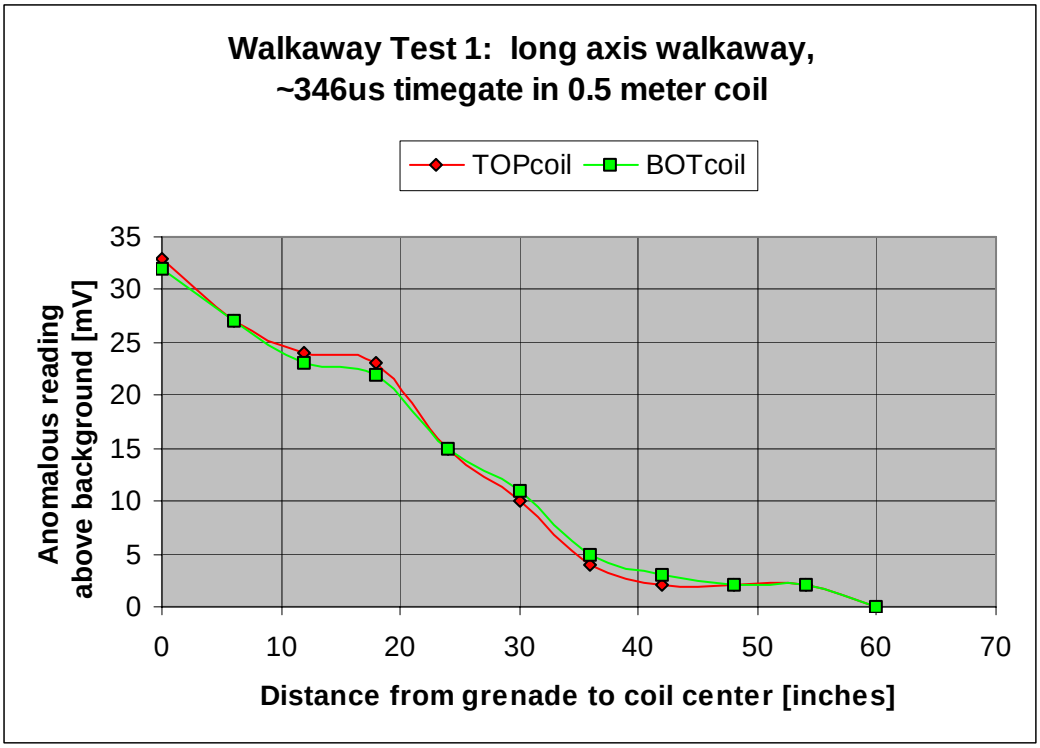
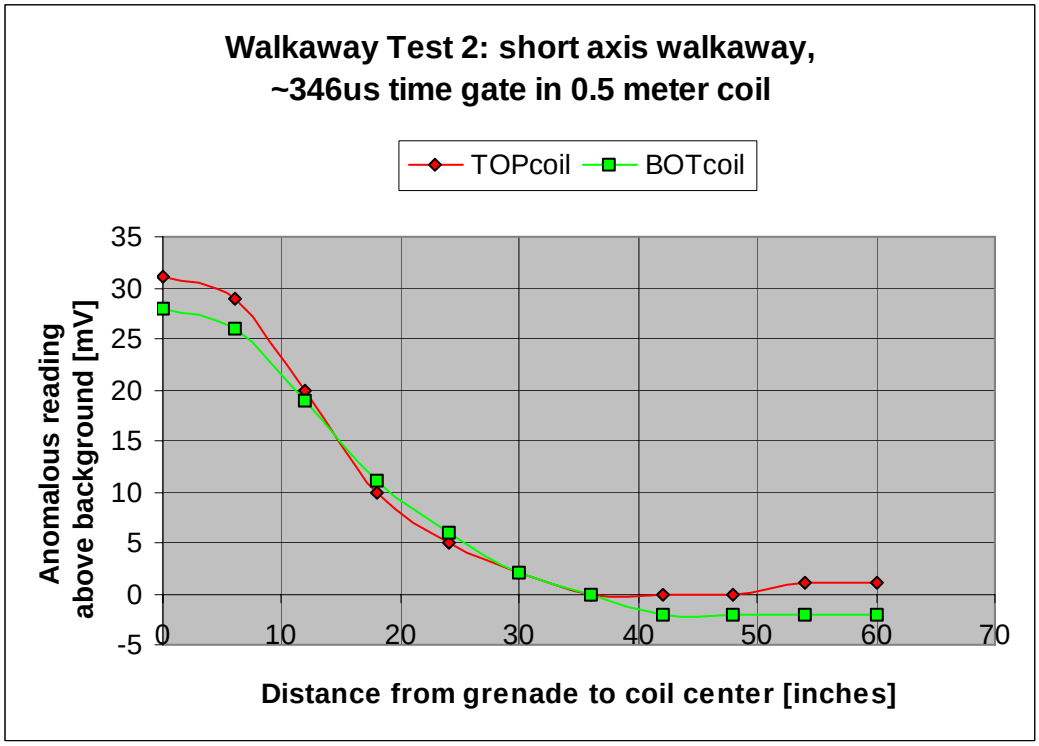
# ATTACHMENT 2

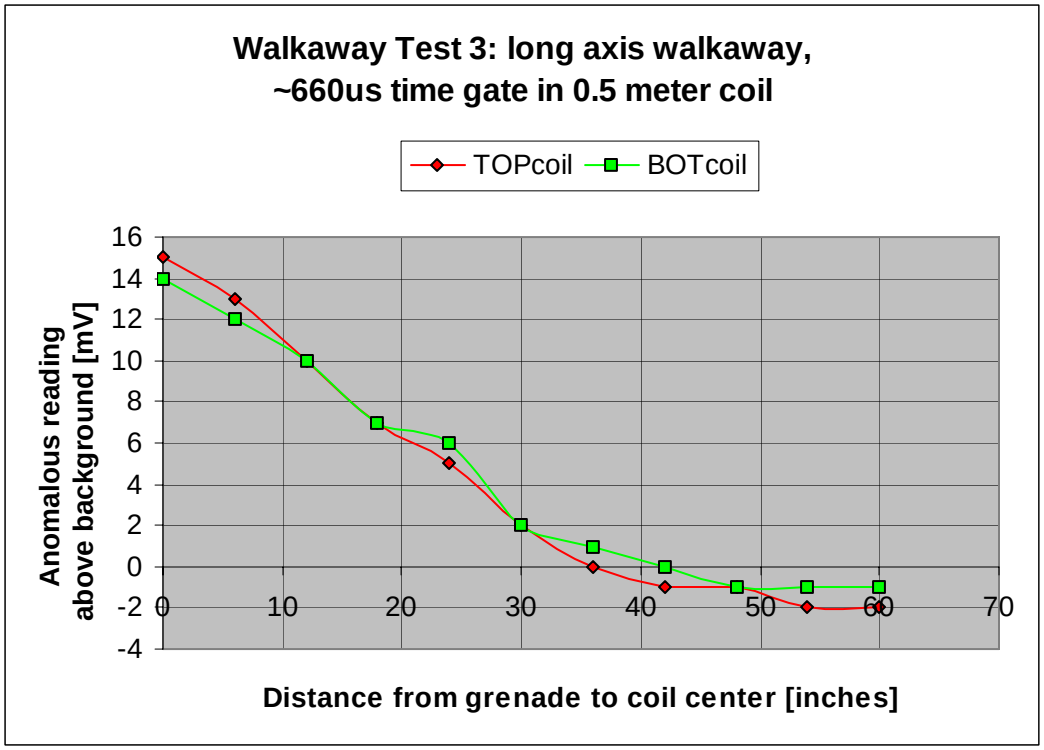
# EM61 MKI Walkaway Test

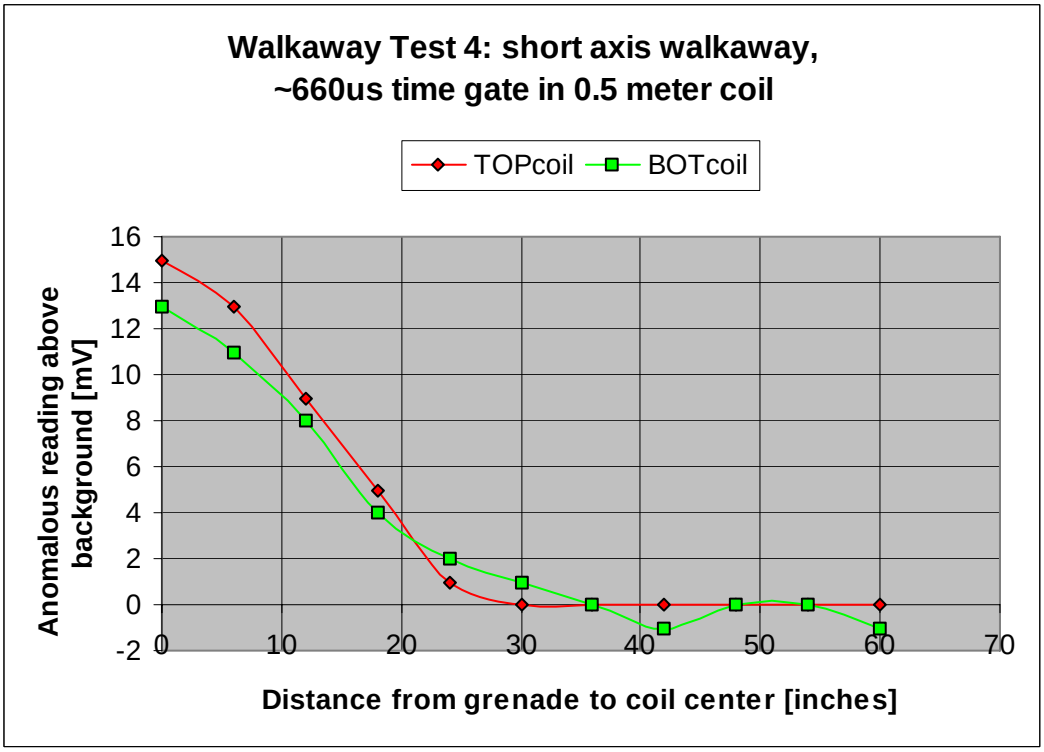
# Fort McClellan

# December, 2002


Walkaway Test 1: long axis walkaway,
~346us timegate in 0.5 meter coil
TOPcoil
BOTcoil
Anomalous reading above background [mV]
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
Distance from grenade to coil center [inches]


Walkaway Test 2: short axis walkaway,
~346us time gate in 0.5 meter coil
TOPcoil
BOTcoil
Anomalous reading above background [mV]
35
30
25
20
15
10
5
0
-5
0
10
20
30
40
50
60
70
Distance from grenade to coil center [inches]




**Grenade depth 0.25 ft below ground surface for all tests**

# ATTACHMENT 3

## EM61 MKI Sensitivity and Time Gate Test

## TtEC Trailer Complex

## March 2000

**FOSTER WHEELER ENVIRONMENTAL CORPORATION**

| CLIENT: | | | | | | PROJECT: | |
|---|---|---|---|---|---|---|---|
| SUBJECT: Fort McClellan | | | | | | | |
| REV# | 0 | | 1 | | 2 | SHEET: 1 | OF |
| BY & DATE | 3/18/00 | | | | | OFS NO.: | |
| CHKD & DATE | | | | | | CALC NO.: | |

~~TJS 716-9614 home~~

~ 10~~15~~ 02.15 - start file 3 on Juniper Systems handheld

(A) + let sit next to building just to make sure recording rate accurate (file 3.661)

stopped @ 10.37.30 (TD watch)

---

→ system just sitting motionless in parking lot

~1110a USRADS

testc.*** (3rd file id)

(B) * channe 1 (top) ; 2 (bottom) reversed in file

Ftmcc(t/b).dat C1~3 C2~5 (reversed)

stop @ 1148am

put Juniper up to coils @ ~ 1118a

also jiggled cables later - no effect

---

1158a EM61 w/ polycorder → system just motionless in parking lot (same exact position as (B))

5.961

(C)

stop file @ 12.40.01

FWDN 581/08-95

FOSTER WHEELER ENVIRONMENTAL CORPORATION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CLIENT: | | | | | | | PROJECT: | |
| SUBJECT: | | | | | | | | |
| REV# | 0 | | 1 | | 2 | | SHEET: 2 | OF |
| BY & DATE | 3/18/ØØ | | | | | | OFS NO.: | |
| CHKD & DATE | | | | | | | CALC NO.: | |

