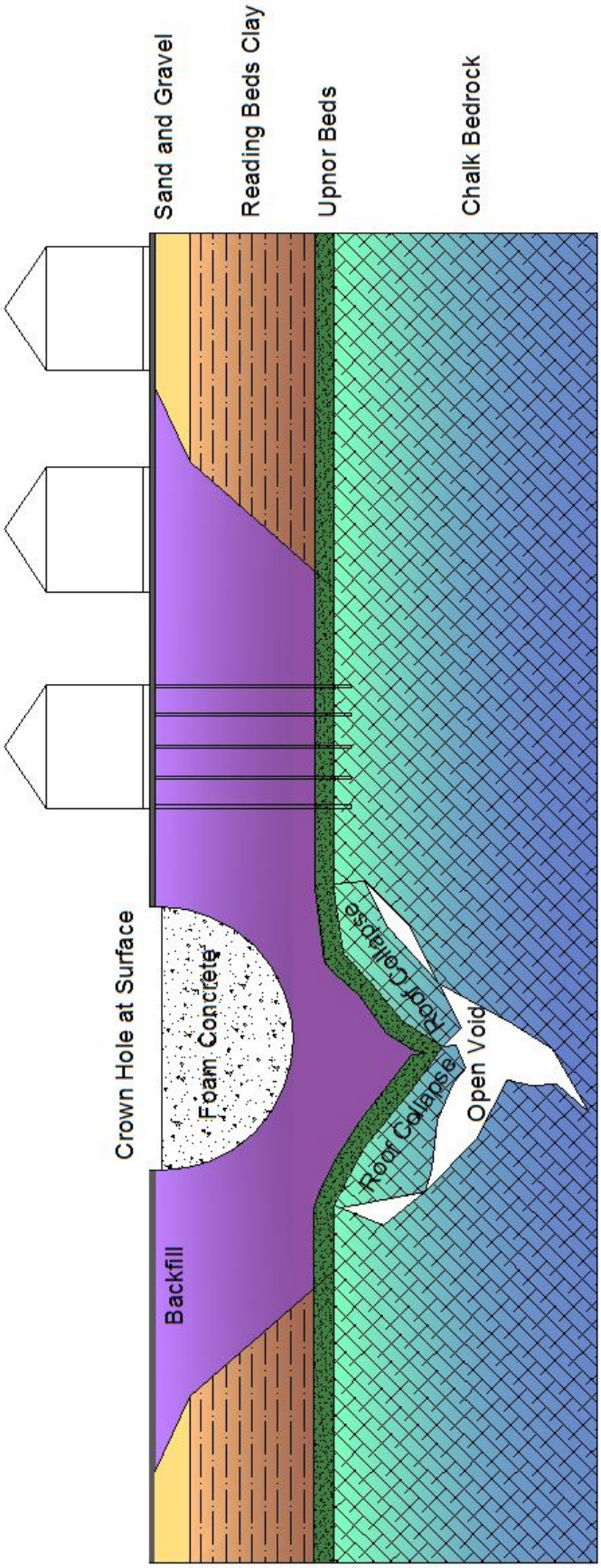


Figure 1531/12 Microgravity Data Acquisition Layout

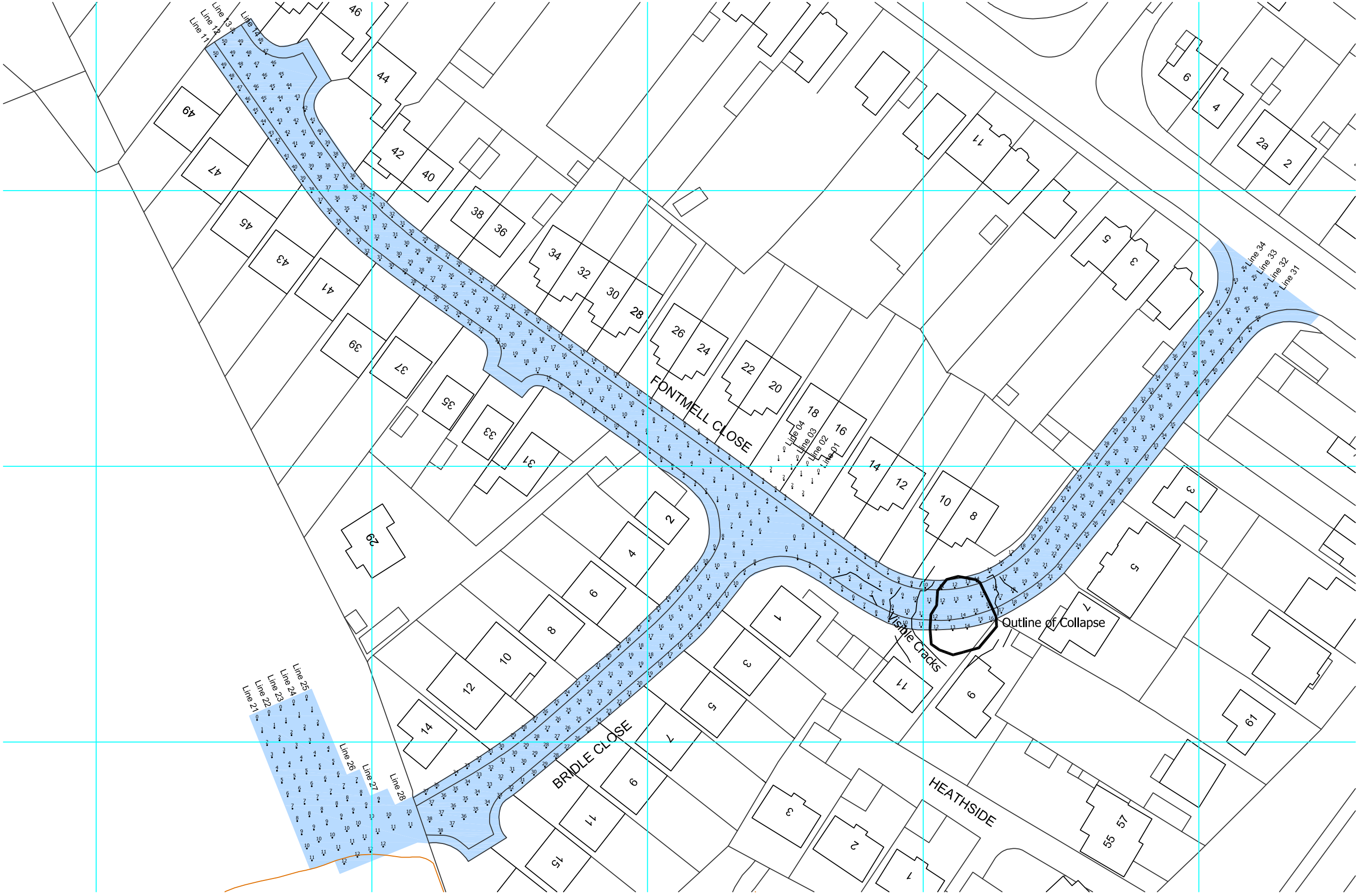


Figure 1531/13 Raw Bouguer Gravity Plan

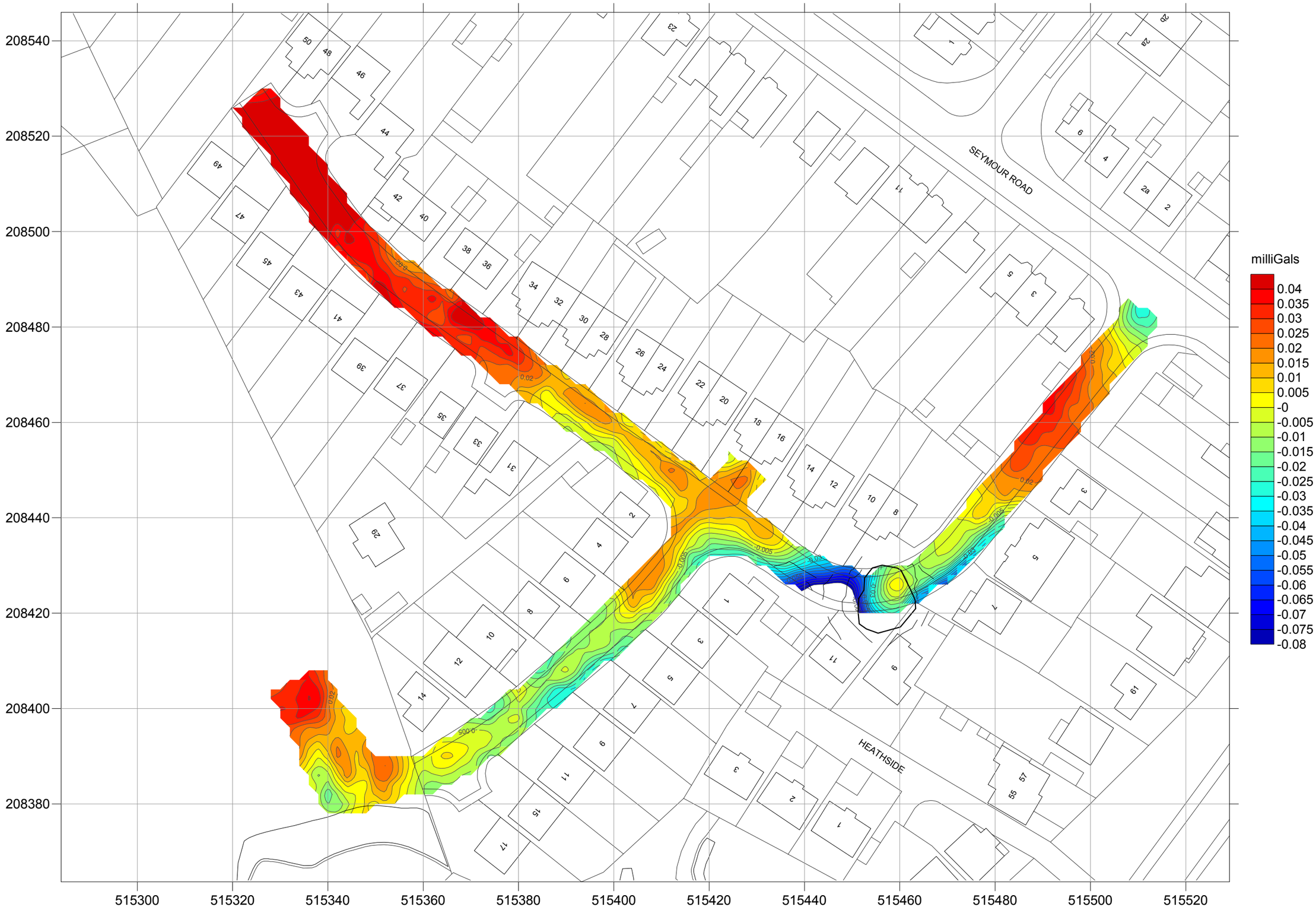


Figure 1531/14 Residual Bouguer Gravity Plan

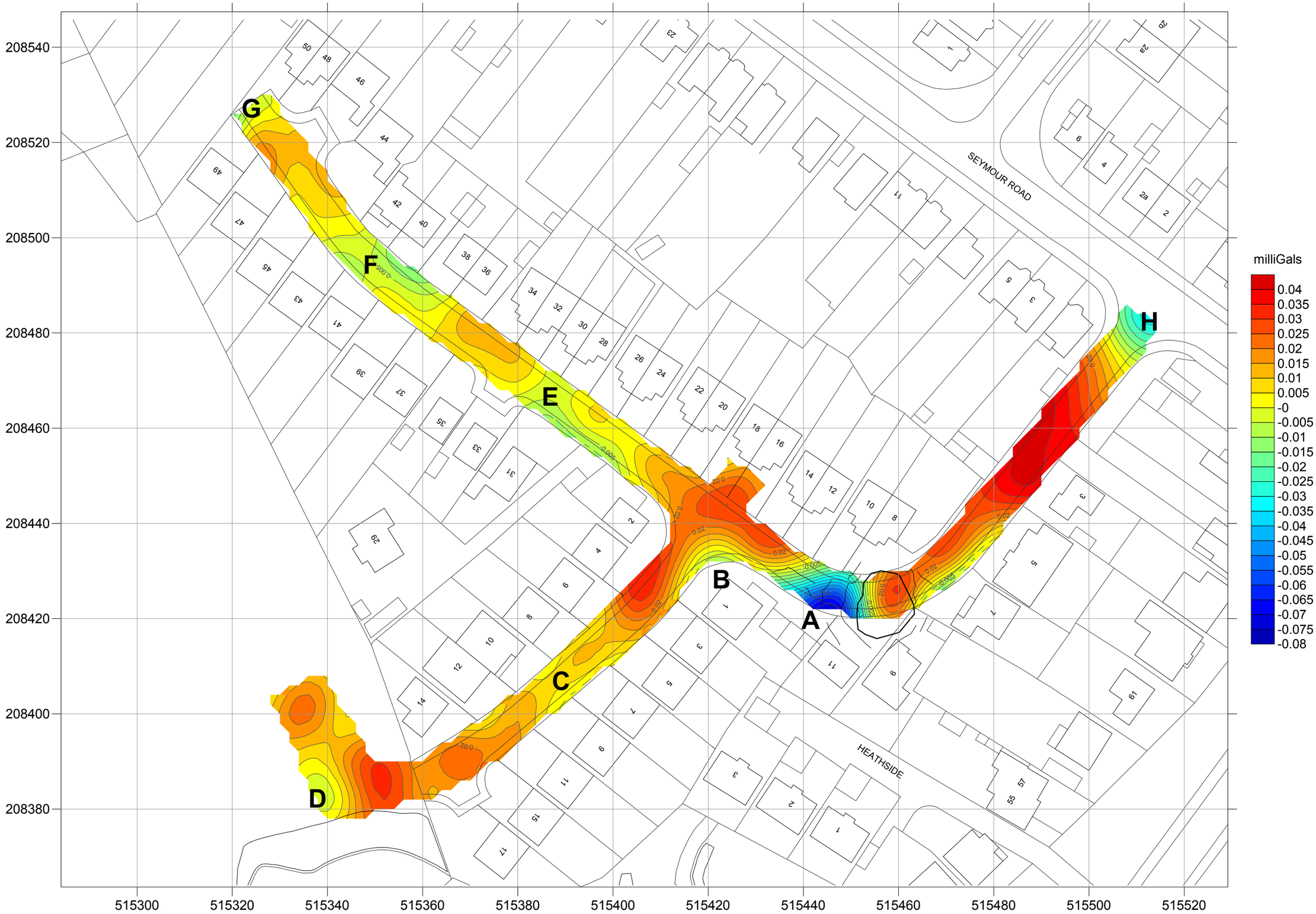


Figure 1531/15 Euler Deconvolution Depth Estimate

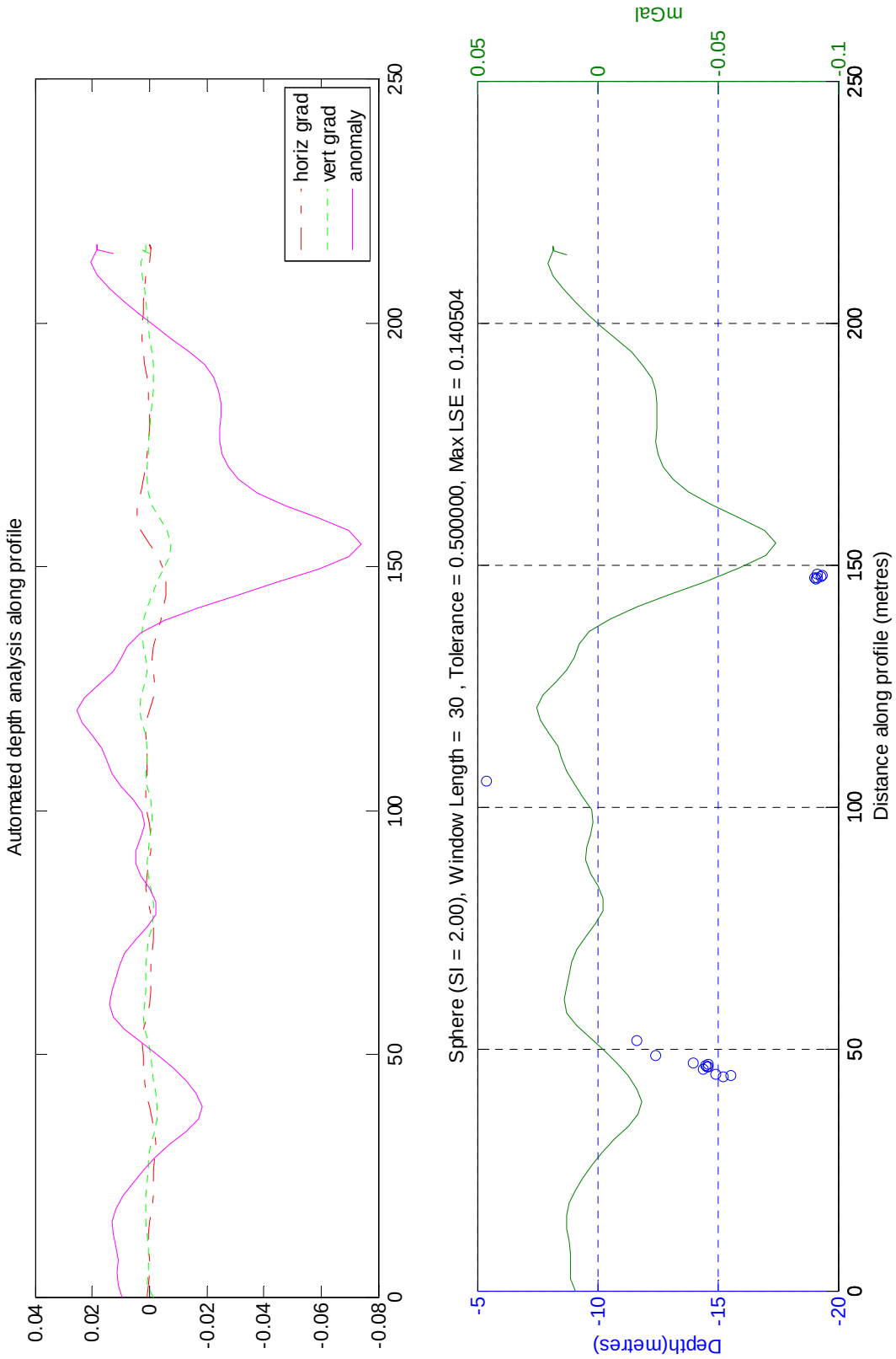


Figure 1531/16 Gausian Mass Estimate

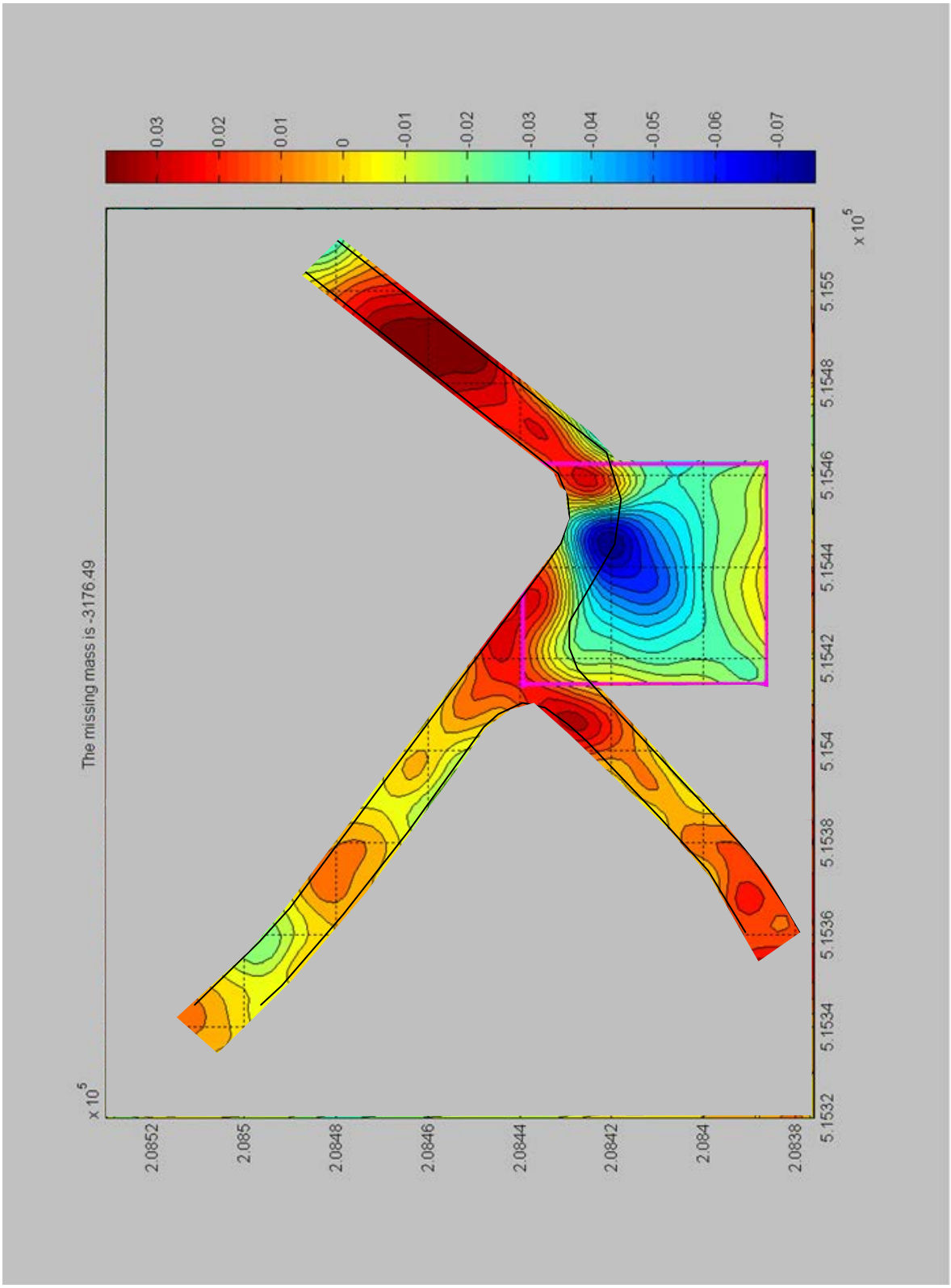
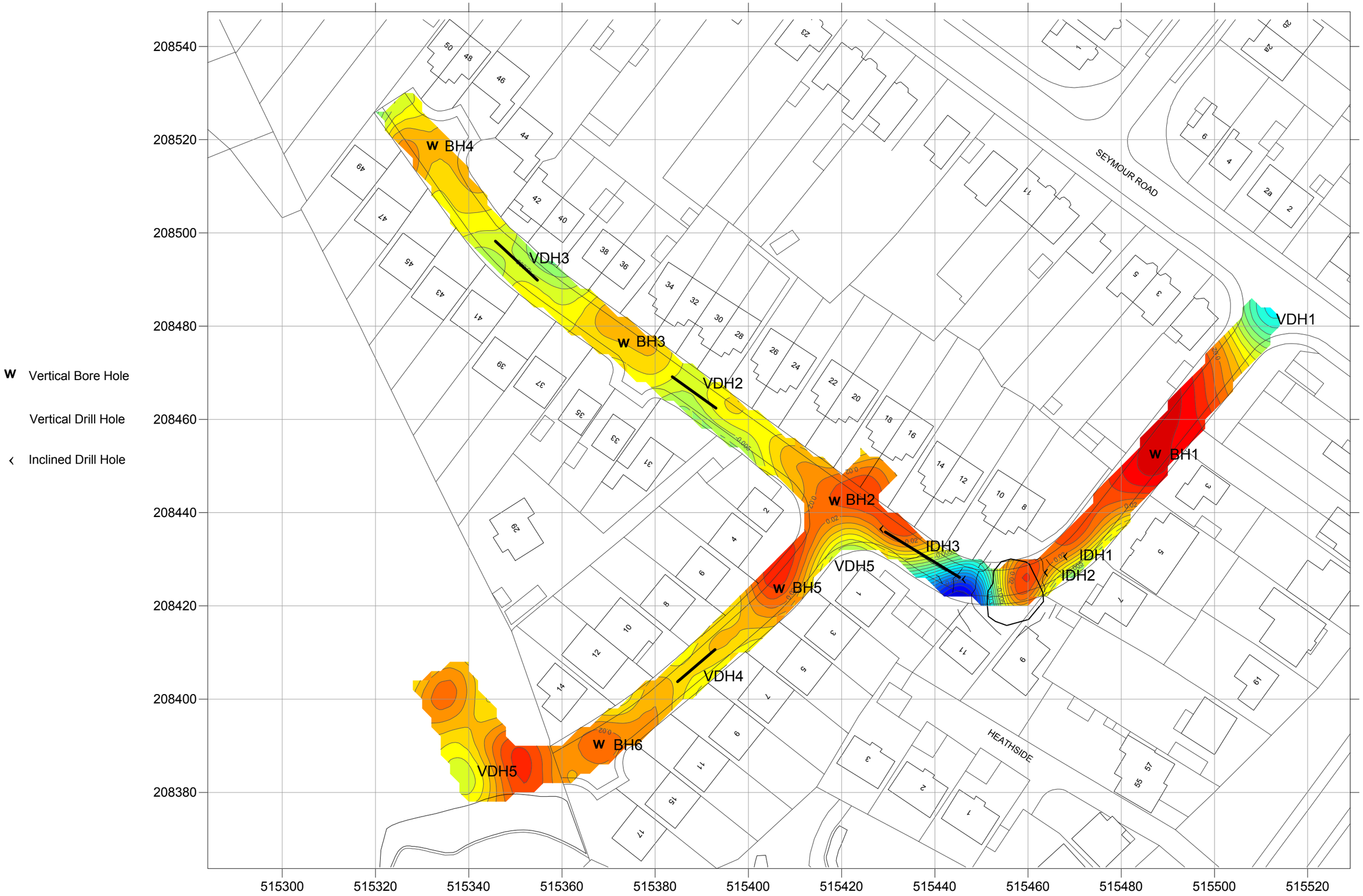


Figure 1531/17 Ground Investigation Recommendations



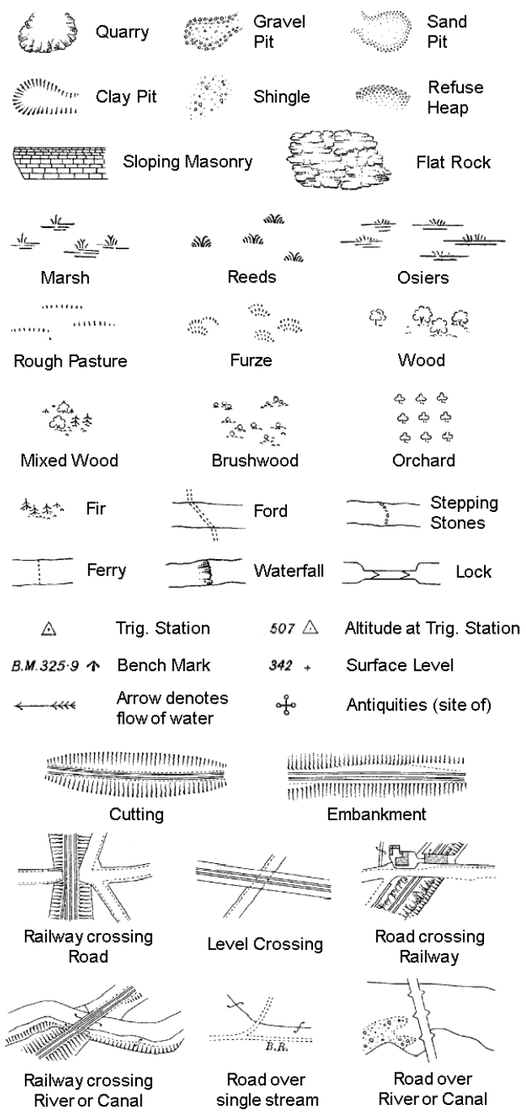
GROUND COLLAPSE AT FONTMELL CLOSE ST. ALBANS

Microgravity Survey

Appendix 1
Historical Plans
Report Number 1531r1v1d1015

Historical Mapping Legends

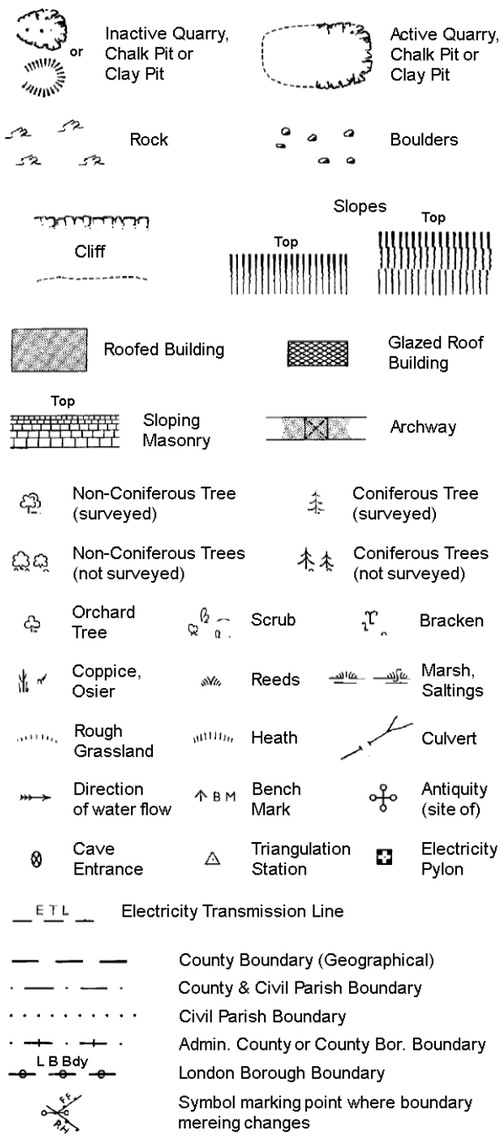
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



— — — — —	County Boundary (Geographical)
— · — · — ·	County & Civil Parish Boundary
+ · + · + · +	Administrative County & Civil Parish Boundary
— — — — — Co. Boro. Bdy.	County Borough Boundary (England)
— — — — — Co. Burgh Bdy.	County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

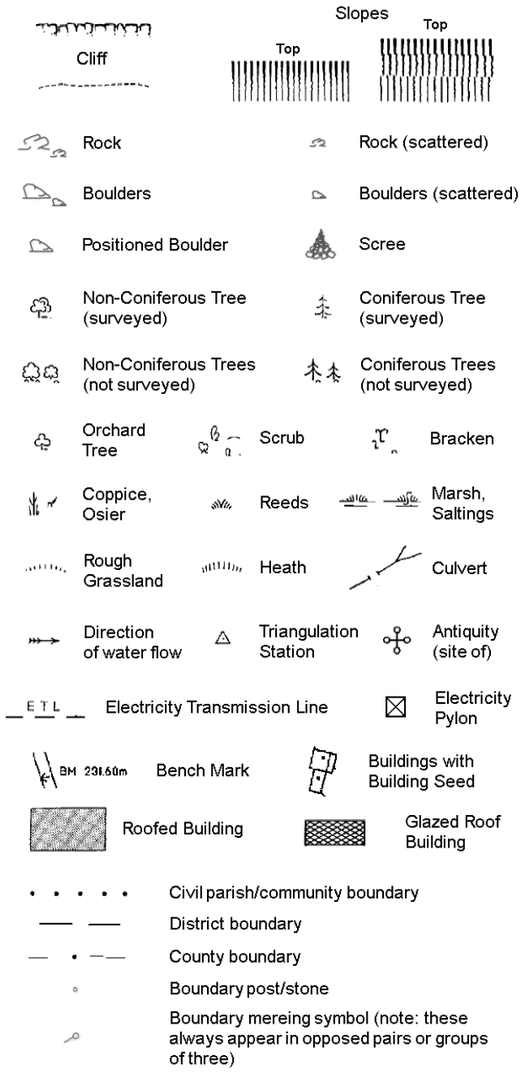
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



— — —	County Boundary (Geographical)
— · — · —	County & Civil Parish Boundary
· · · · · · · · · ·	Civil Parish Boundary
· — + · — + ·	Admin. County or County Bor. Boundary
L B Bdy	London Borough Boundary
E.C. R.H.	Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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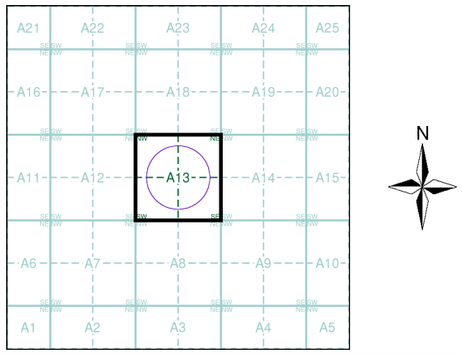
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hertfordshire	1:2,500	1878	2
Hertfordshire	1:2,500	1898	3
Hertfordshire	1:2,500	1924	4
Hertfordshire	1:2,500	1939	5
Ordnance Survey Plan	1:1,250	1963 - 1964	6
Additional SIMs	1:1,250	1964 - 1991	7
Ordnance Survey Plan	1:2,500	1965	8
Ordnance Survey Plan	1:1,250	1973 - 1977	9
Supply of Unpublished Survey Information	1:1,250	1975	10
Additional SIMs	1:1,250	1978 - 1991	11
Large-Scale National Grid Data	1:1,250	1992 - 1993	12

Historical Map - Segment A13



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Search Buffer (m): 250

Site Details

Site at 515270, 208470

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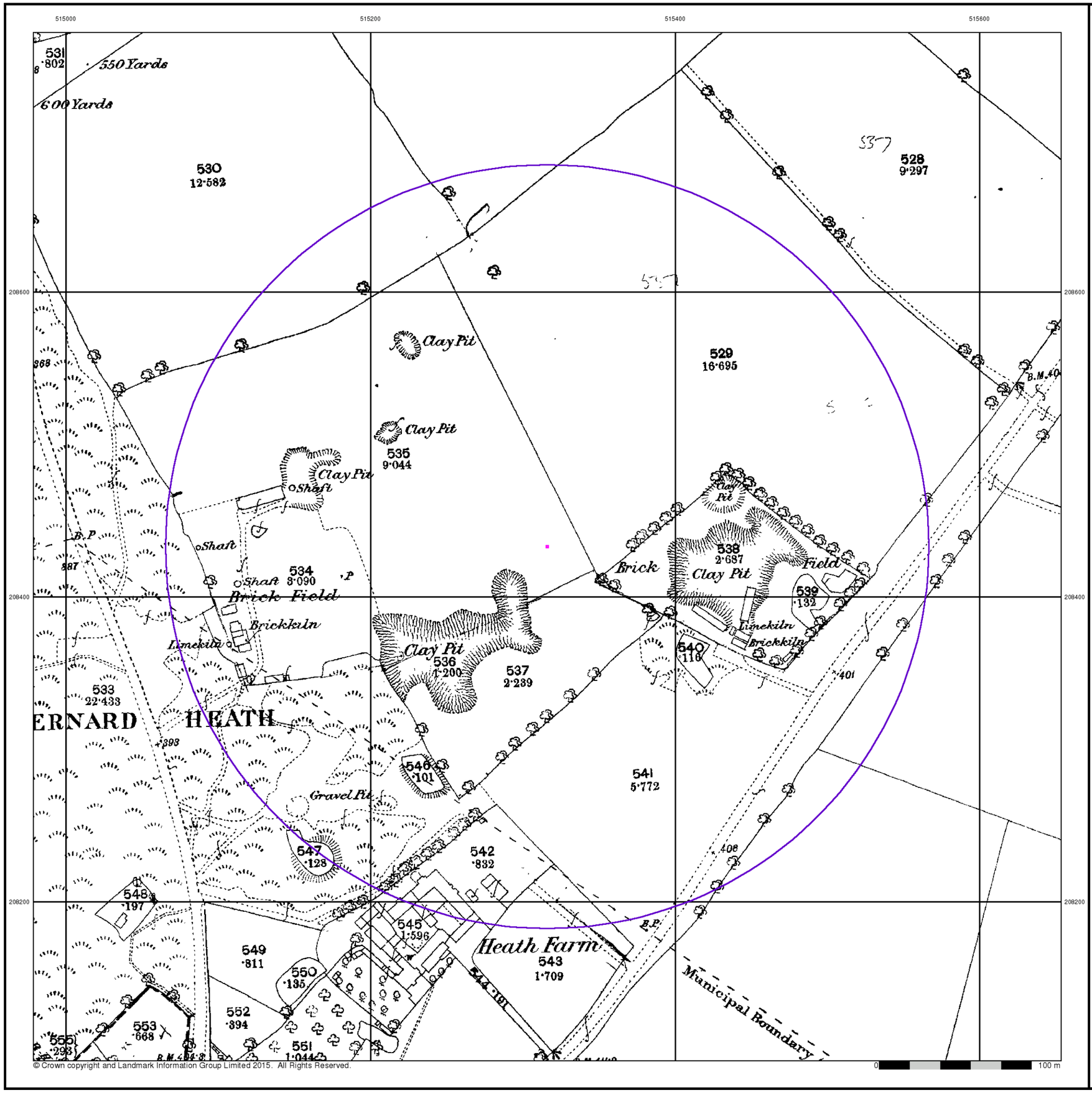

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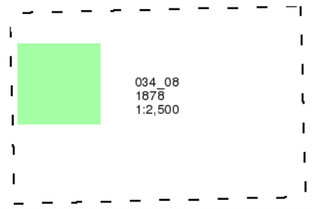
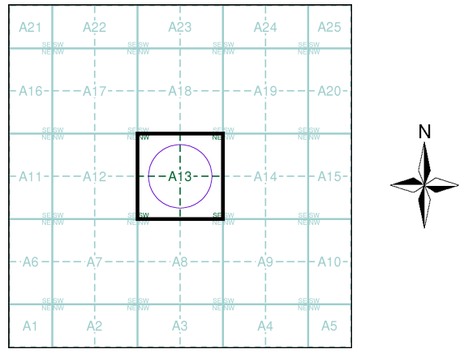
Map Name(s) and Date(s)



Historical Map - Segment A13



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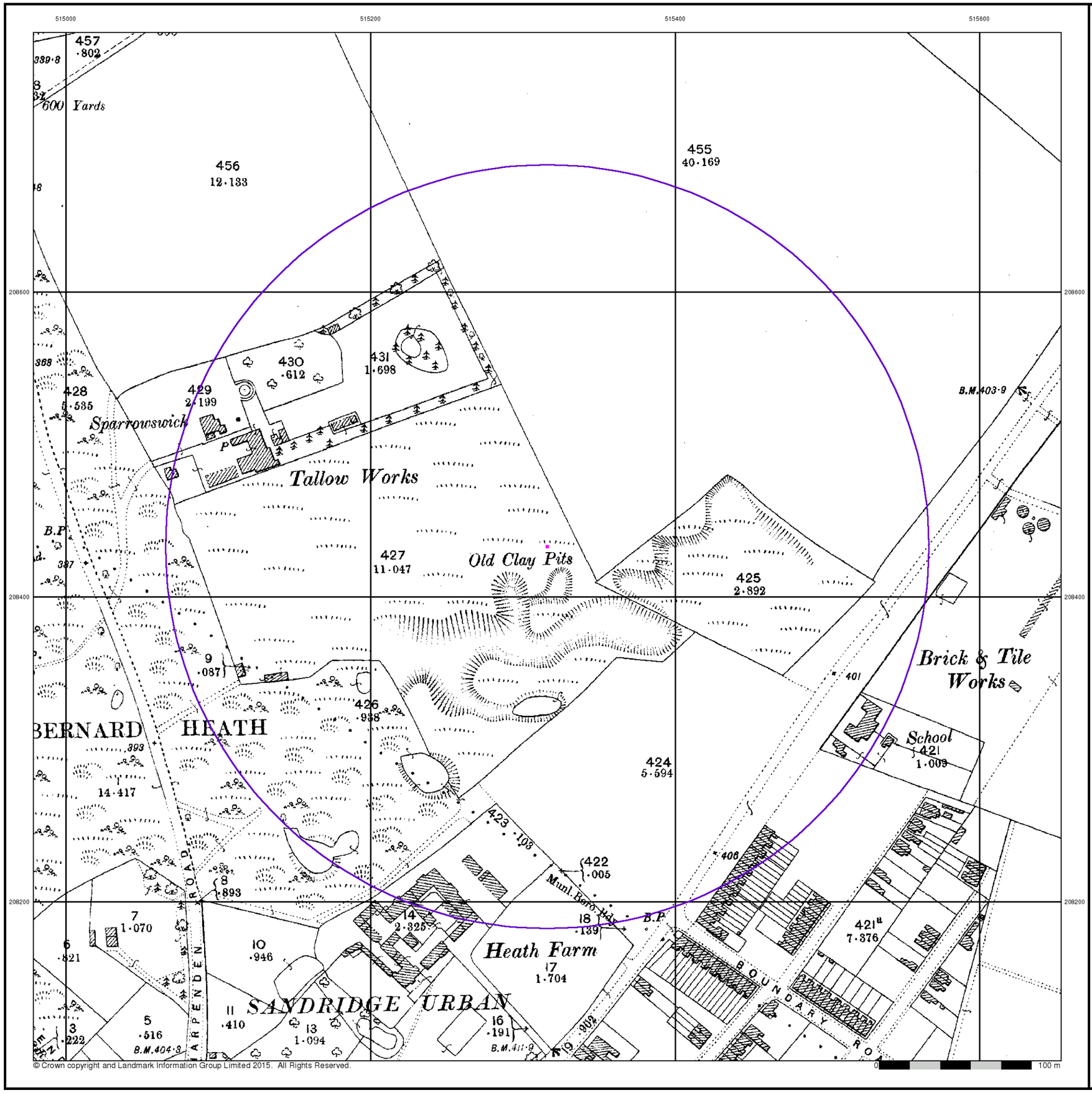