After lunch

Ftmc Ø1 ($t_b$). dat

(D) USRADS over 20mm objects

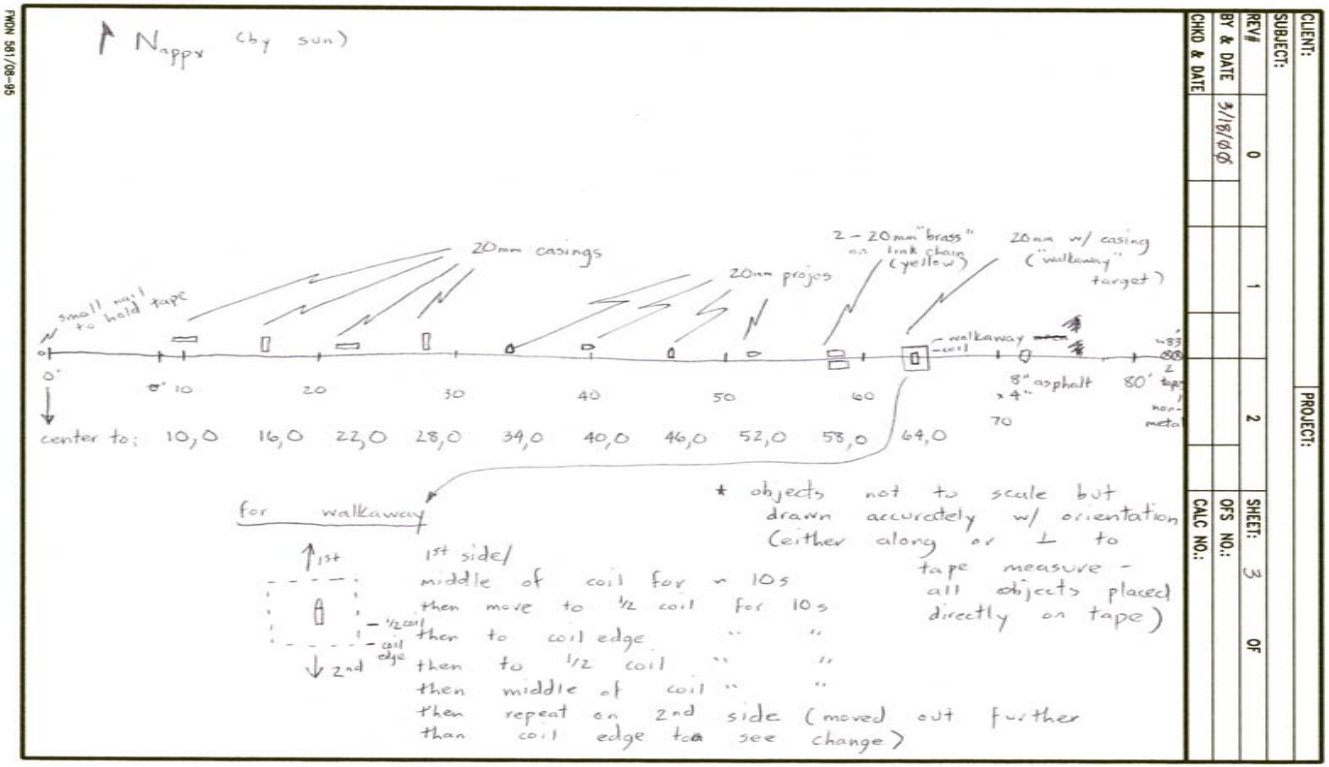
1. walked ~ 10 times in straight line over meas. tape on ground
2. walked ~ 10 times over 20mm objects directly beneath coil
3. " 6 times " left ½ of coil
4. " 6 times " left side of coil
5. Over 20mm w/ casing @ end of line, did "walkaway test". directly beneath coil, ½ way to edge, edge, then repeated
6. Noise test, lifted coil up towards USRADS datapack

SEE MAP PAGE 3

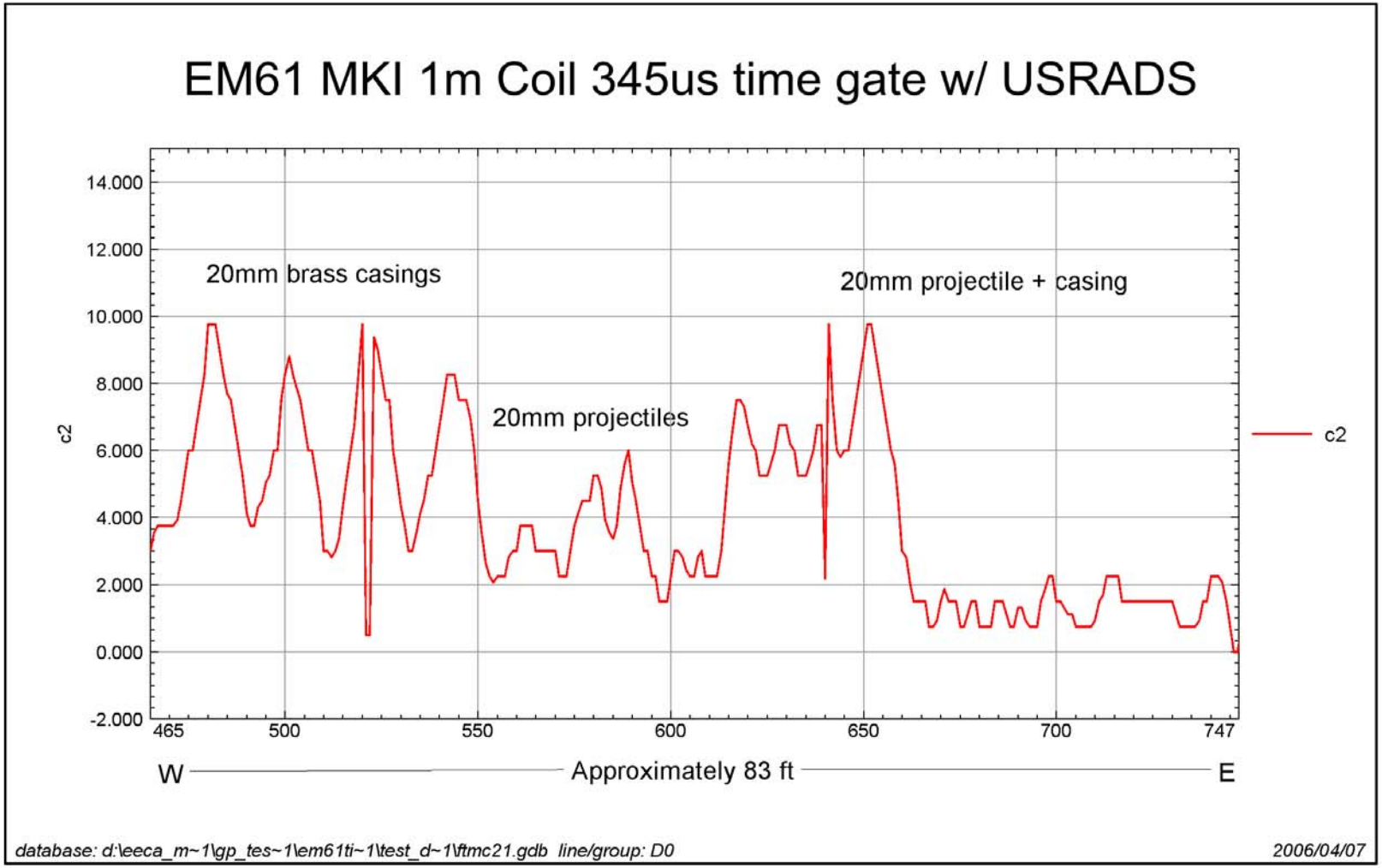
FWDN 561/06-95

FOSTER WHEELER ENVIRONMENTAL CORPORATION

| CLIENT: | | PROJECT: | | |
|---|---|---|---|---|
| SUBJECT: | | | | |
| REV# | 0 | 1 | 2 | SHEET: 3 OF |
| BY & DATE | 3/18/06 | | | OFS NO.: |
| CHKD & DATE | | | | CALC NO.: |




FWON 561/08-95


EM61 MKI 1m Coil 345us time gate w/ USRADS
20mm brass casings
20mm projectiles
20mm projectile + casing
c2
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
-2.000
465
500
550
600
650
700
747
W
Approximately 83 ft
E
database: d:\eeca_m~1\gp_tes~1\em61ti~1\test_d~1\ftmc21.gdb line/group: D0
2006/04/07

**FOSTER WHEELER ENVIRONMENTAL CORPORATION**

| CLIENT: | | | | | | | PROJECT: | |
|---|---|---|---|---|---|---|---|---|
| SUBJECT: Fort McClellan | | | | | | | | |
| REV# | 0 | | 1 | | 2 | | SHEET: 4 | OF |
| BY & DATE | 3/21/00 | | | | | | OFS NO.: | |
| CHKD & DATE | | | | | | | CALC NO.: | |

Late Morning

Ftmc21($^{+}_{b}$). dat

Tested USRADS w/ new EM61 time chip (346 μs)

- 1st walked same test setup w/ targets
- 2nd " " without targets

multiple passes (~8) for each test along test line

- 3rd walked same line w/o targets with polycorder only (put fids @ start/end of 85' line) FILE 7.g61
- 4th " " w/ polycorder ~~w/o~~ with targets in place FILE 8.g61
- 5th Analog test (2 readings/s) looked at intensity on polycorder from several 20mm projectiles and 20 mm projectile w/ casing. Intensity highest when long axis of item is ⊥ to coil edge (highest reading when coil edge over object, also)

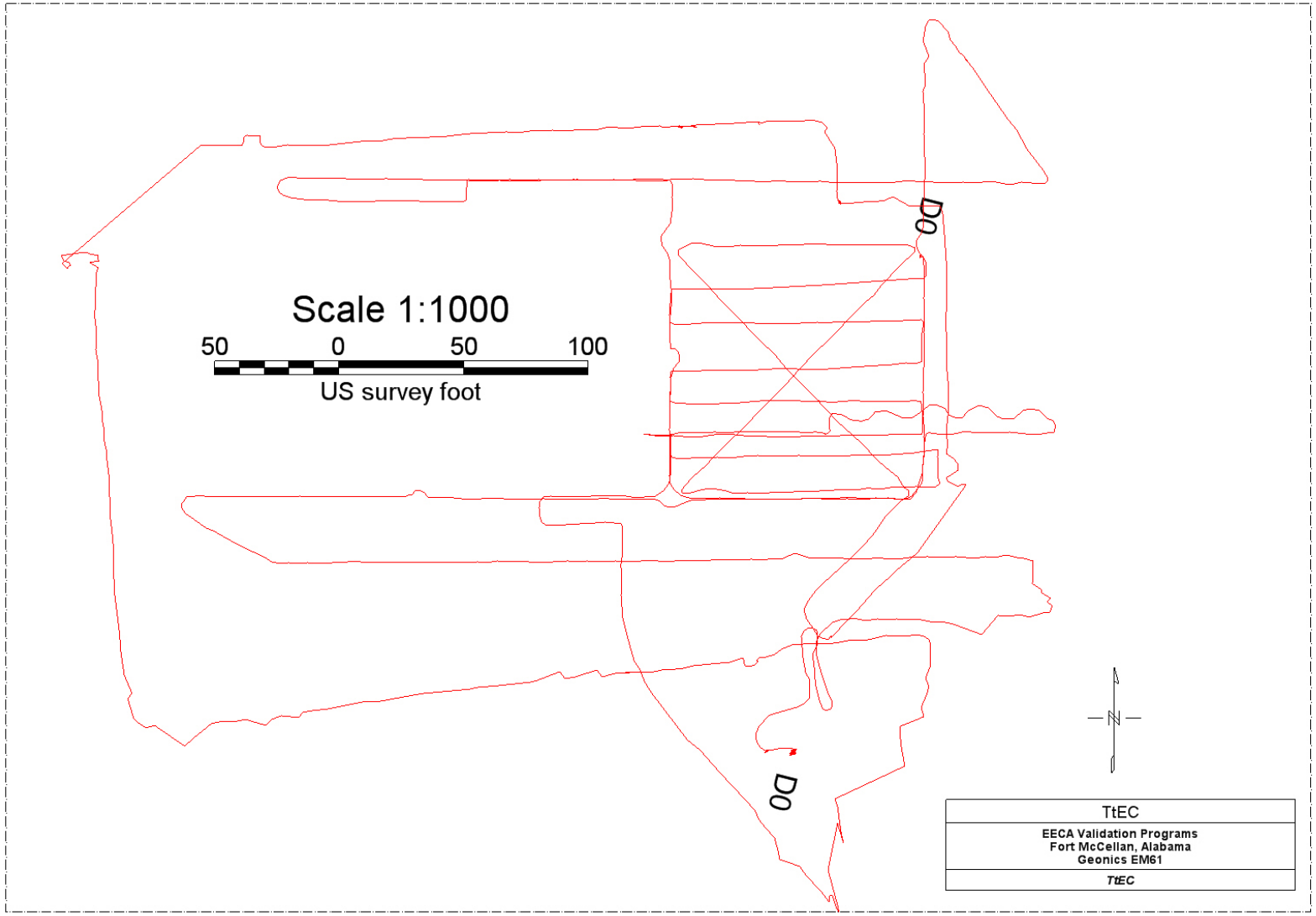
FWDN 581/08-95

# ATTACHMENT 4

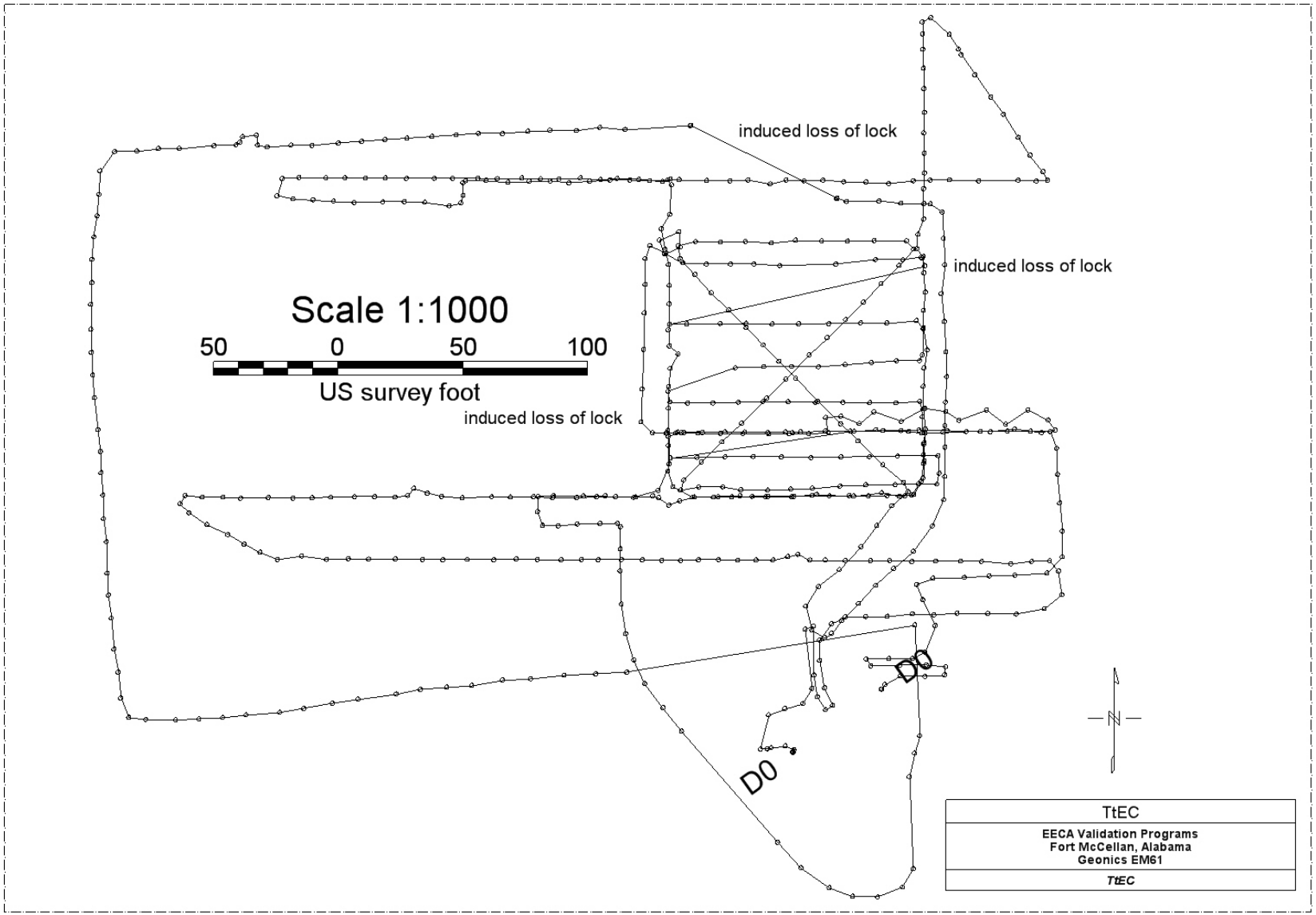
## EM61 MKI & USRADS, RTS, & GPS Positioning Tests

## Parade Field

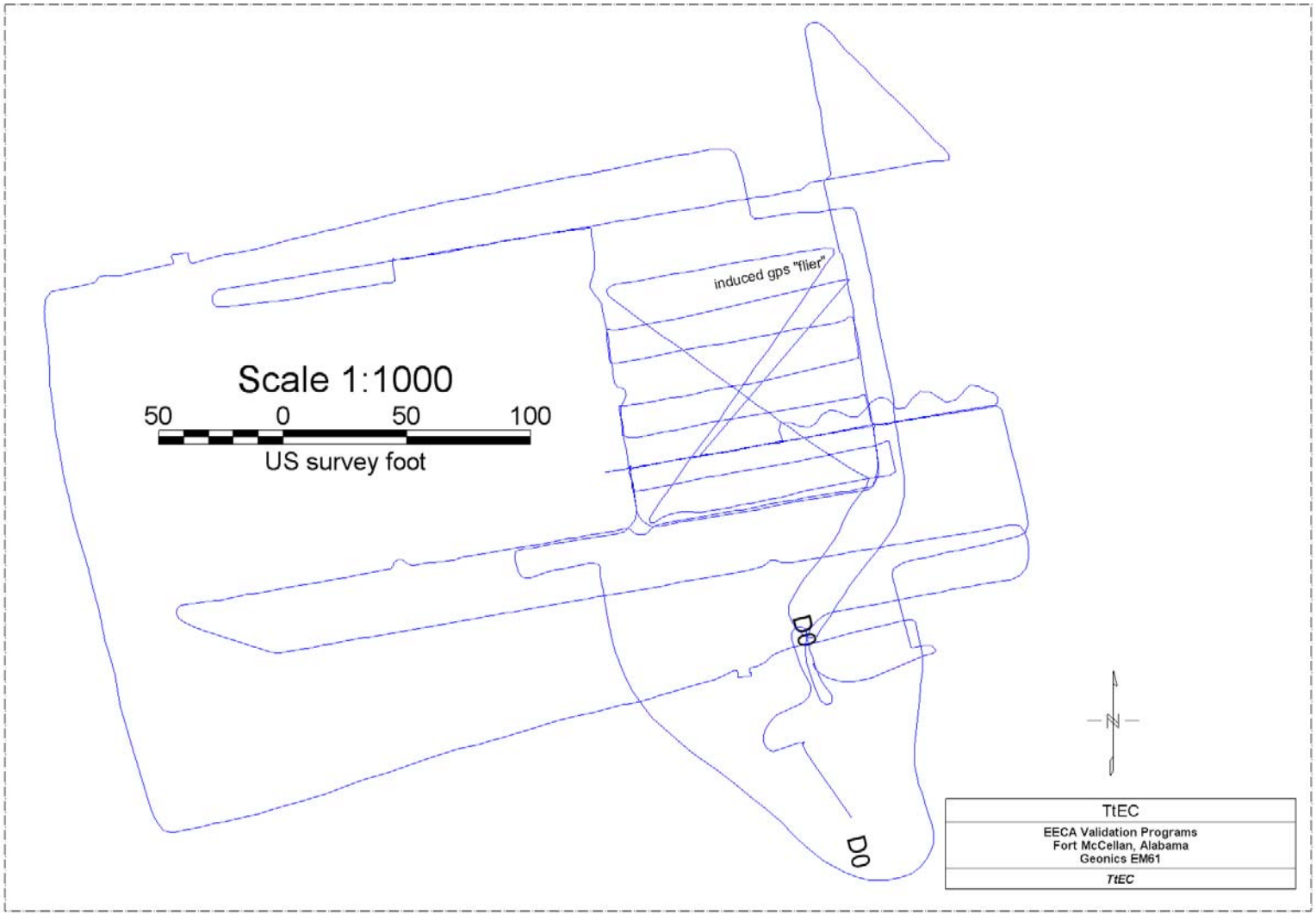
## December 2000




**USRADS Track**


induced loss of lock
induced loss of lock
Scale 1:1000
50
0
50
100
US survey foot
induced loss of lock
D0
D0
TtEC
EECA Validation Programs
Fort McClellan, Alabama
Geonics EM61
TtEC

**RTS Track**


induced gps "flier"
Scale 1:1000
50 0 50 100
US survey foot
D0
D0
N
TtEC
EECA Validation Programs
Fort McCellan, Alabama
Geonics EM61
TtEC

**DGPS Track**

Positioning sensors mounted on doghouse are DGPS antenna, USRADS crystal, and RTS prism. This setup was used to directly compare the accuracy, repeatability, and overall usability of all three of the stated positioning systems across a test course at the Parade Field.

# ATTACHMENT 5

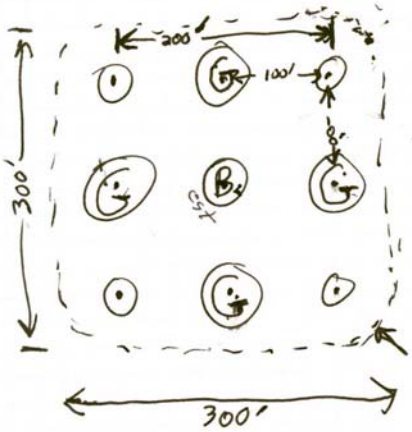
## USRADS Setup Information

## USACE Huntsville Communication

## December, 2002

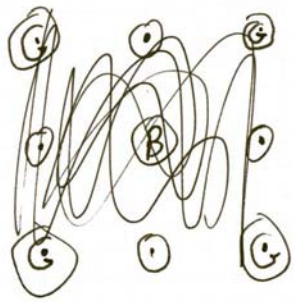
U . S . ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

| SUBJECT: | COMPUTED BY: | DATE: |
|---|---|---|
| | CHECKED BY: | DATE: |




FWEC
Limitations - 4 SR @ 135'
5 SR's @ 75'
9

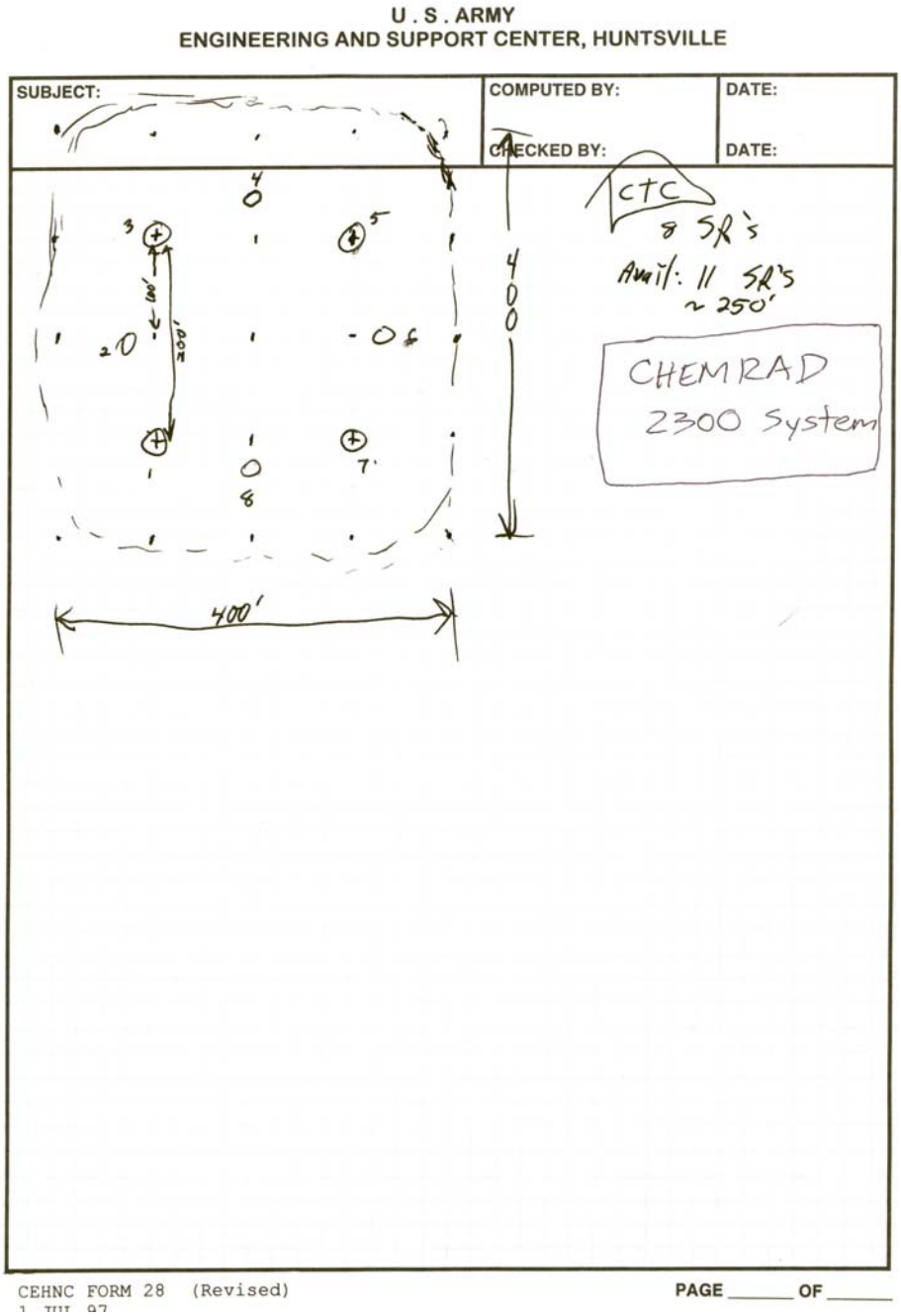
9 Fixed Recievers



CEHNC FORM 28 (Revised)
1 JUL 97

PAGE _____ OF _____

**USRADS optimum setup – "old" system**




**USRADS optimum setup - new (2300) system**

# ATTACHMENT 6

# Bravo EECA Geophysics QC & QA

# TtEC

# 2000-2002

## Fort McClellan EECA Quality Control (QC) and Quality Assurance (QA) Procedures for Bravo EECA Geophysics

The Quality Control (QC) and Quality Assurance (QA) procedures described below provide a review of Foster Wheeler Environmental's geophysical program for the UXO EECA at Fort McClellan. These procedures and accompanying documentation are also documented in the approved WP's for the Alpha, Bravo, and Charlie tasks.

### Bravo EECA QC Procedures-Sensors and Positioning Systems

The Bravo EECA utilized a Geonics' EM61 MKI full-meter coil with Chemrad's Ultra-Sonic Ranging and Data System (USRADS) positioning. Prior to the completion of each grid of the Bravo EECA, the following three major QC tests, in order, were performed in the field: (1) USRADS Positioning Check-Quality Control Point Check, (2) Static Background Test, and (3) Kinematic Response Test.

### USRADS Positioning Check-Quality Control Point Check

The USRADS Positioning Check requires that each team complete the following standard operating procedures prior to walking each grid: (1) compare the estimated the time of flight / speed of sound to the theoretical value and (2) compare the overall geometry of the setup visible in the Chemrad software to the field survey layout. After the USRADS system is "calibrated", both the estimated speed of sound and SR locations are compared to the survey data for the grid. Any major discrepancies (e.g., geometry visible on computer does not correlate with field layout) required a recalibration and/or re-setup of the USRADS receivers until a more reliable speed of sound and survey geometry were obtained. Once a setup is completed, all SR locations were demarcated with non-metallic pin flags in order to achieve repeatability between the acquisition and target reacquisition setups. The USRADS Positioning Check ensures proper system "calibration" prior to acquiring geophysical sensor data for each setup or grid.