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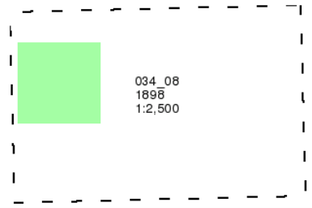
Map Name(s) and Date(s)



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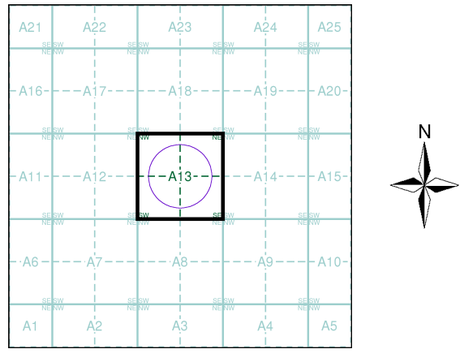

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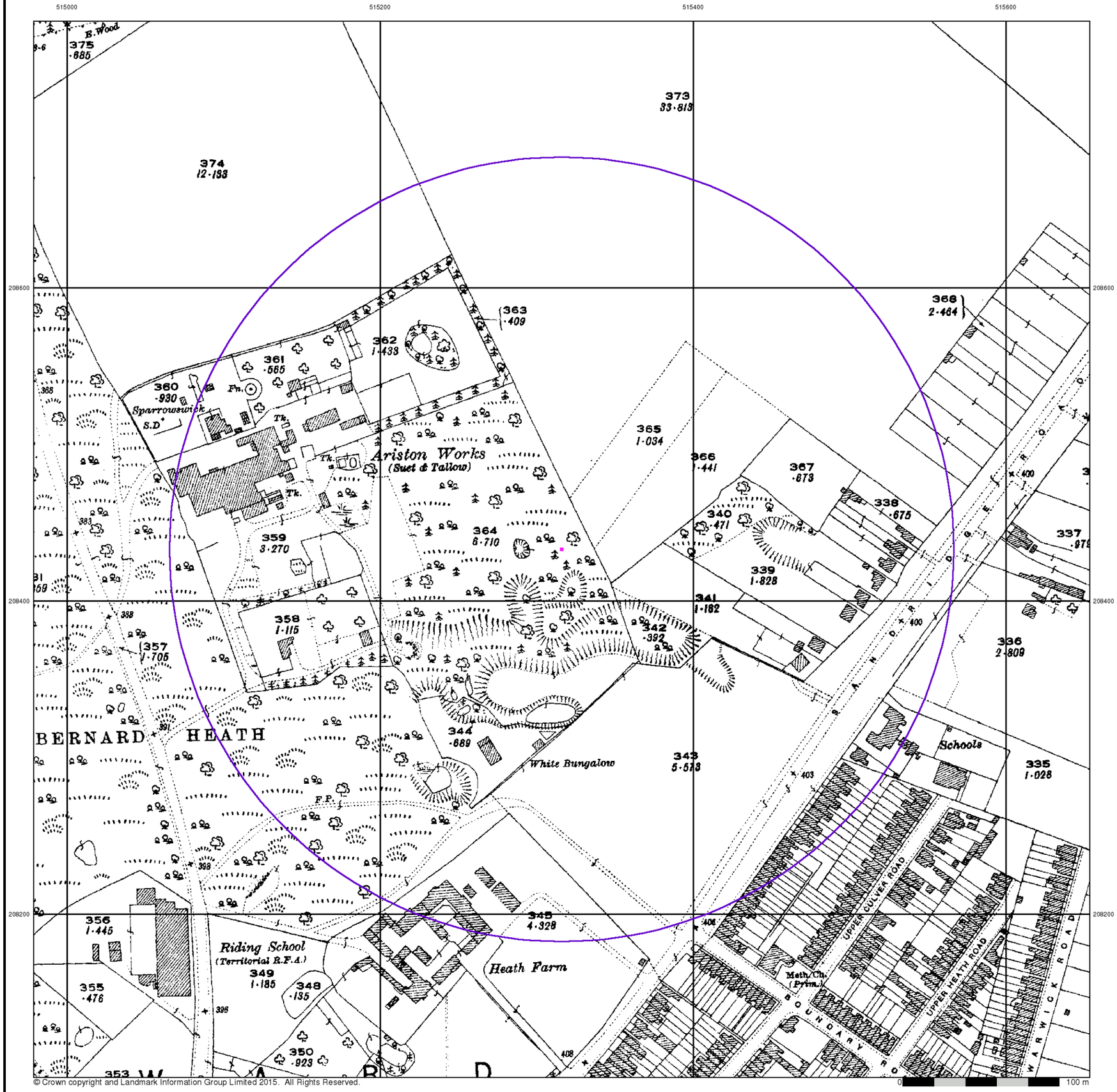

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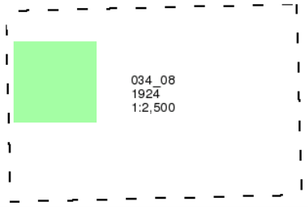
Map Name(s) and Date(s)



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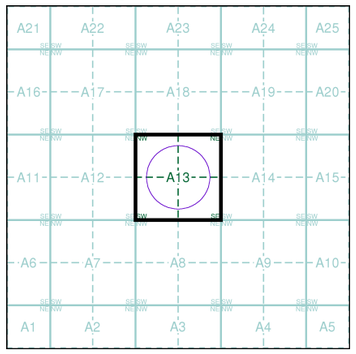

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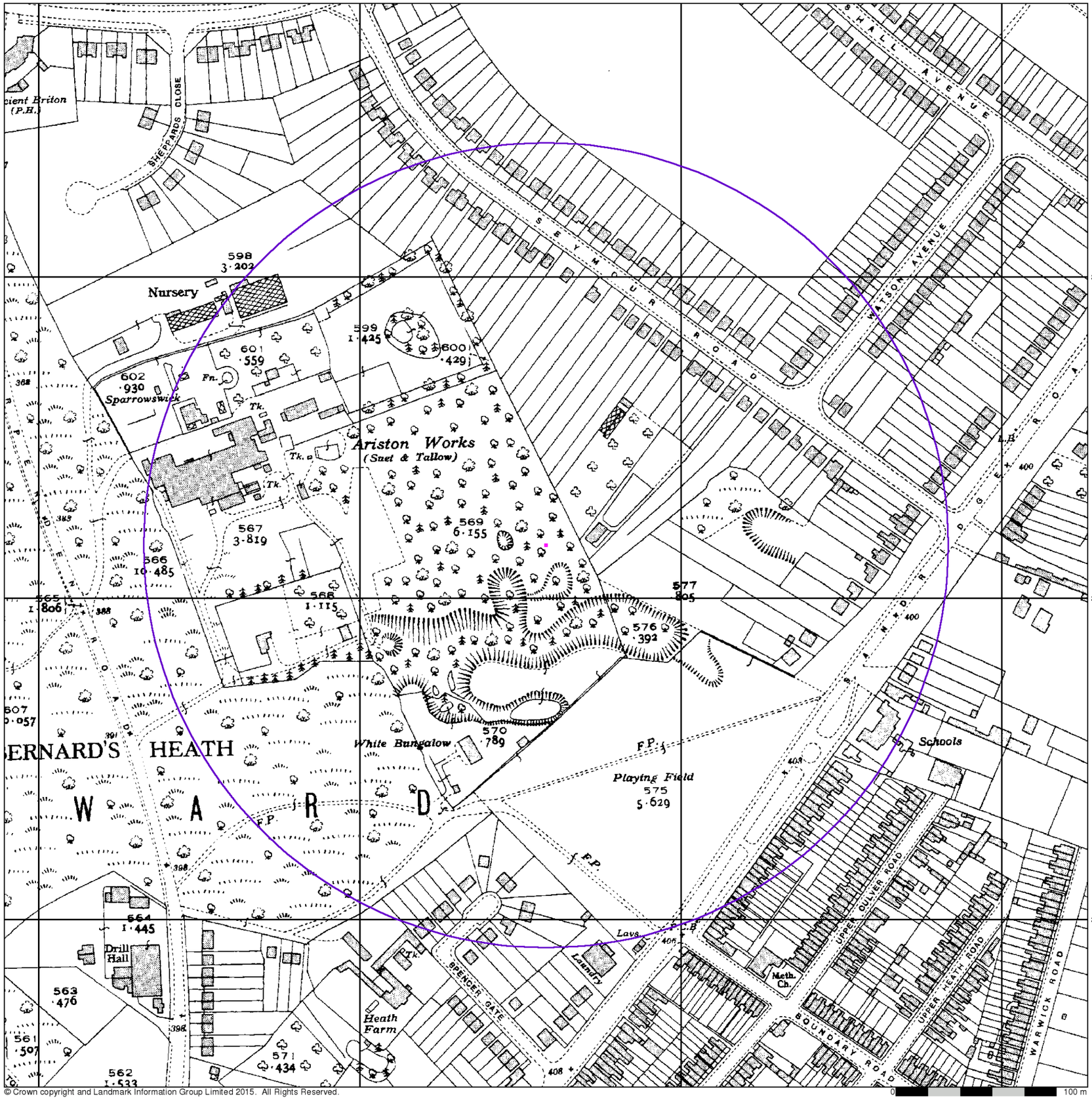

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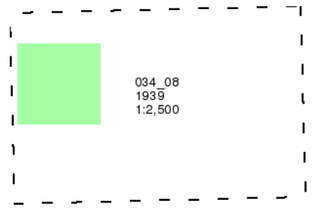

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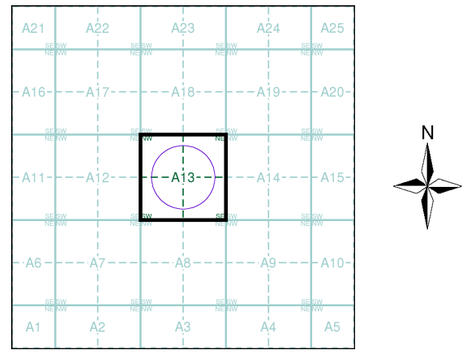

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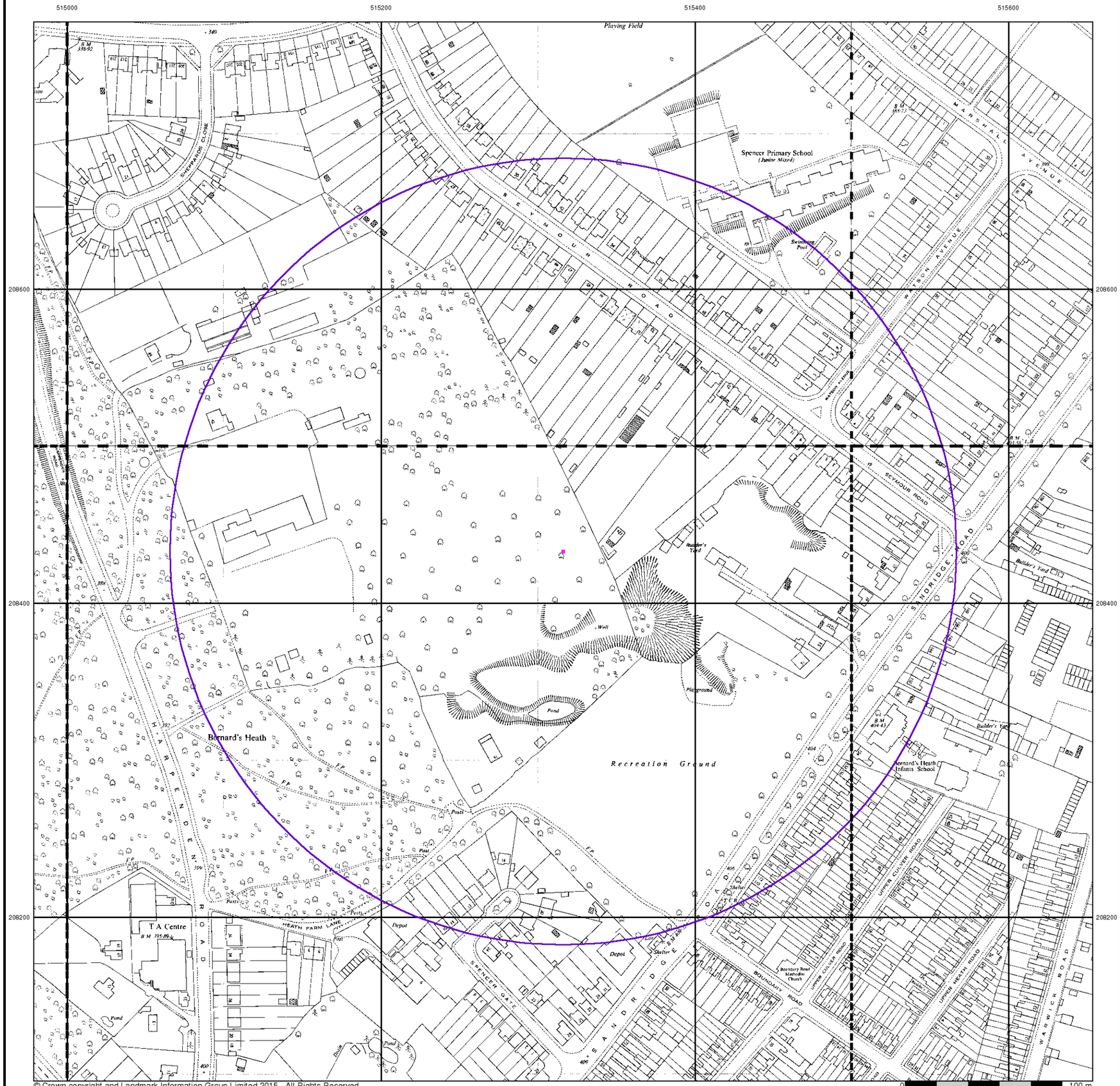

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Ordnance Survey Plan

Published 1963 - 1964

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Map Name(s) and Date(s)

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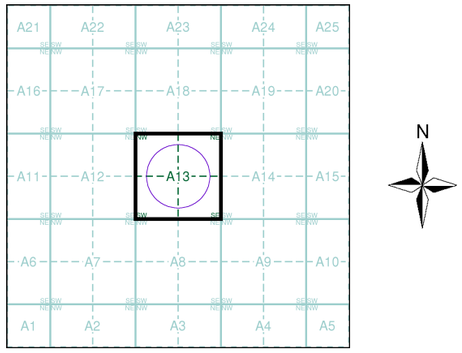
TL1408SE 1963 1:1,250	TL1508SW 1964 1:1,250	TL1508SE 1964 1:1,250

Historical Map - Segment A13



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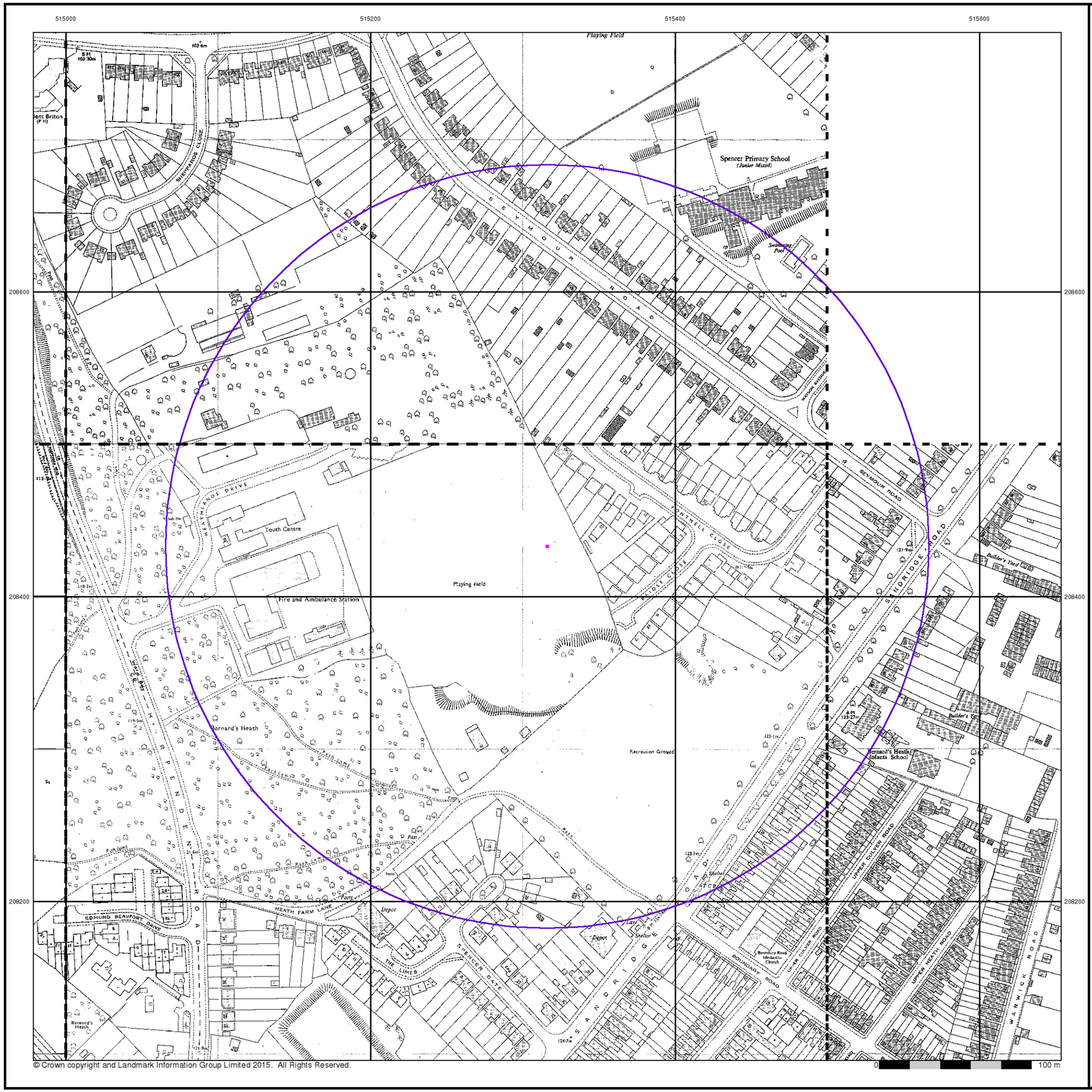

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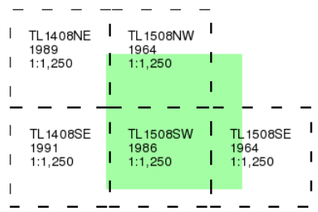
Additional SIMs

Published 1964 - 1991

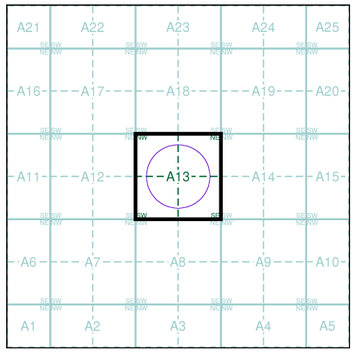
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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Order Details

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Search Buffer (m):	250

Site Details

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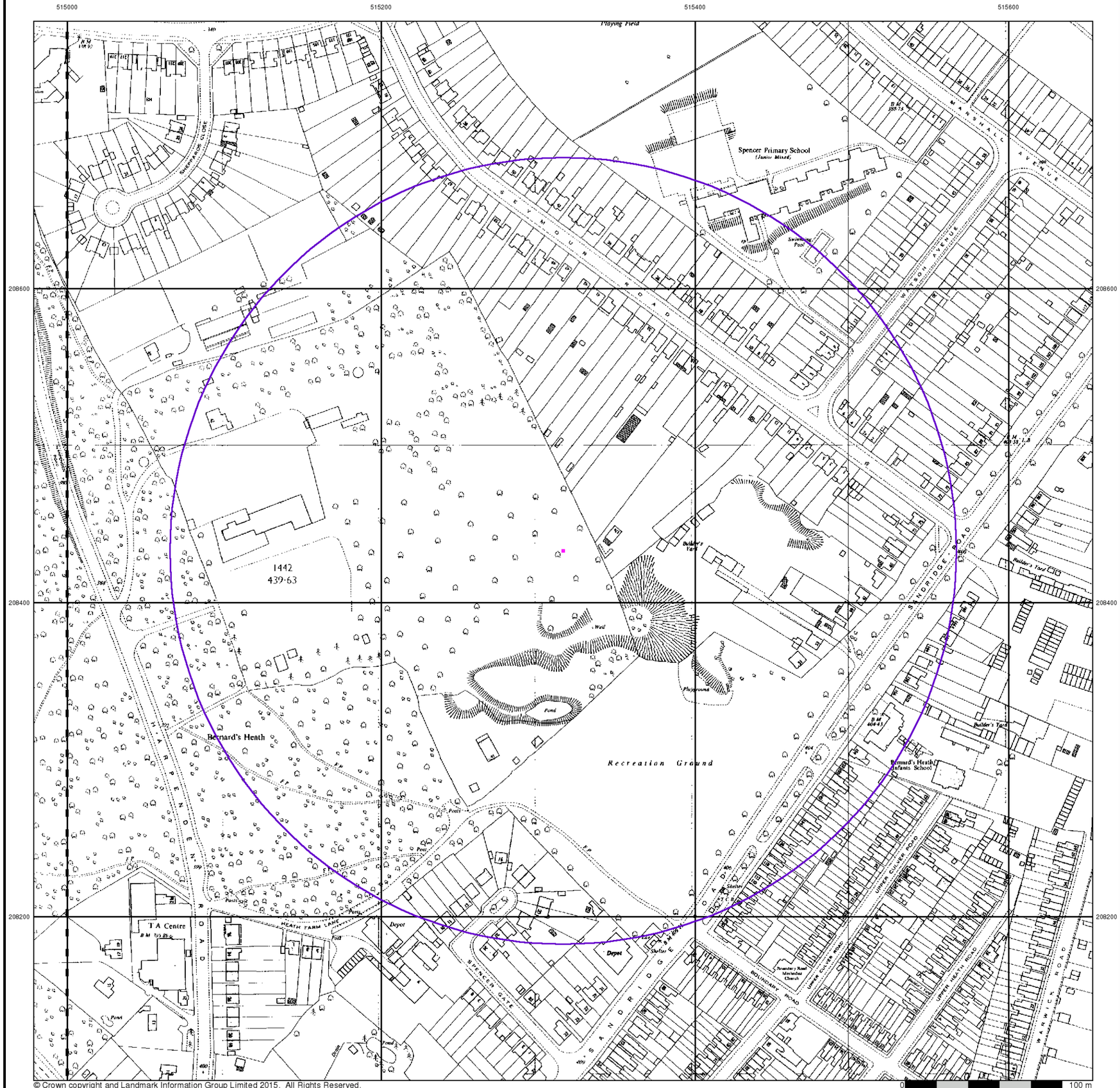

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Ordnance Survey Plan

Published 1965

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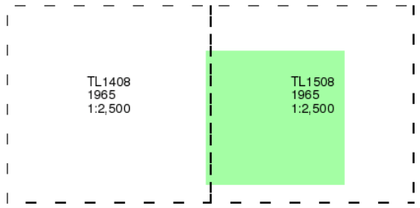
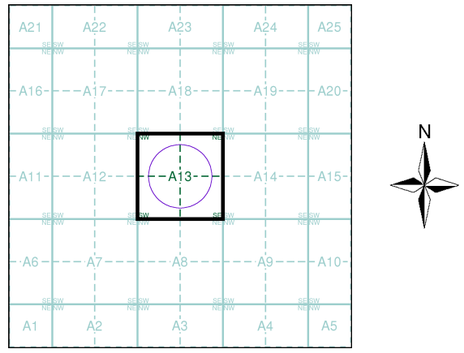
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	73365215_1_1
Customer Ref:	1531
National Grid Reference:	515320, 208430
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	250

Site Details

Site at 515270, 208470

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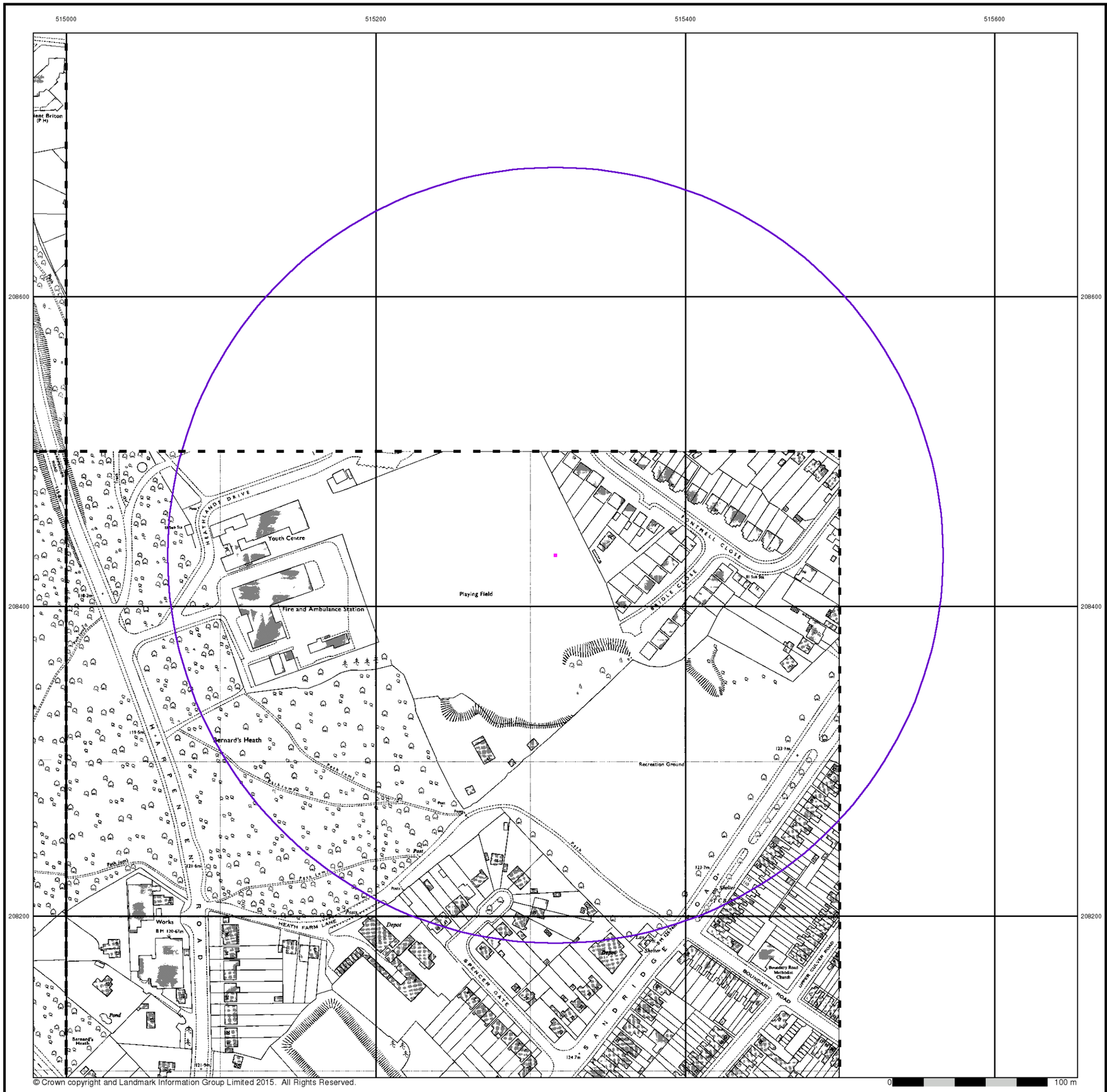

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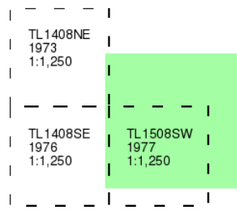
Ordnance Survey Plan

Published 1973 - 1977

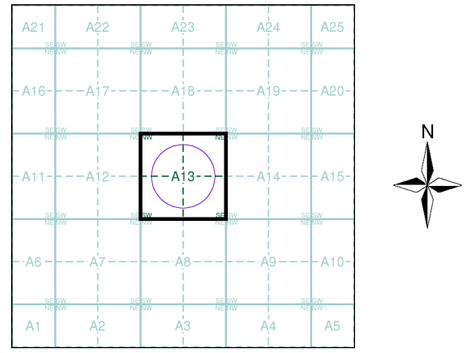
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	73365215_1_1
Customer Ref:	1531
National Grid Reference:	515320, 208430
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	250

Site Details

Site at 515270, 208470

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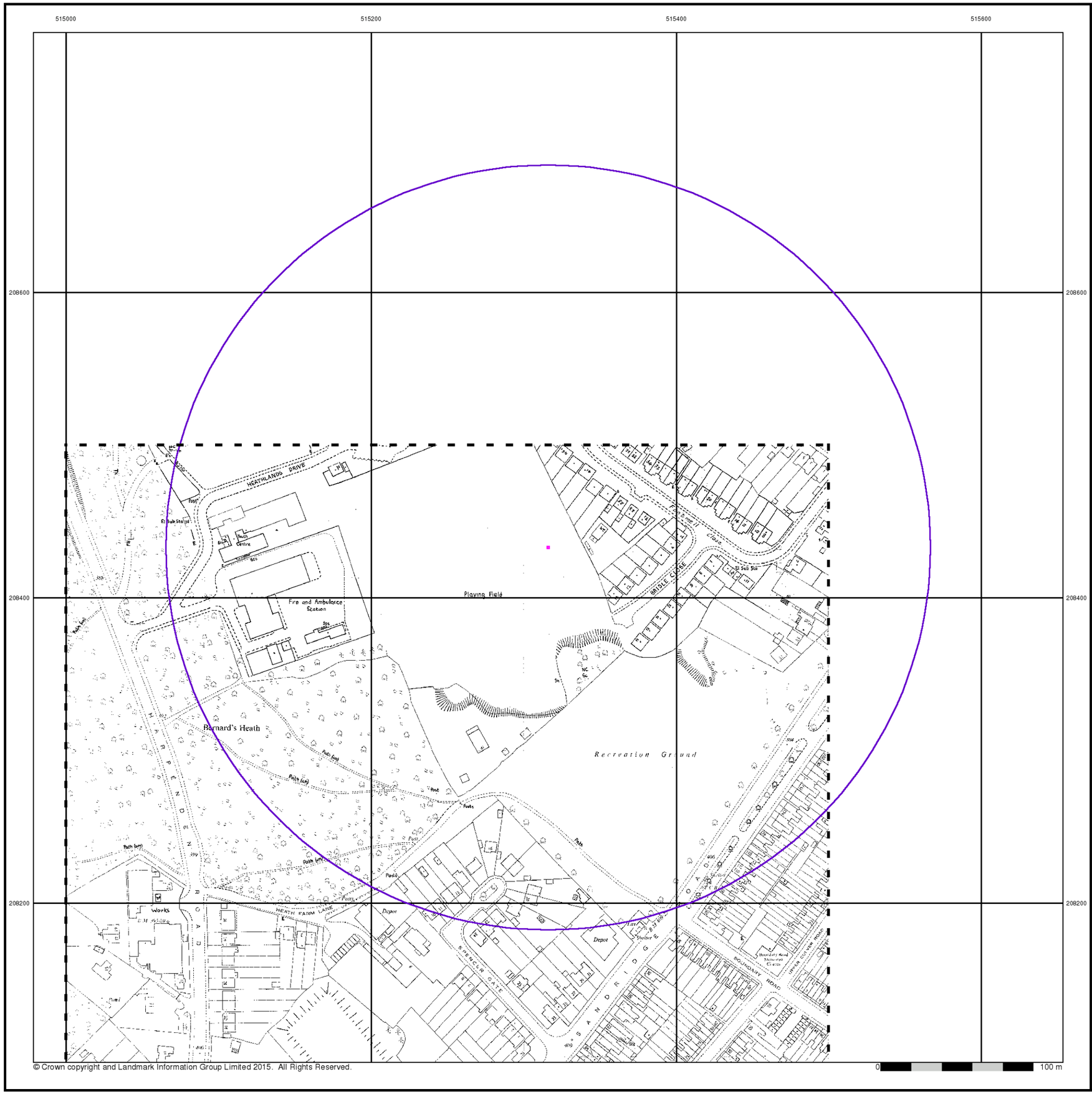

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Envirocheck®

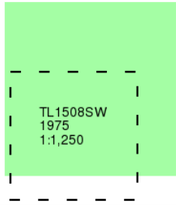
Supply of Unpublished Survey Information

Published 1975

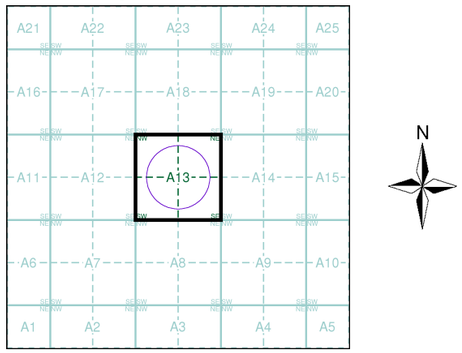
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	73365215_1_1
Customer Ref:	1531
National Grid Reference:	515320, 208430
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	250

Site Details

Site at 515270, 208470

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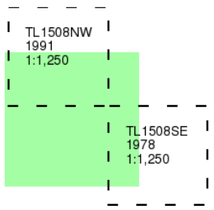
Additional SIMs

Published 1978 - 1991

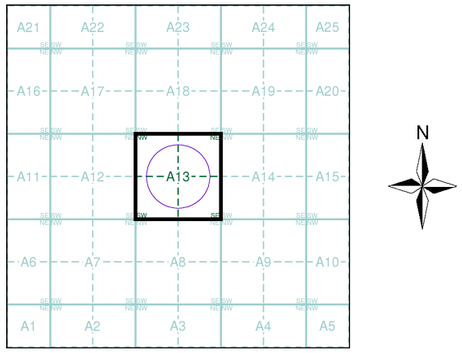
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	73365215_1_1
Customer Ref:	1531
National Grid Reference:	515320, 208430
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	250

Site Details

Site at 515270, 208470

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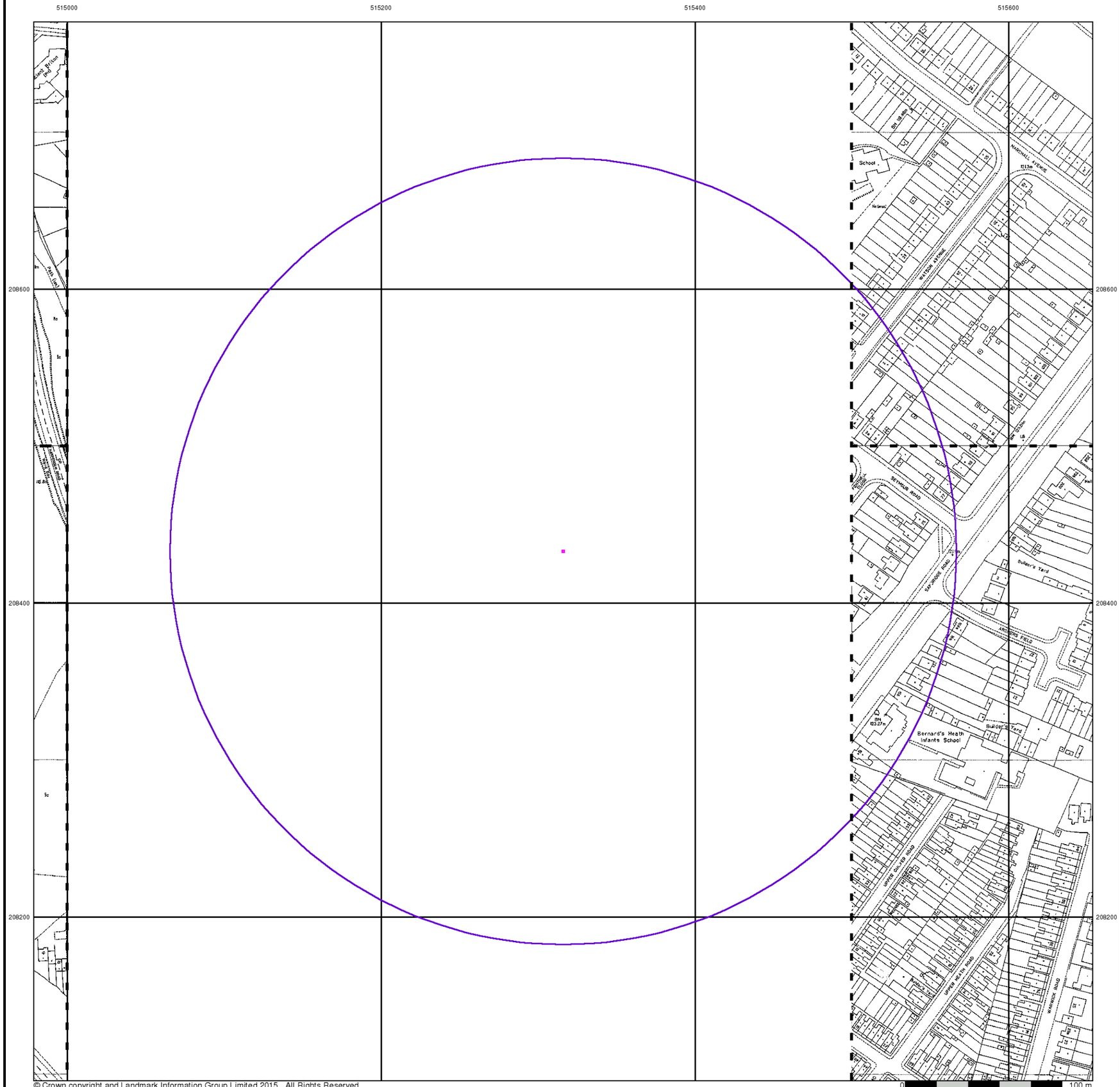

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Envirocheck®

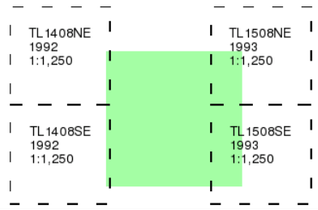
Large-Scale National Grid Data

Published 1992 - 1993

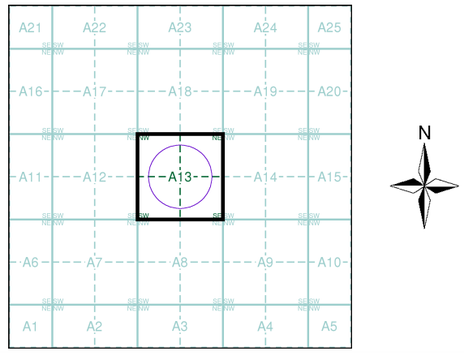
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	73365215_1_1
Customer Ref:	1531
National Grid Reference:	515320, 208430
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	250