To determine a more quantitative method of evaluating the overall correctness of each USRADS setup FW geophysicists implemented the Quality Control Point Check. For each setup at least 2-3 SR's were located over known control points (surveyed locations), and at least one SR was positioned at known location, but not fixed by the Chemrad software. This procedure allowed the SR at the unfixed (but known) location to be compared to the coordinates of the known location. Errors exceeding 3 ft at the QC point were addressed by adjusting the survey parameters such as SR setup location, or the receivers that are fixed within the Chemrad software. The setup and QC point data were also utilized by target reacquisition personnel to ensure repeatability between the data acquisition and target reacquisition phases.

Foster Wheeler geophysicists documented "noise" levels in the data recorded with the USRADS were acceptable by performing pre-project tests, analyzing the EM61 data during the Static Background Test collected prior to and at the end of each setup or grid, and analyzing the overall character of the data for each grid or setup. These data are documented in an MS Excel spreadsheet.

Static Background Test

The Static Background Test requires that each team complete the following standard operating procedures prior and subsequent to acquiring data for each setup or grid: Stand motionless for a minimum of 30 s with the coil at the appropriate height and level while collecting positioning and EM amplitude data. The Static Background Test exhibits the repeatability of the EM and positioning data. The field crew can determine if major problems exist prior to collecting data (positioning, signal amplitude, sample rate, extraneous noise sources, etc.), and the office processor(s) can qualitatively and quantitatively monitor the relative quality of the data between setups for the entire project. Tolerance +- 5 mV Channel 2. If outside, troubleshoot Chemrad equipment as per in-house training.

Kinematic Response Test

The Kinematic Response Test requires that each team complete the following standard operating procedures prior to acquiring data for each setup or grid: Walk back and forth a minimum of three times in opposite directions (i.e., ribbon pattern) across a linear metal object such as a fencepost, Schonstedt, or rebar. The Kinematic Response Test exhibits the repeatability of the EM data over a "standard" item, and exhibits the relative correctness of the positioning data to a pre-defined path. The information is also used during the processing of the data to ensure the data-recording lag by the system is accounted for. The Kinematic Response Test allows the field operators to qualitatively monitor major discrepancies in repeatability of the EM signal amplitudes and the positioning, and it allows the office processor(s) to qualitatively and quantitatively monitor the noise level and repeatability of the data over a "standard" item. Tolerance +- 1-2 samples for alignment. If outside, reprocess dataset.

**Quality Control (QC) Documentation**

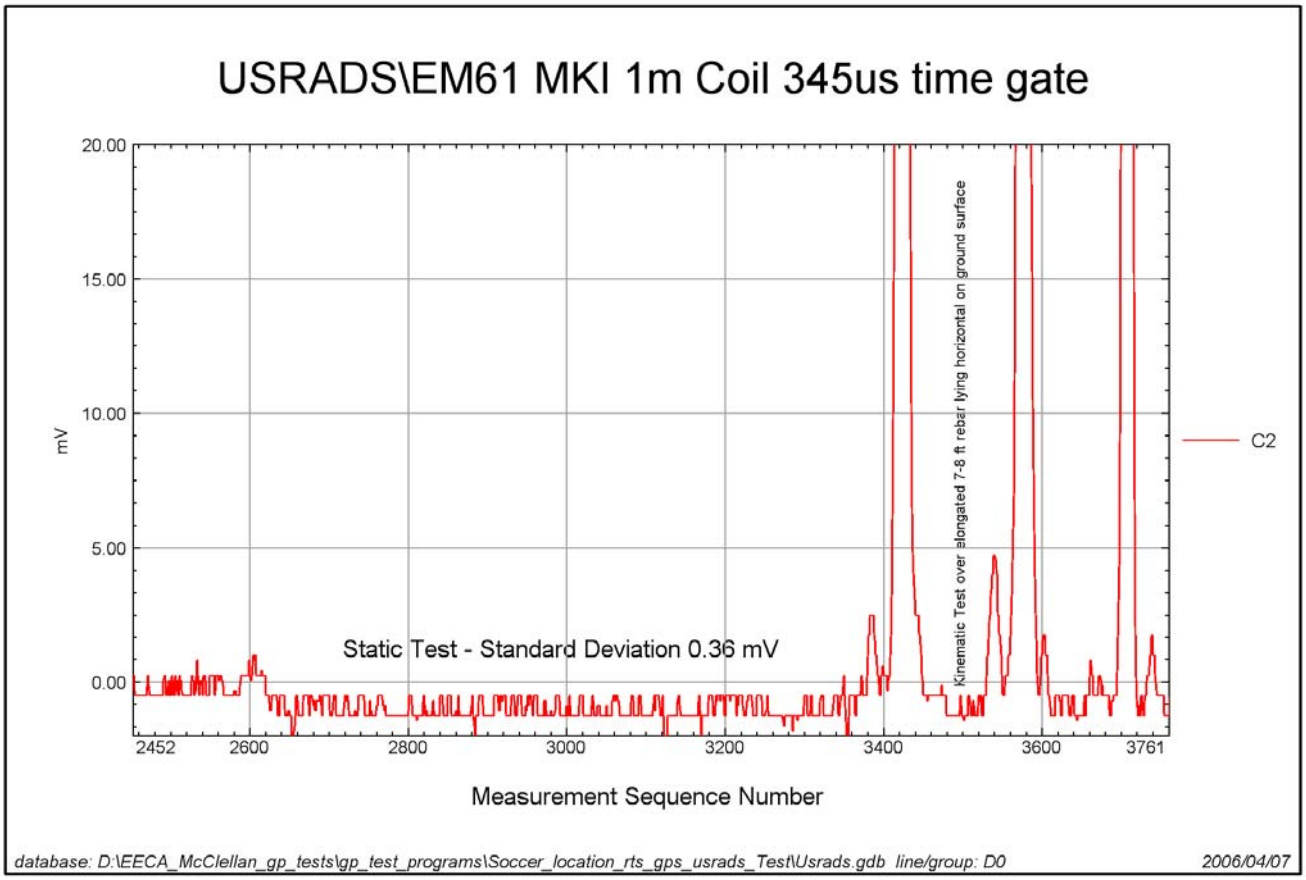
The Quality Control (QC) documentation sources, with their specific location(s) and format(s), are described below in order to document and validate Foster Wheeler Environmental's geophysical program at Fort McClellan for the UXO EECA.

**Bravo EECA QC Documentation**

The digital data documentation for the Static Background Test and Kinematic Response Tests conducted before and after each data collection setup or grid are contained in the raw and processed data files. The processed data file for each setup or grid is an ASCII space or comma delimited file with extension *.XYZ.

The digital data documentation for the USRADS coordinates are contained within the USRADS survey set-up file in ASCII format with extension *.sup. The USRADS setup information for each setup or grid is also documented on a field data sheet, which is located on-site at Fort McClellan. These data sheets also contain information on the site features, topography, soils, obstructions, Quality Control Check Point, etc.

All of the digital geophysical data (sensor and positioning) for each setup and grid are stored on the McClellan server and have also been delivered to the client geophysicists at the Army Corp of Engineers in Huntsville as per the WP.




**Static and Kinematic Test Example**

Geophysical data processing steps and procedures are documented in Oasis *.log files (ASCII format), as well as on processing sheets for each setup or grid. An MS Excel spreadsheet documents processing, interpretation, and intrusive data checks. This information is on-site at Fort McClellan.

**Quality Assurance (QA) Procedures - TtEC**

The Quality Assurance (QA) procedures are described below in order to provide an introduction Foster Wheeler Environmental's geophysical program at Fort McClellan for the UXO EECA.

Bravo EECA QA Procedures - TtEC

For the BRAVO EECA, targets were reacquired using the USRADS positioning system using the same coordinate information used for the original survey file. This information is documented in the (*.sup) file and the USRADS field sheet. After system calibration, the location "crystal" was placed over a known stake to verify that the set-up was repeatable.

Comparison of the items identified during the intrusive investigation to the geophysical signature was performed for > 90 % of the investigation. These data are documented in *.xls files.

Some grids were reacquired during target reacquisition activities with positioning system(s) not used to acquire the original geophysical data. Simplistic testing was performed by on-site personnel to validate the specific method used; the processes and results are documented and available on-site at Fort McClellan.

> 75 % of grids where intrusive activities were performed were re-evaluated by independent geophysicists at the Foster Wheeler Denver Processing Center.

Several background data responses were selected as target reacquire locations to determine the validity of the target reacquisition, excavation, and interpretation processes. These results are documented in the project database.

**Quality Assurance (QA) Documentation**

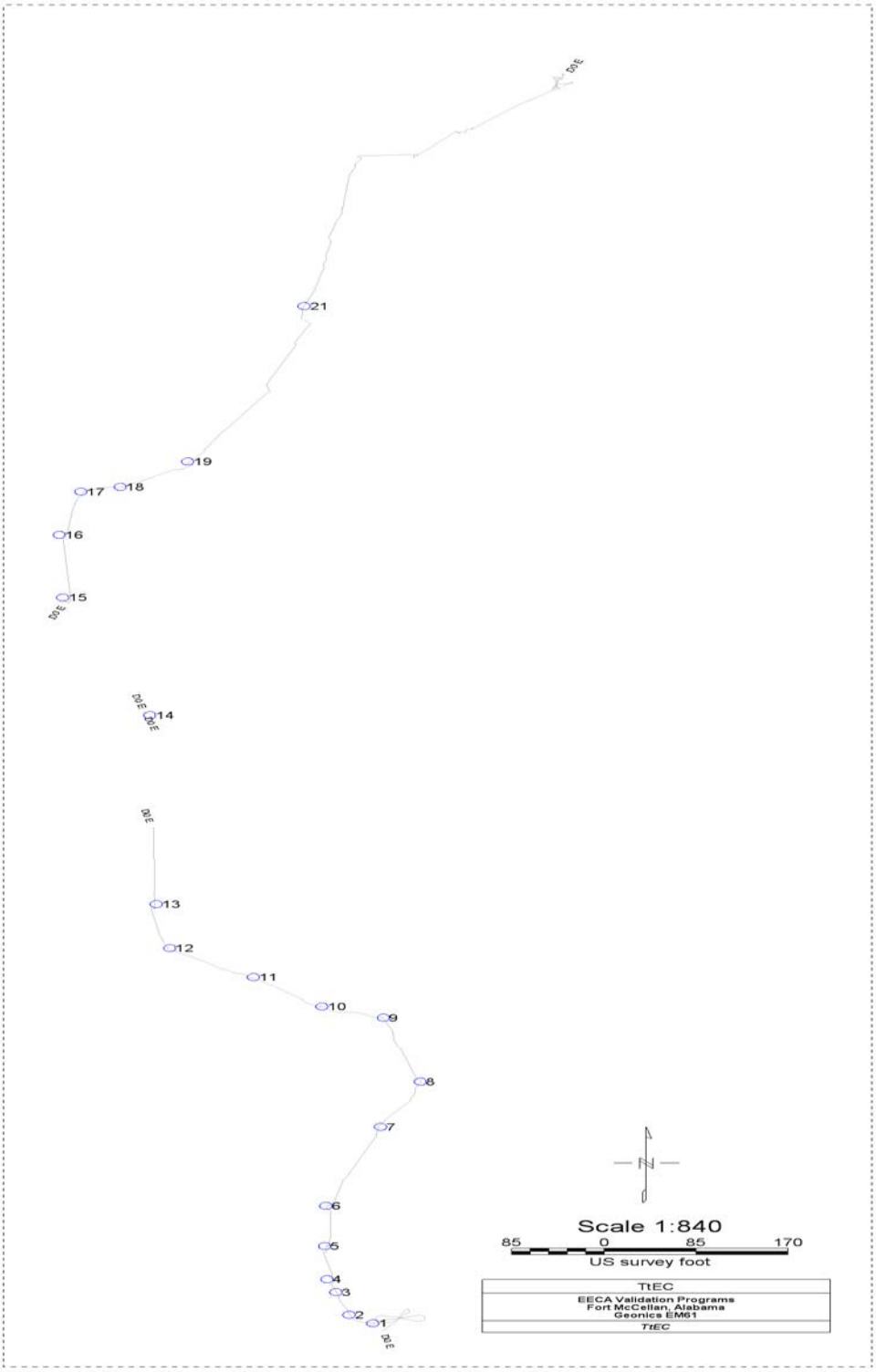
QA information is documented in several EXCEL spreadsheets for each EECA. These spreadsheets for each EECA color-code intrusive validation results for selected grids, processing-interpretation and independent re-evaluation of data, and data that were recollected. Documentation is located on the Fort McClellan server.

# ATTACHMENT 7

## 1D Transect Training w/ DGPS

## M 101 Parcel

## December 2000

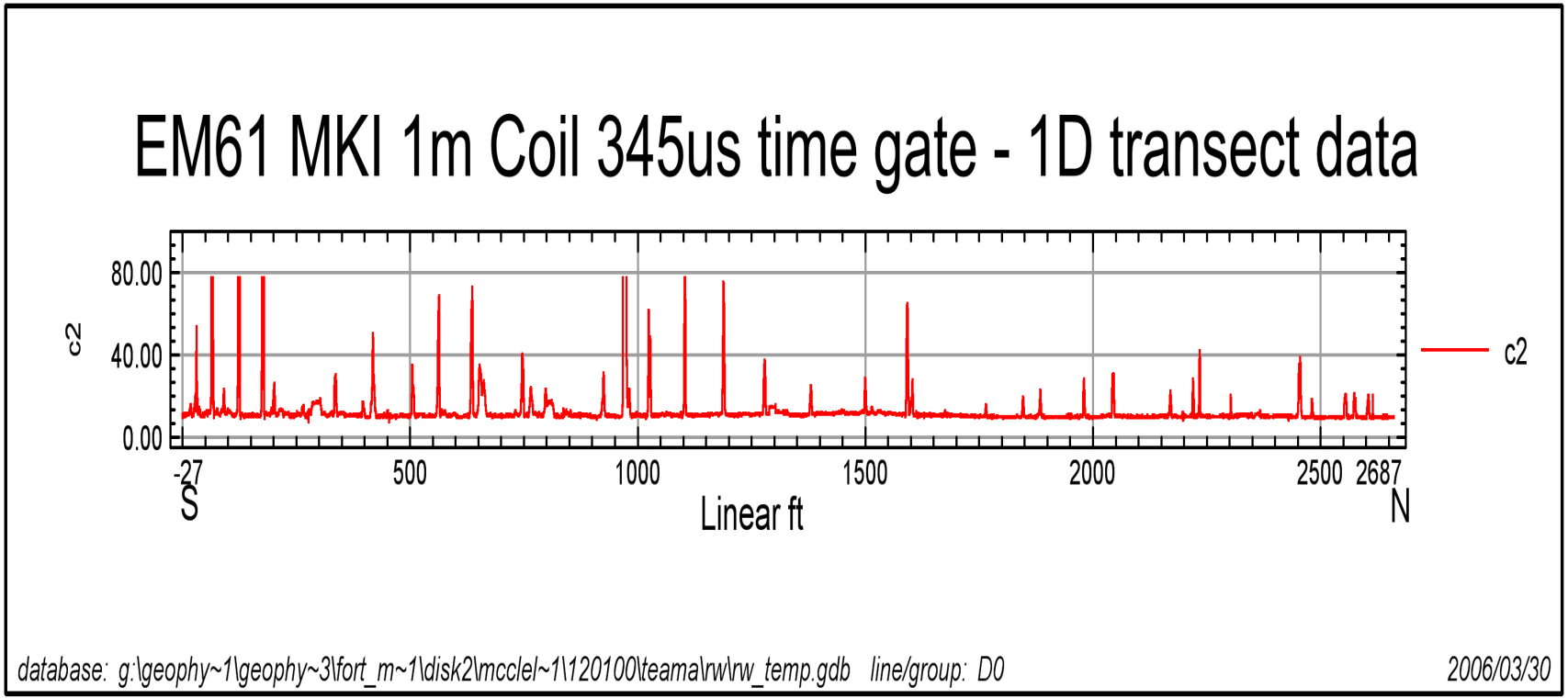



**1D Transect path (Post Processed DGPS) through M101 Densely Wooded Area w/ Waypoint Stakes**

| Stake | EASTING | NORTHING | HEIGHT | Q | StDev |
|---|---|---|---|---|---|
| 1 | 660587.818 | 1164563.152 | 809.336 | 1 | 0.025 |
| 2 | 660565.083 | 1164576.843 | 809.203 | 1 | 0.026 |
| 3 | 660552.542 | 1164614.151 | 806.324 | 3 | 1.163 |
| 4 | 660543.826 | 1164635.206 | 803.807 | 2 | 0.657 |
| 5 | 660541.674 | 1164689.356 | 803.124 | 5 | 5.633 |
| 6 | 660542.808 | 1164755.106 | 794.043 | 3 | 1.47 |
| 7 | 660595.318 | 1164884.351 | 789.683 | 4 | 2.067 |
| 8 | 660633.554 | 1164958.358 | 785.57 | 2 | 0.035 |
| 9 | 660598.035 | 1165062.828 | 781.026 | 1 | 0.044 |
| 10 | 660538.986 | 1165081.011 | 778.153 | 1 | 0.036 |
| 11 | 660473.188 | 1165129.145 | 777.286 | 1 | 0.038 |
| 12 | 660392.908 | 1165176.468 | 782.026 | 4 | 2.791 |
| 13 | 660379.934 | 1165248.538 | 773.527 | 5 | 2.802 |
| 14 | 660373.707 | 1165557.556 | 771.77 | 6 | 2.203 |
| 15 | 660290.134 | 1165748.949 | 770.575 | 5 | 1.595 |
| 16 | 660286.775 | 1165851.245 | 762.532 | 5 | 1.865 |
| 17 | 660307.594 | 1165922.134 | 766.708 | 4 | 4.359 |
| 18 | 660345.325 | 1165929.756 | 764.173 | 5 | 5.101 |
| 19 | 660410.043 | 1165971.428 | 758.583 | 5 | 3.739 |
| 21 | 660521.915 | 1166225.483 | 750.892 | 5 | 3.627 |

**1D Transect Waypoint DGPS Post Processed Solution Quality (Partially and Densely Wooded Area)**

**Standard deviation of measurements is meters; data were acquired for at least 60 seconds at each stake.**




**1D transect EM61 MKI w/ DGPS positioning data (post processed) in densely wooded area – M101 Parcel**

# ATTACHMENT 8

# USRADS / EM61 Two Man Tethered Carry

# Field Guidelines

# Fort McClellan

# December 2000

**USRADS and EM61 Data Acquisition Field Guidelines for the Alpha Project utilizing the Two-Person Tethered Carry**

*NOTE-THESE GUIDELINES WERE ALSO USED DURING THE BRAVO EECA*

(1.) Adequate data coverage for each grid:

- Walk lines parallel to, but outside of the grid at the beginning and at the end of the grid.

Reduction of "noise":

- Coil operators walk a minimum of 5 feet outside of the grid before making the turn. The back pack operator can then approach the coil and prepare for the next transect line. This procedure will prevent anomalies showing up at the edges of the grid that are the result of the data acquisition process.

(2.) There must be a minimum of THREE fixed points entered into the CHEMRAD software and one (or more, if possible-use two or more where you can) SR located at a known point <u>but not fixed</u> for QC purposes (i.e., SR at a known point but not entered as a fixed point in the Chemrad survey software). After the survey software locates the SR's, the accuracy of QC point(s) should be assessed. If the deviation is more than 1.5-2 ft in the x and/or y position, the operator should, if possible, perform any simplistic and obvious changes to setup that will increase the accuracy. Deviations from the QC point larger than 3 ft indicate that more extensive changes to the setup MAY need to be performed.

The SR(s) serving as a QC point(s) will be documented on the USRADS field data acquisition sheet.

THE SAME FIXED POINTS and QC POINT(S) USED DURING DATA ACQUISITION WILL BE USED FOR TARGET REACQUISITION when utilizing the USRADS for target reacquisition.

PROCEDURE 2 is critical and is INTIMATELY RELATED TO ACHIEVING SUCCESS IN TARGET REACQUISITION.

(3.) Where relative coordinates are used (e.g., in areas of excessive topography, or lack of current survey data) the most southwestern point is the origin (0E, 0N). COORDINATE VALUES ALWAYS INCREASE FROM THIS POINT TO THE NORTH AND EAST AND DECREASE TO THE SOUTH AND WEST. If there is confusion please contact Nate Martin or a site geophysicist for clarification.

(4.) Record the specific SR number and location for each setup. SR's not at known points should have pin flags placed underneath them. When and if necessary during target reacquisition, the exact same SR should be positioned in the exact same location during target reacquisition activities.

(5.) If Channel 1 or Channel 2 readings of the EM-61 are outside ± 30 mV, the coils may need to be adjusted at a site to be determined under controlled site conditions. Don't adjust the coils using the backpack knobs prior to or especially during your survey. This procedure can have disastrous consequences during the interpretation.

(6.) Only use the 13 ft cables (USRADS pinger to USRADS datapack) while collecting data in a tethered carry. Team members work together to maintain a distance of at least 7-8 ft between the coil and backpack operators while walking along the transect lines as well as while performing turns at the end of the lines.

(7.) All three PC cards corresponding to the three data collection teams must be turned into the Data Manager, Leah Nerem, at the end of each day.

(8.) File Directory, data management, specific Chemrad software configurations, and file-naming conventions should be consistent for each USRADS team and/or each data acquisition computer. Talk to Nate Martin if you have questions concerning these topics.

(9.) SOME OF THESE CONVENTIONS WILL CHANGE THROUGHOUT THE COURSE OF THE PROJECT BASED ON SITE SPECIFIC CONDITIONS AND OCCURRENCES. Everyone associated with data acquisition should see it as part of their job to employ and refine these conventions (where necessary as determined by site specific and/or project changes), as well as develop innovative procedures and techniques in the field to improve the quality and cost effectiveness of the overall process.

*ATTACHMENT 5-2*
*TEST PLOT DATA*
*ANNISTON EASTERN BYPASS*

## 5.2 TEST CRITERIA

The following criteria was used:

| | |
|---|---|
| Equipment: | EM61 (Hand-held mode)<br>Schonstedt 52CX<br>Vallon VMX-2 |
| Target: | 37mm Projectile |
| Depth: | Surface<br>6"<br>12"<br>18"<br>24" |
| Aspect: | Vertical in a nose down position |
| Spacing: | 10' between targets |
| Sensor Head: | Placement within 1" of surface |
| Detection: | EM61 (Hand-held mode):<br>Assured if numerical values are a minimum of +4 above background values.<br><br>Can also be determined audio signal.<br><br>Schonstedt 52CX:<br>Determined by audio signal only.<br><br>Vallon VMX-2<br>Determined by audio signal only. |

*ATTACHMENT 5-2*
*TEST PLOT DATA*
*ANNISTON EASTERN BYPASS*

## 5.3 PROCEDURES

EM61 (Hand-held mode): An initial sweep of the area was conducted to gather background readings. The targets were then placed to depth and a second sweep of the area was made using a 4' N-S and E-W pattern. Numerical values for the EM-61 (hand-held mode) were collected using an Allegro data recorder and detection capabilities were reevaluated using the EM61' (hand-held mode) audio feature. The test data was dowloaded, evaluated and recorded.

Schonstedt 52CX : An initial sweep of the area was conducted to ensure that the test area was clear of interference. The targets were then placed to depth and a second sweep of the area was made using a 4' N-S and E-W pattern. Detection was determined by using the audio feature of the equipment.

Vallon VMX-2: ***Not Yet Available.***

## 5.4 SUMMARY

The test results indicate that the EM61 (Hand-held mode) is capable of detecting the 37mm Projectile to a depth of 18".

The Schonstedt 52CX is capable of detecting the 37mm projectile to a depth of 24".

Test data for the Vallon VMX-2 is not yet available. The Vallon VMX-2 will not be used until the detection depth is evaluated.

## 6.0 REFERENCES

USACE EM1110-1-4009, Table 7.3, dated 23 Jun 00

## *ATTACHMENT 5-2*
## *TEST PLOT DATA*
## *ANNISTON EASTERN BYPASS*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/29/2000 | EM61 (Hand-held mode) | 37mm Projectile | Vertical | Surface | -3 | -2 | Surface | >70 | >37 | Yes | TARGET DETECTED |
| 11/29/2000 | EM61 (Hand-held mode) | 37mm Projectile | Vertical | Surface | -3 | -2 | 6" | 31 | 15 | Yes | TARGET DETECTED |
| 11/29/2000 | EM61 (Hand-held mode) | 37mm Projectile | Vertical | Surface | -3 | -2 | 12" | 22 | 10 | Yes | TARGET DETECTED |
| 11/29/2000 | EM61 (Hand-held mode) | 37mm Projectile | Vertical | Surface | -3 | -2 | 18" | 12 | 5 | Yes | TARGET DETECTED |
| 11/29/2000 | EM61 (Hand-held mode) | 37mm Projectile | Vertical | Surface | -3 | -2 | 24" | <3 | <1 | No | [illegible] |
| 11/29/2000 | Schonstedt 52CX | 37mm Projectile | Vertical | NA | NA | NA | Surface | NA | NA | Yes | TARGET DETECTED |
| 11/29/2000 | Schonstedt 52CX | 37mm Projectile | Vertical | NA | NA | NA | 6" | NA | NA | Yes | TARGET DETECTED |
| 11/29/2000 | Schonstedt 52CX | 37mm Projectile | Vertical | NA | NA | NA | 12" | NA | NA | Yes | TARGET DETECTED |
| 11/29/2000 | Schonstedt 52CX | 37mm Projectile | Vertical | NA | NA | NA | 18" | NA | NA | Yes | TARGET DETECTED |
| 11/29/2000 | Schonstedt 52CX | 37mm Projectile | Vertical | NA | NA | NA | 24" | NA | NA | Yes | TARGET DETECTED |
| | Vallon VMK-1 | 37mm Projectile | Vertical | NA | NA | NA | | NA | NA | | DATA UNDER REVIEW |
| | Vallon VMK-1 | 37mm Projectile | Vertical | NA | NA | NA | | NA | NA | | DATA UNDER REVIEW |
| | Vallon VMK-1 | 37mm Projectile | Vertical | NA | NA | NA | | NA | NA | | DATA UNDER REVIEW |
| | Vallon VMK-1 | 37mm Projectile | Vertical | NA | NA | NA | | NA | NA | | DATA UNDER REVIEW |
| | Vallon VMK-1 | 37mm Projectile | Vertical | NA | NA | NA | | NA | NA | | DATA UNDER REVIEW |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Rev 2, 2/24 | | | | | | | | |
| | | Sat | Sun | Mon | Tue | Wed | Thu | Fri |
| | | 2/24 | 2/25 | 2/26 | 2/27 | 2/28 | 3/1 | 3/2 |
| J. ENNIS | SSHO/SM | | | DO6/1 | DO6/1 | DO6/1 | DO6/1 | |
| S. NEILL | SSHO/SM | DO-6 | DO-6 | Training | Training | Training | Training | |
| P. SAVEALL | UXOSO | | | DO 6/1 | DO6/1 | DO6/1 | DO6/1 | |
| B. CRAIG | UXOQC | | | DO-6 | DO6/1 | DO6/1 | DO6/1 | |
| N. MARTIN | UXO-3 | | | Training | Training | Training | Training | |
| K. WRIGHT | UXO-3 | | | LAW DR | LAW DR | LAW DR | LAW DR | |
| M.REED | UXO-3 | | | DO-1 | DO-1 | DO-1 | DO-1 | |
| R.TOPHAM | UXO-3 | | | Dozer | Dozer | Dozer | Dozer | |
| J. KARKOSZKA | UXO-3 | | | Trees | Trees | Trees | Trees | |
| J. FORTNEY | UXO-3 | | | LAW DR | LAW DR | LAW DR | LAW DR | |
| M. VARRATO | UXO-3 | | | DO-1 | DO-1 | DO-1 | DO-1 | |
| M. YOUNG | UXO-3 | | | Training | Training | Training | Training | |
| D. ISENBERG | UXO-3 | | | Trees | Trees | Trees | Trees | |
| J. COCCHIOLA | UXO-3 | | | Training | Training | Training | Training | |
| R. PAULETTE | UXO-3 | | | Training | Training | Training | Training | |
| J. SOTH | UXO-2 | | | Training | Training | Training | Training | |
| R. ROOSMA | UXO-2 | | | Data | Data | Data | Data | |
| D. BLACKWELL | UXO-2 | | | Training | Training | Training | Training | |
| T. CLARK | UXO-2 | Law Dr | Law Dr | Log | Log | Log | Log | |
| M. FILIPOWICZ | UXO-2 | | | BW escort | BW escort | BW escort | BW escort | |
| S. HARSH | UXO-2 | | | Trees | Trees | Trees | Trees | |
| D. TAYLOR | UXO-2 | LAW DR | LAW DR | Dozer | Dozer | Dozer | Dozer | |
| R. ELLINGTON | UXO-2 | OFFSITE | OFFSITE | OFFSITE | OFFSITE | OFFSITE | OFFSITE | OFFSITE |
| M. LEAK | UXO-2 | | | Training | Training | Training | Training | |
| A. O'SHAUGHNASSEY | UXO-2 | | | Training | Training | Training | Training | |
| M. BERRY | UXO-2 | | | Trees | Trees | Trees | Trees | |
| N. METZLER | UXO-2 | | | Trees | Trees | Trees | Trees | |
| B. ADDISON | UXO-2 | | | Trees | Trees | Trees | Trees | |
| D. LESHKO | UXO-2 | | | Dozer | Dozer | Dozer | Dozer | |
| T. WRAGE | UXO-1 | | | Training | Training | Training | Training | |