Site Details

Site at 515270, 208470

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GROUND COLLAPSE AT FONTMELL CLOSE ST. ALBANS

Microgravity Survey

Appendix 2
Gravity Observation Data
Report Number 1531r1v1d1015

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
4	0		5731.5	0.028	-0.7	-5	-3.46	0.004	60	3	4/10/2015 09:12:04	4/10/2015 10:12:04	515425	208453	122.18	-0.033085669	-0.000403874	-0.005735314	-0.00633144	
4	0		5731.5	0.029	-2.7	-5.9	-3.46	0.004	60	0	4/10/2015 09:13:24	4/10/2015 10:13:24	515425	208453	122.18	-0.033379026	-0.000461985	-0.005735314	-0.002273329	
4	1		5731.5	0.025	-4.1	-3.8	-3.45	0.003	60	0	4/10/2015 09:15:49	4/10/2015 10:15:49	515424	208451	122.25	-0.033963516	-0.000567312	0.010808861	0.000376173	
4	2		5731.5	0.028	-1.5	4	-3.46	0.002	60	2	4/10/2015 09:18:30	4/10/2015 10:18:30	515422	208449	122.33	-0.034834574	-0.000684262	0.026911858	0.01459612	
4	3		5731.5	0.021	-6.7	-8	-3.53	0	60	0	4/10/2015 09:23:59	4/10/2015 10:23:59	515421	208447	122.33	-0.036270694	-0.000923245	0.028455981	0.015379226	
4	4		5731.5	0.021	-7.7	0.8	-3.55	0	60	0	4/10/2015 09:26:14	4/10/2015 10:26:14	515420	208445	122.28	-0.037122656	-0.001021308	0.015661819	0.020683127	
4	5		5731.5	0.027	-7	4.1	-3.56	-0.001	60	1	4/10/2015 09:28:58	4/10/2015 10:28:58	515418	208443	122.3	-0.037686465	-0.001140436	0.020955955	0.018096391	
4	6		5731.5	0.022	-4.3	0	-3.57	-0.001	60	0	4/10/2015 09:31:13	4/10/2015 10:31:13	515417	208441	122.27	-0.038525789	-0.001238499	0.014117696	0.018356195	
4	7		5731.5	0.024	-3.8	1.1	-3.58	-0.002	60	0	4/10/2015 09:33:19	4/10/2015 10:33:19	515415	208439	122.27	-0.039081	-0.001330024	0.01544123	0.017771254	
4	8		5731.5	0.021	-5.4	0.7	-3.59	-0.003	60	0	4/10/2015 09:36:28	4/10/2015 10:36:28	515414	208437	122.28	-0.039907174	-0.001467312	0.017205942	0.016673254	
4	9		5731.5	0.014	-4	-9	-3.59	-0.004	60	0	4/10/2015 09:38:42	4/10/2015 10:38:42	515412	208435	122.38	-0.040453453	-0.001564649	0.039485431	0.01405008	
4	9		5731.5	0.014	-0.9	-3.6	-3.6	-0.004	60	1	4/10/2015 09:40:19	4/10/2015 10:40:19	515412	208435	122.38	-0.04099607	-0.001635109	0.039485431	0.01212054	
4	10		5731.5	0.028	-2.8	-5.9	-3.6	-0.006	60	4	4/10/2015 09:42:31	4/10/2015 10:42:31	515411	208432	122.41	-0.041534975	-0.001730993	0.045000156	0.013731149	
4	11		5731.5	0.024	-8.3	-6.6	-3.61	-0.006	60	0	4/10/2015 09:45:15	4/10/2015 10:45:15	515409	208431	122.43	-0.042336266	-0.001850121	0.049632525	0.019482646	
4	12		5731.5	0.025	-3.5	-3.2	-3.61	-0.008	60	7	4/10/2015 09:49:14	4/10/2015 10:49:14	515407	208429	122.43	-0.043391216	-0.002023729	0.049853114	0.015876843	
4	13		5731.5	0.025	-9.5	14.6	-3.62	-0.009	60	14	4/10/2015 09:51:33	4/10/2015 10:51:33	515405	208427	122.49	-0.043912828	-0.002124697	0.063309043	0.01843374	
4	14		5731.4	0.018	-10.9	8	-3.62	-0.009	60	0	4/10/2015 09:53:45	4/10/2015 10:53:45	515404	208426	122.53	-0.044430474	-0.002220581	0.071912014	0.019132595	
4	14		5731.4	0.018	-4.9	0	-3.62	-0.01	60	0	4/10/2015 09:55:19	4/10/2015 10:55:19	515404	208426	122.53	-0.04494411	-0.002288862	0.071912014	0.012200876	
4	14		5731.4	0.022	-7.3	1.4	-3.62	-0.01	60	0	4/10/2015 09:56:42	4/10/2015 10:56:42	515404	208426	122.53	-0.045199411	-0.002349153	0.071912014	0.014261167	
4	15		5731.4	0.018	-8.7	1.9	-3.63	-0.011	60	0	4/10/2015 10:00:07	4/10/2015 11:00:07	515402	208424	122.52	-0.046210385	-0.002498063	0.068823768	0.006321831	
4	16		5731.4	0.016	3.4	-4.5	-3.63	-0.012	60	0	4/10/2015 10:02:37	4/10/2015 11:02:37	515400	208422	122.5	-0.046709664	-0.002607022	0.065294344	-0.008098634	
4	17		5731.4	0.018	-4.6	-3.4	-3.63	-0.013	60	0	4/10/2015 10:05:37	4/10/2015 11:05:37	515398	208420	122.48	-0.047450716	-0.002737772	0.060882564	-0.011379664	
4	18		5731.4	0.016	1.6	-2.1	-3.6	-0.018	60	2	4/10/2015 10:19:17	4/10/2015 11:19:17	515396	208418	122.45	-0.050780833	-0.004	0.054485483	-0.012514517	
4	18		5731.4	0.018	2.3	-8	-3.6	-0.018	60	0	4/10/2015 10:20:38	4/10/2015 11:20:38	515396	208418	122.45	-0.051010442	-0.004	0.054485483	-0.013514517	
4	19		5731.4	0.019	-7.6	3.7	-3.61	-0.019	60	0	4/10/2015 10:23:07	4/10/2015 11:23:07	515395	208417	122.44	-0.05169253	-0.004	0.052279593	-0.009720407	
4	20		5731.4	0.018	-7	1.1	-3.61	-0.02	60	5	4/10/2015 10:25:14	4/10/2015 11:25:14	515393	208415	122.43	-0.052141608	-0.004	0.050514881	-0.012485119	
4	21		5731.4	0.022	-9.1	-2.9	-3.62	-0.021	60	0	4/10/2015 10:27:51	4/10/2015 11:27:51	515391	208413	122.46	-0.052586136	-0.004	0.056911962	-0.015088038	
4	22		5731.4	0.018	-4.7	-2	-3.63	-0.023	60	0	4/10/2015 10:34:40	4/10/2015 11:34:40	515389	208411	122.47	-0.054105827	-0.004	0.057573729	-0.016426271	
4	23		5731.4	0.019	0.9	-9	-3.62	-0.024	60	0	4/10/2015 10:37:15	4/10/2015 11:37:15	515387	208410	122.45	-0.05473974	-0.004	0.05514725	-0.01885275	
4	24		5731.4	0.023	-1.5	-5.3	-3.6	-0.025	60	8	4/10/2015 10:41:30	4/10/2015 11:41:30	515385	208408	122.42	-0.055568573	-0.004	0.048088402	-0.026911598	
4	25		5731.4	0.021	-5.6	-4	-3.6	-0.026	60	0	4/10/2015 10:43:41	4/10/2015 11:43:41	515384	208407	122.44	-0.05597593	-0.004	0.051397237	-0.018602763	
4	26		5731.4	0.026	-7.4	-3.5	-3.61	-0.027	60	0	4/10/2015 10:49:19	4/10/2015 11:49:19	515381	208405	122.45	-0.05716957	-0.004	0.054264894	-0.008735106	
4	26		5731.4	0.029	-6.3	3	-3.61	-0.028	60	9	4/10/2015 10:51:05	4/10/2015 11:51:05	515381	208405	122.45	-0.05755793	-0.004	0.054264894	-0.009735106	
4	27		5731.5	0.04	0	-5.7	-3.62	-0.029	60	1	4/10/2015 10:55:05	4/10/2015 11:55:05	515380	208404	122.42	-0.058320298	-0.004	0.047426635	0.004426635	
4	28		5731.4	0.035	0.6	1.6	-3.63	-0.03	60	1	4/10/2015 10:58:14	4/10/2015 11:58:14	515378	208402	122.4	-0.058879479	-0.004	0.042794266	-0.013205734	
4	29		5731.4	0.026	2.1	-9.2	-3.63	-0.031	60	0	4/10/2015 11:01:55	4/10/2015 12:01:55	515376	208401	122.39	-0.059427834	-0.004	0.040147198	-0.020852802	
4	30		5731.5	0.051	4	-9.4	-3.63	-0.032	60	5	4/10/2015 11:04:49	4/10/2015 12:04:49	515374	208399	122.32	-0.059965342	-0.004	0.02647068	-0.02352932	
4	31		5731.5	0.03	4.9	-1.8	-3.61	-0.035	60	1	4/10/2015 11:14:43	4/10/2015 12:14:43	515372	208398	122.25	-0.061678528	-0.004	0.01102945	-0.01397055	
4	31		5731.5	0.016	2.1	-5.1	-3.61	-0.036	60	0	4/10/2015 11:16:16	4/10/2015 12:16:16	515372	208398	122.25	-0.062006659	-0.004	0.01102945	-0.01197055	
4	32		5731.5	0.022	-6.1	-9.8	-3.61	-0.037	60	0	4/10/2015 11:18:35	4/10/2015 12:18:35	515369	208396	122.26	-0.062329957	-0.004	0.011911806	-0.009088194	
4	33		5731.5	0.023	-4.7	-1	-3.63	-0.037	60	0	4/10/2015 11:21:55	4/10/2015 12:21:55	515367	208395	122.26	-0.062805846	-0.004	0.01323534	-0.00476466	
4	34		5731.5	0.025	3.8	-3.7	-3.64	-0.038	60	0	4/10/2015 11:24:35	4/10/2015 12:24:35	515365	208394	122.26	-0.063270878	-0.004	0.011470628	-0.004529372	
4	37		5731.5	0.021	-1.7	2.1	-3.66	-0.039	60	0	4/10/2015 11:26:57	4/10/2015 12:26:57	515360	208391	122.17	-0.063574876	-0.004	-0.007500026	-0.007500026	
3	0		5731.5	0.017	-9	6	-3.67	-0.042	60	0	4/10/2015 11:37:10	4/10/2015 12:37:10	515427	208451	122.09	-0.065161088	-0.005480706	-0.026250091	0.011230615	
3	0		5731.5	0.023	-6.8	3.8	-3.67	-0.042	60	0	4/10/2015 11:38:47	4/10/2015 12:38:47	515427	208451	122.09	-0.065298124	-0.005671027	-0.026250091	0.010420936	
3	1		5731.5	0.024	-1.7	0.7	-3.67	-0.043	60	0	4/10/2015 11:41:22	4/10/2015 12:41:22	515426	208450	122.12	-0.06570211	-0.005975147	-0.018750065	0.017225082	
3	2		5731.5	0.017	-3.9	0.6	-3.67	-0.044	60	3	4/10/2015 11:44:39	4/10/2015 12:44:39	515425	208448	122.23	-0.066095448	-0.006361674	0.005073547	0.022435221	
3	3		5731.5	0.029	-0.8	-9.2	-3.68	-0.044	60	0	4/10/2015 11:46:59	4/10/2015 12:46:59	515423	208445	122.3	-0.066351782	-0.006636364	0.020735366	0.01737173	
3	4		5731.5	0.018	7	0.1	-3.68	-0.045	60	0	4/10/2015 11:49:53	4/10/2015 12:49:53	515422	208443	122.25	-0.066727485	-0.006977763	0.009926505	0.017904268	
3	5		5731.5	0.023	2.1	-3.3	-3.69	-0.046	60	0	4/10/2015 11:52:06	4/10/2015 12:52:06	515420	208441	122.27	-0.06709268	-0.007238718	0.013455929	0.013694647	
3	6		5731.5	0.029	-4.2	-5.2	-3.69	-0.046	60	7	4/10/2015 11:55:07	4/10/2015 12:55:07	515419	208439	122.25	-0.067447428	-0.007593852	0.009044149	0.007638001	
3	7		5731.5	0.042	-1.7	-0.5	-3.7	-0.048	60	1	4/10/2015 12:01:38	4/10/2015 13:01:38	515417	208437	122.26	-0.068125849	-0.00836102	0.011691217	5.22373E-05	
3	8		5731.5	0.019	-4.2	-5.3	-3.71	-0.049	60	10	4/10/2015 12:03:52	4/10/2015 13:03:52	515416	208435	122.28	-0.068342858	-0.008623937	0.017205942	-0.000170121	
3	9		5731.5	0.023	-5.2	-5.8	-3.71	-0.049	60	0	4/10/2015 12:06:04	4/10/2015 13:06:04	515414	208433	122.32	-0.068659889	-0.00888293	0.025147146	0.004030076	
3	10		5731.5	0.026	-12.2	-4.7	-3.72	-0.05	60	14	4/10/2015 12:10:17	4/10/2015 13:10:17	515413	208431	122.32	-0.069066886	-0.009379333	0.026250091	0.010629424	
3	10		5731.5	0.062	-2.3	-0.1	-3.75	-0.054	60	4	4/10/2015 12:26:29	4/10/2015 13:26:29	515413	208431	122.32	-0.070519322	-0.011286462	0.026250091	0.008536553	
3	11		5731.5	0.029	-2.9	4.7	-3.75	-0.054	60	2	4/10/2015 12:29:44	4/10/2015 13:29:44	515411	208429	122.34	-0.070761157	-0.011669065	0.030000104	0.014669169	
3	12		5731.5	0.04	-4.9	-2.7	-3.75	-0.055	60	0	4/10/2015 12:31:52	4/10/2015 13:31:52	515409	208428	122.36	-0.070917164	-0.011920209	0.034411884	0.017332093	
3	13		5731.5	0.029	-7.5	4.7	-3.75	-0.055	60	0	4/10/2015 12:34:06	4/10/2015 13:34:06	515408	208426	122.39	-0.07114343	-0.012183126	0.041691321	0.020874447	
3	14		5731.5	0.022	0.4	1.1	-3.75	-0.056	60	11	4/10/2015 12:36:21	4/10/2015 13:36:21	515406	208424	122.42	-0.071289159	-0.012448005	0.046764868	0.011212873	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
3	15		5731.5	0.024	-7.5	4.5	-3.75	-0.056	60	0	4/10/2015 12:38:28	4/10/2015 13:38:28	515404	208422	122.42	-0.071430835	-0.012697188	0.047647224	0.016344412	
3	16		5731.5	0.027	4.6	-5.3	-3.75	-0.057	60	14	4/10/2015 12:40:52	4/10/2015 13:40:52	515402	208420	122.4	-0.071568492	-0.012979725	0.043456033	0.006435758	
3	17		5731.4	0.017	-5	-3	-3.75	-0.057	60	0	4/10/2015 12:43:24	4/10/2015 13:43:24	515401	208419	122.39	-0.071767521	-0.013277959	0.040808965	-0.001913076	
3	17		5731.4	0.019	-2.8	-0.4	-3.74	-0.057	60	0	4/10/2015 12:44:52	4/10/2015 13:44:52	515401	208419	122.39	-0.071831892	-0.013450621	0.040808965	-0.001740414	
3	18		5731.4	0.025	-4.3	-6	-3.72	-0.059	60	0	4/10/2015 12:55:50	4/10/2015 13:55:50	515399	208417	122.39	-0.072476443	-0.010912254	0.040147198	-0.007940548	
3	19		5731.4	0.02	-4.4	0	-3.71	-0.06	60	1	4/10/2015 12:58:00	4/10/2015 13:58:00	515397	208415	122.39	-0.072632506	-0.010846697	0.040147198	-0.007006105	
3	20		5731.4	0.038	0.6	1.1	-3.71	-0.06	60	2	4/10/2015 13:00:21	4/10/2015 14:00:21	515395	208414	122.39	-0.072731981	-0.010775593	0.040808965	-0.011415442	
3	21		5731.4	0.026	-2	6.5	-3.7	-0.06	60	0	4/10/2015 13:02:25	4/10/2015 14:02:25	515393	208412	122.39	-0.072827847	-0.010713061	0.040367787	-0.007919152	
3	22		5731.4	0.018	-6.4	2.2	-3.7	-0.061	60	0	4/10/2015 13:04:21	4/10/2015 14:04:21	515391	208410	122.38	-0.072920146	-0.010654564	0.03970602	-0.004639416	
3	23		5731.5	0.025	-11.7	2.6	-3.71	-0.061	60	1	4/10/2015 13:06:14	4/10/2015 14:06:14	515390	208409	122.38	-0.073008917	-0.010597579	0.039485431	-0.00191699	
3	23		5731.4	0.039	-2.7	-7.6	-3.71	-0.061	60	2	4/10/2015 13:08:08	4/10/2015 14:08:08	515390	208409	122.38	-0.073094201	-0.010540091	0.039485431	-0.010974478	
3	23		5731.4	0.037	-6.5	0.6	-3.71	-0.062	60	1	4/10/2015 13:11:02	4/10/2015 14:11:02	515390	208409	122.38	-0.073215679	-0.010452345	0.039485431	-0.006062224	
3	24		5731.5	0.025	-9.1	-5.6	-3.72	-0.062	60	0	4/10/2015 13:12:55	4/10/2015 14:12:55	515388	208407	122.37	-0.073254473	-0.010395361	0.036838363	-0.002766276	
3	25		5731.5	0.031	-9.8	1.5	-3.72	-0.063	60	0	4/10/2015 13:15:12	4/10/2015 14:15:12	515386	208405	122.36	-0.07336583	-0.010326273	0.035073651	-0.007600076	
3	25		5731.4	0.024	-2.5	-1	-3.72	-0.063	60	4	4/10/2015 13:17:09	4/10/2015 14:17:09	515386	208405	122.36	-0.073435935	-0.010267272	0.035073651	-0.012659077	
3	25		5731.4	0.038	-2.1	-1.3	-3.73	-0.063	60	2	4/10/2015 13:19:42	4/10/2015 14:19:42	515386	208405	122.36	-0.073502782	-0.010190116	0.035073651	-0.013736233	
3	26		5731.5	0.026	-8.6	0.8	-3.73	-0.064	60	0	4/10/2015 13:21:36	4/10/2015 14:21:36	515384	208404	122.37	-0.073566414	-0.010132627	0.035735418	-0.008131955	
3	27		5731.4	0.025	-1.5	0	-3.74	-0.064	60	0	4/10/2015 13:23:49	4/10/2015 14:23:49	515382	208402	122.38	-0.073626874	-0.010065557	0.039264842	-0.006669601	
3	27		5731.4	0.035	-1.7	0.2	-3.74	-0.064	60	5	4/10/2015 13:25:06	4/10/2015 14:25:06	515382	208402	122.38	-0.073684205	-0.010026727	0.039264842	-0.006708431	
3	28		5731.4	0.033	5.4	-5.8	-3.74	-0.064	60	0	4/10/2015 13:27:21	4/10/2015 14:27:21	515380	208400	122.39	-0.07373845	-0.009958649	0.040147198	-0.006894153	
3	29		5731.5	0.03	1.8	-3.9	-3.75	-0.065	60	0	4/10/2015 13:31:43	4/10/2015 14:31:43	515378	208399	122.37	-0.073837859	-0.009826525	0.035514829	-0.007658646	
3	30		5731.5	0.022	-2.9	-3.4	-3.75	-0.065	60	1	4/10/2015 13:33:56	4/10/2015 14:33:56	515376	208398	122.28	-0.07388311	-0.009759455	0.017426531	-0.006814014	
3	31		5731.5	0.035	0.8	-4.3	-3.75	-0.066	60	0	4/10/2015 13:36:43	4/10/2015 14:36:43	515374	208396	122.21	-0.073945542	-0.00967524	0.001544123	-0.006780637	
3	32		5731.5	0.05	0.6	0.4	-3.75	-0.066	60	10	4/10/2015 13:40:12	4/10/2015 14:40:12	515372	208395	122.19	-0.074018858	-0.009569844	-0.003750013	-0.002180169	
3	33		5731.5	0.034	-3.6	1.2	-3.76	-0.066	60	1	4/10/2015 13:43:05	4/10/2015 14:43:05	515369	208394	122.19	-0.074066593	-0.009482602	-0.003529424	0.000953178	
3	34		5731.5	0.026	2.6	-6.1	-3.76	-0.066	60	0	4/10/2015 13:45:07	4/10/2015 14:45:07	515367	208392	122.18	-0.074095047	-0.009421079	-0.005735314	0.000685765	
3	35		5731.5	0.026	-5.2	8.5	-3.77	-0.067	60	0	4/10/2015 13:48:15	4/10/2015 14:48:15	515365	208391	122.16	-0.074132785	-0.009326273	-0.010147094	0.008179179	
3	36		5731.5	0.026	-5.7	2.5	-3.77	-0.067	60	0	4/10/2015 13:51:10	4/10/2015 14:51:10	515363	208390	122.12	-0.074164726	-0.009238023	-0.018750065	0.004487958	
3	37		5731.5	0.027	-2.6	2.5	-3.77	-0.068	60	0	4/10/2015 13:55:00	4/10/2015 14:55:00	515361	208389	122.08	-0.074198558	-0.009122037	-0.027353036	-0.001230999	
3	37		5731.5	0.026	-4.4	2.5	-3.77	-0.068	60	0	4/10/2015 13:56:18	4/10/2015 14:56:18	515361	208389	122.08	-0.07420549	-0.009082703	-0.027353036	-0.001270333	
2	0		5731.6	0.04	-0.8	-0.9	-3.59	-0.07	60	7	4/10/2015 14:19:07	4/10/2015 15:19:07	515429	208450	122.04	-0.074210815	-0.006568791	-0.03529424	0.017274551	
2	0		5731.5	0.061	1.6	-1.6	-3.56	-0.07	60	3	4/10/2015 14:20:27	4/10/2015 15:20:27	515429	208450	122.04	-0.074204901	-0.006622833	-0.03529424	0.015328593	
2	1		5731.5	0.031	-0.1	-1.9	-3.53	-0.07	60	0	4/10/2015 14:23:04	4/10/2015 15:23:04	515428	208448	122.11	-0.074184382	-0.00672889	-0.020955955	0.022772935	
2	2		5731.5	0.032	0.1	-1.3	-3.54	-0.07	60	0	4/10/2015 14:25:00	4/10/2015 15:25:00	515426	208446	122.25	-0.074168443	-0.006807251	0.010808861	0.019616112	
2	2		5731.5	0.028	-0.5	1.4	-3.55	-0.07	60	0	4/10/2015 14:26:26	4/10/2015 15:26:26	515426	208446	122.25	-0.074159812	-0.006865346	0.010808861	0.019674207	
2	3		5731.5	0.029	-2.3	3.4	-3.58	-0.07	60	0	4/10/2015 14:29:05	4/10/2015 15:29:05	515425	208444	122.25	-0.074131335	-0.006972754	0.009264738	0.019237492	
2	4		5731.5	0.038	1.3	-6.2	-3.62	-0.07	60	5	4/10/2015 14:32:38	4/10/2015 15:32:38	515423	208442	122.23	-0.074099097	-0.00711664	0.00661767	0.01373431	
2	5		5731.5	0.032	-9	8.1	-3.64	-0.071	60	2	4/10/2015 14:34:45	4/10/2015 15:34:45	515422	208440	122.24	-0.074075585	-0.007202432	0.00882356	0.011025992	
2	6		5731.5	0.021	-4.4	-2.4	-3.65	-0.071	60	0	4/10/2015 14:36:50	4/10/2015 15:36:50	515420	208438	122.23	-0.074050506	-0.007286872	0.005735314	2.21863E-05	
2	7		5731.5	0.036	0.4	-5.4	-3.67	-0.071	60	0	4/10/2015 14:39:17	4/10/2015 15:39:17	515419	208436	122.25	-0.074010042	-0.007386174	0.009926505	-0.008687321	
2	8		5731.5	0.029	-17.7	21	-3.68	-0.071	60	0	4/10/2015 14:41:13	4/10/2015 15:41:13	515417	208434	122.27	-0.073981228	-0.007464535	0.014117696	-0.004417769	
2	9		5731.5	0.033	-4.2	-10.9	-3.69	-0.071	60	3	4/10/2015 14:43:15	4/10/2015 15:43:15	515416	208432	122.31	-0.073950992	-0.007546949	0.022941256	-0.018511795	
2	9		5731.5	0.043	-4.2	-5.8	-3.7	-0.071	60	8	4/10/2015 14:44:57	4/10/2015 15:44:57	515416	208432	122.31	-0.073935353	-0.007615852	0.022941256	-0.018442892	
2	10		5731.5	0.037	-5.4	-4.1	-3.72	-0.071	60	1	4/10/2015 14:49:22	4/10/2015 15:49:22	515414	208430	122.32	-0.073852154	-0.007794866	0.024485379	-0.007719755	
2	11		5731.5	0.027	0	-4.2	-3.74	-0.072	60	0	4/10/2015 14:53:33	4/10/2015 15:53:33	515413	208428	122.33	-0.073779884	-0.007964422	0.028235392	-0.003800186	
2	12		5731.5	0.024	1.8	2.5	-3.74	-0.072	60	0	4/10/2015 14:55:38	4/10/2015 15:55:38	515411	208426	122.36	-0.073741953	-0.008048863	0.035073651	-0.004877486	
2	13		5731.5	0.027	3.6	6.2	-3.75	-0.072	60	0	4/10/2015 14:58:38	4/10/2015 15:58:38	515409	208424	122.39	-0.07368292	-0.008170457	0.040588376	0.002758833	
2	14		5731.5	0.03	-5.6	-0.6	-3.75	-0.072	60	1	4/10/2015 15:03:06	4/10/2015 16:03:06	515408	208422	122.41	-0.073579146	-0.008351497	0.04632369	0.003675187	
2	15		5731.4	0.036	3.2	-8.3	-3.76	-0.072	60	0	4/10/2015 15:05:53	4/10/2015 16:05:53	515406	208421	122.42	-0.073535859	-0.00846431	0.048088402	-0.003447288	
2	16		5731.5	0.026	-8.7	3.7	-3.76	-0.072	60	1	4/10/2015 15:09:28	4/10/2015 16:09:28	515404	208419	122.4	-0.073446439	-0.008609547	0.043676622	-0.001713831	
2	17		5731.4	0.047	0.3	-7.5	-3.77	-0.072	60	7	4/10/2015 15:12:04	4/10/2015 16:12:04	515403	208417	122.38	-0.073377022	-0.008714929	0.038823664	-0.010461407	
2	18		5731.4	0.048	-5.1	2.8	-3.71	-0.072	60	7	4/10/2015 15:26:39	4/10/2015 16:26:39	515401	208415	122.39	-0.073029958	-0.010819454	0.041250143	-0.014930403	
2	19		5731.4	0.033	-5.3	-0.5	-3.7	-0.072	60	3	4/10/2015 15:28:32	4/10/2015 16:28:32	515399	208414	122.41	-0.07297768	-0.010744171	0.044338389	-0.00591744	
2	20		5731.4	0.03	-7.4	-0.9	-3.7	-0.072	60	0	4/10/2015 15:30:30	4/10/2015 16:30:30	515397	208412	122.41	-0.072924821	-0.010665556	0.046103101	-0.008231343	
2	21		5731.4	0.037	3.8	-5.9	-3.69	-0.072	60	0	4/10/2015 15:33:05	4/10/2015 16:33:05	515395	208410	122.4	-0.072844508	-0.010562292	0.043235444	-0.017202264	
2	22		5731.4	0.04	-4.8	-7.5	-3.69	-0.072	60	0	4/10/2015 15:36:11	4/10/2015 16:36:11	515393	208409	122.38	-0.072763051	-0.010438374	0.037941308	-0.013620318	
2	23		5731.4	0.03	-4.4	2.8	-3.7	-0.072	60	1	4/10/2015 15:39:31	4/10/2015 16:39:31	515391	208407	122.36	-0.072680546	-0.01030513	0.034191295	-0.010503575	
2	24		5731.4	0.041	-1.5	-7.4	-3.7	-0.072	60	0	4/10/2015 15:44:15	4/10/2015 16:44:15	515389	208405	122.36	-0.072540953	-0.010115923	0.033970706	-0.015913371	
2	25		5731.4	0.034	-18.5	-43.5	-3.7	-0.072	60	0	4/10/2015 15:46:17	4/10/2015 16:46:17	515388	208404	122.36	-0.072484462	-0.010034644	0.033529528	-0.031435828	
2	25		5731.4	0.027	-3.3	-19.6	-3.7	-0.072	60	0	4/10/2015 15:47:52	4/10/2015 16:47:52	515388	208404	122.36	-0.072456089	-0.009971352	0.033529528	-0.03149912	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
2	25		5731.4	0.033	-0.4	-10	-3.7	-0.072	60	1	4/10/2015 15:49:30	4/10/2015 16:49:30	515388	208404	122.36	-0.072399104	-0.009906063	0.033529528	-0.028564409	
2	26		5731.4	0.044	1.8	-8.7	-3.71	-0.072	60	1	4/10/2015 15:51:31	4/10/2015 16:51:31	515386	208402	122.34	-0.072341818	-0.00982545	0.029779515	-0.024395035	
2	27		5731.4	0.044	0	-1	-3.71	-0.072	60	4	4/10/2015 15:54:03	4/10/2015 16:54:03	515384	208401	122.36	-0.072255378	-0.009724184	0.03529424	-0.019981576	
2	28		5731.4	0.029	-10.2	-7.5	-3.71	-0.072	60	0	4/10/2015 15:58:03	4/10/2015 16:58:03	515382	208399	122.42	-0.072139285	-0.00956429	0.046985457	-0.017450253	
2	29		5731.5	0.039	-6	2.6	-3.71	-0.072	60	0	4/10/2015 16:01:00	4/10/2015 17:01:00	515380	208397	122.4	-0.072051679	-0.009446369	0.042794266	0.001240635	
2	30		5731.5	0.03	-8	-0.8	-3.71	-0.072	60	0	4/10/2015 16:03:23	4/10/2015 17:03:23	515378	208396	122.31	-0.071993057	-0.009351099	0.022941256	-0.005707645	
2	31		5731.5	0.049	0	3.7	-3.7	-0.072	60	0	4/10/2015 16:05:40	4/10/2015 17:05:40	515375	208395	122.19	-0.071934284	-0.009259827	-0.002867657	-0.00960783	
2	32		5731.5	0.041	3.9	-3.1	-3.7	-0.072	60	1	4/10/2015 16:09:49	4/10/2015 17:09:49	515373	208393	122.17	-0.071816355	-0.009093937	-0.007720615	-0.000626678	
2	33		5731.5	0.067	6	-2.7	-3.7	-0.072	60	7	4/10/2015 16:12:43	4/10/2015 17:12:43	515371	208392	122.21	-0.071727643	-0.008978015	0.001544123	-0.002477862	
2	34		5731.5	0.047	-3.4	-4.7	-3.7	-0.072	60	4	4/10/2015 16:15:42	4/10/2015 17:15:42	515369	208390	122.23	-0.071638765	-0.008858761	0.005955903	-0.001185336	
2	35		5731.5	0.03	2.5	0.2	-3.7	-0.072	60	0	4/10/2015 16:17:45	4/10/2015 17:17:45	515367	208389	122.22	-0.071579445	-0.008776815	0.004191191	0.002968006	
2	36		5731.5	0.026	-7.1	-1.5	-3.69	-0.072	60	0	4/10/2015 16:21:04	4/10/2015 17:21:04	515365	208388	122.19	-0.071460709	-0.008644237	-0.003529424	0.001114813	
2	36		5731.5	0.033	-9.6	-3	-3.69	-0.072	60	0	4/10/2015 16:23:56	4/10/2015 17:23:56	515365	208388	122.19	-0.071401319	-0.008529647	-0.003529424	0.001000223	
2	37		5731.5	0.036	-6.2	6.8	-3.69	-0.072	60	0	4/10/2015 16:29:41	4/10/2015 17:29:41	515363	208387	122.13	-0.071223205	-0.0082998	-0.016544175	-0.001244375	
2	38		5731.5	0.044	-1.3	-2.1	-3.69	-0.072	60	0	4/10/2015 16:32:04	4/10/2015 17:32:04	515360	208386	122.08	-0.071134244	-0.00820453	-0.027132447	-0.009927917	
2	38		5731.5	0.041	2.5	-2	-3.69	-0.072	60	0	4/10/2015 16:33:26	4/10/2015 17:33:26	515360	208386	122.08	-0.071104613	-0.0081499	-0.027132447	-0.013982547	
1	0		5731.5	0.051	6.7	-6.4	-3.65	-0.071	60	2	4/10/2015 17:01:38	4/10/2015 18:01:38	515431	208449	122.13	-0.070282758	-0.005	-0.016764764	-0.001764764	
1	1		5731.5	0.035	6.2	2.9	-3.65	-0.071	60	0	4/10/2015 17:05:25	4/10/2015 18:05:25	515430	208447	122.18	-0.070166829	-0.005	-0.005955903	0.004044097	
1	2		5731.5	0.061	-2.1	-1.2	-3.65	-0.071	60	1	4/10/2015 17:07:52	4/10/2015 18:07:52	515428	208445	122.3	-0.070109	-0.005	0.020955955	0.008955955	
1	8		5731.4	0.067	8	-6.6	-3.64	-0.071	60	0	4/10/2015 17:11:52	4/10/2015 18:11:52	515419	208432	122.34	-0.069993594	-0.005	0.03088246	-0.02511754	
1	9		5731.4	0.041	1.1	-9.3	-3.63	-0.071	60	6	4/10/2015 17:14:35	4/10/2015 18:14:35	515418	208430	122.36	-0.06990724	-0.005	0.034853062	-0.026146938	
1	10		5731.4	0.046	-1.1	-3.1	-3.62	-0.071	60	0	4/10/2015 17:18:12	4/10/2015 18:18:12	515416	208428	122.39	-0.06979233	-0.005	0.041470732	-0.019529268	
1	11		5731.4	0.039	-0.9	-8.7	-3.62	-0.071	60	2	4/10/2015 17:20:47	4/10/2015 18:20:47	515414	208426	122.41	-0.069734957	-0.005	0.044779567	-0.021220433	
1	12		5731.4	0.049	-4.4	2.6	-3.62	-0.071	60	1	4/10/2015 17:22:56	4/10/2015 18:22:56	515413	208424	122.43	-0.069677627	-0.005	0.049853114	-0.011146886	
1	13		5731.4	0.042	7.8	-0.8	-3.63	-0.07	60	0	4/10/2015 17:27:02	4/10/2015 18:27:02	515411	208423	122.48	-0.069534432	-0.005	0.060220797	-0.013779203	
1	14		5731.4	0.044	4.4	-5.1	-3.63	-0.07	60	0	4/10/2015 17:31:56	4/10/2015 18:31:56	515409	208421	122.48	-0.069419923	-0.005	0.06176492	-0.00623508	
1	15		5731.4	0.045	2.6	-4.3	-3.63	-0.07	60	1	4/10/2015 17:34:53	4/10/2015 18:34:53	515408	208419	122.43	-0.069334007	-0.005	0.049191347	-0.007808653	
1	16		5731.4	0.041	-0.1	0.3	-3.63	-0.07	60	0	4/10/2015 17:37:47	4/10/2015 18:37:47	515406	208417	122.47	-0.069248014	-0.005	0.058014907	-0.014985093	
1	17		5731.4	0.055	-2.4	1.2	-3.63	-0.07	60	0	4/10/2015 17:40:53	4/10/2015 18:40:53	515404	208415	122.45	-0.069161898	-0.005	0.053823716	-0.012176284	
1	18		5731.4	0.04	-3.6	-9.9	-3.61	-0.07	60	0	4/10/2015 17:51:42	4/10/2015 18:51:42	515402	208414	122.43	-0.068844228	-0.002118067	0.05073547	-0.019146463	
1	19		5731.4	0.036	2.9	-2.7	-3.6	-0.07	60	0	4/10/2015 17:56:12	4/10/2015 18:56:12	515400	208412	122.4	-0.068698294	-0.002246608	0.043676622	-0.02007677	
1	20		5731.4	0.047	10.6	-7.4	-3.59	-0.069	60	2	4/10/2015 17:58:43	4/10/2015 18:58:43	515399	208410	122.49	-0.068639553	-0.002318496	0.061985509	-0.029695995	
1	20		5731.4	0.043	0.1	-3.2	-3.59	-0.069	60	1	4/10/2015 18:00:29	4/10/2015 19:00:29	515399	208410	122.49	-0.068580571	-0.00236896	0.061985509	-0.025645531	
1	21		5731.4	0.04	-2.7	-3.5	-3.6	-0.069	60	0	4/10/2015 18:03:45	4/10/2015 19:03:45	515397	208408	122.46	-0.068491601	-0.002462271	0.057132551	-0.032405178	
1	22		5731.4	0.037	-11.9	-1.5	-3.6	-0.069	60	0	4/10/2015 18:05:58	4/10/2015 19:05:58	515395	208407	122.42	-0.068431923	-0.002525589	0.047426635	-0.037047776	
1	22		5731.4	0.043	0.2	-2.3	-3.6	-0.069	60	0	4/10/2015 18:08:44	4/10/2015 19:08:44	515395	208407	122.42	-0.068341805	-0.002604618	0.047426635	-0.038968747	
1	23		5731.4	0.048	-7.4	7.2	-3.61	-0.069	60	1	4/10/2015 18:11:33	4/10/2015 19:11:33	515393	208405	122.37	-0.068250895	-0.002685075	0.036838363	-0.029476562	
1	24		5731.4	0.047	2.2	-8	-3.61	-0.069	60	3	4/10/2015 18:14:13	4/10/2015 19:14:13	515391	208403	122.39	-0.068159113	-0.002761247	0.041029554	-0.035209199	
1	25		5731.4	0.053	-11.6	-0.3	-3.61	-0.069	60	6	4/10/2015 18:16:28	4/10/2015 19:16:28	515389	208402	122.37	-0.068097398	-0.002825518	0.035735418	-0.027439064	
1	25		5731.4	0.041	-8.3	1.4	-3.61	-0.069	60	1	4/10/2015 18:18:05	4/10/2015 19:18:05	515389	208402	122.37	-0.068035234	-0.002871697	0.035735418	-0.029392885	
1	26		5731.4	0.035	-2.5	-3	-3.61	-0.069	60	0	4/10/2015 18:20:47	4/10/2015 19:20:47	515387	208400	122.39	-0.067972593	-0.002948822	0.040588376	-0.024462802	
1	27		5731.4	0.04	5.5	-0.9	-3.61	-0.069	60	0	4/10/2015 18:23:33	4/10/2015 19:23:33	515385	208399	122.35	-0.067877681	-0.003027851	0.032205994	-0.021766155	
1	28		5731.4	0.053	2.5	-7.9	-3.61	-0.069	60	0	4/10/2015 18:25:56	4/10/2015 19:25:56	515383	208397	122.44	-0.067813733	-0.00309593	0.051397237	-0.019506833	
1	29		5731.4	0.036	5.2	-2.3	-3.61	-0.069	60	1	4/10/2015 18:28:22	4/10/2015 19:28:22	515381	208396	122.44	-0.067716733	-0.003165437	0.05294136	-0.017893203	
1	29		5731.5	0.039	-9.8	-4.8	-3.6	-0.069	60	2	4/10/2015 18:31:08	4/10/2015 19:31:08	515381	208396	122.44	-0.067618354	-0.003244466	0.05294136	0.011185826	
1	31		5731.5	0.028	-3	-4.8	-3.6	-0.068	60	2	4/10/2015 18:33:32	4/10/2015 19:33:32	515377	208393	122.18	-0.067551955	-0.003313021	-0.005294136	-0.011981115	
1	32		5731.5	0.045	-5	-4.9	-3.6	-0.068	60	1	4/10/2015 18:35:48	4/10/2015 19:35:48	515375	208391	122.17	-0.067484871	-0.003377767	-0.00661767	-0.009239903	
1	33		5731.5	0.05	-2.8	-2.4	-3.6	-0.068	60	0	4/10/2015 18:39:05	4/10/2015 19:39:05	515373	208390	122.23	-0.067348528	-0.003471554	0.005735314	-0.018793132	
1	34		5731.5	0.05	-5.5	7.1	-3.59	-0.068	60	0	4/10/2015 18:42:04	4/10/2015 19:42:04	515371	208389	122.22	-0.067244251	-0.003556772	0.002426479	-0.006016749	
1	35		5731.5	0.035	-0.4	-1	-3.59	-0.068	60	0	4/10/2015 18:44:31	4/10/2015 19:44:31	515369	208387	122.22	-0.067173712	-0.003626756	0.002867657	-0.009505587	
1	36		5731.5	0.051	-0.1	2.7	-3.59	-0.068	60	1	4/10/2015 18:47:05	4/10/2015 19:47:05	515367	208386	122.17	-0.067066295	-0.003700071	-0.007720615	-0.008020544	
1	37		5731.5	0.051	-3.1	-8.3	-3.59	-0.068	60	1	4/10/2015 18:50:34	4/10/2015 19:50:34	515365	208385	122.1	-0.066956852	-0.003799572	-0.024044201	-0.008244629	
1	38		5731.5	0.046	0.4	-5.1	-3.59	-0.068	60	0	4/10/2015 18:54:11	4/10/2015 19:54:11	515362	208383	122.04	-0.066807589	-0.00390288	-0.037279541	-0.014376661	
11	0		5731.5	0.062	-7.4	-5.9	-3.51	0.021	60	0	5/10/2015 09:09:57	5/10/2015 10:09:57	515415	208442	122.3	-0.012401803	-0.007707003	0.020294188	0.005001191	
11	0		5731.5	0.055	-4.5	-5.8	-3.52	0.021	60	1	5/10/2015 09:11:29	5/10/2015 10:11:29	515415	208442	122.3	-0.013050899	-0.00757925	0.020294188	0.008873438	
11	1		5731.5	0.066	-5.9	-4.5	-3.54	0.02	60	6	5/10/2015 09:13:30	5/10/2015 10:13:30	515413	208444	122.29	-0.013700977	-0.007411228	0.019191243	0.003602471	
11	1		5731.5	0.055	-7	-5	-3.55	0.02	60	0	5/10/2015 09:14:55	5/10/2015 10:14:55	515413	208444	122.29	-0.014026354	-0.007293196	0.019191243	0.011484439	
11	1		5731.5	0.066	0.3	-3.6	-3.56	0.02	60	0	5/10/2015 09:16:38	5/10/2015 10:16:38	515413	208444	122.29	-0.014677721	-0.007150169	0.019191243	0.009341412	
11	2		5731.5	0.067	-2.4	-2.1	-3.58	0.019	60	0	5/10/2015 09:18:51	5/10/2015 10:18:51	515411	208445	122.41	-0.015329827	-0.006965483	0.046103101	6.8584E-05	
11	2		5731.5	0.06	-1.3	-2.6	-3.59	0.019	60	0	5/10/2015 09:20:11	5/10/2015 10:20:11	515411	208445	122.41	-0.015982574	-0.006854394	0.046103101	0.000957495	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
11	3		5731.5	0.069	-4.2	-2.4	-3.61	0.018	60	0	5/10/2015 09:22:36	5/10/2015 10:22:36	515409	208447	122.42	-0.016635865	-0.006653045	0.046985457	-0.000361498	
11	4		5731.5	0.07	-9.1	1.1	-3.62	0.018	60	0	5/10/2015 09:24:59	5/10/2015 10:24:59	515407	208448	122.43	-0.017289603	-0.006454473	0.050073703	0.002528176	
11	5		5731.4	0.071	-6.4	0.8	-3.62	0.017	60	0	5/10/2015 09:27:45	5/10/2015 10:27:45	515405	208450	122.44	-0.018270835	-0.006223963	0.051176648	-0.000599389	
11	6		5731.4	0.067	-12.2	-8.3	-3.63	0.016	60	0	5/10/2015 09:29:56	5/10/2015 10:29:56	515403	208451	122.47	-0.018925266	-0.006042055	0.058014907	-0.003943038	
11	6		5731.4	0.057	-5.6	-7.7	-3.63	0.016	60	0	5/10/2015 09:31:47	5/10/2015 10:31:47	515403	208451	122.47	-0.019579805	-0.005887919	0.058014907	-0.006097174	
11	7		5731.4	0.081	-8.5	3.8	-3.63	0.015	60	0	5/10/2015 09:33:54	5/10/2015 10:33:54	515400	208452	122.48	-0.020234354	-0.005711565	0.060000208	-0.005288227	
11	8		5731.5	0.05	-11.3	-3.1	-3.63	0.015	60	1	5/10/2015 09:36:18	5/10/2015 10:36:18	515398	208454	122.38	-0.021215989	-0.005511605	0.037941308	-0.006547087	
11	8		5731.5	0.07	-3	1.4	-3.63	0.014	60	0	5/10/2015 09:37:48	5/10/2015 10:37:48	515398	208454	122.38	-0.021543101	-0.00538663	0.037941308	-0.007672062	
11	9		5731.4	0.064	-11.1	-6.3	-3.63	0.014	60	0	5/10/2015 09:40:19	5/10/2015 10:40:19	515396	208455	122.42	-0.022523974	-0.005176949	0.048088402	-0.007734649	
11	9		5731.4	0.066	-2.1	-3.1	-3.63	0.013	60	0	5/10/2015 09:41:45	5/10/2015 10:41:45	515396	208455	122.42	-0.022850737	-0.005057528	0.048088402	-0.00985407	
11	10		5731.4	0.054	-4	-5.6	-3.62	0.011	60	1	5/10/2015 09:50:11	5/10/2015 10:50:11	515394	208457	122.48	-0.025784893	-0.00435489	0.061103153	-0.001541957	
11	11		5731.4	0.064	-3.9	-17.7	-3.61	0.01	60	0	5/10/2015 09:53:13	5/10/2015 10:53:13	515392	208458	122.54	-0.026759336	-0.004102162	0.073014959	-0.003882879	
11	11		5731.4	0.062	0	-5.2	-3.61	0.009	60	0	5/10/2015 09:54:41	5/10/2015 10:54:41	515392	208458	122.54	-0.027083648	-0.003979964	0.073014959	-0.005005077	
11	12		5731.4	0.052	-7.5	-5.8	-3.61	0.009	60	0	5/10/2015 09:57:11	5/10/2015 10:57:11	515390	208460	122.54	-0.028054909	-0.003771672	0.074338493	-0.004889835	
11	13		5731.4	0.053	2.7	0.3	-3.61	0.008	60	0	5/10/2015 09:59:46	5/10/2015 10:59:46	515388	208461	122.57	-0.028700906	-0.003556437	0.080956163	-0.0014874	
11	14		5731.4	0.068	-5.6	8.4	-3.6	0.007	60	0	5/10/2015 10:02:15	5/10/2015 11:02:15	515386	208463	122.59	-0.029667405	-0.003349534	0.084706176	0.00405571	
11	15		5731.4	0.059	-1.6	-3.8	-3.6	0.006	60	0	5/10/2015 10:05:40	5/10/2015 11:05:40	515384	208464	122.56	-0.03063063	-0.003064868	0.077647328	0.006712196	
11	16		5731.4	0.047	-8.4	9.6	-3.59	0.005	60	0	5/10/2015 10:08:43	5/10/2015 11:08:43	515382	208466	122.59	-0.031590272	-0.002810752	0.085588532	0.014399284	
11	17		5731.4	0.069	6.1	-6	-3.59	0.004	60	0	5/10/2015 10:12:03	5/10/2015 11:12:03	515380	208467	122.56	-0.032863696	-0.002533029	0.079191451	0.01272448	
11	18		5731.4	0.047	-4.5	-5.9	-3.58	0.003	60	1	5/10/2015 10:16:42	5/10/2015 11:16:42	515378	208468	122.59	-0.034129488	-0.002145606	0.084485587	0.022631193	
11	19		5731.4	0.05	3.9	6.1	-3.58	0.002	60	0	5/10/2015 10:19:41	5/10/2015 11:19:41	515376	208470	122.6	-0.035073398	-0.001897044	0.086912066	0.02480911	
11	20		5731.4	0.054	-5.1	1.3	-3.58	0.001	60	0	5/10/2015 10:24:04	5/10/2015 11:24:04	515374	208471	122.65	-0.036635352	-0.001531839	0.097279749	0.024811588	
11	21		5731.4	0.054	-2.1	-2.9	-3.57	-0.006	60	2	5/10/2015 10:47:23	5/10/2015 11:47:23	515373	208472	122.75	-0.043604306	-0.002676486	0.120882772	0.020559258	
11	21		5731.4	0.063	-0.2	-6	-3.56	-0.007	60	0	5/10/2015 10:50:14	5/10/2015 11:50:14	515373	208472	122.75	-0.044483017	-0.002806755	0.120882772	0.022689527	
11	22		5731.4	0.061	-5.2	-3.9	-3.55	-0.008	60	0	5/10/2015 10:52:31	5/10/2015 11:52:31	515370	208474	122.67	-0.045064483	-0.002911122	0.102132707	0.036043829	
11	23		5731.4	0.076	-0.9	-1.3	-3.56	-0.01	60	0	5/10/2015 10:58:59	5/10/2015 11:58:59	515368	208476	122.7	-0.046787225	-0.003206704	0.1102945	0.032501204	
11	24		5731.4	0.045	-2.9	-8.5	-3.57	-0.011	60	0	5/10/2015 11:01:45	5/10/2015 12:01:45	515366	208477	122.78	-0.047635958	-0.003333164	0.125956319	0.032289483	
11	25		5731.4	0.049	0.8	-5.9	-3.58	-0.012	60	0	5/10/2015 11:05:02	5/10/2015 12:05:02	515364	208478	122.8	-0.048753954	-0.00348324	0.130588688	0.037071928	
11	26		5731.4	0.057	1.5	-1.1	-3.61	-0.019	60	0	5/10/2015 11:26:01	5/10/2015 12:26:01	515362	208480	122.78	-0.054346823	-0.004442357	0.126838675	0.037281032	
11	27		5731.4	0.06	-3.1	5.6	-3.62	-0.02	60	0	5/10/2015 11:28:48	5/10/2015 12:28:48	515360	208482	122.78	-0.054853591	-0.004569578	0.127500442	0.03307002	
11	28		5731.4	0.059	-9.2	-3	-3.62	-0.021	60	3	5/10/2015 11:31:33	5/10/2015 12:31:33	515358	208483	122.83	-0.055604817	-0.004695277	0.138750481	0.033445758	
11	29		5731.4	0.047	1.3	0.1	-3.61	-0.022	60	0	5/10/2015 11:36:25	5/10/2015 12:36:25	515356	208485	122.79	-0.056832593	-0.004917725	0.129485743	0.033403468	
11	29		5731.4	0.069	5.4	2.2	-3.6	-0.023	60	1	5/10/2015 11:37:44	5/10/2015 12:37:44	515356	208485	122.79	-0.057074447	-0.004977908	0.129485743	0.033463651	
11	30		5731.4	0.058	3.7	-3.5	-3.57	-0.026	60	0	5/10/2015 11:45:53	5/10/2015 12:45:53	515354	208486	122.76	-0.058963787	-0.005350432	0.122426895	0.039777327	
11	31		5731.4	0.048	-3.3	-1.4	-3.54	-0.026	60	0	5/10/2015 11:49:17	5/10/2015 12:49:17	515351	208487	122.77	-0.059877491	-0.005505841	0.124632785	0.044138626	
11	31		5731.4	0.06	-3.5	-2.4	-3.54	-0.027	60	0	5/10/2015 11:50:38	5/10/2015 12:50:38	515351	208487	122.77	-0.060102628	-0.005567547	0.124632785	0.044200332	
11	31		5731.4	0.069	-3.8	-3	-3.53	-0.027	60	3	5/10/2015 11:52:01	5/10/2015 12:52:01	515351	208487	122.77	-0.060548917	-0.005630777	0.124632785	0.049263562	
11	32		5731.4	0.054	1.9	5.6	-3.54	-0.029	60	0	5/10/2015 11:56:59	5/10/2015 12:56:59	515349	208489	122.77	-0.061425399	-0.005857796	0.124412196	0.044269992	
11	33		5731.4	0.059	-6.2	2.5	-3.56	-0.031	60	0	5/10/2015 12:04:20	5/10/2015 13:04:20	515348	208491	122.68	-0.063112848	-0.006193753	0.103897419	0.018091172	
11	33		5731.4	0.062	-7.7	3.2	-3.57	-0.032	60	0	5/10/2015 12:05:44	5/10/2015 13:05:44	515348	208491	122.68	-0.063317543	-0.006257745	0.103897419	0.028155164	
11	33		5731.4	0.058	-7.1	-2.9	-3.62	-0.04	60	0	5/10/2015 12:30:50	5/10/2015 13:30:50	515348	208491	122.68	-0.06796965	-0.007405028	0.103897419	0.043302447	
11	33		5731.4	0.075	-8.7	0.3	-3.63	-0.042	60	2	5/10/2015 12:39:19	5/10/2015 13:39:19	515348	208491	122.68	-0.069419659	-0.007792788	0.103897419	0.043690207	
11	34		5731.4	0.049	-8	-2.6	-3.59	-0.045	60	0	5/10/2015 12:50:11	5/10/2015 13:50:11	515346	208492	122.62	-0.071026553	-0.005016456	0.091985613	0.027002069	
11	35		5731.4	0.053	6.6	-1.7	-3.58	-0.046	60	0	5/10/2015 12:52:50	5/10/2015 13:52:50	515344	208494	122.61	-0.07129905	-0.005569937	0.09044149	0.033011427	
11	36		5731.4	0.065	-1.5	-6.8	-3.57	-0.047	60	0	5/10/2015 12:55:00	5/10/2015 13:55:00	515342	208496	122.61	-0.071696415	-0.006022468	0.088456189	0.032478657	
11	37		5731.5	0.053	-3.1	-1.5	-3.57	-0.048	60	0	5/10/2015 12:57:30	5/10/2015 13:57:30	515341	208498	122.56	-0.071953733	-0.00654462	0.077426739	0.036971359	
11	38		5731.5	0.063	-1	-4.1	-3.57	-0.048	60	1	5/10/2015 12:59:47	5/10/2015 13:59:47	515339	208500	122.53	-0.072204976	-0.007021519	0.071029658	0.049051177	
11	39		5731.5	0.063	5.5	-0.9	-3.57	-0.049	60	0	5/10/2015 13:01:57	5/10/2015 14:01:57	515337	208502	122.55	-0.072450142	-0.007474051	0.076544383	0.044018434	
11	40		5731.5	0.051	-5.4	3.4	-3.58	-0.049	60	0	5/10/2015 13:04:21	5/10/2015 14:04:21	515336	208504	122.52	-0.072806499	-0.007975316	0.068823768	0.053799084	
11	41		5731.5	0.061	-2.7	0.5	-3.58	-0.05	60	0	5/10/2015 13:06:46	5/10/2015 14:06:46	515335	208506	122.47	-0.073036478	-0.008480063	0.05955903	0.052039093	
11	42		5731.5	0.045	-1.9	-1.4	-3.59	-0.051	60	0	5/10/2015 13:08:48	5/10/2015 14:08:48	515333	208509	122.38	-0.073260387	-0.008904747	0.03970602	0.042610767	
11	43		5731.5	0.037	0.2	-14.1	-3.59	-0.051	60	0	5/10/2015 13:12:07	5/10/2015 14:12:07	515332	208510	122.42	-0.073690019	-0.009597468	0.047426635	0.055024103	
11	43		5731.5	0.055	-7.5	-7.7	-3.6	-0.052	60	0	5/10/2015 13:13:30	5/10/2015 14:13:30	515332	208510	122.42	-0.073793642	-0.009886392	0.047426635	0.058313027	
11	44		5731.5	0.053	-2.8	0.7	-3.6	-0.053	60	0	5/10/2015 13:15:35	5/10/2015 14:15:35	515330	208512	122.39	-0.073996355	-0.010321519	0.040367787	0.063689306	
11	45		5731.5	0.059	0	3.4	-3.6	-0.053	60	0	5/10/2015 13:17:23	5/10/2015 14:17:23	515329	208514	122.36	-0.07419303	-0.010697468	0.033750117	0.069447585	
11	46		5731.5	0.06	-3.9	0.2	-3.6	-0.054	60	0	5/10/2015 13:20:26	5/10/2015 14:20:26	515327	208516	122.29	-0.074476744	-0.011334494	0.017867709	0.065202203	
11	47		5731.5	0.048	-2.7	-8.1	-3.61	-0.054	60	0	5/10/2015 13:23:21	5/10/2015 14:23:21	515326	208518	122.27	-0.074746937	-0.011943671	0.013676518	0.060620189	
11	48		5731.5	0.061	8.2	8.8	-3.61	-0.055	60	0	5/10/2015 13:25:38	5/10/2015 14:25:38	515325	208520	122.25	-0.074919577	-0.01242057	0.010588272	0.058008842	
11	49		5731.5	0.05	-2.8	-9.5	-3.61	-0.056	60	0	5/10/2015 13:27:44	5/10/2015 14:27:44	515323	208522	122.21	-0.075086244	-0.012859177	0.000661767	0.048520944	
11	49		5731.5	0.05	-6.7	-5.9	-3.61	-0.056	60	0	5/10/2015 13:29:15	5/10/2015 14:29:15	515323	208522	122.21	-0.075246954	-0.013175949	0.000661767	0.050837716	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