EHS 1-11 ATTACHMENT C

# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## EHS TRAINING COURSE SIGN-IN SHEET

| ☑Name of Course: USRADS + associated Equipment | ☑Location: Ft McClellan | Course Duration: 60 hrs | ☑Date: 21 Feb - 29 Feb |
|---|---|---|---|

| Topics Covered (list or attach agenda): | |
|---|---|
| 1. Kawasaki Mule | 3. USRADS location System |
| 2. EM61 | 4. LEICA GPS 500 Series |
| | 5. |

| ☑Instructors: Instructor signature authorizes | | |
|---|---|---|
| | 1. (Print Name) Nate Martin | 1. (Sign Name) |
| | 2. (Print Name) Mel Young | 2. (Sign Name) |
| | 3. (Print Name) | 3. (Sign Name) |

ATTENDEES

| ☑ *Employee Number | ☑Print Name | ☑Sign Name | Job Title | Location to mail certificate | ☑Grade (filled out by instructor only) Grade / Initials |
|---|---|---|---|---|---|
| 1. 14584 | Ty WIAGE | | UXO I | Ft McClellan | |
| 2. 14904 | O'SHAUGHNASSEY, Anthony | | UXO TECH II | Ft McClellan | |
| 3. 14757 | Harsh Steve | | UXO II | Ft McClellan | |
| 4. 15000 | PAULETTE, REB | | UXO TECH III | FT MCCLELLAN | |
| 5. 14523 | Young, MEL | | UXO III | Ft. McClellan | |
| 6. 14993 | LEAK, MARTY | | UXO II | FT McCLELLAN | |
| 7. 14760 | Blackwell David | | UXO II | Ft McClellan | |
| 8. 14134 | Cocchiola Jim | | CLXOS | Ft McClellan | |
| 9. 14627 | Smith, Jason | | Tech 2 | Ft McClellan | |
| 10. 13509 | MARTIN, Nate | | UXO III | FT McClellan | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |

*Note: If you do not have an employee number, please enter the last 4 digits of your Social Security Number. If a new hire and you do not have employee number please enter NH and the last 4 digits (e.g. NH0000) of your Social Security Number.

☑Failure to provide all necessary information will hold up training certificate distribution.

Revision Date 04/04/00

# EHS 1-11 ATTACHMENT C

## FOSTER WHEELER ENVIRONMENTAL CORPORATION

### EHS TRAINING COURSE SIGN-IN SHEET

| ☑Name of Course: USRAD BASICS | ☑Location: | Course Duration: 2 HRS | ☑Date: 2 AUG 2001 |
|---|---|---|---|

| Topics Covered (list or attach agenda): | 3. TROUBLESHOOTING |
|---|---|
| 1. THEORY | 4. |
| 2. SET UP | 5. |

| ☑Instructors: Instructor signature authorizes | 1. (Print Name) CHRIS W. WISEMAN | 1. (Sign Name) [signature] |
|---|---|---|
| | 2. (Print Name) | 2. (Sign Name) |
| | 3. (Print Name) | 3. (Sign Name) |

**ATTENDEES**

| ☑ *Employee Number | ☑Print Name | ☑Sign Name | Job Title | Location to mail certificate | ☑Grade (Filled out by instructor only) Grade | Initials |
|---|---|---|---|---|---|---|
| 1. 15212 | JEFFREY S. CROZIER | [signature] | UXO III | ANNISTON, AL FT. McCLELLAN | | |
| 2. 15161 | CHRISTOPHER A. BRYANT | [signature] | UXO III | FT. McCLELLAN, ANNISTON | | |
| 3. 14991 | Brian K Gentry | [signature] | UXO II | FT McClezcsn | | |
| 4. 15005 | DAVE LESHKO | [signature] | UXO II | FT McClellan | | |
| 5. 15013 | GRADY BENDEL | [signature] | UXO III | FORT McCLELLAN ANNISTON ALA | | |
| 14984 6. 14984 | DAVID ISENBERG | [signature] | UXO III | FT. McCLELLAN | | |
| 7. 14752 | Ron Ellington | [signature] | UXO II | Ft. McClellan | | |
| 8. 14994 | NATHAN METZLER | [signature] | UXO II | FT McCLELLAN | | |
| 9. 15010 | Angel L. James | [signature] | UXO II | Ft. McClellan | | |
| 10. 14919 | Anthony O'SHAUGHNASSEY | [signature] | UXO II | FT McClellan | | |
| 11. 15003 | KENT TIBBITTS | [signature] | UXO III | FT. McCLELLAN | | |
| 12. 14759 | Mike Filipowicz | [signature] | UXO II | FT McClellan | | |
| 13. 14992 | Todd Berry | [signature] | UXO II | FT McClellan | | |
| 14 15202 | DAVE FLUHARTY | [signature] | UXO III | FT McClellan | | |
| 15 | | | | | | |
| 16 | | | | | | |

*Note: If you do not have an employee number, please enter the last 4 digits of your Social Security Number. If a new hire and you do not have employee number please enter NH and the last 4 digits (e.g. NH0000) of your Social Security Number.

☑Failure to provide all necessary information will hold up training certificate distribution.

Revision Date 04/04/00

**Attachment 5-3**
**Training Records**

Schedule Geophysical Training 2000

Team 1

- TimMannering
- Brian Brunette
- Richard Funk

Team 2

- Tony Schroer
- Leah Nerem
- Erin Gorman
- Bill Everham

Wednesday, November 29th

- Introductions
- H&S and site briefing (Jim Ennis and Mike Moore) **730-10am**
- Equipment set-up (EM61, gps, doghouse, etc.)
- Computer software evaluations and set-up
- M 101 site reconnaissance, site radio noise evaluation (UHF scanner)
- GPS base station set-up
- Remote base station(s) set-up
- Generate survey grids (4- 100 ft x 100 ft) w/ gps and conventional methods
- Ribbon walk target placement, grid target placement (surface targets only)
- Information systems management (upload waypoints, grid corners, etc.)

Thursday, November 30th

- Team 1 ribbon walk and grid (GPS)
- Team 2 grid (USRADS-Steve N)
- Data Processing/Analysis
- Information Systems Management

Friday, December 1st

- Team 1 grid (GPS) and robotic total station evaluation
- Team 2 grid (USRADS-Steve N)
- Data Processing/Analysis
- Information Systems Management

Saturday, December 2nd

- Team 2 ribbon walk and grid (GPS)
- Team 1 grid (USRADS-Tim M))
- Data Processing/Analysis
- Information Systems Management
- Early day (~ 3p)
- Dinner and project-related "lessons learned"

Sunday, December 3rd

- Team 2 grid (GPS) and robotic total station evaluation
- Team 1 grid (USRADS-Tim M)
- Data Processing/Analysis
- Information Systems Management

Monday, December 4th

- Team 1 (+ Tony) target reacquisition-ribbon walk and grid (gps)
- Team 1 gps evaluation (vegetation)
- Data Processing/Analysis (specific to advanced gps processing)
- Tabulation of information/results (accuracy of positioning, etc.)
- Information Systems Management (Leah, Erin, Bill E – all day)

Tuesday, December 5th

- Discussion of all sensor results and necessary system improvements (data acquisition)
- Additional acquisition of field data based on discussion (if necessary)
- EM61 field testing under controlled conditions (1 m, 0.5 m, time gates, target orientation, etc.)
- Development of data acquisition platforms (in-field "noise" analysis for ancillary equipment-USRADS, gps, tethered carry, 1 man carry, litter carry, etc.)
- Information Systems Management (Leah, Erin, Bill E – all day)
- Discussion of company/geophysics group organization
- Discussion on upcoming projects

Wednesday, December 6th

- Case Histories (Project test programs)
- Necessary system improvements (processing/analysis/information systems/project roles and responsibilities)
- Tasking of responsibilities for designated areas of improvement
- Demobilization of equipment
- Distribution of data
- Tasking of SOP's for specific equipment and processes

General

Plan on working from 7a-5p each day
There may be some processing/analysis and group discussions after these times

Bring acceptable footwear (non-steel toe or shank, rugged boots, water proof if possible)
Bring approved eye protection

Be prepared for weather from 60-70's and sunny to 30-40's, windy and VERY WET (bring appropriate clothing)
Bring your personal H&S paper trail (40 hr, 8 hr refresher, physician's statement, etc.)
Bring a laptop computer if you have one

# APPENDIX E

## QUALITY ASSURANCE AUDIT EVALUATION

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**APPENDIX E**

# Quality Assurance Audit Evaluation

# On

# Foster Wheeler Environmental Corporation

# Digital Geophysical Survey Results

# For The Bravo Area EECA of Ft. McClellan

# Anniston, Alabama


Jon A. Durham - Geologist
Robert J. Selfridge – Chief Geophysicist

U.S. Army Corps of Engineers

Engineering and Support Center, Huntsville

CEHNC-ED-CS-G


**February 25, 2003**

Revision July 21, 2006

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**2.0 Introduction**

**3.0 Quality Assurance Audit Elements**

**3.1 Geophysical Prove-out Results**

**3.2 Government Field Oversight of Data Acquisition and Data Processing Operations**

**3.3 Government Review of Digital Geophysical Data**

**3.4 Comparison of Excavation Results with Geophysical Data Results**

**3.5 Government QA Field Oversight**

**4.0 Quality Assurance Audit Summary**

**ATTACHMENT 1 Government Geophysical QA Maps of Select areas within the Study Area.**

**ATTACHMENT 2 Daily Quality Assurance Reports for Additional Transects in NFA Area.**

## 1.0 Executive Summary

A Government Quality Assurance Audit was performed on the UXO Geophysical Investigation Process performed on the Bravo area of land at Ft. McClellan in Anniston, Alabama. The Bravo area encompasses approximately 3,325 acres in the southeastern portion of Fort McClellan. Bravo comprises a large portion of the Redevelopment Area. Both grids and transects were surveyed at Bravo by EM61s and mag and flag, respectively. The area is moderately to heavily wooded with level to mostly moderate steep slopes. A portion of the area is cleared from the various activities at the base. Numerous paved and graveled roads exist within the study area. This report documents the specific processes used to ensure that the Product delivered by the contractor meets the projects Data Quality Objectives as outlined in the Task Order. This audit concentrated on the following four (4) major Quality Control Elements to verify acceptable contractor performance:

1.) Acceptable Geophysical Prove-out Results
2.) Passed Government Field Oversight Inspection of Data Acquisition and Data Processing Operations
3.) Successfully passed Government Review of Digital Geophysical Data
4.) Satisfactory Comparison of Excavation Results with Geophysical Data Results

The contractor was successful in meeting all of these Quality Control Elements although several data quality issues were addressed during the investigation process. Improvements in field procedures, data processing and notification of error correction were made during the project resulting from Government Geophysical QA observations, namely data processing.

## 2.0 Introduction

The purpose of this Government Quality Assurance Audit is to document the specific processes used and the results attained for the Ft. McClellan Alabama – Bravo EECA - Ordnance and Explosive Geophysical Investigation. The general objective of the geophysical investigations was to efficiently characterize the metallic targets and assist in delineating areas of potential OE concern while complying with applicable laws, regulations, and sound technical practices. This audit evaluates the effectiveness of the Contractors Quality Control Program, processes, and compliance of work-by-others.