11	50		5731.5	0.052	3.1	-4	-3.61	-0.056	60	0	5/10/2015 13:31:20	5/10/2015 14:31:20	515322	208524	122.17	-0.075401724	-0.013611076	-0.007720615	0.046890461	
11	50		5731.5	0.052	-2.8	-6.7	-3.61	-0.057	60	0	5/10/2015 13:32:51	5/10/2015 14:32:51	515322	208524	122.17	-0.075476888	-0.013927848	-0.007720615	0.048207233	
12	0		5731.5	0.053	-0.4	-0.9	-3.62	-0.065	60	0	5/10/2015 14:11:50	5/10/2015 15:11:50	515416	208444	122.31	-0.077287354	-0.000366351	0.023603023	0.010969374	
12	1		5731.5	0.066	2	-7	-3.6	-0.065	60	0	5/10/2015 14:14:54	5/10/2015 15:14:54	515414	208446	122.33	-0.077339603	-0.000173045	0.028014803	0.017187848	
12	1		5731.5	0.041	0.4	-9.5	-3.6	-0.066	60	0	5/10/2015 14:16:15	5/10/2015 15:16:15	515414	208446	122.33	-0.077367869	-8.79484E-05	0.028014803	0.015102751	
12	2		5731.5	0.076	6.7	-3	-3.59	-0.066	60	0	5/10/2015 14:18:24	5/10/2015 15:18:24	515412	208447	122.33	-0.077390932	4.75762E-05	0.027132447	0.012084871	
12	3		5731.5	0.049	1.6	0	-3.59	-0.067	60	0	5/10/2015 14:21:40	5/10/2015 15:21:40	515410	208449	122.33	-0.077415865	0.000253489	0.02867657	0.011423081	
12	4		5731.5	0.047	-1.8	0.2	-3.6	-0.067	60	0	5/10/2015 14:23:41	5/10/2015 15:23:41	515408	208450	122.35	-0.077426113	0.000380609	0.031103049	0.00772244	
12	5		5731.5	0.055	1.5	-1.7	-3.6	-0.067	60	0	5/10/2015 14:26:33	5/10/2015 15:26:33	515406	208452	122.36	-0.077432035	0.000561309	0.033970706	0.004409397	
12	6		5731.5	0.054	-2.4	-5.3	-3.61	-0.068	60	0	5/10/2015 14:29:23	5/10/2015 15:29:23	515404	208453	122.37	-0.077426762	0.000739907	0.035956007	0.0032161	
12	6		5731.5	0.038	-4.7	-8.1	-3.61	-0.068	60	2	5/10/2015 14:30:41	5/10/2015 15:30:41	515404	208453	122.37	-0.077422544	0.000821852	0.035956007	0.002134155	
12	7		5731.5	0.063	1	-5.1	-3.61	-0.068	60	0	5/10/2015 14:33:05	5/10/2015 15:33:05	515402	208454	122.37	-0.077402597	0.000973135	0.037058952	-0.000914183	
12	7		5731.5	0.051	1.1	-7.6	-3.61	-0.068	60	0	5/10/2015 14:34:25	5/10/2015 15:34:25	515402	208454	122.37	-0.077393537	0.001057181	0.037058952	-0.002998229	
12	8		5731.5	0.061	-4.5	-2.9	-3.62	-0.069	60	1	5/10/2015 14:36:16	5/10/2015 15:36:16	515400	208456	122.38	-0.07737184	0.001173796	0.039485431	-0.004688365	
12	9		5731.5	0.047	-6	1.1	-3.62	-0.069	60	0	5/10/2015 14:39:13	5/10/2015 15:39:13	515398	208457	122.4	-0.077330446	0.001359748	0.042132499	0.001772751	
12	10		5731.5	0.054	-6.8	-0.1	-3.62	-0.07	60	0	5/10/2015 14:41:58	5/10/2015 15:41:58	515396	208459	122.43	-0.077297028	0.001533093	0.049191347	0.005658254	
12	11		5731.5	0.069	1.7	-4.9	-3.62	-0.07	60	0	5/10/2015 14:45:30	5/10/2015 15:45:30	515394	208460	122.45	-0.077216456	0.001755816	0.053603127	0.003847311	
12	12		5731.5	0.039	1	6.9	-3.62	-0.07	60	0	5/10/2015 14:47:42	5/10/2015 15:47:42	515392	208462	122.47	-0.077169411	0.001894492	0.058014907	0.005120415	
12	13		5731.4	0.046	-0.2	-1.7	-3.62	-0.071	60	0	5/10/2015 14:49:57	5/10/2015 15:49:57	515390	208463	122.5	-0.077117934	0.00203632	0.064411988	0.002375668	
12	14		5731.4	0.049	-0.1	3	-3.62	-0.071	60	0	5/10/2015 14:52:07	5/10/2015 15:52:07	515388	208465	122.52	-0.07703253	0.002172895	0.069044357	0.001871462	
12	15		5731.4	0.041	12.7	-9.3	-3.62	-0.071	60	0	5/10/2015 14:53:59	5/10/2015 15:53:59	515386	208466	122.53	-0.077001907	0.00229056	0.07279437	-0.00149619	
12	15		5731.4	0.045	-1.8	-2.8	-3.62	-0.071	60	0	5/10/2015 14:55:20	5/10/2015 15:55:20	515386	208466	122.53	-0.076937471	0.002375657	0.07279437	0.002418713	
12	16		5731.4	0.054	-3.5	1.5	-3.62	-0.071	60	0	5/10/2015 14:57:59	5/10/2015 15:57:59	515384	208468	122.56	-0.07686883	0.002542698	0.078309095	0.014766397	
12	17		5731.4	0.062	0.1	-3.6	-3.62	-0.072	60	0	5/10/2015 15:00:52	5/10/2015 16:00:52	515382	208469	122.58	-0.076758112	0.002724448	0.083382642	0.016658194	
12	18		5731.4	0.06	0.4	-11	-3.63	-0.072	60	0	5/10/2015 15:02:46	5/10/2015 16:02:46	515379	208471	122.6	-0.076679216	0.002844214	0.087573833	0.021729619	
12	18		5731.4	0.073	-2.5	0.4	-3.63	-0.072	60	0	5/10/2015 15:04:09	5/10/2015 16:04:09	515379	208471	122.6	-0.076596323	0.002931412	0.087573833	0.024642421	
12	19		5731.4	0.072	25.8	-1	-3.63	-0.072	60	0	5/10/2015 15:06:04	5/10/2015 16:06:04	515378	208472	122.62	-0.076509491	0.003052229	0.091323846	0.022271617	
12	19		5731.4	0.056	-6.4	-0.1	-3.63	-0.072	60	0	5/10/2015 15:07:43	5/10/2015 16:07:43	515378	208472	122.62	-0.076464618	0.003156236	0.091323846	0.02916761	
12	20		5731.4	0.053	-3.6	-3.7	-3.63	-0.073	60	0	5/10/2015 15:09:32	5/10/2015 16:09:32	515375	208473	122.65	-0.076371996	0.003270749	0.097279749	0.028009	
12	21		5731.4	0.061	12.8	2	-3.63	-0.073	60	0	5/10/2015 15:11:33	5/10/2015 16:11:33	515373	208475	122.66	-0.076275589	0.003397869	0.099926817	0.027528948	
12	21		5731.4	0.056	-5.6	4.3	-3.63	-0.073	60	0	5/10/2015 15:12:59	5/10/2015 16:12:59	515373	208475	122.66	-0.076225986	0.003488219	0.099926817	0.033438598	
12	21		5731.4	0.042	-1.4	5	-3.63	-0.073	60	0	5/10/2015 15:14:30	5/10/2015 16:14:30	515373	208475	122.66	-0.076124019	0.003583821	0.099926817	0.029342996	
12	22		5731.4	0.051	-3.8	1.1	-3.63	-0.073	60	0	5/10/2015 15:16:32	5/10/2015 16:16:32	515371	208476	122.66	-0.076018425	0.003711992	0.099926817	0.029214825	
12	23		5731.4	0.049	1.2	-5.9	-3.63	-0.074	60	0	5/10/2015 15:22:13	5/10/2015 16:22:13	515369	208478	122.67	-0.075680509	0.004070239	0.102573885	0.024503646	
12	24		5731.4	0.042	4.7	-2.1	-3.63	-0.074	60	0	5/10/2015 15:25:46	5/10/2015 16:25:46	515367	208479	122.7	-0.07550006	0.004294012	0.1102945	0.031000488	
12	25		5731.4	0.063	-6.1	-2.6	-3.63	-0.074	60	8	5/10/2015 15:27:50	5/10/2015 16:27:50	515365	208481	122.72	-0.075375653	0.004424283	0.114265102	0.030840819	
12	25		5731.4	0.058	-9.4	-4.8	-3.63	-0.074	60	0	5/10/2015 15:29:10	5/10/2015 16:29:10	515365	208481	122.72	-0.075248036	0.00450833	0.114265102	0.034756772	
12	25		5731.4	0.059	0.1	-5.7	-3.63	-0.074	60	0	5/10/2015 15:30:47	5/10/2015 16:30:47	515365	208481	122.72	-0.075183044	0.004610236	0.114265102	0.031654866	
12	26		5731.4	0.049	-5.4	-2.2	-3.59	-0.075	60	0	5/10/2015 15:46:34	5/10/2015 16:46:34	515363	208482	122.73	-0.074043007	0.00621155	0.116250403	0.018038853	
12	27		5731.4	0.055	-2.5	1.8	-3.58	-0.075	60	0	5/10/2015 15:48:37	5/10/2015 16:48:37	515361	208484	122.75	-0.073888196	0.005858898	0.119779827	0.030920929	
12	28		5731.4	0.052	4.7	0.2	-3.57	-0.075	60	0	5/10/2015 15:51:22	5/10/2015 16:51:22	515359	208485	122.75	-0.073651293	0.005385828	0.120000416	0.032614588	
12	29		5731.4	0.042	7.9	-4.7	-3.58	-0.075	60	0	5/10/2015 15:58:34	5/10/2015 16:58:34	515357	208487	122.74	-0.07307783	0.004147246	0.117794526	0.02764728	
12	30		5731.4	0.079	-0.2	-6	-3.59	-0.075	60	2	5/10/2015 16:01:32	5/10/2015 17:01:32	515355	208488	122.73	-0.072823742	0.003636904	0.11691217	0.028275266	
12	31		5731.4	0.061	-2.3	-1.3	-3.61	-0.075	60	0	5/10/2015 16:03:56	5/10/2015 17:03:56	515353	208489	122.71	-0.072651748	0.003224043	0.11250039	0.036276347	
12	32		5731.4	0.077	-4.4	-3.6	-3.61	-0.076	60	1	5/10/2015 16:05:54	5/10/2015 17:05:54	515351	208491	122.68	-0.072477749	0.002885726	0.103897419	0.038011693	
12	33		5731.5	0.072	-3.8	0.9	-3.61	-0.076	60	0	5/10/2015 16:08:00	5/10/2015 17:08:00	515349	208493	122.63	-0.072213142	0.002524473	0.094191503	0.03966703	
12	34		5731.5	0.044	-5.4	-2.3	-3.62	-0.076	60	0	5/10/2015 16:12:07	5/10/2015 17:12:07	515347	208494	122.6	-0.071853949	0.001816301	0.087794422	0.038978121	
12	35		5731.5	0.054	-5.3	1.3	-3.61	-0.076	60	0	5/10/2015 16:15:40	5/10/2015 17:15:40	515345	208496	122.58	-0.071580062	0.001205611	0.083162053	0.038956442	
12	36		5731.5	0.054	-6.6	-4.2	-3.61	-0.076	60	0	5/10/2015 16:18:05	5/10/2015 17:18:05	515344	208498	122.56	-0.071302575	0.000789883	0.077426739	0.041636856	
12	37		5731.5	0.065	1.4	-5.3	-3.6	-0.076	60	0	5/10/2015 16:20:22	5/10/2015 17:20:22	515342	208500	122.52	-0.071115695	0.000397092	0.069485535	0.032088443	
12	38		5731.5	0.069	-0.8	-0.5	-3.6	-0.076	60	3	5/10/2015 16:22:51	5/10/2015 17:22:51	515341	208502	122.49	-0.070927382	-3.01044E-05	0.062867865	0.042897969	
12	39		5731.5	0.046	6	-1.8	-3.6	-0.076	60	0	5/10/2015 16:24:56	5/10/2015 17:24:56	515339	208504	122.46	-0.070737703	-0.000388491	0.056911962	0.045300453	
12	40		5731.5	0.051	-6.6	-13.2	-3.6	-0.076	60	0	5/10/2015 16:26:58	5/10/2015 17:26:58	515338	208506	122.43	-0.070546722	-0.000738276	0.049411936	0.046150212	
12	40		5731.5	0.044	-1	-5.8	-3.6	-0.076	60	0	5/10/2015 16:28:26	5/10/2015 17:28:26	515338	208506	122.43	-0.070354507	-0.00099058	0.049411936	0.044402516	
12	41		5731.5	0.066	-7.7	-5.5	-3.61	-0.075	60	0	5/10/2015 16:30:37	5/10/2015 17:30:37	515336	208508	122.39	-0.070161123	-0.001366168	0.041029554	0.048395722	
12	42		5731.5	0.05	-9.7	0.7	-3.61	-0.075	60	0	5/10/2015 16:35:21	5/10/2015 17:35:21	515335	208510	122.35	-0.069672973	-0.002180422	0.031323638	0.05050406	
12	43		5731.5	0.066	0.4	2.5	-3.61	-0.075	60	0	5/10/2015 16:37:41	5/10/2015 17:37:41	515333	208512	122.31	-0.069476008	-0.002581814	0.02426479	0.048846604	
12	44		5731.5	0.062	-2.6	5.6	-3.61	-0.075	60	0	5/10/2015 16:39:52	5/10/2015 17:39:52	515332	208514	122.28	-0.069278164	-0.002957403	0.016323586	0.053280989	
12	45		5731.5	0.046	1.3	-2.3	-3.61	-0.075	60	0	5/10/2015 16:42:56	5/10/2015 17:42:56	515330	208516	122.25	-0.068979891	-0.003484948	0.009485327	0.056970275	
12	46		5731.6	0.041	2.5	-3.9	-3.61	-0.075	60	0	5/10/2015 16:46:28	5/10/2015 17:46:28	515329	208518	122.22	-0.068579711	-0.004092771	0.002867657	0.058960428	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
12	47		5731.6	0.053	2.4	-0.3	-3.61	-0.075	60	0	5/10/2015 16:48:27	5/10/2015 17:48:27	515328	208520	122.2	-0.068378698	-0.004433955	-0.001985301	0.058448654	
12	48		5731.6	0.069	-2.1	-2.7	-3.61	-0.075	60	0	5/10/2015 16:51:54	5/10/2015 17:51:54	515326	208522	122.18	-0.068076197	-0.005027442	-0.006397081	0.055630361	
12	49		5731.6	0.051	3	-5.9	-3.61	-0.075	60	0	5/10/2015 16:53:41	5/10/2015 17:53:41	515325	208524	122.15	-0.067873966	-0.005334221	-0.011911806	0.051422415	
12	50		5731.6	0.069	-1.6	-1.5	-3.61	-0.075	60	0	5/10/2015 16:56:45	5/10/2015 17:56:45	515323	208527	122.12	-0.067569924	-0.005861765	-0.01764712	0.043214645	
12	50		5731.6	0.055	-3.7	1	-3.61	-0.075	60	1	5/10/2015 16:58:04	5/10/2015 17:58:04	515323	208527	122.12	-0.067366853	-0.006088265	-0.01764712	0.043441145	
13	0		5731.5	0.068	-8.6	-8.8	-3.61	0.029	60	0	6/10/2015 08:57:41	6/10/2015 09:57:41	515418	208446	122.28	0.00695182	-0.003754724	0.017426531	0.011181255	
13	0		5731.5	0.063	-3.6	-7.4	-3.6	0.029	60	0	6/10/2015 08:59:10	6/10/2015 09:59:10	515418	208446	122.28	0.006380641	-0.003657703	0.017426531	0.014084234	
13	1		5731.5	0.07	0.5	-8.9	-3.59	0.029	60	0	6/10/2015 09:01:58	6/10/2015 10:01:58	515416	208448	122.3	0.005803946	-0.003474564	0.021397133	0.014871697	
13	2		5731.5	0.078	-0.9	-4.1	-3.58	0.028	60	0	6/10/2015 09:04:18	6/10/2015 10:04:18	515413	208449	122.31	0.004928774	-0.003321948	0.023161845	0.023483793	
13	3		5731.5	0.058	-3	5.8	-3.58	0.028	60	0	6/10/2015 09:06:17	6/10/2015 10:06:17	515411	208451	122.32	0.004338718	-0.003192224	0.026029502	0.023221726	
13	4		5731.5	0.059	6.9	-5.4	-3.58	0.028	60	0	6/10/2015 09:08:20	6/10/2015 10:08:20	515409	208452	122.34	0.003743491	-0.00305814	0.029117748	0.015175888	
13	5		5731.5	0.077	-0.9	-0.1	-3.58	0.028	60	0	6/10/2015 09:12:07	6/10/2015 10:12:07	515407	208454	122.34	0.002537937	-0.002810683	0.030220693	0.019031376	
13	6		5731.5	0.065	2.4	1.1	-3.59	0.027	60	0	6/10/2015 09:21:00	6/10/2015 10:21:00	515405	208455	122.35	-0.000244369	-0.002229651	0.031985405	0.014215056	
13	6		5731.5	0.057	2.4	0.2	-3.59	0.027	60	0	6/10/2015 09:22:24	6/10/2015 10:22:24	515405	208455	122.35	-0.000559171	-0.002138081	0.031985405	0.012123486	
13	7		5731.5	0.089	9.7	-2.1	-3.59	0.026	60	0	6/10/2015 09:24:17	6/10/2015 10:24:17	515403	208457	122.35	-0.001192004	-0.002014898	0.032426583	0.014441481	
13	8		5731.5	0.068	2.2	0.3	-3.59	0.026	60	0	6/10/2015 09:26:13	6/10/2015 10:26:13	515401	208458	122.37	-0.001829054	-0.001888445	0.036617774	0.013506219	
13	9		5731.5	0.065	-8	-4.5	-3.59	0.026	60	0	6/10/2015 09:28:10	6/10/2015 10:28:10	515399	208459	122.4	-0.002470209	-0.001760901	0.042573677	0.018334578	
13	10		5731.5	0.075	0.7	-4.7	-3.59	0.026	60	0	6/10/2015 09:30:09	6/10/2015 10:30:09	515397	208461	122.42	-0.003115356	-0.001631177	0.04852958	0.019160757	
13	11		5731.5	0.072	12.1	2.4	-3.59	0.025	60	0	6/10/2015 09:32:05	6/10/2015 10:32:05	515395	208462	122.45	-0.003764384	-0.001504724	0.054264894	0.021769618	
13	11		5731.5	0.056	-1.4	2.1	-3.59	0.025	60	0	6/10/2015 09:33:34	6/10/2015 10:33:34	515395	208462	122.45	-0.004090317	-0.001407703	0.054264894	0.022672597	
13	12		5731.5	0.073	-8.9	-1.6	-3.59	0.025	60	0	6/10/2015 09:35:25	6/10/2015 10:35:25	515393	208464	122.46	-0.004744952	-0.001286701	0.056470784	0.022757485	
13	13		5731.5	0.063	-6.6	6.7	-3.59	0.024	60	0	6/10/2015 09:38:52	6/10/2015 10:38:52	515391	208465	122.48	-0.005733605	-0.001061047	0.061103153	0.0211642	
13	14		5731.5	0.084	-3.7	1.5	-3.6	0.023	60	0	6/10/2015 09:46:37	6/10/2015 10:46:37	515389	208467	122.51	-0.008406555	-0.000554142	0.067059056	0.018613198	
13	15		5731.4	0.068	-4	-9.5	-3.59	0.022	60	0	6/10/2015 09:51:23	6/10/2015 10:51:23	515387	208468	122.53	-0.010101576	-0.000242369	0.071912014	0.014154383	
13	16		5731.4	0.089	-6.4	11.2	-3.6	0.021	60	0	6/10/2015 09:56:15	6/10/2015 10:56:15	515385	208470	122.56	-0.011813134	7.59448E-05	0.078088506	0.022012561	
13	16		5731.4	0.079	-0.5	-5.7	-3.59	0.021	60	0	6/10/2015 09:58:03	6/10/2015 10:58:03	515385	208470	122.56	-0.012501963	0.000193677	0.078088506	0.017894829	
13	17		5731.5	0.073	-8	-8.1	-3.6	0.02	60	0	6/10/2015 10:01:32	6/10/2015 11:01:32	515383	208471	122.57	-0.013539327	0.000421512	0.081176752	0.02875524	
13	18		5731.5	0.088	-3.8	-0.7	-3.6	0.02	60	0	6/10/2015 10:03:50	6/10/2015 11:03:50	515381	208473	122.58	-0.014233472	0.000571948	0.083162053	0.033590105	
13	19		5731.5	0.076	-2.3	6.5	-3.6	0.019	60	0	6/10/2015 10:05:56	6/10/2015 11:05:56	515379	208474	122.59	-0.014929526	0.000709302	0.084044409	0.038335107	
13	20		5731.5	0.056	-0.9	-1.9	-3.59	0.019	60	0	6/10/2015 10:07:57	6/10/2015 11:07:57	515377	208475	122.62	-0.015627367	0.000841206	0.090882668	0.036041462	
13	21		5731.4	0.087	7.2	-2.2	-3.59	0.018	60	0	6/10/2015 10:11:17	6/10/2015 11:11:17	515375	208477	122.65	-0.017027904	0.00105923	0.097279749	0.038220519	
13	22		5731.4	0.066	1.6	-0.9	-3.59	0.017	60	0	6/10/2015 10:13:40	6/10/2015 11:13:40	515373	208478	122.67	-0.017730352	0.001215116	0.102573885	0.039358769	
13	23		5731.4	0.073	3.9	-0.1	-3.59	0.017	60	0	6/10/2015 10:15:56	6/10/2015 11:15:56	515371	208480	122.68	-0.018434083	0.001363372	0.104338597	0.042975225	
13	24		5731.4	0.064	-2.4	-0.6	-3.59	0.016	60	0	6/10/2015 10:17:56	6/10/2015 11:17:56	515369	208481	122.72	-0.019138974	0.001494186	0.113823924	0.047329738	
13	25		5731.4	0.081	-5	-3.4	-3.58	0.016	60	0	6/10/2015 10:19:56	6/10/2015 11:19:56	515366	208483	122.75	-0.019844896	0.001625	0.119779827	0.049154827	
13	25		5731.4	0.075	-5.2	-2.7	-3.58	0.016	60	0	6/10/2015 10:21:15	6/10/2015 11:21:15	515366	208483	122.75	-0.020551724	0.001711119	0.119779827	0.049068708	
13	26		5731.4	0.101	-6.3	-5.2	-3.56	0.01	60	0	6/10/2015 10:42:50	6/10/2015 11:42:50	515364	208484	122.75	-0.027996194	0.01075281	0.121103361	0.029350551	
13	26		5731.4	0.063	-5.5	-4.3	-3.55	0.01	60	0	6/10/2015 10:44:27	6/10/2015 11:44:27	515364	208484	122.75	-0.028704317	0.010697178	0.121103361	0.036406183	
13	26		5731.4	0.082	-1	-5.8	-3.54	0.009	60	0	6/10/2015 10:46:03	6/10/2015 11:46:03	515364	208484	122.75	-0.02941176	0.01064212	0.121103361	0.030461241	
13	26		5731.4	0.065	-3	-6.7	-3.53	0.009	60	0	6/10/2015 10:47:47	6/10/2015 11:47:47	515364	208484	122.75	-0.029765187	0.010582473	0.121103361	0.036520888	
13	27		5731.4	0.064	-1.4	-1.4	-3.42	0.001	60	0	6/10/2015 11:14:12	6/10/2015 12:14:12	515362	208486	122.77	-0.039174326	0.009673434	0.124191607	0.040518173	
13	27		5731.4	0.057	-1.9	-5.1	-3.44	0	60	0	6/10/2015 11:15:56	6/10/2015 12:15:56	515362	208486	122.77	-0.039515781	0.009613788	0.124191607	0.039577819	
13	28		5731.4	0.069	-6.8	-9.9	-3.51	-0.001	60	0	6/10/2015 11:21:35	6/10/2015 12:21:35	515360	208487	122.77	-0.041550355	0.009419362	0.123971018	0.031551656	
13	29		5731.4	0.06	6.5	8.8	-3.52	-0.002	60	0	6/10/2015 11:24:15	6/10/2015 12:24:15	515358	208489	122.76	-0.042557874	0.009327598	0.122426895	0.032099297	
13	30		5731.4	0.071	-7.8	9	-3.53	-0.002	60	0	6/10/2015 11:26:01	6/10/2015 12:26:01	515356	208490	122.76	-0.043225667	0.009266804	0.122426895	0.033160091	
13	31		5731.4	0.081	-4.3	-7	-3.54	-0.003	60	0	6/10/2015 11:27:51	6/10/2015 12:27:51	515354	208492	122.75	-0.043558354	0.009203716	0.121103361	0.027899645	
13	32		5731.4	0.071	0.6	-2.6	-3.55	-0.004	60	1	6/10/2015 11:31:03	6/10/2015 12:31:03	515352	208493	122.73	-0.0448807	0.009093599	0.114926869	0.03083327	
13	33		5731.4	0.06	9.7	5.3	-3.58	-0.007	60	0	6/10/2015 11:39:44	6/10/2015 12:39:44	515350	208495	122.69	-0.047482118	0.008794792	0.106323898	0.031529106	
13	34		5731.5	0.058	-4.6	9.7	-3.59	-0.008	60	2	6/10/2015 11:44:22	6/10/2015 12:44:22	515349	208496	122.65	-0.049076137	0.008635352	0.098162105	0.038526753	
13	34		5731.5	0.088	-3.5	2.9	-3.59	-0.009	60	0	6/10/2015 11:45:49	6/10/2015 12:45:49	515349	208496	122.65	-0.049391808	0.008585455	0.098162105	0.03857665	
13	35		5731.5	0.071	13.7	2.7	-3.59	-0.01	60	0	6/10/2015 11:47:36	6/10/2015 12:47:36	515347	208498	122.61	-0.050019909	0.008524088	0.09044149	0.037917402	
13	35		5731.5	0.093	-2.5	-0.1	-3.59	-0.01	60	0	6/10/2015 11:48:59	6/10/2015 12:48:59	515347	208498	122.61	-0.050332313	0.008476485	0.09044149	0.041965005	
13	35		5731.5	0.088	4.2	0.1	-3.6	-0.012	60	0	6/10/2015 11:53:54	6/10/2015 12:53:54	515347	208498	122.61	-0.051877344	0.008307295	0.09044149	0.037134195	
13	36		5731.5	0.065	2.8	2.7	-3.6	-0.012	60	0	6/10/2015 11:55:54	6/10/2015 12:55:54	515345	208500	122.58	-0.052487186	0.008238472	0.083162053	0.041923581	
13	37		5731.5	0.099	-9.2	-11.6	-3.6	-0.013	60	0	6/10/2015 11:57:52	6/10/2015 12:57:52	515344	208502	122.55	-0.053092207	0.008170796	0.076544383	0.043373587	
13	37		5731.5	0.065	2	0.2	-3.61	-0.014	60	0	6/10/2015 12:00:55	6/10/2015 13:00:55	515344	208502	122.55	-0.053990479	0.008065841	0.076544383	0.041478542	
13	38		5731.5	0.086	-1.7	0.2	-3.61	-0.015	60	0	6/10/2015 12:02:57	6/10/2015 13:02:57	515342	208504	122.52	-0.05458301	0.007995871	0.070367891	0.04637202	
13	39		5731.5	0.074	-6.8	-10.9	-3.62	-0.017	60	0	6/10/2015 12:07:37	6/10/2015 13:07:37	515341	208506	122.48	-0.056041523	0.007835283	0.061323742	0.048488459	
13	39		5731.5	0.049	-6.6	-7.7	-3.62	-0.017	60	0	6/10/2015 12:09:03	6/10/2015 13:09:03	515341	208506	122.48	-0.056615552	0.00778596	0.061323742	0.049537782	
13	40		5731.5	0.069	4.8	-1.3	-3.62	-0.018	60	0	6/10/2015 12:11:37	6/10/2015 13:11:37	515339	208508	122.45	-0.057184085	0.007697637	0.054044305	0.049346668	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
13	41		5731.5	0.078	-8.8	-11.7	-3.62	-0.019	60	1	6/10/2015 12:13:45	6/10/2015 13:13:45	515338	208510	122.4	-0.05774703	0.007624226	0.043456033	0.049831807	
13	41		5731.5	0.07	2.5	-5	-3.62	-0.019	60	0	6/10/2015 12:15:27	6/10/2015 13:15:27	515338	208510	122.4	-0.058304297	0.007565726	0.043456033	0.046890307	
13	42		5731.5	0.062	2.9	3.5	-3.63	-0.02	60	0	6/10/2015 12:17:48	6/10/2015 13:17:48	515336	208512	122.36	-0.058855797	0.007484859	0.034632473	0.050147614	
13	43		5731.5	0.061	-2.9	0.3	-3.63	-0.021	60	0	6/10/2015 12:21:06	6/10/2015 13:21:06	515335	208514	122.32	-0.059941152	0.007371301	0.024926557	0.053555256	
13	44		5731.5	0.066	-5.5	-11.2	-3.63	-0.023	60	0	6/10/2015 12:26:25	6/10/2015 13:26:25	515333	208516	122.29	-0.061263891	0.007188346	0.018529476	0.05534113	
13	44		5731.5	0.064	-7	-8	-3.63	-0.024	60	0	6/10/2015 12:28:37	6/10/2015 13:28:37	515333	208516	122.29	-0.06178216	0.007112641	0.018529476	0.056416835	
13	45		5731.6	0.072	-0.4	-3	-3.63	-0.026	60	0	6/10/2015 12:33:11	6/10/2015 13:33:11	515332	208518	122.25	-0.063050079	0.006955494	0.01102945	0.054073956	
13	45		5731.6	0.061	-3	-7.1	-3.63	-0.026	60	0	6/10/2015 12:34:52	6/10/2015 13:34:52	515332	208518	122.25	-0.063298829	0.006897568	0.01102945	0.052131882	
13	46		5731.6	0.076	1.6	-0.3	-3.64	-0.028	60	0	6/10/2015 12:39:32	6/10/2015 13:39:32	515331	208520	122.22	-0.064517899	0.006736981	0.003970602	0.053233621	
13	47		5731.6	0.048	-4.8	-1.5	-3.64	-0.03	60	0	6/10/2015 12:44:43	6/10/2015 13:44:43	515329	208522	122.19	-0.065695035	0.006558614	-0.002647068	0.050794318	
13	48		5731.6	0.076	-9.1	-5.4	-3.64	-0.031	60	0	6/10/2015 12:47:13	6/10/2015 13:47:13	515328	208524	122.16	-0.066380749	0.006472585	-0.00882356	0.049703855	
13	48		5731.6	0.068	-2.5	-0.9	-3.64	-0.031	60	0	6/10/2015 12:48:57	6/10/2015 13:48:57	515328	208524	122.16	-0.066605844	0.006412939	-0.00882356	0.045763501	
13	49		5731.6	0.056	-8.2	5.1	-3.65	-0.032	60	0	6/10/2015 12:50:57	6/10/2015 13:50:57	515326	208527	122.13	-0.067050772	0.006344116	-0.01544123	0.043214654	
13	50		5731.6	0.075	-0.7	-1.7	-3.64	-0.033	60	0	6/10/2015 12:54:29	6/10/2015 13:54:29	515325	208529	122.12	-0.067919374	0.006222528	-0.019411832	0.03136564	
14	0		5731.5	0.106	-5.2	2.3	-3.59	-0.066	60	1	6/10/2015 14:47:07	6/10/2015 15:47:07	515419	208448	122.35	-0.079682734	0.007758333	0.032426583	0.00766825	
14	1		5731.5	0.105	-8.9	2.3	-3.61	-0.067	60	0	6/10/2015 14:53:02	6/10/2015 15:53:02	515417	208450	122.37	-0.079611826	0.007388542	0.036617774	0.009229232	
14	1		5731.5	0.05	-6.6	-0.8	-3.6	-0.067	60	0	6/10/2015 14:54:29	6/10/2015 15:54:29	515417	208450	122.37	-0.079593641	0.007297917	0.036617774	0.008319857	
14	2		5731.5	0.079	-4.3	1.7	-3.6	-0.068	60	0	6/10/2015 14:57:38	6/10/2015 15:57:38	515415	208451	122.38	-0.079528305	0.007101042	0.038161897	0.005060855	
14	3		5731.5	0.07	3.4	-4.3	-3.62	-0.07	60	0	6/10/2015 15:05:11	6/10/2015 16:05:11	515413	208453	122.36	-0.079276256	0.006629167	0.034632473	0.004003306	
14	4		5731.5	0.086	-3.2	-3.4	-3.62	-0.07	60	0	6/10/2015 15:09:06	6/10/2015 16:09:06	515411	208454	122.36	-0.079108684	0.006384375	0.033308939	0.001924564	
14	5		5731.5	0.068	-7.3	1.7	-3.62	-0.071	60	0	6/10/2015 15:11:10	6/10/2015 16:11:10	515409	208456	122.42	-0.079014732	0.006255208	0.047647224	0.003392016	
14	6		5731.5	0.071	-4	-5.3	-3.62	-0.071	60	0	6/10/2015 15:14:47	6/10/2015 16:14:47	515407	208457	122.41	-0.078861282	0.006029167	0.045441334	0.003412167	
14	7		5731.5	0.056	-4.9	-4.5	-3.63	-0.072	60	0	6/10/2015 15:21:57	6/10/2015 16:21:57	515405	208459	122.45	-0.078446012	0.00558125	0.054264894	0.004683644	
14	8		5731.5	0.1	10.4	-3.6	-3.63	-0.073	60	0	6/10/2015 15:24:05	6/10/2015 16:24:05	515403	208460	122.46	-0.0782441	0.005447917	0.055367839	0.000919922	
14	8		5731.5	0.066	-2.9	-3.7	-3.63	-0.073	60	0	6/10/2015 15:25:30	6/10/2015 16:25:30	515403	208460	122.46	-0.078173672	0.005359375	0.055367839	0.005008464	
14	9		5731.5	0.084	-9.2	0.2	-3.63	-0.073	60	0	6/10/2015 15:28:23	6/10/2015 16:28:23	515401	208461	122.45	-0.07795315	0.005179167	0.053823716	0.008644549	
14	10		5731.5	0.079	-4	-0.9	-3.63	-0.074	60	0	6/10/2015 15:31:58	6/10/2015 16:31:58	515398	208463	122.46	-0.077718978	0.004955208	0.055367839	0.011412631	
14	11		5731.5	0.132	2	0	-3.62	-0.074	60	1	6/10/2015 15:34:13	6/10/2015 16:34:13	515396	208464	122.52	-0.077471423	0.004814583	0.069926713	0.01211213	
14	12		5731.4	0.091	3.9	-6.1	-3.62	-0.074	60	0	6/10/2015 15:37:48	6/10/2015 16:37:48	515394	208466	122.55	-0.077210763	0.004590625	0.076544383	0.009953758	
14	13		5731.4	0.062	-7.3	0.2	-3.61	-0.075	60	0	6/10/2015 15:40:07	6/10/2015 16:40:07	515392	208467	122.56	-0.076937277	0.004445833	0.077647328	0.015201495	
14	14		5731.4	0.094	-5	3.4	-3.61	-0.075	60	0	6/10/2015 15:42:17	6/10/2015 16:42:17	515390	208469	122.51	-0.076747971	0.004310417	0.068162001	0.006851584	
14	15		5731.4	0.095	-10.8	-5.5	-3.61	-0.075	60	0	6/10/2015 15:45:06	6/10/2015 16:45:06	515388	208470	122.54	-0.076453752	0.004134375	0.073897315	0.01176294	
14	15		5731.4	0.052	-9.3	2.3	-3.61	-0.075	60	0	6/10/2015 15:46:43	6/10/2015 16:46:43	515388	208470	122.54	-0.076352988	0.004033333	0.073897315	0.014863982	
14	16		5731.4	0.075	-8.2	-10.7	-3.61	-0.076	60	0	6/10/2015 15:50:59	6/10/2015 16:50:59	515386	208471	122.54	-0.075936769	0.003766667	0.074117904	0.013351237	
14	16		5731.4	0.079	-2.9	-8	-3.61	-0.076	60	1	6/10/2015 15:52:25	6/10/2015 16:52:25	515386	208471	122.54	-0.075720921	0.003677083	0.074117904	0.011440821	
14	17		5731.4	0.073	0	1.4	-3.61	-0.076	60	0	6/10/2015 15:55:15	6/10/2015 16:55:15	515384	208473	122.63	-0.075387733	0.0035	0.09485327	0.01635327	
14	18		5731.4	0.075	-4.1	4.4	-3.61	-0.076	60	0	6/10/2015 15:58:50	6/10/2015 16:58:50	515382	208475	122.67	-0.075043527	0.003276042	0.102132707	0.025856665	
14	19		5731.4	0.066	-1.6	-6.8	-3.61	-0.076	60	0	6/10/2015 16:01:20	6/10/2015 17:01:20	515380	208476	122.64	-0.07468862	0.003119792	0.09705916	0.028939368	
14	20		5731.4	0.081	9	0.6	-3.61	-0.077	60	1	6/10/2015 16:03:43	6/10/2015 17:03:43	515378	208478	122.67	-0.07444623	0.002970833	0.102794474	0.033823641	
14	21		5731.4	0.079	-6.2	4.2	-3.6	-0.077	60	0	6/10/2015 16:06:26	6/10/2015 17:06:26	515376	208478	122.71	-0.074074208	0.002801042	0.110956267	0.032155225	
14	22		5731.4	0.074	2.1	2.5	-3.6	-0.077	60	0	6/10/2015 16:08:34	6/10/2015 17:08:34	515374	208480	122.74	-0.073820712	0.002667708	0.118235704	0.037567996	
14	23		5731.4	0.078	-6.9	1.4	-3.6	-0.077	60	0	6/10/2015 16:10:42	6/10/2015 17:10:42	515372	208482	122.73	-0.073562945	0.002534375	0.114926869	0.040392494	
14	24		5731.4	0.097	3.5	-1.5	-3.6	-0.077	60	0	6/10/2015 16:12:53	6/10/2015 17:12:53	515370	208483	122.76	-0.073301007	0.002397917	0.122206306	0.040808389	
14	25		5731.4	0.074	1.5	-3.5	-3.59	-0.077	60	0	6/10/2015 16:17:34	6/10/2015 17:17:34	515368	208485	122.83	-0.072628572	0.002105208	0.137426947	0.039321739	
14	25		5731.4	0.064	-4.3	-0.6	-3.62	-0.078	60	0	6/10/2015 16:29:13	6/10/2015 17:29:13	515368	208485	122.83	-0.070920442	0.001377083	0.137426947	0.042049864	
14	26		5731.4	0.08	-3.9	-10	-3.58	-0.078	60	0	6/10/2015 16:44:18	6/10/2015 17:44:18	515366	208486	122.84	-0.068626226	0.00556486	0.140956371	0.021391511	
14	26		5731.4	0.079	-1.4	-4.7	-3.57	-0.078	60	0	6/10/2015 16:45:46	6/10/2015 17:45:46	515366	208486	122.84	-0.068467983	0.005481435	0.140956371	0.026474936	
14	27		5731.4	0.064	7.5	-1.6	-3.57	-0.078	60	0	6/10/2015 16:48:58	6/10/2015 17:48:58	515364	208488	122.85	-0.067989791	0.005299415	0.142500494	0.027201079	
14	28		5731.4	0.076	10	0.3	-3.57	-0.078	60	0	6/10/2015 16:51:02	6/10/2015 17:51:02	515362	208489	122.82	-0.067506687	0.005181861	0.136544591	0.02336273	
14	29		5731.4	0.063	4.1	0.7	-3.57	-0.077	60	0	6/10/2015 16:53:15	6/10/2015 17:53:15	515360	208491	122.78	-0.067182068	0.005055775	0.12794162	0.021885845	
14	30		5731.4	0.075	2.9	-5.6	-3.57	-0.077	60	1	6/10/2015 16:55:15	6/10/2015 17:55:15	515357	208492	122.78	-0.066855536	0.004942013	0.127279853	0.01633784	
14	30		5731.4	0.079	-3.4	-1	-3.57	-0.077	60	0	6/10/2015 16:59:39	6/10/2015 17:59:39	515357	208492	122.78	-0.066197161	0.004691736	0.127279853	0.017588117	
14	31		5731.4	0.085	-3.8	-3.3	-3.58	-0.077	60	0	6/10/2015 17:04:37	6/10/2015 18:04:37	515356	208494	122.81	-0.065365347	0.004409227	0.134338701	0.015929474	
14	32		5731.4	0.094	3.5	-5.3	-3.58	-0.077	60	0	6/10/2015 17:07:13	6/10/2015 18:07:13	515354	208495	122.83	-0.064862189	0.004261337	0.138529892	0.017268555	
14	33		5731.4	0.094	-1.3	5.6	-3.58	-0.077	60	0	6/10/2015 17:10:01	6/10/2015 18:10:01	515352	208497	122.8	-0.064356421	0.00410207	0.1323534	0.02625133	
14	34		5731.4	0.122	1	-7.2	-3.58	-0.077	60	0	6/10/2015 17:12:16	6/10/2015 18:12:16	515350	208499	122.76	-0.064017971	0.003974088	0.123088662	0.031114574	
14	35		5731.4	0.071	1	5.6	-3.58	-0.076	60	0	6/10/2015 17:14:43	6/10/2015 18:14:43	515348	208500	122.7	-0.063678629	0.003834729	0.108529788	0.032695059	
14	36		5731.5	0.093	-3.5	-7.8	-3.58	-0.076	60	0	6/10/2015 17:17:06	6/10/2015 18:17:06	515347	208502	122.64	-0.063168177	0.003699163	0.095073859	0.037374696	
14	37		5731.5	0.068	-9.3	-1.3	-3.58	-0.076	60	0	6/10/2015 17:19:06	6/10/2015 18:19:06	515345	208504	122.61	-0.062827071	0.003585401	0.088897367	0.048311966	
14	38		5731.5	0.106	-0.6	-10.1	-3.57	-0.076	60	0	6/10/2015 17:23:30	6/10/2015 18:23:30	515343	208506	122.59	-0.062143405	0.003335124	0.085367943	0.045032819	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
14	38		5731.5	0.063	-6.4	-2.9	-3.57	-0.076	60	0	6/10/2015 17:24:59	6/10/2015 18:24:59	515343	208506	122.59	-0.061972262	0.003250751	0.085367943	0.050117192	
14	39		5731.5	0.068	-12.6	-8.8	-3.57	-0.076	60	3	6/10/2015 17:27:14	6/10/2015 18:27:14	515342	208508	122.56	-0.061458501	0.003122768	0.078750273	0.050627505	
14	39		5731.5	0.086	-6.4	-5.6	-3.57	-0.075	60	0	6/10/2015 17:28:41	6/10/2015 18:28:41	515342	208508	122.56	-0.061287179	0.003040291	0.078750273	0.048709982	
14	40		5731.5	0.071	-4.6	-4.7	-3.57	-0.075	60	0	6/10/2015 17:34:12	6/10/2015 18:34:12	515341	208510	122.5	-0.060259448	0.002726497	0.064411988	0.053685491	
14	40		5731.5	0.066	-6.8	-8.3	-3.56	-0.075	60	0	6/10/2015 17:35:29	6/10/2015 18:35:29	515341	208510	122.5	-0.060088313	0.0026535	0.064411988	0.053758488	
14	41		5731.5	0.085	-11	3.8	-3.55	-0.074	60	0	6/10/2015 17:39:58	6/10/2015 18:39:58	515339	208512	122.46	-0.059404676	0.002398483	0.05735314	0.057954657	
14	41		5731.5	0.071	-6.6	-1.4	-3.55	-0.074	60	0	6/10/2015 17:41:37	6/10/2015 18:41:37	515339	208512	122.46	-0.059063578	0.002304629	0.05735314	0.056048511	
14	42		5731.5	0.069	-4	-6.6	-3.56	-0.074	60	0	6/10/2015 17:45:08	6/10/2015 18:45:08	515338	208514	122.42	-0.058383323	0.002104598	0.047647224	0.051542626	
14	43		5731.5	0.067	-6.7	-6	-3.56	-0.073	60	0	6/10/2015 17:49:02	6/10/2015 18:49:02	515336	208517	122.28	-0.057706315	0.001882762	0.016544175	0.052661413	
14	43		5731.5	0.072	-0.8	-7.1	-3.55	-0.073	60	0	6/10/2015 17:50:35	6/10/2015 18:50:35	515336	208517	122.28	-0.057537663	0.001794596	0.016544175	0.051749579	
14	44		5731.5	0.097	-5	-1.7	-3.55	-0.073	60	0	6/10/2015 17:53:07	6/10/2015 18:53:07	515335	208519	122.25	-0.057033337	0.001650498	0.010147094	0.052496596	
14	45		5731.6	0.09	-3.3	7.2	-3.56	-0.072	60	0	6/10/2015 17:58:06	6/10/2015 18:58:06	515334	208521	122.21	-0.056198948	0.001367041	0.00220589	0.059838849	
14	46		5731.6	0.082	-1.7	-6.8	-3.56	-0.072	60	0	6/10/2015 18:01:45	6/10/2015 19:01:45	515332	208523	122.17	-0.055702525	0.001159425	-0.007941204	0.048899371	
14	47		5731.6	0.083	-1.4	2.2	-3.56	-0.071	60	0	6/10/2015 18:06:17	6/10/2015 19:06:17	515331	208525	122.15	-0.05488317	0.000901564	-0.01102945	0.057068986	
14	48		5731.5	0.074	-7.7	-8.6	-3.55	-0.071	60	0	6/10/2015 18:10:15	6/10/2015 19:10:15	515330	208527	122.26	-0.054235711	0.000675936	0.011470628	0.043794692	
14	48		5731.5	0.097	0	-7.7	-3.55	-0.07	60	0	6/10/2015 18:12:40	6/10/2015 19:12:40	515330	208527	122.26	-0.053914899	0.000538474	0.011470628	0.043932154	
21	0		5731.8	0.102	0.4	-4.3	-3.48	-0.049	90	0	7/10/2015 14:12:44	7/10/2015 15:12:44	515329	208404	121.02	-0.078640993	0.017750403	-0.261177376	0.026072221	
21	1		5731.8	0.084	-4	-5.7	-3.52	-0.051	90	0	7/10/2015 14:16:21	7/10/2015 15:16:21	515330	208402	121.02	-0.07909116	0.017575684	-0.26029502	0.034129296	
21	2		5731.8	0.098	-3.5	0.5	-3.55	-0.052	90	0	7/10/2015 14:19:46	7/10/2015 15:19:46	515331	208399	121.01	-0.079402937	0.017410628	-0.263824444	0.036764928	
21	3		5731.8	0.063	-4.7	0.7	-3.58	-0.054	90	0	7/10/2015 14:25:42	7/10/2015 15:25:42	515332	208397	120.96	-0.079959807	0.017123994	-0.27353036	0.032345646	
21	4		5731.8	0.068	4.6	-0.4	-3.6	-0.055	90	0	7/10/2015 14:29:20	7/10/2015 15:29:20	515333	208395	120.83	-0.080281555	0.01694847	-0.302868697	0.023182833	
21	5		5731.9	0.108	-13.4	-10	-3.6	-0.056	90	0	7/10/2015 14:33:43	7/10/2015 15:33:43	515334	208393	120.76	-0.08056367	0.016736715	-0.31764816	0.022615125	
21	5		5731.9	0.085	-0.9	-2.8	-3.6	-0.057	90	0	7/10/2015 14:35:43	7/10/2015 15:35:43	515334	208393	120.76	-0.080689867	0.016640097	-0.31764816	0.020711743	
21	6		5731.9	0.064	-6.3	-4.8	-3.61	-0.058	90	0	7/10/2015 14:40:09	7/10/2015 15:40:09	515335	208390	120.73	-0.080962067	0.016425926	-0.324486419	0.017087655	
21	7		5731.9	0.092	7.5	-4.8	-3.61	-0.059	90	0	7/10/2015 14:44:11	7/10/2015 15:44:11	515336	208388	120.62	-0.081135388	0.016231079	-0.348971798	0.004797123	
21	8		5731.9	0.097	3.1	-3.1	-3.59	-0.061	90	0	7/10/2015 14:50:03	7/10/2015 15:50:03	515336	208386	120.58	-0.081321606	0.015947665	-0.358015947	-0.005963612	
21	9		5731.9	0.072	-11.9	3.5	-3.58	-0.062	90	0	7/10/2015 14:54:00	7/10/2015 15:54:00	515337	208383	120.52	-0.081396836	0.015756844	-0.371471876	0.00077128	
21	9		5731.9	0.058	-5.1	-1.6	-3.58	-0.063	90	0	7/10/2015 14:56:07	7/10/2015 15:56:07	515337	208383	120.52	-0.081419859	0.015654589	-0.371471876	-0.003126465	
21	10		5731.9	0.095	-1.3	-4.2	-3.59	-0.064	90	0	7/10/2015 14:59:39	7/10/2015 15:59:39	515338	208381	120.47	-0.081436242	0.015483897	-0.382501326	-0.008985223	
21	11		5731.9	0.07	0.2	-6.4	-3.6	-0.065	90	0	7/10/2015 15:05:19	7/10/2015 16:05:19	515339	208379	120.48	-0.081404119	0.015210145	-0.380516025	-0.00672617	
22	0		5731.8	0.073	-6.1	-5.1	-3.58	-0.067	90	0	7/10/2015 15:14:02	7/10/2015 16:14:02	515331	208405	121.03	-0.081195878	0.015387861	-0.258530308	0.033081831	
22	1		5731.8	0.1	-10.6	1	-3.57	-0.068	90	0	7/10/2015 15:18:53	7/10/2015 16:18:53	515332	208403	121.04	-0.081042691	0.015818653	-0.256324418	0.032856929	
22	1		5731.8	0.072	-1.8	-2.2	-3.55	-0.069	90	0	7/10/2015 15:20:54	7/10/2015 16:20:54	515332	208403	121.04	-0.080952314	0.015997779	-0.256324418	0.032677803	
22	2		5731.8	0.085	3.1	4.7	-3.54	-0.07	90	0	7/10/2015 15:25:02	7/10/2015 16:25:02	515333	208400	121.02	-0.080686661	0.016364915	-0.261397965	0.03223712	
22	3		5731.8	0.102	-2.8	1.4	-3.56	-0.071	90	0	7/10/2015 15:29:54	7/10/2015 16:29:54	515334	208398	120.95	-0.080433838	0.016797187	-0.276177428	0.036025385	
22	4		5731.8	0.083	3	-6.7	-3.58	-0.072	90	0	7/10/2015 15:35:22	7/10/2015 16:35:22	515335	208396	120.84	-0.079988756	0.017282754	-0.300883396	0.01583385	
22	5		5731.9	0.083	-12.5	-0.2	-3.58	-0.072	90	0	7/10/2015 15:39:12	7/10/2015 16:39:12	515336	208393	120.76	-0.079649021	0.017623242	-0.318751105	0.016625653	
22	5		5731.9	0.061	-6.2	-0.9	-3.59	-0.073	90	0	7/10/2015 15:41:50	7/10/2015 16:41:50	515336	208393	120.76	-0.079466491	0.017857143	-0.318751105	0.013391752	
22	6		5731.8	0.111	10.4	-0.7	-3.6	-0.074	90	0	7/10/2015 15:46:59	7/10/2015 16:46:59	515337	208391	120.77	-0.078973906	0.018314582	-0.316545215	0.000140203	
22	6		5731.8	0.087	3.7	-2	-3.6	-0.074	90	0	7/10/2015 15:49:26	7/10/2015 16:49:26	515337	208391	120.77	-0.078653935	0.018532198	-0.316545215	-0.001077413	
22	7		5731.8	0.096	-4	-4.9	-3.61	-0.075	90	0	7/10/2015 15:54:17	7/10/2015 16:54:17	515338	208389	120.78	-0.078080942	0.01896299	-0.313677558	-0.001640548	
22	8		5731.8	0.091	0.6	-8.8	-3.61	-0.076	90	0	7/10/2015 15:59:45	7/10/2015 16:59:45	515339	208387	120.69	-0.077459621	0.019448557	-0.33308939	-0.012537947	
22	9		5731.9	0.089	-4.9	-0.2	-3.61	-0.076	90	1	7/10/2015 16:04:06	7/10/2015 17:04:06	515339	208384	120.51	-0.076791542	0.019834937	-0.373677766	-0.012512703	
22	10		5731.9	0.109	4.2	-8.8	-3.6	-0.077	90	0	7/10/2015 16:07:36	7/10/2015 17:07:36	515340	208382	120.53	-0.076368931	0.020145818	-0.370368931	-0.021514749	
22	11		5731.9	0.06	-4.6	0.3	-3.59	-0.077	90	0	7/10/2015 16:11:22	7/10/2015 17:11:22	515341	208380	120.51	-0.075780817	0.020480385	-0.373677766	-0.016158151	
22	11		5731.9	0.072	-3.4	1.1	-3.59	-0.077	90	0	7/10/2015 16:14:00	7/10/2015 17:14:00	515341	208380	120.51	-0.075321745	0.020714286	-0.373677766	-0.016392052	
23	0		5731.8	0.08	-5.8	-3.6	-3.39	0.021	60	0	8/10/2015 10:17:13	8/10/2015 11:17:13	515333	208406	121.05	0.00229237	0.027567407	-0.254780295	0.028652298	
23	1		5731.8	0.063	-3.5	10.5	-3.46	0.021	60	0	8/10/2015 10:21:20	8/10/2015 11:21:20	515334	208404	121.04	0.001054761	0.027228199	-0.256324418	0.036447383	
23	2		5731.8	0.083	-6.7	11	-3.53	0.021	60	0	8/10/2015 10:25:54	8/10/2015 11:25:54	515335	208401	121.01	-0.000212724	0.026851911	-0.264486211	0.039661878	
23	2		5731.8	0.109	-11.4	-1.6	-3.55	0.021	60	0	8/10/2015 10:28:06	8/10/2015 11:28:06	515335	208401	121.01	-0.001182256	0.026670634	-0.264486211	0.038843155	
23	2		5731.8	0.082	-5.8	1.3	-3.58	0.021	60	0	8/10/2015 10:30:01	8/10/2015 11:30:01	515335	208401	121.01	-0.001837343	0.026512703	-0.264486211	0.038001086	
23	3		5731.8	0.075	-6.1	-4	-3.61	0.02	60	0	8/10/2015 10:32:59	8/10/2015 11:32:59	515336	208399	120.95	-0.002499244	0.026268254	-0.276177428	0.036554318	
23	3		5731.8	0.093	-11.4	-3.7	-3.63	0.02	60	0	8/10/2015 10:34:35	8/10/2015 11:34:35	515336	208399	120.95	-0.003167807	0.026136416	-0.276177428	0.038686156	
23	3		5731.8	0.095	-1	-4.6	-3.64	0.02	60	0	8/10/2015 10:35:59	8/10/2015 11:35:59	515336	208399	120.95	-0.003504539	0.026021057	-0.276177428	0.034801515	
23	4		5731.9	0.086	-11	-13	-3.65	0.02	60	0	8/10/2015 10:39:00	8/10/2015 11:39:00	515337	208397	120.84	-0.004867351	0.025772488	-0.301324574	0.023902938	
23	4		5731.9	0.072	-5.5	-6.2	-3.66	0.02	60	0	8/10/2015 10:40:36	8/10/2015 11:40:36	515337	208397	120.84	-0.005211928	0.02564065	-0.301324574	0.025034776	
23	5		5731.9	0.108	-6	-1.3	-3.66	0.02	60	0	8/10/2015 10:46:14	8/10/2015 11:46:14	515338	208394	120.79	-0.00731039	0.025176471	-0.311251079	0.01357245	
23	6		5731.9	0.097	-6.5	2.6	-3.65	0.019	60	0	8/10/2015 10:50:25	8/10/2015 11:50:25	515339	208392	120.78	-0.008737406	0.024831769	-0.314118736	0.009049495	
23	7		5731.8	0.093	-5.8	0.6	-3.64	0.019	60	0	8/10/2015 10:54:50	8/10/2015 11:54:50	515340	208390	120.81	-0.010185313	0.024467842	-0.30661871	0.006913448	
23	8		5731.8	0.074	-11.2	3.3	-3.64	0.018	60	0	8/10/2015 10:58:17	8/10/2015 11:58:17	515341	208387	120.78	-0.011652763	0.024183566	-0.315221681	0.002594753	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
23	8		5731.8	0.071	-5.3	-1.9	-3.64	0.018	60	0	8/10/2015 10:59:48	8/10/2015 11:59:48	515341	208387	120.78	-0.012022519	0.024058595	-0.315221681	-0.000280276	
23	9		5731.9	0.106	-4.2	0	-3.64	0.018	60	0	8/10/2015 11:02:49	8/10/2015 12:02:49	515342	208385	120.69	-0.013138386	0.023810025	-0.335074691	0.001115284	
23	10		5731.9	0.088	1.8	-2	-3.64	0.017	60	0	8/10/2015 11:10:52	8/10/2015 12:10:52	515343	208383	120.61	-0.016158574	0.023146715	-0.351839455	0.00101383	
23	11		5731.9	0.092	2.8	-1	-3.63	0.016	60	0	8/10/2015 11:15:10	8/10/2015 12:15:10	515344	208380	120.68	-0.018075246	0.022792401	-0.337059992	-0.007852393	
23	12		5731.9	0.091	-4	0.3	-3.63	0.015	60	0	8/10/2015 11:18:54	8/10/2015 12:18:54	515345	208378	120.6	-0.019234538	0.022484779	-0.354927701	0.00158752	
24	0		5731.8	0.092	-8.9	-3.9	-3.61	0.013	60	0	8/10/2015 11:32:38	8/10/2015 12:32:38	515336	208407	121.09	-0.024716694	0.025241192	-0.245294968	0.03646384	
24	0		5731.8	0.087	-5.5	-5	-3.61	0.012	60	0	8/10/2015 11:34:25	8/10/2015 12:34:25	515336	208407	121.09	-0.02550721	0.02495122	-0.245294968	0.035753812	
24	1		5731.8	0.074	-5.3	-0.9	-3.63	0.01	60	0	8/10/2015 11:45:02	8/10/2015 12:45:02	515337	208405	121.05	-0.029872841	0.023224932	-0.255221473	0.039553595	
24	2		5731.8	0.101	-5	-5.7	-3.63	0.009	60	0	8/10/2015 11:48:19	8/10/2015 12:48:19	515338	208402	120.99	-0.031066052	0.022691057	-0.267353868	0.039955075	
24	3		5731.8	0.096	0.2	-10.6	-3.64	0.008	60	0	8/10/2015 11:51:06	8/10/2015 12:51:06	515339	208400	120.98	-0.032259167	0.022238482	-0.26911858	0.030642938	
24	3		5731.8	0.101	-9.4	-3.5	-3.64	0.008	40	2	8/10/2015 11:53:04	8/10/2015 12:53:04	515339	208400	120.98	-0.033054207	0.021918699	-0.26911858	0.036962721	
24	3		5731.8	0.081	-0.8	-6.1	-3.64	0.008	60	0	8/10/2015 11:54:05	8/10/2015 12:54:05	515339	208400	120.98	-0.033451546	0.021753388	-0.26911858	0.033128032	
24	4		5731.8	0.059	-3.1	-8	-3.64	0.006	60	0	8/10/2015 11:57:36	8/10/2015 12:57:36	515340	208398	120.96	-0.03464255	0.021181572	-0.273750949	0.024067479	
24	5		5731.8	0.093	-7.2	-2	-3.65	0.006	60	0	8/10/2015 12:00:33	8/10/2015 13:00:33	515341	208395	120.92	-0.035831544	0.020701897	-0.283456865	0.013841238	
24	6		5731.8	0.082	-2.1	-5.1	-3.65	0.005	60	1	8/10/2015 12:03:35	8/10/2015 13:03:35	515342	208393	120.91	-0.037017889	0.020208672	-0.286545111	0.019246217	
24	7		5731.9	0.08	-11.4	-0.9	-3.65	0.003	60	3	8/10/2015 12:09:10	8/10/2015 13:09:10	515343	208391	120.83	-0.039380095	0.019300813	-0.30220693	0.026492257	
24	7		5731.8	0.088	-4.8	-1.2	-3.65	0.003	60	0	8/10/2015 12:10:31	8/10/2015 13:10:31	515343	208391	120.83	-0.039772163	0.019081301	-0.30220693	0.021711769	
24	8		5731.8	0.054	-0.2	-1.5	-3.66	0.001	60	4	8/10/2015 12:17:49	8/10/2015 13:17:49	515344	208388	120.82	-0.04250054	0.017894309	-0.30441282	0.021692871	
24	9		5731.9	0.046	-1.3	-2.3	-3.66	0	60	0	8/10/2015 12:21:34	8/10/2015 13:21:34	515344	208386	120.73	-0.044044922	0.017284553	-0.325589364	0.021126083	
24	10		5731.9	0.102	5.5	-0.7	-3.66	-0.001	60	0	8/10/2015 12:25:58	8/10/2015 13:25:58	515345	208384	120.73	-0.045576785	0.016569106	-0.326030542	0.004400352	
24	11		5731.8	0.063	-2.6	-5.4	-3.65	-0.002	60	0	8/10/2015 12:29:21	8/10/2015 13:29:21	515346	208382	120.82	-0.047094673	0.01601897	-0.304633409	0.000347621	
24	12		5731.8	0.069	2.2	-1.6	-3.64	-0.003	60	0	8/10/2015 12:32:29	8/10/2015 13:32:29	515347	208379	120.82	-0.048223051	0.015509485	-0.305074587	0.008415928	
25	0		5731.8	0.081	-6.1	-5.4	-3.63	-0.006	60	0	8/10/2015 12:40:59	8/10/2015 13:40:59	515338	208408	121.11	-0.051185115	0.020719512	-0.242427311	0.027853177	
25	0		5731.8	0.073	-3.3	-3.4	-3.62	-0.007	60	0	8/10/2015 12:44:31	8/10/2015 13:44:31	515338	208408	121.11	-0.052637916	0.021365854	-0.242427311	0.028206835	
25	1		5731.8	0.08	-1.7	-1.2	-3.63	-0.009	60	2	8/10/2015 12:49:05	8/10/2015 13:49:05	515339	208406	121.05	-0.054424714	0.02220122	-0.255000884	0.023797896	
25	2		5731.8	0.086	-2.3	-3.7	-3.63	-0.011	60	0	8/10/2015 12:53:33	8/10/2015 13:53:33	515340	208403	121.04	-0.05582915	0.023018293	-0.257206774	0.023774933	
25	3		5731.8	0.07	-4.2	-0.1	-3.63	-0.012	60	0	8/10/2015 12:56:48	8/10/2015 13:56:48	515341	208401	121.05	-0.056867025	0.023612805	-0.255662651	0.010724544	
25	4		5731.8	0.063	-8.3	-0.4	-3.63	-0.012	60	0	8/10/2015 12:59:29	8/10/2015 13:59:29	515342	208398	120.99	-0.057891047	0.024103659	-0.267353868	0.012542473	
25	4		5731.8	0.074	-3.1	-2.8	-3.63	-0.013	60	0	8/10/2015 13:01:09	8/10/2015 14:01:09	515342	208398	120.99	-0.058565766	0.024408537	-0.267353868	0.010237595	
25	5		5731.8	0.042	-5	-5.2	-3.63	-0.014	60	0	8/10/2015 13:04:23	8/10/2015 14:04:23	515343	208396	121	-0.059565508	0.025	-0.266030334	0.008969666	
25	6		5731.8	0.069	-7.7	-4.8	-3.63	-0.015	60	0	8/10/2015 13:07:13	8/10/2015 14:07:13	515344	208394	120.95	-0.06054998	0.025518293	-0.276839195	0.010642512	
25	7		5731.8	0.076	-4.3	-0.8	-3.63	-0.017	60	0	8/10/2015 13:12:14	8/10/2015 14:12:14	515345	208392	120.88	-0.062155443	0.026435976	-0.291839247	0.008724777	
25	8		5731.8	0.085	-8.9	-7.9	-3.64	-0.02	60	0	8/10/2015 13:18:07	8/10/2015 14:18:07	515346	208389	120.82	-0.064020867	0.027512195	-0.305956943	0.005530862	
25	9		5731.8	0.064	-3.9	-6.7	-3.64	-0.021	60	0	8/10/2015 13:22:14	8/10/2015 14:22:14	515347	208387	120.81	-0.065225642	0.028265244	-0.307280477	0.005454279	
25	10		5731.8	0.073	-4.5	-5.6	-3.64	-0.024	60	0	8/10/2015 13:29:33	8/10/2015 14:29:33	515348	208385	120.8	-0.067255477	0.029603659	-0.309486367	-0.001090026	
25	11		5731.8	0.065	-0.5	-0.1	-3.65	-0.027	60	4	8/10/2015 13:35:50	8/10/2015 14:35:50	515349	208382	120.88	-0.068912174	0.030753049	-0.292280425	0.008966526	
25	12		5731.8	0.061	2	4.5	-3.64	-0.028	60	0	8/10/2015 13:39:21	8/10/2015 14:39:21	515350	208380	120.94	-0.06997222	0.031396341	-0.279706852	0.001896807	
26	7		5731.8	0.072	1.8	2	-3.62	-0.032	60	0	8/10/2015 13:49:57	8/10/2015 14:49:57	515347	208393	121.01	-0.072460047	0.033189853	-0.263824444	0.015985703	
26	8		5731.8	0.068	-8.3	-1.1	-3.61	-0.033	60	0	8/10/2015 13:52:52	8/10/2015 14:52:52	515348	208390	120.9	-0.073159673	0.032664757	-0.287868645	0.018466598	
26	8		5731.8	0.096	1.2	-0.7	-3.61	-0.034	60	0	8/10/2015 13:54:23	8/10/2015 14:54:23	515348	208390	120.9	-0.073613787	0.032391708	-0.287868645	0.015739647	
26	9		5731.8	0.074	-3.1	1.8	-3.61	-0.035	60	0	8/10/2015 13:57:14	8/10/2015 14:57:14	515349	208388	120.88	-0.074276259	0.031878614	-0.292059836	0.01706155	
26	10		5731.8	0.084	-4.8	6.4	-3.63	-0.037	60	0	8/10/2015 14:03:09	8/10/2015 15:03:09	515350	208386	120.92	-0.07553274	0.030813421	-0.283456865	0.020729714	
26	11		5731.8	0.082	3.4	-0.2	-3.63	-0.04	60	3	8/10/2015 14:09:43	8/10/2015 15:09:43	515351	208383	120.97	-0.076695983	0.029631206	-0.272648004	0.01872079	
26	11		5731.8	0.109	-0.9	0.9	-3.63	-0.04	60	0	8/10/2015 14:11:05	8/10/2015 15:11:05	515351	208383	120.97	-0.077062635	0.029385161	-0.272648004	0.023966835	
26	12		5731.8	0.075	-1.4	-2.7	-3.64	-0.043	60	0	8/10/2015 14:18:28	8/10/2015 15:18:28	515352	208381	121.02	-0.078261405	0.028055919	-0.261177376	0.012766705	
27	9		5731.8	0.071	-3.3	-2.1	-3.61	-0.046	60	0	8/10/2015 14:26:18	8/10/2015 15:26:18	515351	208389	121.07	-0.079467704	0.026645663	-0.250368515	0.025985822	
27	10		5731.7	0.05	1.3	1.3	-3.57	-0.048	60	0	8/10/2015 14:30:33	8/10/2015 15:30:33	515353	208386	121.38	-0.080004281	0.025880524	-0.182647692	0.024471784	
27	11		5731.7	0.053	-3.5	-3.6	-3.55	-0.049	60	1	8/10/2015 14:34:22	8/10/2015 15:34:22	515354	208384	121.54	-0.080495961	0.025193399	-0.147132863	0.008673738	
27	12		5731.5	0.077	11.1	3	-3.57	-0.05	60	0	8/10/2015 14:39:17	8/10/2015 15:39:17				-0.081046934	0.024308238	-26.95685816	-26.94716639	
27	13		5731.5	0.069	4.2	-10.1	-3.58	-0.052	60	2	8/10/2015 14:42:23	8/10/2015 15:42:23				-0.081343378	0.023750136	-26.95685816	-26.94260829	
31	0		5731.5	0.039	-3.8	-5.6	-3.47	0	60	0	10/10/2015 10:21:13	10/10/2015 11:21:13	515425	208435	122.18	0.004783583	0.041705528	-0.005294136	-0.010999664	
31	0		5731.5	0.048	-4.4	-6.9	-3.48	0	60	0	10/10/2015 10:22:30	10/10/2015 11:22:30	515425	208435	122.18	0.004626308	0.041628141	-0.005294136	-0.006922277	
31	0		5731.5	0.04	-5.4	-2.6	-3.5	0	60	0	10/10/2015 10:23:57	10/10/2015 11:23:57	515425	208435	122.18	0.004466008	0.041540704	-0.005294136	-0.00583484	
31	1		5731.5	0.039	-3.7	-7	-3.54	0.001	60	0	10/10/2015 10:28:55	10/10/2015 11:28:55	515427	208433	122.27	0.003619517	0.041241206	0.01544123	-0.022799976	
31	1		5731.5	0.042	-6.4	-4.1	-3.55	0.001	60	1	10/10/2015 10:30:25	10/10/2015 11:30:25	515427	208433	122.27	0.003260126	0.041150754	0.01544123	-0.021709524	
31	2		5731.5	0.042	-7.6	-1	-3.57	0.002	60	0	10/10/2015 10:32:34	10/10/2015 11:32:34	515429	208432	122.23	0.002888992	0.041021106	0.005955903	-0.022065203	
31	3		5731.5	0.039	-5.8	1.9	-3.6	0.003	60	0	10/10/2015 10:38:21	10/10/2015 11:38:21	515431	208430	122.24	0.001706109	0.040672362	0.00882356	-0.030848802	
31	4		5731.5	0.038	-8.5	-1.5	-3.61	0.003	60	0	10/10/2015 10:40:25	10/10/2015 11:40:25	515433	208429	122.24	0.001289001	0.040547739	0.007058848	-0.036488891	
31	5		5731.5	0.034	-3.6	2.7	-3.62	0.003	60	0	10/10/2015 10:42:17	10/10/2015 11:42:17	515435	208427	122.2	0.000860667	0.040435176	0	-0.047435176	
31	6		5731.5	0.039	1	3.1	-3.62	0.004	60	2	10/10/2015 10:45:04	10/10/2015 11:45:04	515437	208426	122.09	0.000197369	0.040267337	-0.026250091	-0.064517428	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
31	7		5731.5	0.038	-7.3	-4.5	-3.62	0.004	60	2	10/10/2015 10:47:15	10/10/2015 11:47:15	515439	208424	122.04	-0.000258522	0.040135678	-0.036617774	-0.079753452	
31	8		5731.5	0.043	1.1	6.4	-3.61	0.005	60	2	10/10/2015 10:52:08	10/10/2015 11:52:08	515441	208423	122.05	-0.001445279	0.039841206	-0.035073651	-0.101914857	
31	8		5731.5	0.041	-2.9	0.6	-3.6	0.005	60	0	10/10/2015 10:53:38	10/10/2015 11:53:38	515441	208423	122.05	-0.001690565	0.039750754	-0.035073651	-0.101824405	
31	9		5731.5	0.044	-11.9	-0.7	-3.59	0.005	60	0	10/10/2015 10:55:45	10/10/2015 11:55:45	515444	208422	122.1	-0.002188939	0.039623116	-0.023823612	-0.106446728	
31	10		5731.5	0.029	-4.6	6.9	-3.58	0.006	60	0	10/10/2015 10:57:58	10/10/2015 11:57:58	515447	208421	122.08	-0.002697605	0.039489447	-0.026691269	-0.109180716	
31	11		5731.5	0.04	12.2	-8	-3.58	0.006	60	0	10/10/2015 11:00:31	10/10/2015 12:00:31	515450	208421	122.02	-0.003479597	0.039335678	-0.040367787	-0.112703465	
31	11		5731.5	0.066	0	-11.7	-3.59	0.006	60	2	10/10/2015 11:02:24	10/10/2015 12:02:24	515450	208421	122.02	-0.00401338	0.039222111	-0.040367787	-0.116589898	
31	11		5731.5	0.049	-6.4	-6.2	-3.59	0.006	60	2	10/10/2015 11:04:21	10/10/2015 12:04:21	515450	208421	122.02	-0.004556957	0.039104523	-0.040367787	-0.10847231	
31	12		5731.7	0.044	2.1	2.2	-3.6	0.006	60	0	10/10/2015 11:07:24	10/10/2015 12:07:24	515452	208420	121.15	-0.005390361	0.038920603	-0.232941984	-0.063862587	
31	13		5731.7	0.027	-0.2	-1.1	-3.61	0.007	60	0	10/10/2015 11:11:14	10/10/2015 12:11:14	515455	208420	121.19	-0.006534436	0.038689447	-0.223015479	-0.034704926	
31	14		5731.7	0.025	-3.6	-0.3	-3.61	0.007	60	0	10/10/2015 11:13:24	10/10/2015 12:13:24	515458	208421	121.23	-0.007120207	0.038558794	-0.215736042	-0.020294836	
31	15		5731.7	0.028	-2	-2.5	-3.61	0.007	60	0	10/10/2015 11:15:44	10/10/2015 12:15:44	515460	208422	121.22	-0.007714919	0.03841809	-0.217941932	-0.019360022	
31	16		5731.7	0.045	1.2	-2.3	-3.61	0.007	60	0	10/10/2015 11:18:19	10/10/2015 12:18:19	515462	208422	121.26	-0.008623392	0.038262312	-0.207574249	-0.039836561	
31	17		5731.6	0.034	-2.4	-18	-3.61	0.007	60	0	10/10/2015 11:20:52	10/10/2015 12:20:52	515464	208423	121.86	-0.009239733	0.038108543	-0.07500026	-0.052108803	
31	18		5731.6	0.035	12.7	-4.6	-3.61	0.007	60	0	10/10/2015 11:23:03	10/10/2015 12:23:03	515466	208425	121.88	-0.010179855	0.037976884	-0.071691425	-0.048668309	
31	18		5731.6	0.038	1.7	-8.8	-3.61	0.007	60	0	10/10/2015 11:24:30	10/10/2015 12:24:30	515466	208425	121.88	-0.010497306	0.037889447	-0.071691425	-0.047580872	
31	19		5731.5	0.037	-13.4	-8.8	-3.61	0.007	60	0	10/10/2015 11:28:07	10/10/2015 12:28:07	515469	208426	121.92	-0.011786899	0.037671357	-0.063309043	-0.0569804	
31	19		5731.5	0.039	2.5	-3.7	-3.62	0.007	60	0	10/10/2015 11:30:38	10/10/2015 12:30:38	515469	208426	121.92	-0.012443256	0.037519598	-0.063309043	-0.056828641	
31	20		5731.6	0.048	-10.2	1.5	-3.62	0.007	60	0	10/10/2015 11:32:31	10/10/2015 12:32:31	515471	208428	121.86	-0.013107077	0.03740603	-0.075662027	-0.049068057	
31	21		5731.6	0.043	-1.6	-0.3	-3.62	0.007	60	1	10/10/2015 11:35:16	10/10/2015 12:35:16	515473	208429	121.85	-0.014116396	0.037240201	-0.077426739	-0.05566694	
31	22		5731.6	0.03	-2.4	1.3	-3.63	0.007	60	2	10/10/2015 11:38:56	10/10/2015 12:38:56	515475	208431	121.84	-0.015141455	0.037019095	-0.081176752	-0.045195847	
31	23		5731.6	0.044	-3.6	1.4	-3.64	0.007	60	0	10/10/2015 11:40:12	10/10/2015 12:40:12				-0.015833253	0.036942714	-26.95685816		
31	24		5731.6	0.044	-8.6	-1.3	-3.65	0.007	60	0	10/10/2015 11:48:38	10/10/2015 12:48:38	515478	208435	121.77	-0.018663622	0.036434171	-0.095735626	-0.035169797	
31	25		5731.6	0.05	3.9	-3.5	-3.66	0.007	60	0	10/10/2015 11:51:00	10/10/2015 12:51:00	515480	208437	121.74	-0.019749289	0.036291457	-0.103235652	-0.028527109	
31	26		5731.6	0.043	-13.3	-4.2	-3.61	0.005	60	0	10/10/2015 12:06:50	10/10/2015 13:06:50	515481	208439	121.73	-0.025346214	0.037683975	-0.105441542	-0.022125517	
31	27		5731.6	0.041	5.7	-4.9	-3.61	0.005	60	0	10/10/2015 12:09:07	10/10/2015 13:09:07	515483	208441	121.76	-0.026494324	0.037561325	-0.09705916	-0.013620485	
31	28		5731.6	0.032	-1.7	-8.3	-3.61	0.005	60	0	10/10/2015 12:11:38	10/10/2015 13:11:38	515484	208443	121.78	-0.027264154	0.037426141	-0.094412092	0.002161767	
31	29		5731.6	0.034	-1.1	0	-3.61	0.004	60	0	10/10/2015 12:14:12	10/10/2015 13:14:12	515486	208445	121.78	-0.028424984	0.037288272	-0.09264738	0.014064348	
31	30		5731.7	0.034	-3.5	0.1	-3.62	0.004	60	0	10/10/2015 12:16:21	10/10/2015 13:16:21	515487	208447	121.78	-0.029202606	0.037172784	-0.093970914	0.020856302	
31	32		5731.6	0.037	-7.4	-1.8	-3.62	0.004	60	0	10/10/2015 12:18:51	10/10/2015 13:18:51	515490	208451	121.83	-0.029982959	0.037038496	-0.082941464	0.02502004	
31	33		5731.6	0.058	-6.3	-9.3	-3.62	0.003	60	0	10/10/2015 12:21:06	10/10/2015 13:21:06	515492	208453	121.82	-0.031158121	0.036917637	-0.084706176	0.023376187	
31	34		5731.7	0.028	0	4.3	-3.62	0.003	60	0	10/10/2015 12:23:28	10/10/2015 13:23:28	515494	208455	121.8	-0.031944324	0.03679051	-0.089117956	0.025091534	
31	35		5731.7	0.036	-6	8.2	-3.63	0.002	60	0	10/10/2015 12:28:07	10/10/2015 13:28:07	515495	208457	121.84	-0.033917861	0.036540734	-0.079632629	0.029826637	
31	36		5731.6	0.049	-10.6	-10	-3.63	0.002	60	0	10/10/2015 12:30:47	10/10/2015 13:30:47				-0.034709894	0.036397493	-26.95685816		
31	36		5731.6	0.031	3.8	-4.7	-3.63	0.001	60	0	10/10/2015 12:32:14	10/10/2015 13:32:14				-0.035503083	0.036319606	-26.95685816		
31	38		5731.6	0.033	-6.7	-4.2	-3.63	0.001	60	1	10/10/2015 12:34:59	10/10/2015 13:34:59	515500	208463	121.83	-0.036297202	0.036171889	-0.08161793	0.021210181	
31	39		5731.6	0.038	1.8	-11.6	-3.63	0.001	60	0	10/10/2015 12:36:59	10/10/2015 13:36:59	515501	208465	121.85	-0.037092021	0.036064458	-0.078529684	0.018405858	
31	39		5731.6	0.034	-5.3	-4.5	-3.63	0	60	0	10/10/2015 12:38:25	10/10/2015 13:38:25	515501	208465	121.85	-0.037887314	0.035987466	-0.078529684	0.02248285	
31	40		5731.6	0.031	-5.8	-2.9	-3.39	-0.004	60	0	10/10/2015 12:58:48	10/10/2015 13:58:48	515503	208467	121.92	-0.045815965	0.034892569	-0.063750221	0.01635721	
31	41		5731.6	0.035	-4.5	-1.1	-3.38	-0.004	60	0	10/10/2015 13:00:46	10/10/2015 14:00:46	515504	208469	121.93	-0.046601373	0.034786929	-0.061544331	0.01266874	
31	42		5731.6	0.046	-4.9	-2.9	-3.39	-0.005	60	0	10/10/2015 13:02:57	10/10/2015 14:02:57	515506	208471	121.94	-0.047384514	0.034669651	-0.058897263	0.008433086	
31	43		5731.6	0.033	-1.1	4.9	-3.42	-0.005	60	0	10/10/2015 13:05:06	10/10/2015 14:05:06	515508	208473	121.97	-0.048554479	0.034554163	-0.051617826	0.003828011	
31	44		5731.6	0.038	-8.9	-8.3	-3.46	-0.006	60	0	10/10/2015 13:08:02	10/10/2015 14:08:02	515509	208474	121.99	-0.049718069	0.034396598	-0.046764868	-0.003161466	
31	45		5731.6	0.039	-7.3	6.5	-3.5	-0.007	60	0	10/10/2015 13:10:05	10/10/2015 14:10:05	515511	208476	121.93	-0.050489881	0.034286482	-0.060441386	-0.005727868	
31	46		5731.6	0.034	-4.6	-5.6	-3.54	-0.007	60	1	10/10/2015 13:12:56	10/10/2015 14:12:56	515512	208479	121.96	-0.051258297	0.034133393	-0.054485483	-0.019618876	
31	47		5731.6	0.056	-8.6	-3.5	-3.57	-0.008	60	6	10/10/2015 13:15:41	10/10/2015 14:15:41	515514	208481	122	-0.052404071	0.033985676	-0.046103101	-0.016088777	
31	47		5731.6	0.056	-0.4	-3.9	-3.59	-0.009	60	3	10/10/2015 13:18:25	10/10/2015 14:18:25	515514	208481	122	-0.053540957	0.033838854	-0.046103101	-0.018941955	
32	0		5731.5	0.041	-1.8	-0.9	-3.48	-0.043	60	1	10/10/2015 14:52:34	10/10/2015 15:52:34	515427	208437	122.19	-0.080827576	0.037572942	-0.00220589	0.001221168	
32	0		5731.5	0.035	-2.5	-1.1	-3.49	-0.044	60	0	10/10/2015 14:53:53	10/10/2015 15:53:53	515427	208437	122.19	-0.08099716	0.037489226	-0.00220589	0.004304884	
32	1		5731.6	0.041	-7.5	-2.1	-3.5	-0.044	60	3	10/10/2015 14:55:57	10/10/2015 15:55:57	515429	208435	122.17	-0.081326999	0.037357824	-0.008382382	0.003259794	
32	2		5731.6	0.042	0	0	-3.52	-0.045	60	0	10/10/2015 14:58:05	10/10/2015 15:58:05	515431	208434	122.15	-0.081798242	0.037222183	-0.012573573	0.000204244	
32	3		5731.5	0.039	-6.1	-8.9	-3.54	-0.046	60	0	10/10/2015 15:00:12	10/10/2015 16:00:12	515433	208432	122.15	-0.082096585	0.037087602	-0.012573573	-0.006661175	
32	4		5731.5	0.035	0.4	-8.8	-3.56	-0.047	60	0	10/10/2015 15:03:09	10/10/2015 16:03:09	515435	208431	122.14	-0.082520138	0.036900035	-0.014779463	-0.018679498	
32	5		5731.5	0.047	-0.7	3.4	-3.58	-0.048	60	0	10/10/2015 15:05:06	10/10/2015 16:05:06	515437	208429	122.09	-0.082786403	0.036776051	-0.024705968	-0.027482019	
32	6		5731.5	0.035	18.4	-1	-3.6	-0.048	60	0	10/10/2015 15:07:17	10/10/2015 16:07:17	515439	208428	122.05	-0.083039686	0.036637231	-0.033750117	-0.056387348	
32	6		5731.5	0.041	0.1	0.3	-3.6	-0.049	60	0	10/10/2015 15:08:44	10/10/2015 16:08:44	515439	208428	122.05	-0.083161435	0.036545037	-0.033750117	-0.052295154	
32	7		5731.5	0.049	-16.1	-6.2	-3.61	-0.05	60	0	10/10/2015 15:10:43	10/10/2015 16:10:43	515441	208427	122.05	-0.083395096	0.036418933	-0.034411884	-0.069830817	
32	7		5731.5	0.053	-1.3	-5.8	-3.62	-0.05	60	0	10/10/2015 15:12:14	10/10/2015 16:12:14	515441	208427	122.05	-0.083615582	0.036322501	-0.034411884	-0.074734385	
32	8		5731.5	0.038	-3.1	-2.4	-3.62	-0.052	60	2	10/10/2015 15:17:15	10/10/2015 16:17:15	515443	208425	122.04	-0.084108696	0.036003532	-0.035735418	-0.09373895	
32	9		5731.5	0.039	0.2	16.2	-3.59	-0.054	60	0	10/10/2015 15:21:26	10/10/2015 16:21:26	515444	208424	122.06	-0.084442902	0.035737549	-0.032426583	-0.097164132	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
32	10		5731.5	0.047	-2.9	-4.5	-3.59	-0.055	60	4	10/10/2015 15:23:56	10/10/2015 16:23:56	515447	208423	122.05	-0.084589753	0.035578594	-0.034632473	-0.100211067	
32	11		5731.5	0.035	-9.8	0.5	-3.59	-0.055	60	0	10/10/2015 15:26:11	10/10/2015 16:26:11	515450	208423	121.92	-0.08478457	0.035435535	-0.063750221	-0.093185756	
32	12		5731.7	0.035	1.3	-1.7	-3.61	-0.057	60	0	10/10/2015 15:30:34	10/10/2015 16:30:34	515452	208422	121.11	-0.084996572	0.035156835	-0.24044201	-0.057598845	
32	13		5731.7	0.045	0.1	-2.3	-3.61	-0.058	60	0	10/10/2015 15:32:35	10/10/2015 16:32:35	515455	208422	121.16	-0.085082019	0.035028612	-0.230736094	-0.024764706	
32	14		5731.8	0.04	0	-5	-3.61	-0.059	60	0	10/10/2015 15:36:21	10/10/2015 16:36:21	515457	208423	121.18	-0.085211641	0.03478912	-0.226324314	-0.015113434	
32	15		5731.8	0.031	0.5	-1.6	-3.62	-0.06	60	0	10/10/2015 15:38:32	10/10/2015 16:38:32	515460	208423	121.19	-0.085255763	0.0346503	-0.224559602	-0.003209902	
32	16		5731.7	0.043	1.1	-1.6	-3.61	-0.061	60	0	10/10/2015 15:41:32	10/10/2015 16:41:32	515462	208424	121.3	-0.085296024	0.034459555	-0.199633045	-0.0120926	
32	16		5731.7	0.038	0.3	-1.8	-3.61	-0.061	60	0	10/10/2015 15:42:58	10/10/2015 16:42:58	515462	208424	121.3	-0.085302524	0.034368421	-0.199633045	-0.010001466	
32	17		5731.6	0.044	-5.1	4.4	-3.61	-0.062	60	0	10/10/2015 15:45:02	10/10/2015 16:45:02	515464	208426	121.81	-0.085301241	0.034237019	-0.087573833	-0.015810852	
32	18		5731.6	0.058	-7	1.1	-3.61	-0.062	60	0	10/10/2015 15:47:09	10/10/2015 16:47:09	515466	208427	121.81	-0.085283058	0.034102437	-0.086912066	-0.016014503	
32	19		5731.6	0.047	-4.6	-4.4	-3.61	-0.063	60	0	10/10/2015 15:49:55	10/10/2015 16:49:55	515468	208429	121.8	-0.085251007	0.033926528	-0.089338545	-0.018265073	
32	20		5731.6	0.051	-3.8	-7.8	-3.61	-0.064	60	0	10/10/2015 15:51:59	10/10/2015 16:51:59	515470	208430	121.77	-0.085205091	0.033795125	-0.095294448	-0.018089573	
32	21		5731.6	0.057	-1.5	0.5	-3.62	-0.065	60	0	10/10/2015 15:53:55	10/10/2015 16:53:55	515472	208432	121.76	-0.085145314	0.033672201	-0.098823872	-0.015496073	
32	22		5731.6	0.041	-10	-4.2	-3.62	-0.065	60	5	10/10/2015 15:56:24	10/10/2015 16:56:24	515474	208434	121.74	-0.085029679	0.033514306	-0.10147094	-0.012985246	
32	23		5731.6	0.035	16.2	3.2	-3.63	-0.066	60	0	10/10/2015 15:58:57	10/10/2015 16:58:57	515474	208435	121.73	-0.084935297	0.033352172	-0.103897419	-0.012249591	
32	23		5731.6	0.052	2.1	-2.8	-3.63	-0.067	60	0	10/10/2015 16:00:30	10/10/2015 17:00:30	515474	208435	121.73	-0.084827103	0.033253621	-0.103897419	-0.01215104	
32	24		5731.6	0.043	-9.8	-7.6	-3.63	-0.067	60	2	10/10/2015 16:02:40	10/10/2015 17:02:40	515476	208437	121.71	-0.084705118	0.03311586	-0.10808861	-0.00920447	
32	25		5731.7	0.047	-0.1	1.3	-3.63	-0.068	60	0	10/10/2015 16:04:37	10/10/2015 17:04:37	515477	208439	121.69	-0.084569371	0.032991876	-0.113382746	0.000625378	
32	25		5731.7	0.047	1.1	1.6	-3.63	-0.068	60	0	10/10/2015 16:06:05	10/10/2015 17:06:05	515477	208439	121.69	-0.084419892	0.032898622	-0.113382746	0.000718632	
32	26		5731.7	0.04	-4.7	-5.4	-3.63	-0.069	60	0	10/10/2015 16:08:09	10/10/2015 17:08:09	515479	208441	121.68	-0.084256714	0.03276722	-0.115588636	0.004644144	
32	27		5731.6	0.043	1.2	0.4	-3.63	-0.069	60	0	10/10/2015 16:10:24	10/10/2015 17:10:24	515481	208443	121.72	-0.084079877	0.032624161	-0.107426843	0.001948996	
32	28		5731.7	0.062	-2.2	-5.7	-3.63	-0.07	60	11	10/10/2015 16:12:09	10/10/2015 17:12:09	515482	208445	121.74	-0.083889424	0.032512893	-0.103456241	0.021030866	
32	28		5731.7	0.041	-2.6	-7.7	-3.63	-0.07	60	0	10/10/2015 16:13:37	10/10/2015 17:13:37	515482	208445	121.74	-0.083789105	0.03241964	-0.103456241	0.015124119	
32	28		5731.7	0.026	-7.8	1.1	-3.63	-0.071	60	0	10/10/2015 16:15:16	10/10/2015 17:15:16	515482	208445	121.74	-0.083578315	0.03231473	-0.103456241	0.018229029	
32	29		5731.7	0.042	-5.4	0.4	-3.6	-0.075	60	8	10/10/2015 16:33:15	10/10/2015 17:33:15	515484	208447	121.76	-0.081081528	0.041409633	-0.097720927	0.01386944	
32	30		5731.7	0.058	-2.7	0.9	-3.59	-0.075	60	6	10/10/2015 16:35:50	10/10/2015 17:35:50	515485	208449	121.77	-0.080738786	0.041554594	-0.095515037	0.019930369	
32	31		5731.7	0.045	-9.2	-6.4	-3.58	-0.076	60	0	10/10/2015 16:38:58	10/10/2015 17:38:58	515487	208451	121.77	-0.080200776	0.041730419	-0.095294448	0.024975133	
32	31		5731.7	0.054	-8.7	-1.4	-3.58	-0.076	60	6	10/10/2015 16:40:39	10/10/2015 17:40:39	515487	208451	121.77	-0.079826309	0.041824877	-0.095294448	0.021880675	
32	32		5731.7	0.042	-4.4	-3.7	-3.58	-0.077	60	0	10/10/2015 16:43:07	10/10/2015 17:43:07	515489	208453	121.77	-0.079241166	0.041963292	-0.096397393	0.022639315	
32	33		5731.7	0.04	14.2	-1.6	-3.59	-0.077	60	1	10/10/2015 16:45:30	10/10/2015 17:45:30	515490	208455	121.77	-0.078835594	0.042097031	-0.095735626	0.021167343	
32	33		5731.7	0.053	4.9	-0.7	-3.59	-0.077	60	2	10/10/2015 16:47:01	10/10/2015 17:47:01	515490	208455	121.77	-0.078417768	0.042182137	-0.095735626	0.024082237	
32	34		5731.7	0.073	-9	11.4	-3.6	-0.078	60	5	10/10/2015 16:49:20	10/10/2015 17:49:20	515492	208457	121.77	-0.077987798	0.042312135	-0.096397393	0.029290472	
32	34		5731.7	0.056	0.4	-1.4	-3.6	-0.078	60	11	10/10/2015 16:51:10	10/10/2015 17:51:10	515492	208457	121.77	-0.077545799	0.042415011	-0.096397393	0.023187596	
32	34		5731.7	0.045	0.1	0.5	-3.61	-0.078	60	2	10/10/2015 16:52:46	10/10/2015 17:52:46	515492	208457	121.77	-0.077320327	0.042504793	-0.096397393	0.024097814	
32	35		5731.7	0.036	-5.4	-3.6	-3.61	-0.079	60	0	10/10/2015 16:55:31	10/10/2015 17:55:31	515493	208459	121.77	-0.076626198	0.042659107	-0.095073859	0.029267034	
32	36		5731.7	0.047	-7.2	-6.7	-3.62	-0.079	60	0	10/10/2015 16:57:56	10/10/2015 17:57:56	515495	208461	121.78	-0.076148842	0.042794716	-0.093309147	0.026896137	
32	37		5731.7	0.041	9.1	-7.6	-3.62	-0.08	60	2	10/10/2015 17:00:31	10/10/2015 18:00:31	515496	208463	121.8	-0.075411227	0.042939677	-0.090000312	0.020060011	
32	37		5731.7	0.038	-0.7	-4.6	-3.62	-0.08	60	0	10/10/2015 17:02:12	10/10/2015 18:02:12	515496	208463	121.8	-0.074905291	0.043034136	-0.090000312	0.025965552	
32	38		5731.7	0.043	-0.6	-4	-3.62	-0.08	60	2	10/10/2015 17:05:09	10/10/2015 18:05:09	515498	208464	121.81	-0.07412544	0.043199673	-0.086691477	0.02610885	
32	39		5731.7	0.032	-1	1.5	-3.62	-0.08	60	1	10/10/2015 17:07:48	10/10/2015 18:07:48	515499	208466	121.82	-0.07359178	0.043348375	-0.08382382	0.018827805	
32	39		5731.7	0.041	-5.6	5.2	-3.62	-0.081	60	1	10/10/2015 17:09:16	10/10/2015 18:09:16	515499	208466	121.82	-0.073047284	0.043430676	-0.08382382	0.022745504	
32	40		5731.6	0.039	-9.1	-21.3	-3.62	-0.081	60	0	10/10/2015 17:11:52	10/10/2015 18:11:52	515501	208468	121.84	-0.072492098	0.043576572	-0.080735574	0.015687854	
32	40		5731.6	0.035	-5.6	-11	-3.62	-0.081	60	0	10/10/2015 17:13:37	10/10/2015 18:13:37	515501	208468	121.84	-0.071926375	0.043674772	-0.080735574	0.015589654	
32	41		5731.6	0.059	3.4	-8.5	-3.62	-0.081	60	3	10/10/2015 17:16:33	10/10/2015 18:16:33	515502	208470	121.86	-0.071058372	0.043839373	-0.075882616	0.015278011	
32	42		5731.6	0.058	17.3	-1.2	-3.62	-0.081	60	0	10/10/2015 17:18:21	10/10/2015 18:18:21	515504	208472	121.88	-0.070466989	0.043940379	-0.071250247	0.007809374	
32	43		5731.6	0.033	-6.2	4.8	-3.62	-0.081	60	0	10/10/2015 17:20:18	10/10/2015 18:20:18	515506	208474	121.91	-0.069865624	0.044049801	-0.064632577	0.007317622	
32	44		5731.6	0.038	-2.1	0.8	-3.62	-0.082	60	0	10/10/2015 17:22:16	10/10/2015 18:22:16	515507	208476	121.93	-0.06925444	0.044160159	-0.060441386	-0.000601545	
32	45		5731.6	0.039	-8.1	4.1	-3.62	-0.082	60	0	10/10/2015 17:24:13	10/10/2015 18:24:13	515509	208478	121.97	-0.068633606	0.044269581	-0.051838415	-0.008107996	
32	45		5731.6	0.051	-5.1	-0.4	-3.62	-0.082	60	0	10/10/2015 17:25:40	10/10/2015 18:25:40	515509	208478	121.97	-0.068319623	0.044350947	-0.051838415	-0.011189362	
32	46		5731.6	0.042	-4.4	1.6	-3.62	-0.082	60	0	10/10/2015 17:27:37	10/10/2015 18:27:37	515510	208480	122	-0.067684635	0.044460369	-0.046103101	-0.01856347	
32	47		5731.6	0.054	-6.4	-3.7	-3.62	-0.082	60	0	10/10/2015 17:29:40	10/10/2015 18:29:40	515512	208482	122.02	-0.067040429	0.044575403	-0.039926609	-0.025502012	
33	0		5731.6	0.047	-2.3	-3.6	-3.49	-0.053	60	0	11/10/2015 08:30:09	11/10/2015 09:30:09	515428	208439	122.17	-0.013421069	0.058025797	-0.007941204	0.010032999	
33	1		5731.6	0.038	-8.8	-6.3	-3.49	-0.052	60	0	11/10/2015 08:31:57	11/10/2015 09:31:57	515430	208437	122.14	-0.013153693	0.058040384	-0.013676518	0.013283098	
33	2		5731.6	0.043	-6.6	0.2	-3.5	-0.052	60	0	11/10/2015 08:33:42	11/10/2015 09:33:42	515432	208436	122.13	-0.01262552	0.058054565	-0.017426531	0.011518904	
33	3		5731.6	0.041	-7.4	6.2	-3.51	-0.051	60	0	11/10/2015 08:35:36	11/10/2015 09:35:36	515434	208434	122.14	-0.012106259	0.058069962	-0.015220641	0.004709397	
33	4		5731.6	0.034	-5.2	0.3	-3.53	-0.051	60	0	11/10/2015 08:37:27	11/10/2015 09:37:27	515436	208433	122.15	-0.011596077	0.058084954	-0.011470628	-0.007555582	
33	5		5731.6	0.046	4	4.8	-3.54	-0.05	60	0	11/10/2015 08:39:21	11/10/2015 09:39:21	515438	208431	122.14	-0.011095137	0.058100351	-0.013676518	-0.020776869	
33	6		5731.5	0.038	-6.2	7.8	-3.56	-0.049	60	0	11/10/2015 08:41:14	11/10/2015 09:41:14	515440	208430	122.12	-0.010603601	0.058115613	-0.01764712	-0.035762733	
33	7		5731.5	0.047	-0.6	0.4	-3.57	-0.048	60	1	11/10/2015 08:42:57	11/10/2015 09:42:57	515442	208428	122.11	-0.010361408	0.058129525	-0.01985301	-0.054982535	
33	8		5731.5	0.057	-0.4	3	-3.58	-0.048	60	2	11/10/2015 08:44:54	11/10/2015 09:44:54	515444	208427	122.1	-0.009884271	0.058145327	-0.023603023	-0.06774835	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
33	9		5731.5	0.047	7.4	-7.8	-3.59	-0.046	60	3	11/10/2015 08:49:15	11/10/2015 09:49:15	515446	208426	122.08	-0.008734597	0.058180578	-0.028455981	-0.082636559	
33	10		5731.5	0.046	0.1	-1.6	-3.59	-0.046	60	0	11/10/2015 08:51:09	11/10/2015 09:51:09	515449	208425	122.09	-0.008292384	0.058195975	-0.025808913	-0.085004888	
33	11		5731.6	0.057	-0.5	-2.2	-3.59	-0.045	60	0	11/10/2015 08:53:11	11/10/2015 09:53:11	515451	208425	121.94	-0.007860475	0.058212453	-0.058456085	-0.070668538	
33	12		5731.8	0.034	1.1	-2	-3.58	-0.044	60	0	11/10/2015 08:56:13	11/10/2015 09:56:13	515454	208425	121.09	-0.007232239	0.058237034	-0.246397913	-0.033634947	
33	13		5731.8	0.048	-1.5	-1.4	-3.57	-0.043	60	0	11/10/2015 08:58:35	11/10/2015 09:58:35	515456	208425	121.17	-0.006826696	0.058256213	-0.22720667	-0.015462883	
33	14		5731.8	0.052	-1.5	-1.9	-3.56	-0.042	60	0	11/10/2015 09:00:53	11/10/2015 10:00:53	515458	208426	121.11	-0.006431933	0.058274851	-0.24044201	0.005283139	
33	15		5731.8	0.034	-2.4	0.3	-3.55	-0.042	60	0	11/10/2015 09:03:02	11/10/2015 10:03:02	515461	208426	121.29	-0.005860278	0.058292274	-0.201397757	0.003309969	
33	16		5731.6	0.048	-3.2	-0.3	-3.54	-0.041	60	0	11/10/2015 09:05:10	11/10/2015 10:05:10	515463	208428	121.85	-0.005493016	0.058309562	-0.077647328	-0.01495689	
33	17		5731.6	0.051	-4.6	-2.4	-3.54	-0.04	60	0	11/10/2015 09:07:52	11/10/2015 10:07:52	515465	208429	121.84	-0.005136967	0.058331442	-0.079632629	-0.008964071	
33	17		5731.6	0.072	-3.2	-4.5	-3.54	-0.039	60	6	11/10/2015 09:09:25	11/10/2015 10:09:25	515465	208429	121.84	-0.004792247	0.058344003	-0.079632629	-0.016976632	
33	17		5731.6	0.065	3.6	-6.4	-3.54	-0.039	60	1	11/10/2015 09:10:59	11/10/2015 10:10:59	515465	208429	121.84	-0.004624171	0.058356699	-0.079632629	-0.016989328	
33	18		5731.6	0.053	-9.1	-5	-3.55	-0.038	60	1	11/10/2015 09:12:52	11/10/2015 10:12:52	515467	208431	121.82	-0.004296655	0.058371961	-0.085809121	-0.008181082	
33	19		5731.7	0.049	-8.3	-8.2	-3.55	-0.037	60	0	11/10/2015 09:14:46	11/10/2015 10:14:46	515469	208432	121.79	-0.003980745	0.058387358	-0.090662079	-0.003049437	
33	20		5731.7	0.042	4	-0.1	-3.55	-0.037	60	0	11/10/2015 09:16:34	11/10/2015 10:16:34	515471	208434	121.77	-0.003676543	0.058401945	-0.095956215	-0.00335816	
33	21		5731.7	0.06	-8.4	-2	-3.56	-0.036	60	0	11/10/2015 09:18:52	11/10/2015 10:18:52	515473	208436	121.74	-0.00338415	0.058420583	-0.101691529	-0.003112112	
33	22		5731.7	0.037	-2.4	-1.8	-3.57	-0.035	60	0	11/10/2015 09:21:01	11/10/2015 10:21:01	515474	208438	121.72	-0.002967914	0.058438006	-0.107426843	-0.003864849	
33	23		5731.7	0.045	-4	-0.3	-3.57	-0.034	60	0	11/10/2015 09:22:53	11/10/2015 10:22:53	515476	208440	121.7	-0.002835175	0.058453133	-0.111397445	0.007149422	
33	24		5731.7	0.041	-8.1	-2.3	-3.57	-0.034	60	0	11/10/2015 09:24:43	11/10/2015 10:24:43	515477	208442	121.69	-0.002578776	0.05846799	-0.114044513	0.010487497	
33	25		5731.7	0.05	-1	-6.5	-3.57	-0.033	60	0	11/10/2015 09:26:49	11/10/2015 10:26:49	515479	208444	121.7	-0.002334551	0.058485008	-0.111618034	0.006896958	
33	26		5731.7	0.042	-4.7	-1.1	-3.57	-0.032	60	0	11/10/2015 09:28:51	11/10/2015 10:28:51	515480	208446	121.74	-0.002102582	0.058501486	-0.102353296	0.015145218	
33	27		5731.7	0.037	3.2	-5.5	-3.57	-0.032	60	0	11/10/2015 09:30:39	11/10/2015 10:30:39	515482	208448	121.76	-0.001882947	0.058516072	-0.098162105	0.017321823	
33	28		5731.7	0.046	0	1	-3.58	-0.031	60	0	11/10/2015 09:32:30	11/10/2015 10:32:30	515483	208450	121.76	-0.001675722	0.058531064	-0.097279749	0.027189187	
33	29		5731.7	0.041	-9	-2.9	-3.58	-0.03	60	0	11/10/2015 09:34:30	11/10/2015 10:34:30	515485	208452	121.76	-0.001480976	0.058547272	-0.098162105	0.029290623	
33	30		5731.7	0.047	10.6	-8.9	-3.58	-0.029	33	1	11/10/2015 09:40:31	11/10/2015 10:40:31	515487	208454	121.76	-0.000972264	0.058596029	-0.097941516	0.027462455	
33	30		5731.7	0.043	0	-1.8	-3.59	-0.026	60	0	11/10/2015 09:48:10	11/10/2015 10:48:10	515487	208454	121.76	-0.000472305	0.058658023	-0.097941516	0.032400461	
33	31		5731.7	0.044	-3.9	-2.7	-3.6	-0.024	60	0	11/10/2015 09:53:19	11/10/2015 10:53:19	515488	208456	121.76	-0.000264503	0.058699757	-0.098382694	0.033917549	
33	32		5731.7	0.045	4.2	-11.6	-3.6	-0.024	60	2	11/10/2015 09:55:11	11/10/2015 10:55:11	515490	208458	121.75	-0.000204083	0.058714884	-0.099706228	0.030578888	
33	32		5731.7	0.046	-7.1	-7.2	-3.6	-0.023	60	0	11/10/2015 09:56:35	11/10/2015 10:56:35	515490	208458	121.75	-0.00017875	0.058726229	-0.099706228	0.032567543	
33	33		5731.7	0.04	5.3	-3	-3.6	-0.023	60	0	11/10/2015 09:58:26	11/10/2015 10:58:26	515491	208460	121.76	-0.000137856	0.058741221	-0.098162105	0.032096674	
33	34		5731.7	0.049	-8.9	0	-3.6	-0.022	60	0	11/10/2015 10:00:21	11/10/2015 11:00:21	515493	208462	121.78	-0.000110004	0.058756753	-0.09264738	0.035595867	
33	35		5731.7	0.039	2.4	-7.4	-3.6	-0.021	60	0	11/10/2015 10:02:11	11/10/2015 11:02:11	515494	208464	121.81	-9.5211E-05	0.05877161	-0.087132655	0.031095735	
33	36		5731.7	0.039	-3.2	5	-3.6	-0.021	60	0	11/10/2015 10:04:08	11/10/2015 11:04:08	515496	208466	121.82	-9.34875E-05	0.058787412	-0.084264998	0.02994759	
33	37		5731.7	0.04	-4.1	-0.9	-3.6	-0.02	60	0	11/10/2015 10:06:32	11/10/2015 11:06:32	515498	208468	121.84	-0.000104841	0.058806861	-0.081176752	0.027016387	
33	38		5731.7	0.047	-6.4	4.7	-3.61	-0.02	60	0	11/10/2015 10:08:20	11/10/2015 11:08:20	515499	208470	121.86	-0.000129275	0.058821448	-0.076985561	0.026192991	
33	39		5731.7	0.046	-2.1	1.3	-3.61	-0.019	60	0	11/10/2015 10:10:27	11/10/2015 11:10:27	515501	208472	121.88	-0.00016679	0.058838601	-0.072132603	0.019028796	
33	40		5731.6	0.051	-1.7	1.4	-3.62	-0.018	60	0	11/10/2015 10:12:11	11/10/2015 11:12:11	515502	208474	121.89	-0.000217379	0.058852647	-0.070147302	0.016000051	
33	41		5731.6	0.045	5.9	-1.9	-3.62	-0.018	60	0	11/10/2015 10:14:00	11/10/2015 11:14:00	515504	208476	121.91	-0.000281036	0.058867369	-0.065735522	0.013397109	
33	42		5731.6	0.047	5.2	-4.3	-3.62	-0.017	60	0	11/10/2015 10:16:18	11/10/2015 11:16:18	515505	208478	121.94	-0.000357746	0.058886008	-0.058235496	0.001878496	
33	43		5731.6	0.052	-9.8	-7.3	-3.62	-0.017	60	0	11/10/2015 10:18:19	11/10/2015 11:18:19	515507	208480	121.97	-0.000447494	0.05890235	-0.051397237	-0.008299587	
33	44		5731.6	0.04	0.1	-2.1	-3.63	-0.016	60	0	11/10/2015 10:20:59	11/10/2015 11:20:59	515508	208482	122.02	-0.000550258	0.05892396	-0.041691321	-0.020615281	
33	45		5731.6	0.047	-2.4	0.8	-3.63	-0.015	60	1	11/10/2015 10:24:19	11/10/2015 11:24:19	515510	208484	122.04	-0.000794732	0.058950972	-0.037279541	-0.030230513	
34	0		5731.6	0.035	-13.3	-11.5	-3.6	-0.012	60	2	11/10/2015 10:35:28	11/10/2015 11:35:28	515430	208441	122.24	-0.001732728	0.059630875	0.007058848	0.011427973	
34	0		5731.6	0.036	-5.3	-3.7	-3.6	-0.012	60	0	11/10/2015 10:36:51	11/10/2015 11:36:51	515430	208441	122.24	-0.001837147	0.05948771	0.007058848	0.013571138	
34	1		5731.6	0.047	-12.4	-7.4	-3.59	-0.011	60	0	11/10/2015 10:38:57	11/10/2015 11:38:57	515432	208439	122.21	-0.002055463	0.059270375	0.000882356	0.011611981	
34	1		5731.6	0.045	-5.6	-2.3	-3.6	-0.011	60	0	11/10/2015 10:40:24	11/10/2015 11:40:24	515432	208439	122.21	-0.002286368	0.05912031	0.000882356	0.010762046	
34	2		5731.6	0.039	-3.3	-8.4	-3.6	-0.01	60	0	11/10/2015 10:42:25	11/10/2015 11:42:25	515434	208438	122.17	-0.002529798	0.0589116	-0.008602971	0.009485429	
34	4		5731.6	0.056	-14.8	-9.3	-3.61	-0.01	60	0	11/10/2015 10:44:48	11/10/2015 11:44:48	515438	208435	122.19	-0.002785683	0.058664942	-0.003308835	-0.003973777	
34	4		5731.6	0.049	-7	-2.9	-3.61	-0.009	60	2	11/10/2015 10:46:10	11/10/2015 11:46:10	515438	208435	122.19	-0.003053953	0.058523502	-0.003308835	-0.003832337	
34	5		5731.5	0.054	-5.4	-4.2	-3.62	-0.009	60	0	11/10/2015 10:48:19	11/10/2015 11:48:19	515439	208433	122.21	-0.00333453	0.058300992	0.001102945	-0.014198047	
34	6		5731.5	0.044	-7.5	-4.8	-3.62	-0.008	60	0	11/10/2015 10:50:56	11/10/2015 11:50:56	515441	208432	122.19	-0.003627334	0.058030185	-0.003308835	-0.02733902	
34	7		5731.5	0.057	-2.7	9.3	-3.63	-0.008	60	0	11/10/2015 10:53:03	11/10/2015 11:53:03	515444	208431	122.16	-0.004089284	0.057811125	-0.009264738	-0.037075863	
34	8		5731.5	0.06	-5.1	3.2	-3.64	-0.007	60	0	11/10/2015 10:56:37	11/10/2015 11:56:37	515446	208429	122.13	-0.004578258	0.057442001	-0.016985353	-0.049427354	
34	9		5731.5	0.083	9.9	-9.5	-3.65	-0.006	60	2	11/10/2015 11:00:49	11/10/2015 12:00:49	515448	208428	122.11	-0.005271709	0.057007331	-0.021838311	-0.061845642	
34	10		5731.5	0.047	-3	5.3	-3.63	-0.006	60	6	11/10/2015 11:03:56	11/10/2015 12:03:56	515450	208428	122.09	-0.005822472	0.056684778	-0.02426479	-0.059949568	
34	11		5731.8	0.053	-0.5	-6.3	-3.66	-0.004	60	0	11/10/2015 11:17:08	11/10/2015 12:17:08	515453	208428	121.05	-0.008728743	0.055318672	-0.255000884	-0.047319556	
34	12		5731.8	0.04	-0.2	-0.5	-3.66	-0.003	60	0	11/10/2015 11:19:44	11/10/2015 12:19:44	515456	208428	121.12	-0.009187566	0.05504959	-0.238456709	-0.020506299	
34	13		5731.8	0.053	3	1.2	-3.65	-0.003	60	0	11/10/2015 11:22:25	11/10/2015 12:22:25	515458	208429	121.13	-0.009895479	0.054771884	-0.237353764	-0.009125648	
34	14		5731.8	0.045	-2	-4.3	-3.65	-0.003	60	0	11/10/2015 11:24:39	11/10/2015 12:24:39	515460	208429	121.29	-0.010380337	0.05454075	-0.202721291	-0.005262041	
34	15		5731.6	0.053	-9.3	-6.7	-3.65	-0.002	60	0	11/10/2015 11:27:24	11/10/2015 12:27:24	515462	208431	121.95	-0.011126635	0.054256145	-0.056470784	-0.015726929	
34	16		5731.6	0.057	-6	1	-3.65	-0.002	60	1	11/10/2015 11:29:29	11/10/2015 12:29:29	515464	208432	121.92	-0.011636627	0.054040535	-0.063750221	-0.009790756	

Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	X	Y	Z	TideCorr	Drift	ElevCorrection	BougAnom	BAD
34	17		5731.6	0.064	-5.1	1.5	-3.65	-0.002	60	0	11/10/2015 11:31:33	11/10/2015 12:31:33	515466	208434	121.91	-0.012156409	0.053826649	-0.06397081	-0.009797459	
34	17		5731.6	0.044	-3.5	-0.9	-3.65	-0.002	60	0	11/10/2015 11:32:53	11/10/2015 12:32:53	515466	208434	121.91	-0.012419923	0.053688659	-0.06397081	-0.009659469	
34	18		5731.6	0.073	-11	1.1	-3.66	-0.002	60	3	11/10/2015 11:36:18	11/10/2015 12:36:18	515468	208435	121.91	-0.013497673	0.053335058	-0.065956111	-0.001291169	
34	18		5731.6	0.045	-0.5	1	-3.66	-0.001	60	0	11/10/2015 11:37:44	11/10/2015 12:37:44	515468	208435	121.91	-0.013772933	0.053186718	-0.065956111	-0.003142829	
34	19		5731.6	0.05	-5.3	-9.8	-3.67	-0.001	60	1	11/10/2015 11:39:39	11/10/2015 12:39:39	515470	208437	121.86	-0.014330296	0.052988357	-0.076764972	-0.001753329	
34	20		5731.6	0.06	18.9	-4.9	-3.67	-0.001	60	0	11/10/2015 11:41:46	11/10/2015 12:41:46	515471	208438	121.81	-0.014896644	0.052769297	-0.08602971	-0.003799007	
34	20		5731.6	0.041	5.3	-4.3	-3.67	-0.001	60	0	11/10/2015 11:43:11	11/10/2015 12:43:11	515471	208438	121.81	-0.015471808	0.052622682	-0.08602971	-0.002652392	
34	21		5731.6	0.056	-7.8	-9.5	-3.67	-0.001	60	0	11/10/2015 11:45:06	11/10/2015 12:45:06	515472	208440	121.8	-0.016055613	0.052424321	-0.090220901	0.000354778	
34	22		5731.6	0.051	-2.9	-6.2	-3.67	-0.001	60	0	11/10/2015 11:47:07	11/10/2015 12:47:07	515474	208442	121.78	-0.016647886	0.05221561	-0.09264738	0.00013701	
34	23		5731.6	0.042	6.8	-11.2	-3.67	-0.001	60	0	11/10/2015 11:49:21	11/10/2015 12:49:21	515475	208444	121.8	-0.017248447	0.051984476	-0.088676778	-0.000661254	
34	23		5731.6	0.046	-4	-4.2	-3.67	-0.001	60	0	11/10/2015 11:50:44	11/10/2015 12:50:44	515475	208444	121.8	-0.01755178	0.051841311	-0.088676778	0.003481911	
34	24		5731.6	0.044	-3.7	-0.7	-3.67	-0.001	60	0	11/10/2015 11:52:52	11/10/2015 12:52:52	515476	208446	121.85	-0.018164434	0.051620526	-0.078529684	0.00384979	
34	25		5731.7	0.041	-9.8	8.5	-3.67	0	60	0	11/10/2015 11:55:10	11/10/2015 12:55:10	515478	208448	121.8	-0.01909804	0.051382492	-0.090000312	0.013617196	
34	26		5731.7	0.038	-4.1	2.6	-3.66	0	60	0	11/10/2015 11:57:17	11/10/2015 12:57:17	515480	208450	121.8	-0.019729921	0.051163433	-0.089338545	0.016498022	
34	27		5731.7	0.047	5	1.8	-3.66	0	60	0	11/10/2015 11:59:14	11/10/2015 12:59:14	515481	208452	121.79	-0.020369159	0.050961621	-0.091985613	0.020052766	
34	28		5731.7	0.042	0	3	-3.66	0	60	0	11/10/2015 12:01:41	11/10/2015 13:01:41	515483	208454	121.82	-0.021015563	0.050708064	-0.084926765	0.023365171	
34	29		5731.7	0.036	-3.1	-0.7	-3.66	0	60	0	11/10/2015 12:04:08	11/10/2015 13:04:08	515485	208456	121.82	-0.021998174	0.050454506	-0.085147354	0.03039814	
34	30		5731.7	0.036	-13.3	-8	-3.66	0	60	0	11/10/2015 12:06:04	11/10/2015 13:06:04	515486	208458	121.83	-0.022661628	0.05025442	-0.082720875	0.032024705	
34	30		5731.7	0.039	-5.4	-3.1	-3.66	0	60	1	11/10/2015 12:08:26	11/10/2015 13:08:26	515486	208458	121.83	-0.023331551	0.050009487	-0.082720875	0.030269638	
34	31		5731.7	0.035	-4.9	7.4	-3.66	0	60	0	11/10/2015 12:10:17	11/10/2015 13:10:17	515488	208460	121.81	-0.024007741	0.049818025	-0.087353244	0.032828731	
34	31		5731.7	0.062	-5.9	-0.7	-3.66	-0.001	60	0	11/10/2015 12:16:11	11/10/2015 13:16:11	515488	208460	121.81	-0.02607184	0.049207417	-0.087353244	0.026439339	
34	33		5731.7	0.039	-1.2	-2.1	-3.66	-0.001	60	0	11/10/2015 12:21:23	11/10/2015 13:21:23	515491	208463	121.86	-0.0278295	0.048669254	-0.076323794	0.037006952	
34	34		5731.7	0.05	-9.4	-10.8	-3.66	-0.001	60	0	11/10/2015 12:23:37	11/10/2015 13:23:37	515493	208466	121.88	-0.028541319	0.04843812	-0.070809069	0.034752811	
34	34		5731.7	0.047	-9.8	-1.1	-3.65	-0.001	60	0	11/10/2015 12:25:19	11/10/2015 13:25:19	515493	208466	121.88	-0.029257815	0.048262182	-0.070809069	0.036928749	
34	35		5731.7	0.045	-9	-2	-3.65	-0.002	60	0	11/10/2015 12:31:04	11/10/2015 13:31:04	515494	208468	121.9	-0.031433166	0.047667098	-0.067941412	0.03639149	
34	36		5731.6	0.034	-7.3	5.6	-3.66	-0.002	60	0	11/10/2015 12:33:31	11/10/2015 13:33:31	515496	208469	121.92	-0.032166163	0.04741354	-0.063309043	0.033277417	
34	37		5731.6	0.043	-6.2	3.5	-3.66	-0.002	60	0	11/10/2015 12:37:06	11/10/2015 13:37:06	515497	208472	121.93	-0.033642628	0.047042691	-0.060441386	0.028515923	
34	40		5731.6	0.051	-3.2	-1.4	-3.66	-0.003	60	0	11/10/2015 12:40:05	11/10/2015 13:40:05	515502	208477	121.99	-0.034758244	0.046733937	-0.046544279	0.015721784	
34	41		5731.6	0.044	-10.1	-7.5	-3.66	-0.003	60	0	11/10/2015 12:43:19	11/10/2015 13:43:19	515503	208479	122.03	-0.03588009	0.04639931	-0.039264842	0.006335848	
34	41		5731.6	0.046	-3.9	-1.3	-3.65	-0.003	60	0	11/10/2015 12:44:52	11/10/2015 13:44:52	515503	208479	122.03	-0.036255288	0.046238896	-0.039264842	0.006496262	
34	42		5731.6	0.052	-6.5	-3.3	-3.65	-0.004	60	0	11/10/2015 12:47:49	11/10/2015 13:47:49	515505	208482	122.04	-0.037384226	0.045933592	-0.035514829	-0.002448421	
34	43		5731.6	0.042	-5.1	-3.5	-3.64	-0.004	60	1	11/10/2015 12:51:40	11/10/2015 13:51:40	515507	208483	121.99	-0.038896194	0.045535144	-0.048088402	-0.006623546	
34	44		5731.6	0.047	-4.5	-9.9	-3.63	-0.005	60	2	11/10/2015 12:57:12	11/10/2015 13:57:12	515508	208485	122.04	-0.041174734	0.044962484	-0.036176596	-0.01113908	
2	25		5731.5	0.039	0	0.3	-3.55	-0.013	60	0	11/10/2015 13:32:54	11/10/2015 14:32:54	515388	208404	122.36	-0.05440108	0.060912288	0.033529528	-0.01438276	
4	28		5731.5	0.038	-11.3	-3.8	-3.59	-0.014	60	0	11/10/2015 13:37:41	11/10/2015 14:37:41	515378	208402	122.4	-0.056236065	0.060688025	0.042794266	-0.012893759	
4	28		5731.5	0.036	-4.3	-4.5	-3.61	-0.015	60	0	11/10/2015 13:40:34	11/10/2015 14:40:34	515378	208402	122.4	-0.057325465	0.060552842	0.042794266	-0.013758576	
3	15		5731.5	0.049	8.8	-4.4	-3.63	-0.016	60	10	11/10/2015 13:44:04	11/10/2015 14:44:04	515404	208422	122.42	-0.05876286	0.060388748	0.047647224	-0.005741524	
1	10		5731.5	0.047	-10.9	-5.2	-3.64	-0.017	60	3	11/10/2015 13:48:30	11/10/2015 14:48:30	515416	208428	122.39	-0.060181275	0.060180895	0.041470732	-0.018710163	
1	10		5731.5	0.043	-6.3	-2.8	-3.64	-0.018	60	1	11/10/2015 13:50:10	11/10/2015 14:50:10	515416	208428	122.39	-0.060882799	0.060102754	0.041470732	-0.020632022	
4	5		5731.6	0.035	-6.8	2.4	-3.64	-0.018	60	0	11/10/2015 13:53:21	11/10/2015 14:53:21	515418	208443	122.3	-0.061924846	0.059953507	0.020955955	0.018002448	
2	1		5731.6	0.033	-5.1	-1.8	-3.65	-0.02	60	0	11/10/2015 13:56:47	11/10/2015 14:56:47	515428	208448	122.11	-0.062953941	0.059792538	-0.020955955	0.020251507	
11	7		5731.5	0.066	-9.3	-2	-3.65	-0.023	60	2	11/10/2015 14:06:46	11/10/2015 15:06:46	515400	208452	122.48	-0.066281206	0.059324477	0.060000208	-0.009324269	
13	13		5731.5	0.052	-4.1	0	-3.61	-0.024	60	0	11/10/2015 14:11:58	11/10/2015 15:11:58	515391	208465	122.48	-0.067879344	0.05908068	0.061103153	0.005022473	
12	23		5731.5	0.056	-5.7	2.2	-3.64	-0.026	60	0	11/10/2015 14:15:44	11/10/2015 15:15:44	515369	208478	122.67	-0.06912343	0.058904083	0.102573885	0.033669802	
14	32		5731.4	0.05	-10.6	-0.2	-3.67	-0.028	60	0	11/10/2015 14:22:55	11/10/2015 15:22:55	515354	208495	122.83	-0.071221735	0.058567298	0.138529892	0.017962594	
13	46		5731.6	0.052	-4.4	0.6	-3.68	-0.03	60	1	11/10/2015 14:26:58	11/10/2015 15:26:58	515331	208520	122.22	-0.072372995	0.058377417	0.003970602	0.047593185	