## 3.0 Quality Assurance Audit Elements

The Government Geophysical Quality Assurance Inspection Audit provides a documentable process that effectively monitors the contractors' performance in the areas of;

a.) Initial data acquisition, processing, and interpretation

b.) Target anomaly reacquisition and excavation.

The Inspection Audit is a multi-layered approach that verifies whether the contractor's team is performing the OE Detection and Characterization operations to an acceptable standard. Any failure resulting from this audit by the contractor will result in a detailed review of the affected Data Quality Control Elements followed by immediate remediation of the identified failures. This Audit concentrated on four (4) major Quality Control Elements to verify acceptable contractor performance.

### 3.1 Geophysical Prove-out Results

The Contractor was selected for the Ft. McClellan Project in the spring of 1999 by performance-based contracting based in part for their superior performance on the Demonstration Test Grid. This test grid was located adjacent to a target area within Range 16 and consisted of both existing ordnance and ordnance seeded on the grid by the Huntsville Corps of Engineers. Foster Wheeler Environmental Corporation (FWENC) finished first in this competition against three other Finalists (a total of 50

companies competed for this award). This Demonstration grid was used as the Geophysical Prove-Out for the work performed by the FWENC in the Spring/Summer of 2000. No report was required under the terms of the Task Order. Although details of the Procurement action are still procurement sensitive, a summary of this contractors result was that 33 of the 40 seeded items were detected by this contractor. The location accuracy was 28 of these items were within 0.5 meters, with the final 5 items being within 1 meter. The depth accuracy of this contractor was 20 items determined within 10 cm of the actual depth. Similar results were achieved for the non-seeded "real ordnance items" located within the evaluation grid. This evaluation was performed before the 11X depth rule was determined and most (if not all) of the non-detected items were buried below this 11X depth. The results of this performance evaluation is what led USAESCH to investigate further these results to see if this relationship of depth of detection was consistent across the sites located in the contiguous United States. Analysis of the additional sites revealed that this is indeed a technological limitation with the currently available commercial detectors and was used to develop the current minimum required depth of detection standard for the contract Geophysical DID.

In addition, Equipment testing was performed by FWENC on a local FWENC installed test grid that was used to evaluate equipment and train personnel and was used during the Bravo EECA.

## 3.2 Government Field Oversight of Data Acquisition and Data Processing Operations

The Huntsville Corps of Engineers Chief Geophysicist performed three separate field oversight operations during the Bravo EECA geophysical mapping project. The first field oversight was performed concurrently with a request from the contractor to assist in solving a noise issue associated with the USRADs navigation system. The problem appeared in

the EM61 data as a temporal interference noise spike, either positive or negative, that appeared at three different respective periods on the three geophysical mapping systems. The periods for the spikes ranged from a minimum of 26 seconds to a maximum of 84 seconds. Three days of systematic diagnostic testing performed on-site with the Chemrad President (USRADs manufacturer) assisting identified an electronics impedance mismatch between the crystal driver boards and the rf communications and counter boards of the USRADs data packs. During fault diagnosis, the systems crystal driver boards were swapped between different systems and the noise level dropped below the 2 mV acceptable threshold. This resolved the noise issue but the USAESCH Geophysical DID was modified for all contractors to perform a minimum 3-minute static test instead of the former 1-minute static test to insure that at least 2 instances of this interference would be collected and easily identified if it ever occurred again. The repair of this technical problem resulted in greater productivity due to the simple fact that the number of grids that had to be redone because of QC rejection due to unacceptable system noise dropped dramatically.

The second field oversight revealed no Quality Control issues but production issues that needed addressed. The contractor was not making use of the benefits that a real time geophysical data collection and analysis system offered. The USAESCH chief geophysicist worked with the individual field teams, collecting data in the grids and performing near real time analysis so that re-acquisition could take place with-in approximately 15-minutes after completion of the initial scanning survey of the grid. This eliminates a future setup on the same grid for re-acquisition, since the setup takes 30-60 minutes plus travel to the grid. The contractor considered this approach but rejected it based on the concern that the field survey was being performed by UXO technicians and not trained geophysicists. In order to maintain internal corporate QC, they felt it was

important to have only trained geophysicists making the dig selections where a processing and interpretation procedure was established with the associated internal audit trails. A second recommendation was made to replace the 6-foot long signpost that the contractor would carry out to the site for pre and post data latency checks with a 2-5/8ths inch diameter uniball –ball hitch. This would reduce weight and bulk for the field team (improve production) and still provide the required data to perform the latency correction. A second alternative was given to use a reel of steel wire set parallel to each endline of the grid and 5 to 10 feet outside of the grid being surveyed. That way, each line could be adjusted based on the response peak associated with the wire which is encountered at the beginning and end of every line with no interference for data inside the grid. The two small reels of wire would still be smaller and lighter than the 6-foot signpost currently being used. This recommendation was initially rejected by the contractor since the current method was providing the QC measures needed for the project, but it has been noted that later on the signpost has been replaced by the contractor with a chain for performing these tests.

The third field oversight revealed two potential safety issues, two potential data quality issues and one production issues. The main safety issue was that the EM-61, data-pack and navigation system was all being carried by one person. This results in an approximate 70 pounds (+/- 10 lbs) of equipment being carried by one person over difficult terrain in highly vegetated areas. It was recommended to split the load between two people, one carrying the EM61 coils, and the second person carrying the data-packs and batteries. This would minimize back and neck strain and potentially twisted/broken ankles. It would also reduce EM61 system noise by removing the metal of the data-packs and batteries outside of the sensing coils. This recommendation was initially rejected but later accepted after a reported case of neck/back strain from field personnel. A

second issue was the use of traffic cones being used for visual guides at the halfway point across the grid. Although this allows for extremely consistent and straight lines (good coverage), it also contributes to excessive back strain for the field personnel for repetitive motion when bending over with the added equipment weight to move the midpoint cones on every single line of data. When the field person carrying the coils bends over, he also slightly changes the height and angle of the EM-61 coils with respect to the ground which conversely increases noise slightly in the data along this midpoint line as can be evidenced in figure 6 found later in this report. The USAESCH chief geophysicist also timed all the operators and found that it took on the average 7 seconds to move the center cone. This results in a non-production loss of 2.5 minutes on 3 foot spacing and loss of 6 minutes of non-productive time for 2 foot spacing for 100 foot grids. Considering the safety concern, data quality reduction and production loss issues, it was recommended by USAESCH that the midpoint cone be eliminated. The contractor rejected this recommendation in favor of more consistent lane spacing and improved data coverage.

At the conclusion of each field oversight, the USAESCH chief geophysicist performed a personal debrief to the contractors Site Supervisor (Mr. Jim Ennis), SUXOS and other personnel who happened to be in the office at the time of the end of day debrief. It should be noted that although several recommendations were initially rejected by the contractor, as long as they did not pose a significant safety hazard, or data quality issue, the contractor was not required to change their SOPs. Instances were a data quality issue might arise were noted and monitored by USAESCH to ensure performance objectives would continue to be met throughout the project.

A partial listing of the items checked for and optimized during this pre-operation check included:

*Safety*

*-Use buddy system*

*-Pre-sweep area for surface ordnance*

*-No stakes w/o safety inspection*

*-Obey exclusion and decontamination zone boundaries*

*-Use radios coordinated with geophysical data collection*

*-Wear boots with fiberglass rather than steel toe protection*

*EM Specific check items*

*-Establish instrument-nulling station*

*-Secure cable leads*

*-Sweep operator and assistant with Schonstedt*

*-Check battery levels*

*-Check cable and connector integrity*

*-Warm up sensors prior to recording*

*-Null instruments at nulling station*

*-Conduct stationary noise level test*

*-Document amplitude gain with uniform test object*

*-Evaluate survey standardization line in both directions once each day*

*-Evaluate survey standardization line at each equipment change*

*-Maintain consistent ground clearance and coupling while surveying*

*Function Test Line*

*-Purpose: to ensure instrument is operating consistently over the life of the project, to ensure that any equipment or operator changes do not affect the results, to establish instrument repeatability baseline*

*-Establish line convenient to grid (either GPO or Survey)*

*-Survey line with all instruments prior to locating targets*

*-Note type, orientation and position of targets in field log*

*-If targets are swapped, survey immediately before and after for control*

*<u>Nulling Station</u>*

*-Purpose: an electromagnetically quiet area to consistently null instruments prior to surveying*

*-Should be convenient to grid*

*-Sweep with all EM instruments to be used at the site before finalizing*

*-Mark location clearly*

*-Clearly mark desired instrument direction*

*-Can also be used to calibrate amplitude gain if mobile test source is used*

*<u>Stationary Receiver locations</u>*

*-Purpose: a base reference network to facilitate ultra sonic positioning measurements*

*-Establish SR locations*

*-Operational modes: data logging combined or separate from geophysics*

*-Obtain permission to use radio frequencies necessary for RT link*

*-Verify full radio link coverage over entire area*

*-Test geophysical signatures of positioning sensor with pull away test (power off)*

*-Test geophysical signature of positioning electronics with detector power up*

*-Periodically test data synch at start and end of day to check for clock drift*

*-Calculate data lag on standardization line at various speeds*

*-Measure positional lag (separate from time lag) between Ultrasonic transmitter and instrument location*

*<u>Survey grid</u>*

*-Locate grid corners and ensure the grid is square*

*-Measure corner positions with the digital data positioning system being used*

*-Maintain logical and consistent file naming conventions*

*-Document naming convention and data structures in field log book*

*Data processing*

*-Make duplicate copies of all raw data as soon as possible*

*-Maintain logical and consistent file naming conventions*

*-Document naming convention and data structures in field log book*

*-Develop decision criteria for target selection (from GPO) and pick targets for dig list*

### 3.3 Government Review of Digital Geophysical Data

Geophysical data was transmitted on an approximately weekly basis from FWENC to CEHNC for review. Digital data was checked for location accuracy, lag corrections, leveling corrections, proper filtering and determination of usability based on noise recorded within the EM61 data. A total of 47 grids, randomly selected from data submittals from July-December 2001 were reviewed by the USAESCH Geophysicists. These data were gridded and plotted in Surfer, and target selections were made for comparison to FWENC picks. If FWENC geophysicists did not have at least all of the same dig selections as the USAESCH geophysicists, the additional dig selections were passed along to the USAESCH Site Safety and dug as QA picks. If any ordnance items are uncovered in the QA digs, this would initiate a root cause analysis and the results and recommendations would be listed in the QA report. Any problematic data were brought to the attention of the Chief Geophysicist and then discussed with the contractors Geophysicists until resolution. The issues previously detailed under field oversight, (interference from navigation equipment, cones used for sight guides in middle of grid, cracked coil, etc.) are examples of this. Examples of the grids are contained in Attachment 1. All map units are U.S. Survey Feet, and all maps were made using contour intervals of 5mV, with blue for -10:-5 and pink-to-red for 5:80 mV, unless otherwise noted on the map (see Figure 1). Several concerns were addressed during the Government review of the digital geophysical data.

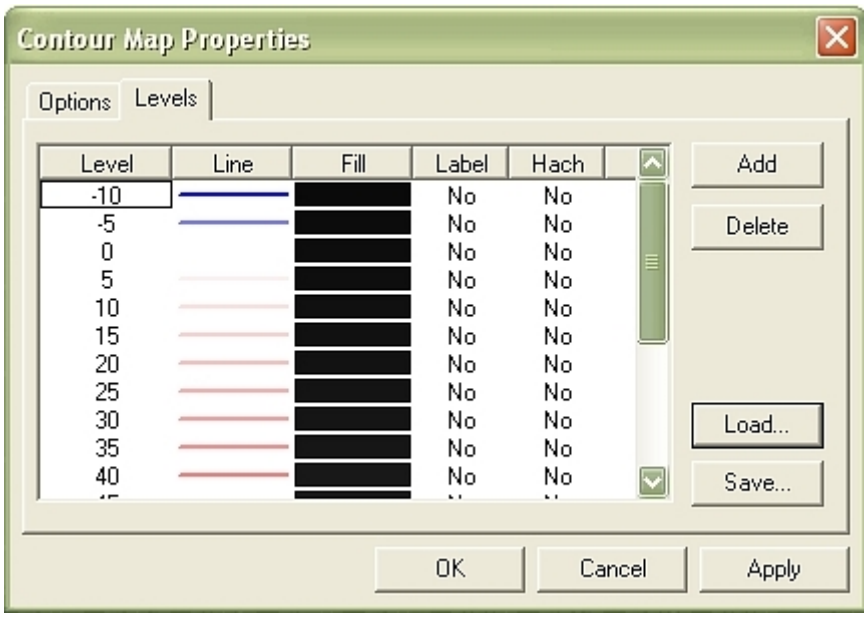



**Figure 1**

1. In two of the QA-processed grids, CEHNC discovered noisy data from the bottom coil of one EM61 (Grids 053y02 & 052y02r, both submitted on July 24, 2001). Four additional grids were processed from this submittal and did not exhibit the problem. The noisy data was caused by a crack in the bottom coil. The solution was to remove the cracked coil from service, process the top coil data on the grids, and then perform an evaluation of acceptable product on each of these data sets to determine if the data would still detect the target objectives. In using the top coil data, slightly more noise is evident due to the increased gain, which would account for more false positives being dug and a slight decrease in maximum depth of detection due to the increased distance from the target item to the upper coil. If the data did not meet performance objectives, the grid would have to be remapped. In this specific instance, all top coil processed data met the performance objectives and the limited number of affected grids did not have to be remapped. Figure 2 shows the bottom coil data from an affected grid. Figure 3 shows the top coil data of the same grid.