GROUND COLLAPSE AT FONTMELL CLOSE ST. ALBANS

Microgravity Survey

Appendix 3
Gravity Base Station Data
Report Number 1531r1v1d1015

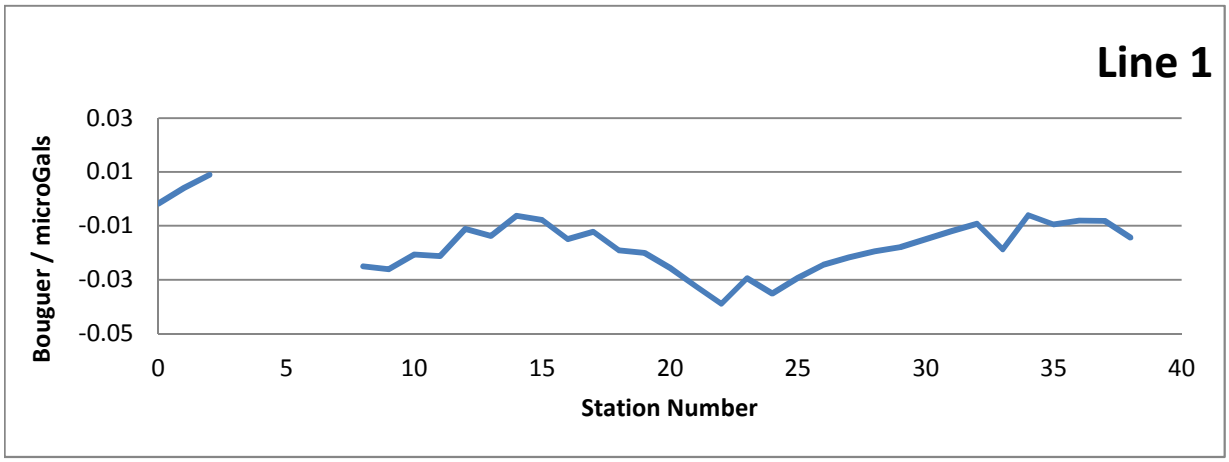
Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	TideCorr	DriftRate	CumDrift
999	999		5732	0.012	-4.1	-5.1	-3.4	0.008	60	0	4/10/2015 08:57:56	4/10/2015 09:57:56	-0.028602156	0	0
999	999		5732	0.021	-0.6	-0.7	-3.38	0.008	60	2	4/10/2015 09:01:29	4/10/2015 10:01:29	-0.029812279	0	0
999	999		5732	0.016	0.3	-1.4	-3.38	0.007	60	0	4/10/2015 09:02:48	4/10/2015 10:02:48	-0.03011323	-0.062760291	0
999	999		5732	0.015	4.1	-6.2	-3.61	-0.015	60	0	4/10/2015 10:11:38	4/10/2015 11:11:38	-0.048904051	-1.016470591	-0.003
999	999		5732	0.016	4.2	-4.6	-3.6	-0.016	60	0	4/10/2015 10:13:03	4/10/2015 11:13:03	-0.049379846	0	-0.004
999	999		5732	0.027	-0.4	-6.3	-3.66	-0.04	60	5	4/10/2015 11:30:04	4/10/2015 12:30:04	-0.064168446	-3.676595746	-0.004
999	999		5731	0.027	4.3	-7.8	-3.66	-0.04	60	1	4/10/2015 11:31:38	4/10/2015 12:31:38	-0.064313839	2.979310337	-0.008
999	999		5731	0.022	-1.5	-1.6	-3.66	-0.041	60	0	4/10/2015 11:33:05	4/10/2015 12:33:05	-0.064601033	-0.169522564	-0.005
999	999		5731	0.023	8.7	-3.5	-3.74	-0.058	60	0	4/10/2015 12:49:32	4/10/2015 13:49:32	-0.072139171	0	-0.014
999	999		5731	0.03	8.9	-5.4	-3.73	-0.059	60	0	4/10/2015 12:51:19	4/10/2015 13:51:19	-0.072255365	2.672164948	-0.014
999	999		5731	0.034	-1	0.8	-3.72	-0.059	60	0	4/10/2015 12:52:56	4/10/2015 13:52:56	-0.072312041	0.043570348	-0.011
999	999		5731	0.039	3	1.5	-3.77	-0.068	60	2	4/10/2015 13:59:02	4/10/2015 14:59:02	-0.074222713	0	-0.009
999	999		5731	0.024	7.7	3.4	-3.77	-0.068	60	0	4/10/2015 14:00:29	4/10/2015 15:00:29	-0.074227281	3.756521734	-0.009
999	999		5731	0.024	-1.4	4.5	-3.76	-0.068	60	0	4/10/2015 14:02:01	4/10/2015 15:02:01	-0.074234693	-2.107317081	-0.005
999	999		5731	0.024	5.1	3.5	-3.75	-0.068	60	1	4/10/2015 14:03:23	4/10/2015 15:03:23	-0.074237547	0.847058823	-0.007
999	999		5731	0.033	0.5	5.1	-3.75	-0.068	60	0	4/10/2015 14:05:05	4/10/2015 15:05:05	-0.074241581	-0.058365233	-0.006
999	999		5731	0.042	3.1	0.7	-3.74	-0.072	60	2	4/10/2015 15:19:06	4/10/2015 16:19:06	-0.073207912	0.890721649	-0.009
999	999		5731	0.023	1.5	2.5	-3.73	-0.072	60	0	4/10/2015 15:20:43	4/10/2015 16:20:43	-0.073182999	-3.049411773	-0.008
999	999		5731	0.043	8.4	4.1	-3.72	-0.072	60	2	4/10/2015 15:22:08	4/10/2015 16:22:08	-0.073132648	0.057561626	-0.011
999	999		5731	0.029	-5.9	-5.8	-3.68	-0.072	60	0	4/10/2015 16:37:11	4/10/2015 17:37:11	-0.070986228	3.199999997	-0.008
999	999		5731	0.033	-9.3	-7.3	-3.67	-0.072	60	0	4/10/2015 16:38:32	4/10/2015 17:38:32	-0.070956671	0	-0.005
999	999		5731	0.049	-3.7	-0.2	-3.62	-0.07	60	0	4/10/2015 17:44:46	4/10/2015 18:44:46	-0.069046795	0	-0.005
999	999		5731	0.04	-1.6	2.9	-3.62	-0.07	60	0	4/10/2015 17:46:15	4/10/2015 18:46:15	-0.068989087	3.281012675	-0.005
999	999		5732	0.036	-3.6	5.5	-3.61	-0.07	60	0	4/10/2015 17:47:34	4/10/2015 18:47:34	-0.068960187	-0.041133064	-0.002
999	999		5732	0.056	-4.9	1.8	-3.59	-0.068	60	0	4/10/2015 18:57:35	4/10/2015 19:57:35	-0.066692994	-2.591999997	-0.004
999	999		5731	0.044	2.3	0.8	-3.59	-0.068	60	0	4/10/2015 18:59:15	4/10/2015 19:59:15	-0.066615274	0	-0.007
999	999		5731	0.041	0.9	0	-3.59	-0.068	60	1	4/10/2015 19:00:35	4/10/2015 20:00:35	-0.066576004	-0.685714286	-0.007
999	999		5731	0.055	-1.2	-0.9	-3.59	-0.068	60	0	4/10/2015 19:02:41	4/10/2015 20:02:41	-0.066496625	0.001714048	-0.008
999	999		5731	0.068	2	0.4	-3.47	0.023	60	1	5/10/2015 09:02:48	5/10/2015 10:02:48	-0.010139091	0	-0.007
999	999		5731	0.062	5.9	-2.6	-3.47	0.023	60	0	5/10/2015 09:04:09	5/10/2015 10:04:09	-0.01078399	-0.630656935	-0.007
999	999		5731	0.057	3.7	-6.4	-3.48	0.022	60	0	5/10/2015 09:06:26	5/10/2015 10:06:26	-0.011430209	0.119976195	-0.008
999	999		5732	0.068	-9.1	-5.8	-3.57	0	60	0	5/10/2015 10:30:27	5/10/2015 11:30:27	-0.038489511	-0.675000001	-0.001
999	999		5732	0.047	-1	-2.6	-3.55	-0.001	60	0	5/10/2015 10:32:35	5/10/2015 11:32:35	-0.039102302	-0.065820213	-0.002
999	999		5731	0.048	-0.9	8.6	-3.62	-0.044	60	0	5/10/2015 12:43:51	5/10/2015 13:43:51	-0.070025119	3.927272735	-0.008
999	999		5732	0.05	2.3	0.5	-3.61	-0.044	60	0	5/10/2015 12:45:19	5/10/2015 13:45:19	-0.070318803	-0.300759494	-0.004
999	999		5731	0.054	7.7	2.3	-3.61	-0.058	60	1	5/10/2015 13:37:59	5/10/2015 14:37:59	-0.075830596	8.582781452	-0.015
999	999		5732	0.065	-1.5	5	-3.6	-0.059	60	0	5/10/2015 13:40:30	5/10/2015 14:40:30	-0.076025229	-3.160975622	0
999	999		5732	0.054	4.4	5.5	-3.59	-0.059	60	0	5/10/2015 13:41:52	5/10/2015 14:41:52	-0.076087192	-1.080000002	-0.003
999	999		5732	0.045	9.1	6.2	-3.59	-0.059	60	0	5/10/2015 13:43:12	5/10/2015 14:43:12	-0.076206765	2.979310337	-0.004
999	999		5732	0.061	-8.1	-5.1	-3.6	-0.059	60	0	5/10/2015 13:44:39	5/10/2015 14:44:39	-0.076264382	-1.136842102	-0.001
999	999		5732	0.045	-5.2	-4.7	-3.6	-0.06	60	0	5/10/2015 13:45:55	5/10/2015 14:45:55	-0.076320556	0.090769923	-0.002
999	999		5732	0.061	0.4	-1	-3.62	-0.075	60	0	5/10/2015 15:36:58	5/10/2015 16:36:58	-0.074777044	0	0.005
999	999		5732	0.05	6.2	4.3	-3.6	-0.075	60	0	5/10/2015 15:40:26	5/10/2015 16:40:26	-0.074491701	1.858064522	0.005
999	999		5732	0.063	1.4	6.3	-3.59	-0.075	60	0	5/10/2015 15:41:59	5/10/2015 16:41:59	-0.074418607	-0.247716568	0.007
999	999		5731	0.063	4.2	-5	-3.61	-0.074	60	1	5/10/2015 17:03:22	5/10/2015 18:03:22	-0.066858291	2.672164964	-0.007
999	999		5732	0.066	2.2	-3.5	-3.6	-0.074	60	0	5/10/2015 17:04:59	5/10/2015 18:04:59	-0.066756485	0.822857143	-0.004
999	999		5732	0.039	0.1	-5.1	-3.59	-0.074	60	0	5/10/2015 17:06:44	5/10/2015 18:06:44	-0.066552838	-0.015624435	-0.003
999	999		5731	0.06	10	4.1	-3.45	0.03	60	0	6/10/2015 08:28:22	6/10/2015 09:28:22	0.0145574	7.199999987	-0.013
999	999		5731	0.06	4.1	0	-3.44	0.03	60	0	6/10/2015 08:29:46	6/10/2015 09:29:46	0.014317717	0.188783685	-0.006
999	999		5732	0.053	-1.7	0.3	-3.6	0.029	60	0	6/10/2015 08:52:39	6/10/2015 09:52:39	0.008355008	-1.122077926	-0.003
999	999		5732	0.098	-0.6	0.8	-3.61	0.029	60	0	6/10/2015 08:53:56	6/10/2015 09:53:56	0.008077247	0.094186047	-0.004
999	999		5732	0.084	9.2	-5.3	-3.57	0.014	60	0	6/10/2015 10:25:40	6/10/2015 11:25:40	-0.021967592	6.496240618	0.002
999	999		5732	0.087	-2.5	-2.3	-3.56	0.014	60	0	6/10/2015 10:27:53	6/10/2015 11:27:53	-0.022676377	-0.185407725	0.012
999	999		5732	0.074	-1.2	-3.2	-3.56	0.012	60	2	6/10/2015 10:35:39	6/10/2015 11:35:39	-0.025514233	-0.04955265	0.011
999	999		5732	0.075	1.1	-10.6	-3.62	-0.035	60	0	6/10/2015 13:00:57	6/10/2015 14:00:57	-0.069168281	1.382399996	0.006
999	999		5732	0.059	4.2	-5.8	-3.61	-0.036	60	0	6/10/2015 13:03:02	6/10/2015 14:03:02	-0.069768042	0.981818184	0.008
999	999		5732	0.065	-1.4	-5.5	-3.6	-0.037	60	0	6/10/2015 13:04:30	6/10/2015 14:04:30	-0.069964262	-0.493714286	0.009
999	999		5732	0.06	-0.1	-2.6	-3.61	-0.037	60	0	6/10/2015 13:07:25	6/10/2015 14:07:25	-0.070541736	-0.960000003	0.008
999	999		5732	0.065	1.3	-3.7	-3.61	-0.038	60	0	6/10/2015 13:08:55	6/10/2015 14:08:55	-0.070730479	0.036765957	0.007
999	999		5732	0.07	-4.3	1.5	-3.4	-0.061	60	0	6/10/2015 14:27:15	6/10/2015 15:27:15	-0.079432432	-0.09	0.009
999	999		5732	0.09	-5.5	6	-3.6	-0.078	60	0	6/10/2015 16:35:15	6/10/2015 17:35:15	-0.070021827	5.142857134	0.001
999	999		5732	0.08	-4	0.3	-3.59	-0.078	60	0	6/10/2015 16:36:39	6/10/2015 17:36:39	-0.069869461	-0.081908674	0.006

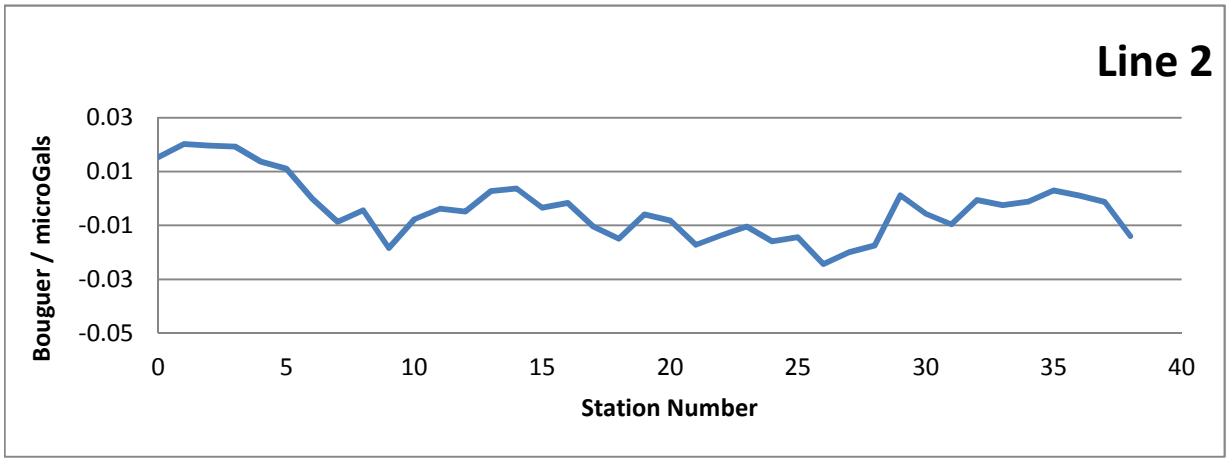
Line	Station	StationDir	Gravity	SD	TiltX	TiltY	Temp	ETC	Dur	Rej	Local Time	GMT Time	TideCorr	DriftRate	CumDrift
999	999		5732	0.074	-3.6	-1.2	-3.53	-0.069	60	0	6/10/2015 18:22:08	6/10/2015 19:22:08	-0.052343442	3.410526308	0
999	999		5732	0.072	-0.4	0	-3.51	-0.069	60	0	6/10/2015 18:23:24	6/10/2015 19:23:24	-0.052189532	1.107692308	0.003
999	999		5732	0.07	1.6	0.6	-3.5	-0.069	60	0	6/10/2015 18:24:42	6/10/2015 19:24:42	-0.052036251	0.033945109	0.004
999	999		5732	0.115	4.9	10.1	-3.25	0.025	60	0	7/10/2015 09:15:33	7/10/2015 10:15:33	0.012292573	-0.909473682	0.025
999	999		5732	0.111	3.4	-2.2	-3.25	0.025	60	0	7/10/2015 09:17:08	7/10/2015 10:17:08	0.011793473	0.012116113	0.024
999	999		5732	0.107	4	-0.7	-3.35	0.011	60	0	7/10/2015 11:15:59	7/10/2015 12:15:59	-0.02789853	-0.815094338	0.025
999	999		5732	0.088	4.8	-4.1	-3.36	0.011	90	0	7/10/2015 11:17:45	7/10/2015 12:17:45	-0.028660237	0	0.024
999	999		5732	0.078	0.9	-5.9	-3.39	0.01	90	0	7/10/2015 11:20:01	7/10/2015 12:20:01	-0.029802468	0	0.024
999	999		5732	0.09	1.7	0	-3.42	0.009	90	0	7/10/2015 11:21:54	7/10/2015 12:21:54	-0.030183043	0.046426652	0.024
999	999		5732	0.083	-0.4	-1.5	-3.51	-0.009	90	0	7/10/2015 12:23:56	7/10/2015 13:23:56	-0.052769625	-0.799999999	0.026
999	999		5732	0.062	2.8	1.1	-3.48	-0.01	90	0	7/10/2015 12:25:44	7/10/2015 13:25:44	-0.053438798	-0.785454546	0.025
999	999		5732	0.086	5.2	3.2	-3.48	-0.011	90	0	7/10/2015 12:27:34	7/10/2015 13:27:34	-0.054102666	-0.030215073	0.024
999	999		5732	0.069	1.6	-1	-3.32	-0.046	90	0	7/10/2015 14:02:53	7/10/2015 15:02:53	-0.077344348	-3.661016952	0.022
999	999		5732	0.076	7.5	-0.2	-3.34	-0.047	90	0	7/10/2015 14:04:51	7/10/2015 15:04:51	-0.077623138	0.530061349	0.017
999	999		5732	0.07	-0.6	-3.9	-3.38	-0.048	90	0	7/10/2015 14:07:34	7/10/2015 15:07:34	-0.078023124	-0.069565217	0.018
999	999		5732	0.088	0.5	-2.9	-3.6	-0.066	90	0	7/10/2015 15:09:40	7/10/2015 16:09:40	-0.081335085	0.127905255	0.015
999	999		5732	0.076	-12.2	0	-3.59	-0.077	90	0	7/10/2015 16:17:13	7/10/2015 17:17:13	-0.074847684	-1.825352114	0.021
999	999		5732	0.088	-1.3	-3.6	-3.59	-0.078	90	0	7/10/2015 16:19:35	7/10/2015 17:19:35	-0.074523511	0.010766355	0.018
999	999		5732	0.051	-4.7	-19.8	-3.3	0.021	90	0	8/10/2015 10:09:35	8/10/2015 11:09:35	0.004673537	1.208391613	0.026
999	999		5732	0.058	-4.3	-3	-3.31	0.021	90	0	8/10/2015 10:11:58	8/10/2015 11:11:58	0.004090337	-0.118654154	0.028
999	999		5732	0.09	9	-0.8	-3.61	0.014	60	0	8/10/2015 11:24:47	8/10/2015 12:24:47	-0.021571146	3.637894753	0.022
999	999		5732	0.095	-2.1	-1.7	-3.61	0.014	60	0	8/10/2015 11:26:22	8/10/2015 12:26:22	-0.022354682	0	0.026
999	999		5732	0.08	-0.3	-3.3	-3.61	0.014	60	0	8/10/2015 11:27:58	8/10/2015 12:27:58	-0.022747221	-0.234146341	0.026
999	999		5732	0.087	11.5	-5.2	-3.63	-0.004	60	0	8/10/2015 12:35:37	8/10/2015 13:35:37	-0.049342158	5.023255815	0.015
999	999		5732	0.056	1.1	0.6	-3.63	-0.005	60	0	8/10/2015 12:37:03	8/10/2015 13:37:03	-0.050082783	0.263414634	0.02
999	999		5732	0.071	-1.2	0.7	-3.64	-0.029	60	0	8/10/2015 13:42:39	8/10/2015 14:42:39	-0.070743256	2.107317081	0.032
999	999		5732	0.088	-1.9	2.7	-3.63	-0.03	60	0	8/10/2015 13:44:01	8/10/2015 14:44:01	-0.071245639	0	0.034
999	999		5732	0.064	-1.9	4.7	-3.63	-0.03	60	0	8/10/2015 13:45:27	8/10/2015 14:45:27	-0.071493296	-0.259247136	0.034
999	999		5732	0.051	8.2	-3.4	-3.59	-0.053	60	0	8/10/2015 14:46:33	8/10/2015 15:46:33	-0.081698614	3.153284672	0.023
999	999		5732	0.097	0.4	-1.7	-3.59	-0.054	60	0	8/10/2015 14:48:50	8/10/2015 15:48:50	-0.081859028	-1.122077917	0.028
999	999		5732	0.073	5.1	-0.7	-3.59	-0.054	60	0	8/10/2015 14:50:07	8/10/2015 15:50:07	-0.082007949	0.248991355	0.027
999	999		5732	0.087	1	-3.6	-3.62	-0.056	60	2	8/10/2015 14:55:54	8/10/2015 15:55:54	-0.082329882	-0.422493888	0.028
999	999		5732	0.081	2.4	-3.9	-3.65	-0.059	60	0	8/10/2015 15:02:43	8/10/2015 16:02:43	-0.082659537	0.006667824	0.026
999	999		5732	0.028	-4.2	-3.1	-3.45	-0.001	60	0	10/10/2015 10:14:16	10/10/2015 11:14:16	0.005799024	2.787096773	0.038
999	999		5732	0.048	-2.1	-6.1	-3.44	0	60	0	10/10/2015 10:16:20	10/10/2015 11:16:20	0.005524256	-0.086834171	0.042
999	999		5732	0.039	0.7	11	-3.64	0.006	60	0	10/10/2015 11:55:50	10/10/2015 12:55:50	-0.021215667	0.834782609	0.036
999	999		5732	0.04	-1.1	-2.5	-3.61	0.006	60	0	10/10/2015 11:59:17	10/10/2015 12:59:17	-0.022702037	0	0.038
999	999		5732	0.047	2.1	2.7	-3.61	0.006	60	7	10/10/2015 12:00:57	10/10/2015 13:00:57	-0.023076556	-0.077350045	0.038
999	999		5732	0.036	-11.8	-9.1	-3.64	-0.014	60	0	10/10/2015 13:34:02	10/10/2015 14:34:02	-0.059423792	0.959999996	0.033
999	999		5732	0.036	-1.2	-0.9	-3.62	-0.015	60	0	10/10/2015 13:35:32	10/10/2015 14:35:32	-0.059779849	3.281012675	0.034
999	999		5732	0.036	-5.2	-3	-3.61	-0.015	60	0	10/10/2015 13:36:51	10/10/2015 14:36:51	-0.060134382	-0.108706593	0.037
999	999		5732	0.052	-5.4	-2.9	-3.38	-0.039	60	0	10/10/2015 14:43:05	10/10/2015 15:43:05	-0.079163789	4.114285707	0.032
999	999		5732	0.038	-6	-5.9	-3.38	-0.04	60	0	10/10/2015 14:44:29	10/10/2015 15:44:29	-0.07936071	2.107317066	0.036
999	999		5732	0.049	-3.4	-4.3	-3.39	-0.041	60	0	10/10/2015 14:45:51	10/10/2015 15:45:51	-0.079554651	-0.091557753	0.038
999	999		5732	0.066	-14	-5.1	-3.63	-0.072	60	0	10/10/2015 16:20:13	10/10/2015 17:20:13	-0.082992428	-9.781132071	0.032
999	999		5732	0.104	-6.9	-6.3	-3.61	-0.073	60	15	10/10/2015 16:22:52	10/10/2015 17:22:52	-0.082734664	23.15876288	0.014
999	999		5732	0.047	-5.6	-0.5	-3.6	-0.073	60	0	10/10/2015 16:24:29	10/10/2015 17:24:29	-0.08246362	0.981818184	0.04
999	999		5732	0.042	-4.4	-0.8	-3.59	-0.073	60	0	10/10/2015 16:25:57	10/10/2015 17:25:57	-0.082323139	0.080804302	0.041
999	999		5732	0.045	-11.5	-11.4	-3.59	-0.082	60	0	10/10/2015 17:37:14	10/10/2015 18:37:14	-0.06437501	-1.040963857	0.045
999	999		5732	0.048	-6.1	-9.5	-3.58	-0.082	60	0	10/10/2015 17:38:37	10/10/2015 18:38:37	-0.064032245	-0.959999997	0.044
999	999		5732	0.038	-7.3	-11.7	-3.58	-0.082	60	0	10/10/2015 17:40:07	10/10/2015 18:40:07	-0.06334058	0.026018219	0.043
999	999		5732	0.062	-10.3	-2.9	-3.49	-0.054	60	2	11/10/2015 08:25:39	11/10/2015 09:25:39	-0.014789986	-1.093670883	0.059
999	999		5732	0.05	-0.4	-3.4	-3.48	-0.054	60	0	11/10/2015 08:26:58	11/10/2015 09:26:58	-0.014512004	0.011669368	0.058
999	999		5732	0.044	-10.5	-8.3	-3.63	-0.013	60	0	11/10/2015 10:30:22	11/10/2015 11:30:22	-0.001258317	0.939130434	0.059
999	999		5732	0.044	-4.8	-5.7	-3.62	-0.013	60	0	11/10/2015 10:31:54	11/10/2015 11:31:54	-0.00134682	-0.149029754	0.06
999	999		5732	0.063	3.9	-4.9	-3.58	-0.007	60	13	11/10/2015 13:06:30	11/10/2015 14:06:30	-0.044603767	15.63428571	0.044
999	999		5732	0.066	-4.9	-1.6	-3.57	-0.007	60	10	11/10/2015 13:08:15	11/10/2015 14:08:15	-0.045365757	-0.993103446	0.063
999	999		5732	0.044	1.8	-2.8	-3.57	-0.007	60	0	11/10/2015 13:09:42	11/10/2015 14:09:42	-0.045746572	-0.067513186	0.062
999	999		5732	0.041	1.2	-3	-3.65	-0.032	60	0	11/10/2015 14:35:01	11/10/2015 15:35:01	-0.07482702	-2.273684205	0.058
999	999		5732	0.048	5	-3.6	-3.64	-0.033	60	0	11/10/2015 14:36:17	11/10/2015 15:36:17	-0.075087503	-1.053658533	0.056
999	999		5732	0.05	9.3	-5.5	-3.63	-0.033	60	0	11/10/2015 14:37:39	11/10/2015 15:37:39	-0.075345466	0.135534345	0.055

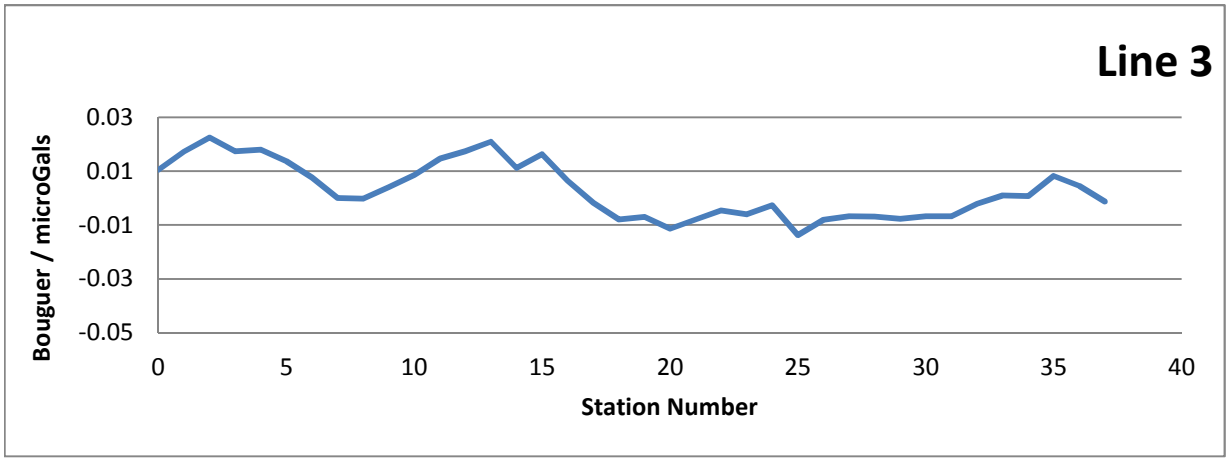
GROUND COLLAPSE AT FONTMELL CLOSE ST. ALBANS

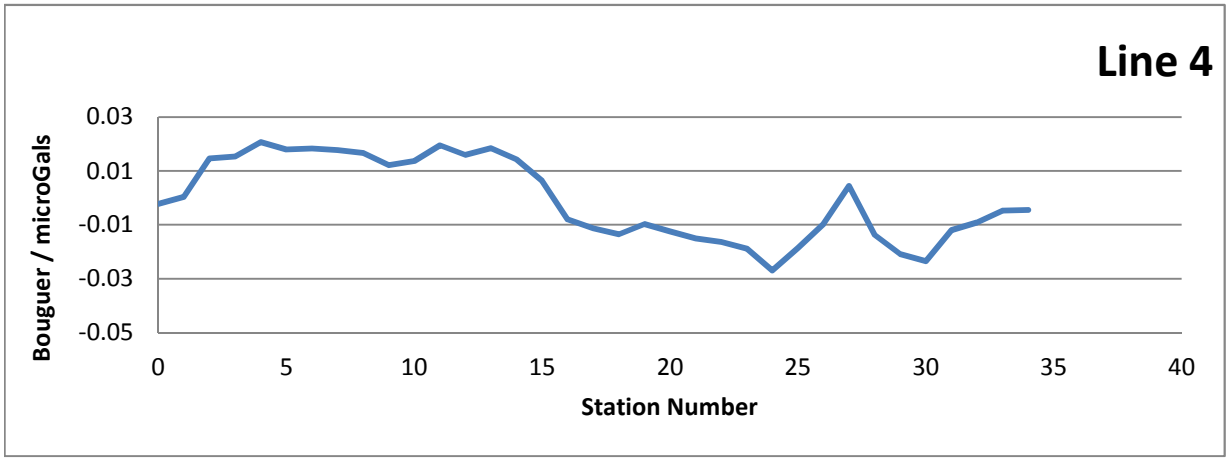
Microgravity Survey

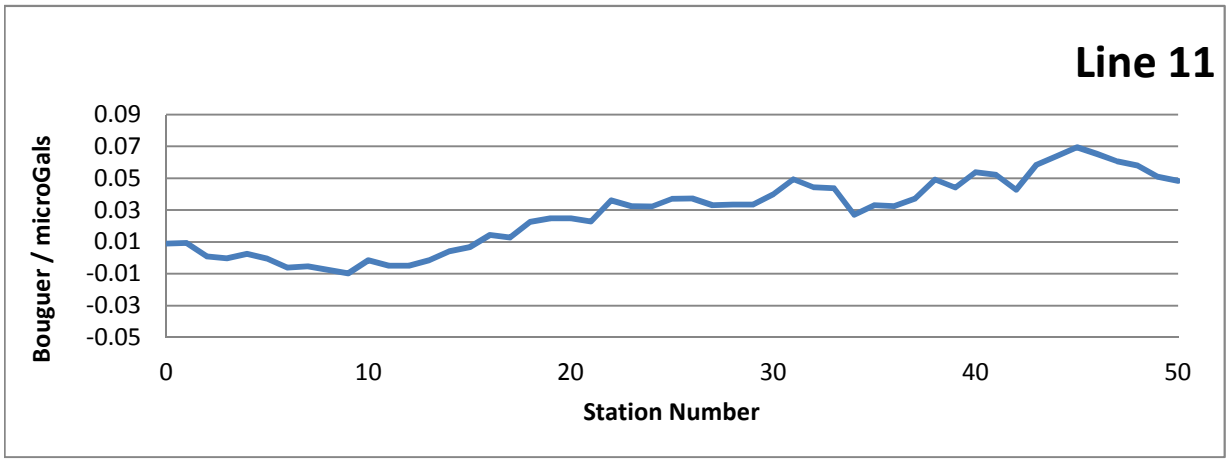
Appendix 4
Microgravity Profiles
Report Number 1531r1v1d1015

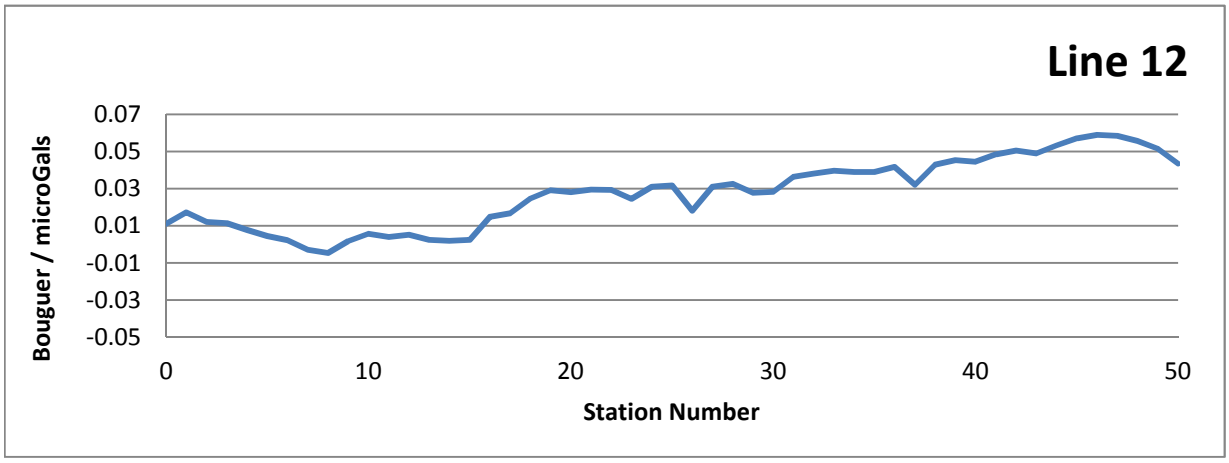

Line 1
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
5
10
15
20
25
30
35
40
Station Number

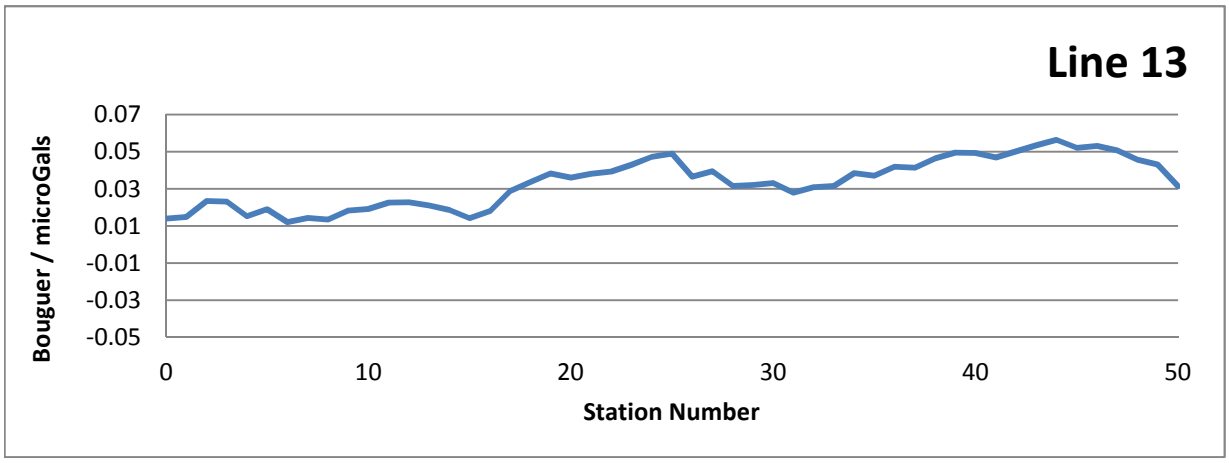

Line 2
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
5
10
15
20
25
30
35
40
Station Number

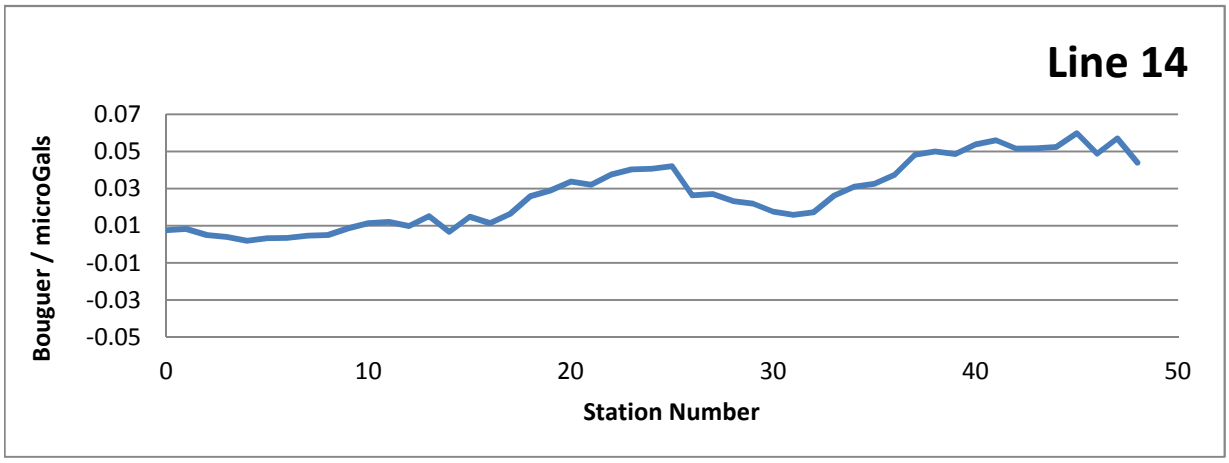

Line 3
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
5
10
15
20
25
30
35
40
Station Number

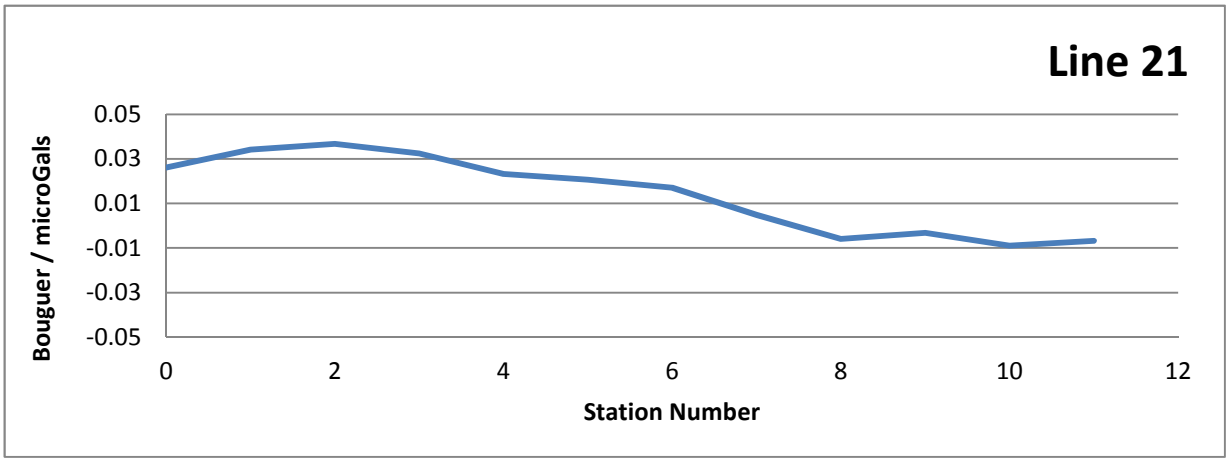

Line 4
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
5
10
15
20
25
30
35
40
Station Number

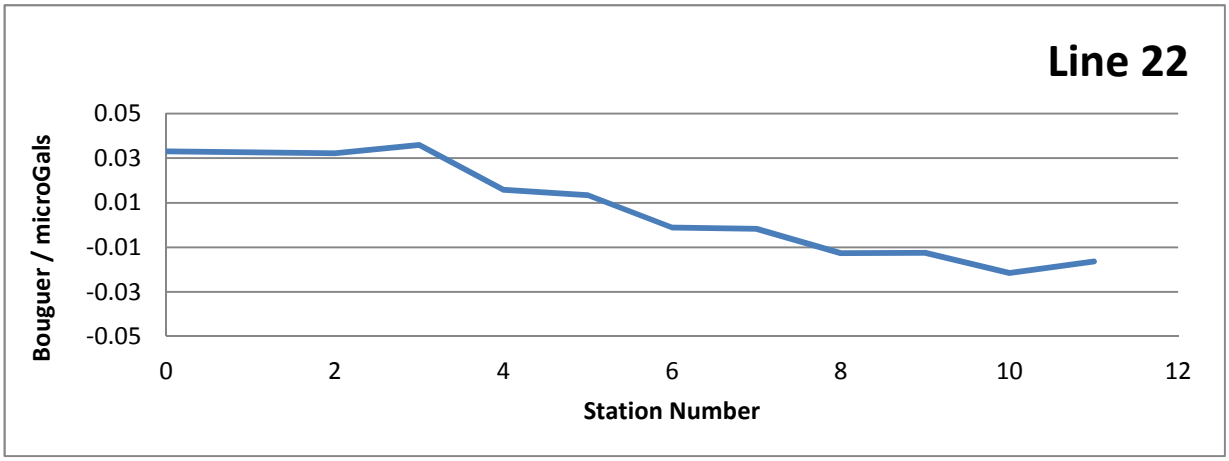

Line 11
Bouguer / microGals
0.09
0.07
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
10
20
30
40
50
Station Number

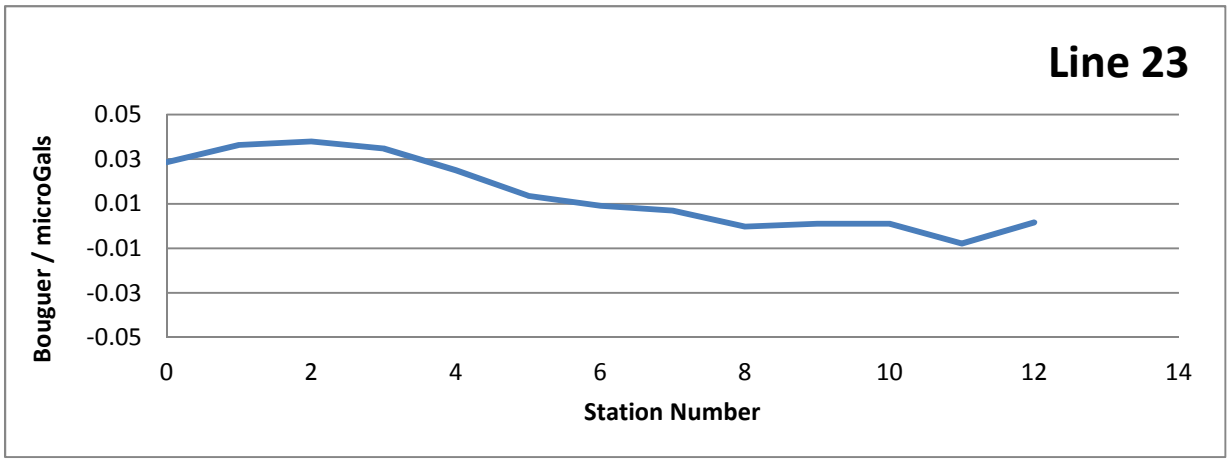

Line 12
Bouguer / microGals
0.07
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
10
20
30
40
50
Station Number

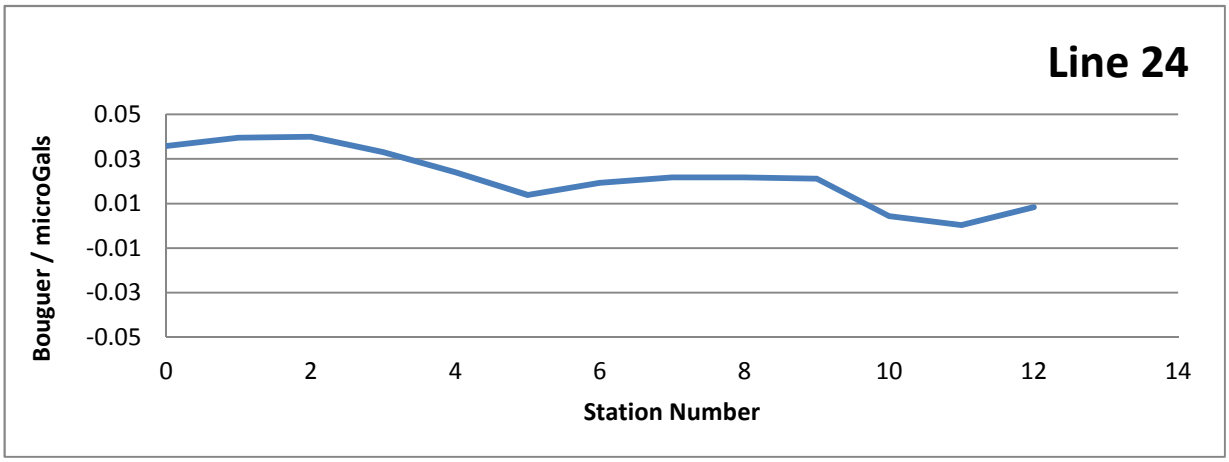

Line 13
Bouguer / microGals
0.07
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
10
20
30
40
50
Station Number

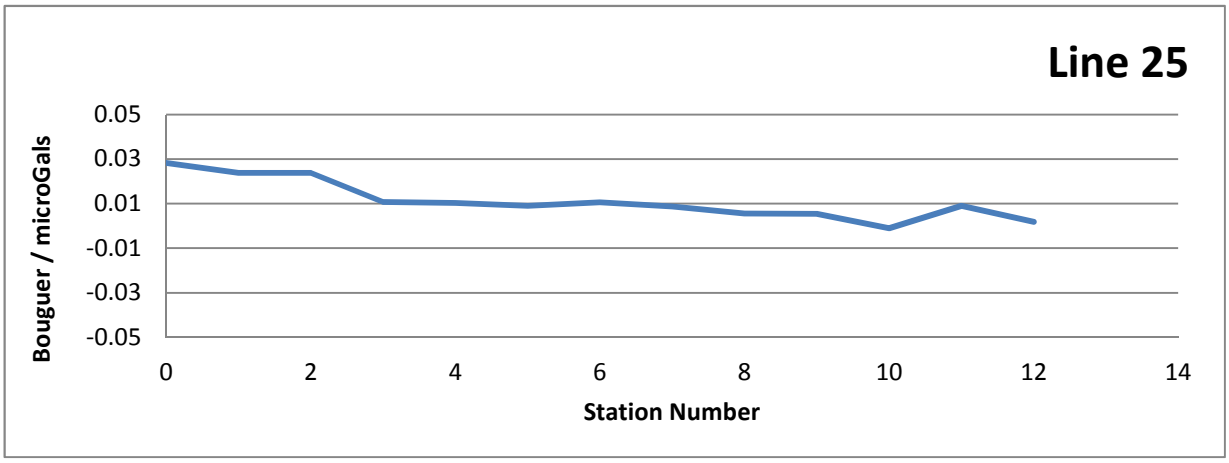

Line 14
Bouguer / microGals
0.07
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
10
20
30
40
50
Station Number

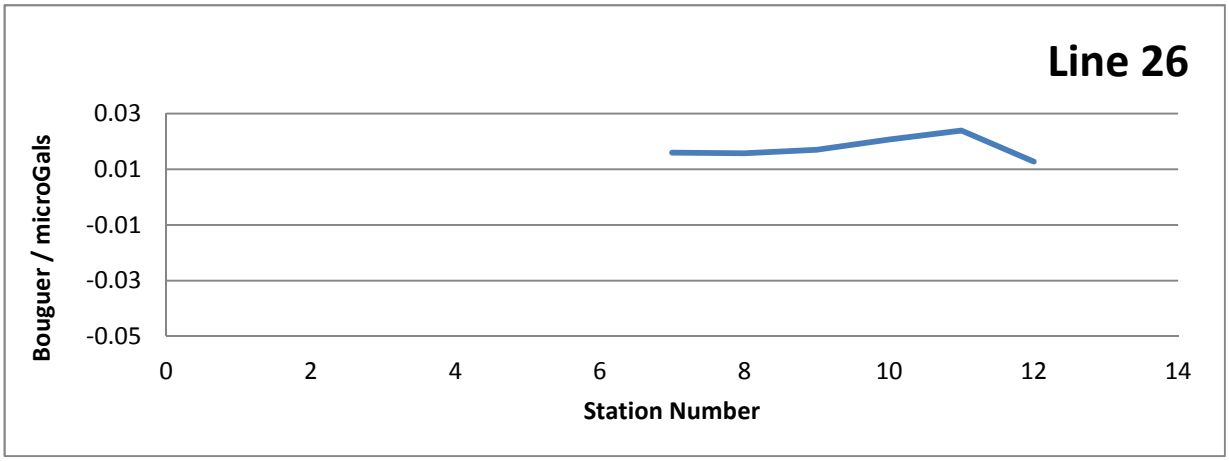

Line 21
Bouguer / microGals
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
Station Number

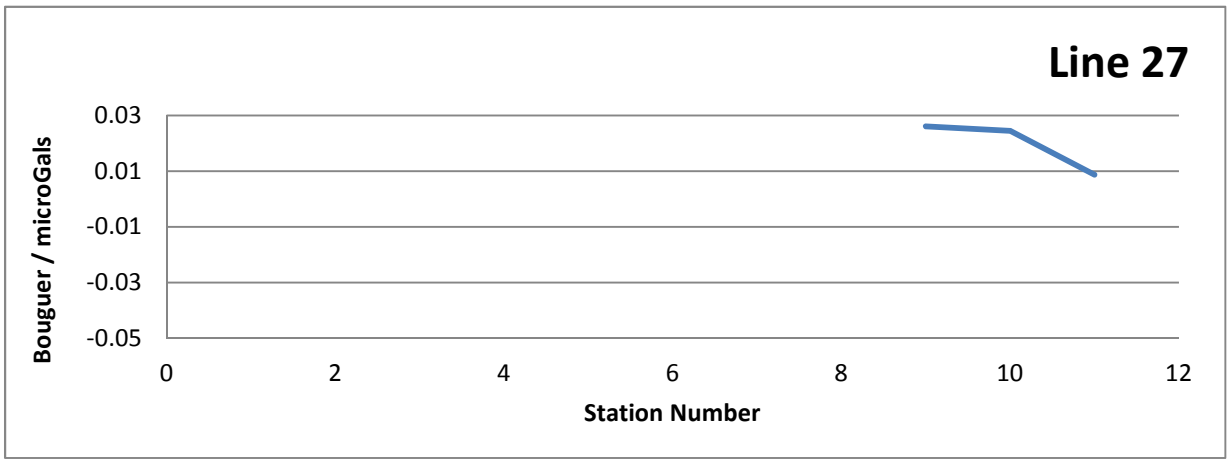

Line 22
Bouguer / microGals
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
Station Number

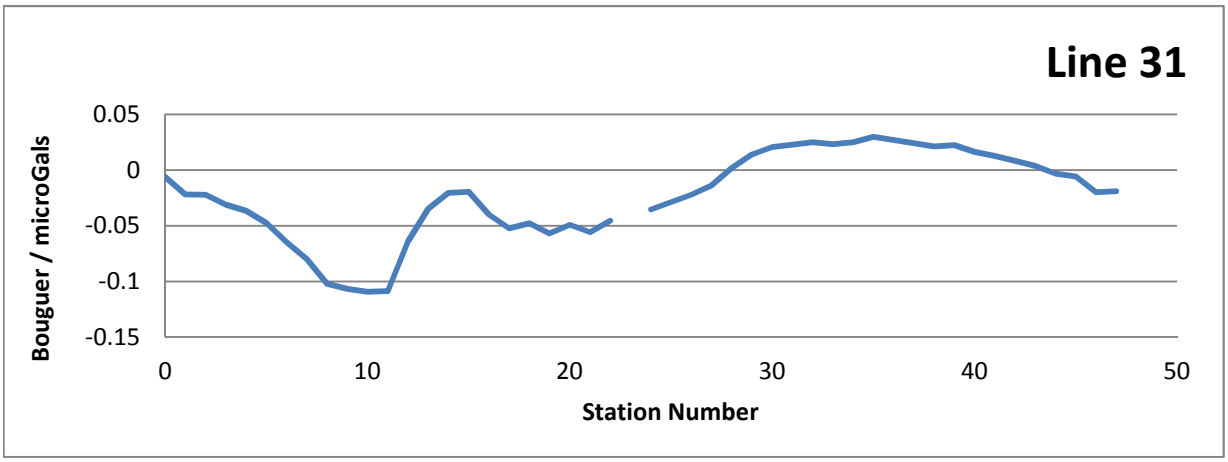

Line 23
Bouguer / microGals
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
14
Station Number

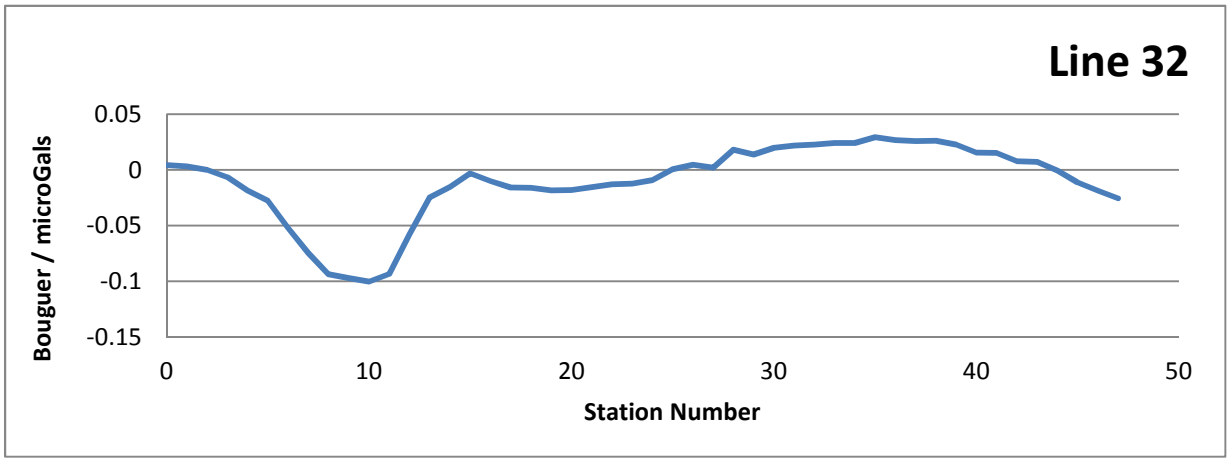

Line 24
Bouguer / microGals
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
14
Station Number

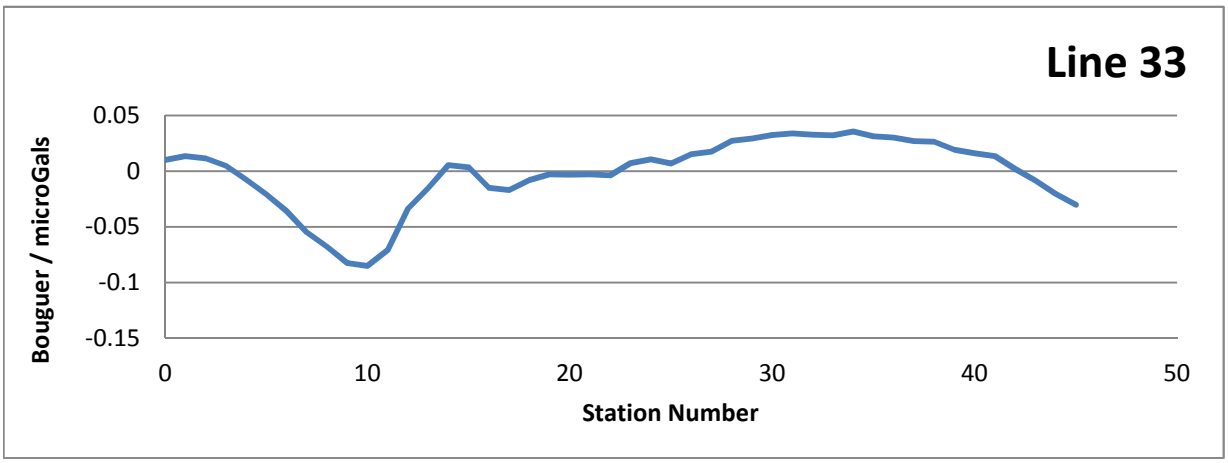

Line 25
Bouguer / microGals
0.05
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
14
Station Number

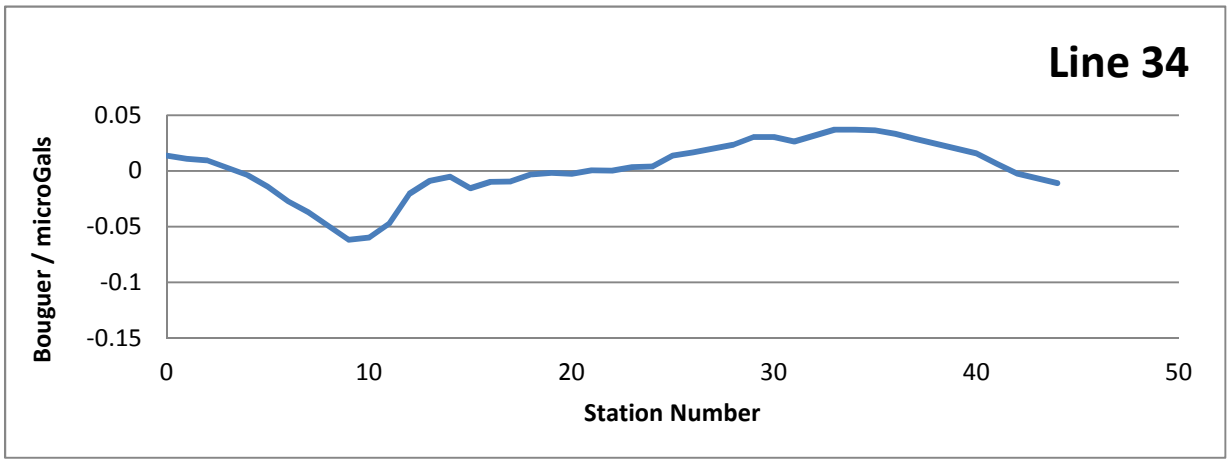

Line 26
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
14
Station Number


Line 27
Bouguer / microGals
0.03
0.01
-0.01
-0.03
-0.05
0
2
4
6
8
10
12
Station Number


Line 31
Bouguer / microGals
0.05
0
-0.05
-0.1
-0.15
0
10
20
30
40
50
Station Number


Line 32
Bouguer / microGals
0.05
0
-0.05
-0.1
-0.15
0
10
20
30
40
50
Station Number


Line 33
Bouguer / microGals
0.05
0
-0.05
-0.1
-0.15
0
10
20
30
40
50
Station Number


Line 34
Bouguer / microGals
0.05
0
-0.05
-0.1
-0.15
0
10
20
30
40
50
Station Number

Geotechnical &
Environmental Services

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Cefn-yr-Allt
Aberdulais
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