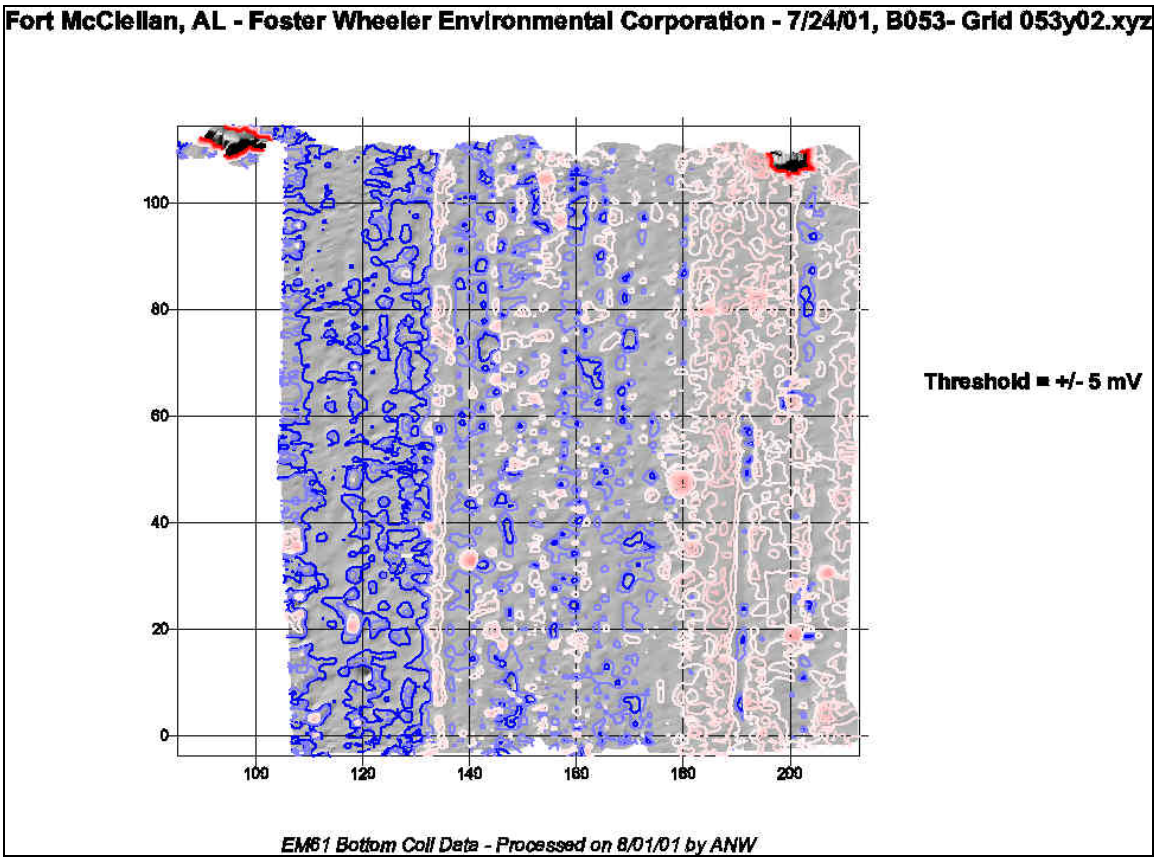

Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B053- Grid 053y02.xyz
100
80
60
40
20
0
100
120
140
160
180
200
Threshold = +/- 5 mV
EM61 Bottom Coil Data - Processed on 8/01/01 by ANW

**Figure 2.**

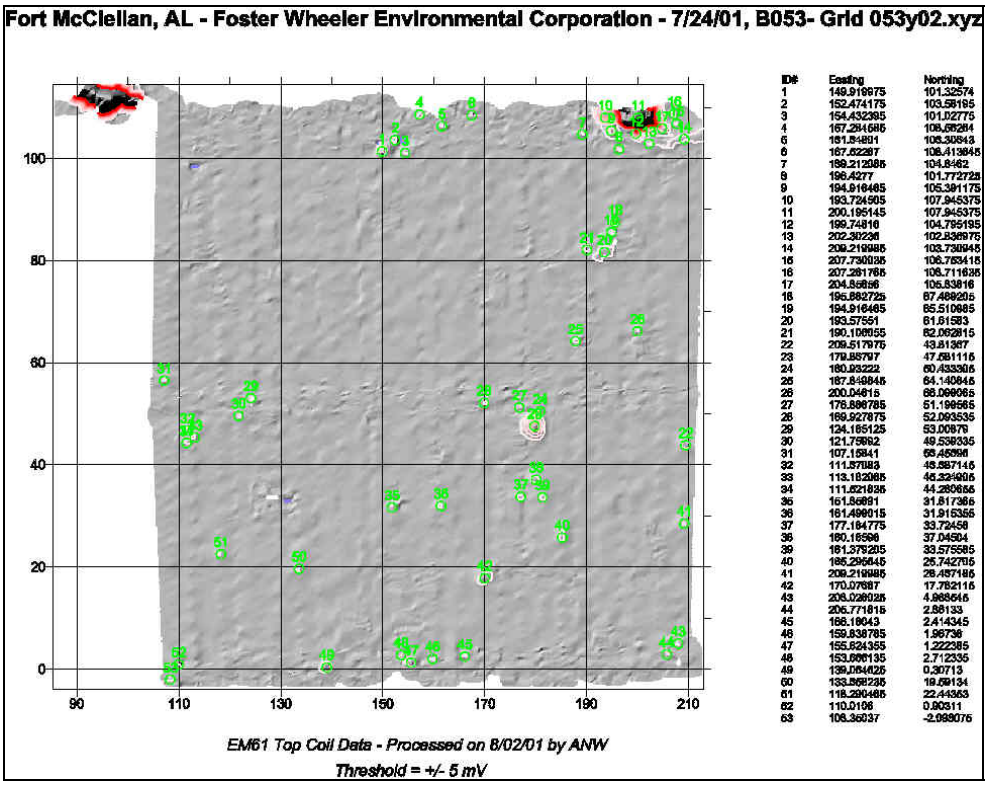



**Figure 3**

2. A strong, unexplained lineation shows up in Grid B511r. The Contractor caught this problem via their QC procedures and the Contractor remapped that part of the grid. Figure 4 shows the original survey and Figure 5 shows that part of the grid that was resurveyed.

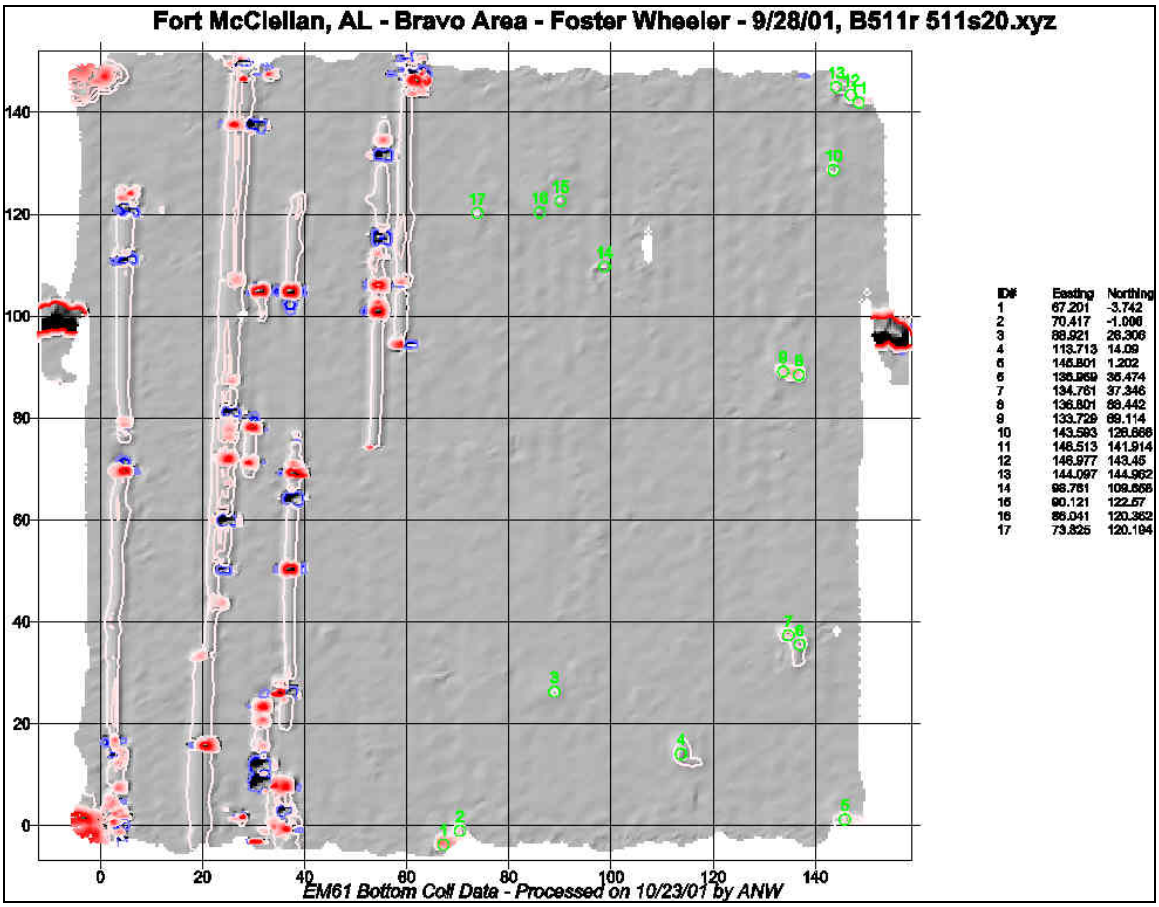

Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01, B511r 511s20.xyz
EM61 Bottom Coil Data - Processed on 10/23/01 by ANW
ID# Easting Northing
1 67.201 -3.742
2 70.417 -1.006
3 88.921 26.306
4 113.713 14.09
5 146.801 1.202
6 135.959 35.474
7 134.761 37.346
8 136.801 88.442
9 133.729 89.114
10 143.593 126.666
11 146.513 141.914
12 146.977 143.45
13 144.097 144.962
14 98.761 109.666
15 90.121 122.67
16 86.041 120.352
17 73.825 120.194

**Figure 4**

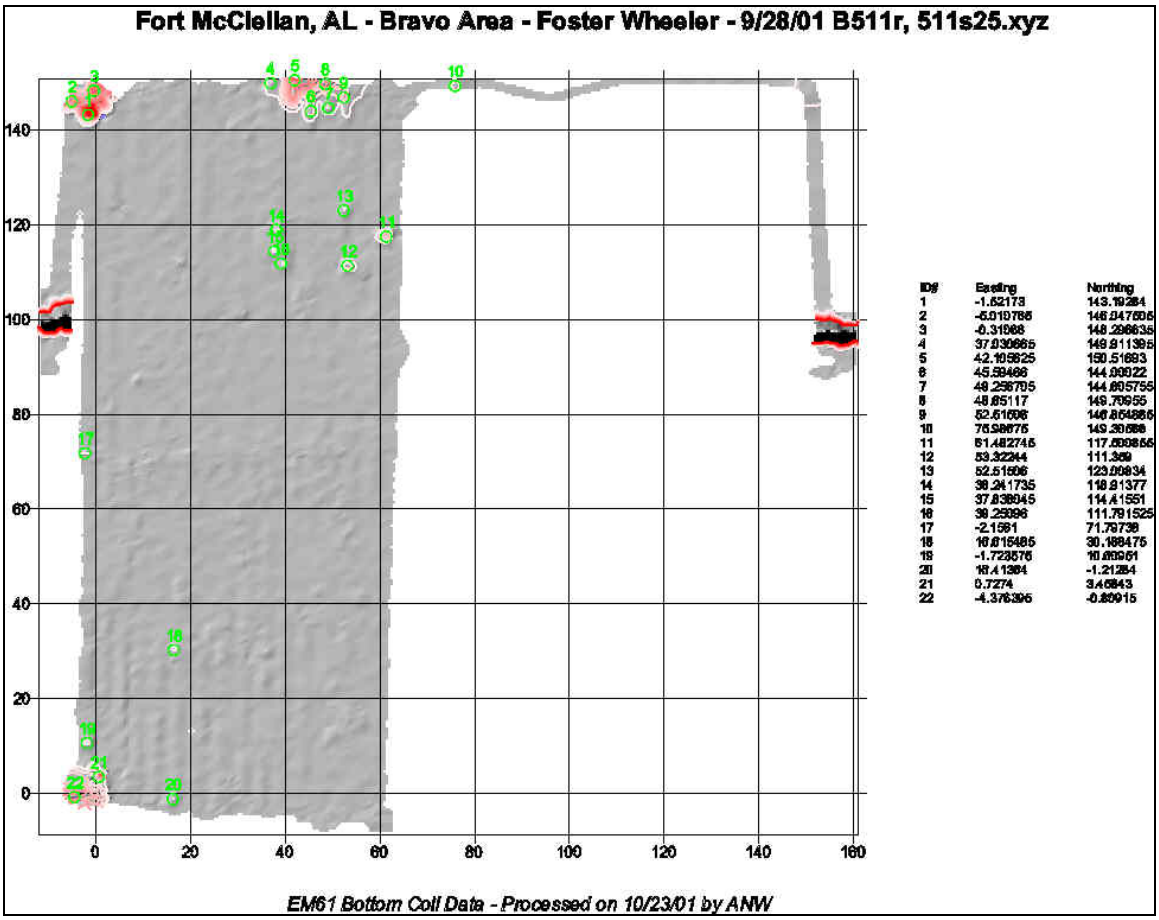



**Figure 5**

3. Anomalies that lie along a common border for Grids 522o04 and 522o04a show up in Grid 522o04a but not in Grid 522o04. The Contractor was informed of this problem and performed corrective action on the affected data and procedures.
4. Data from many of the grids have linear features coinciding with grid lines that are the result of the EM61 operator bending over to move survey cones as he proceeds. Figure 6 is an example of such. The Contractor was informed of this issue.

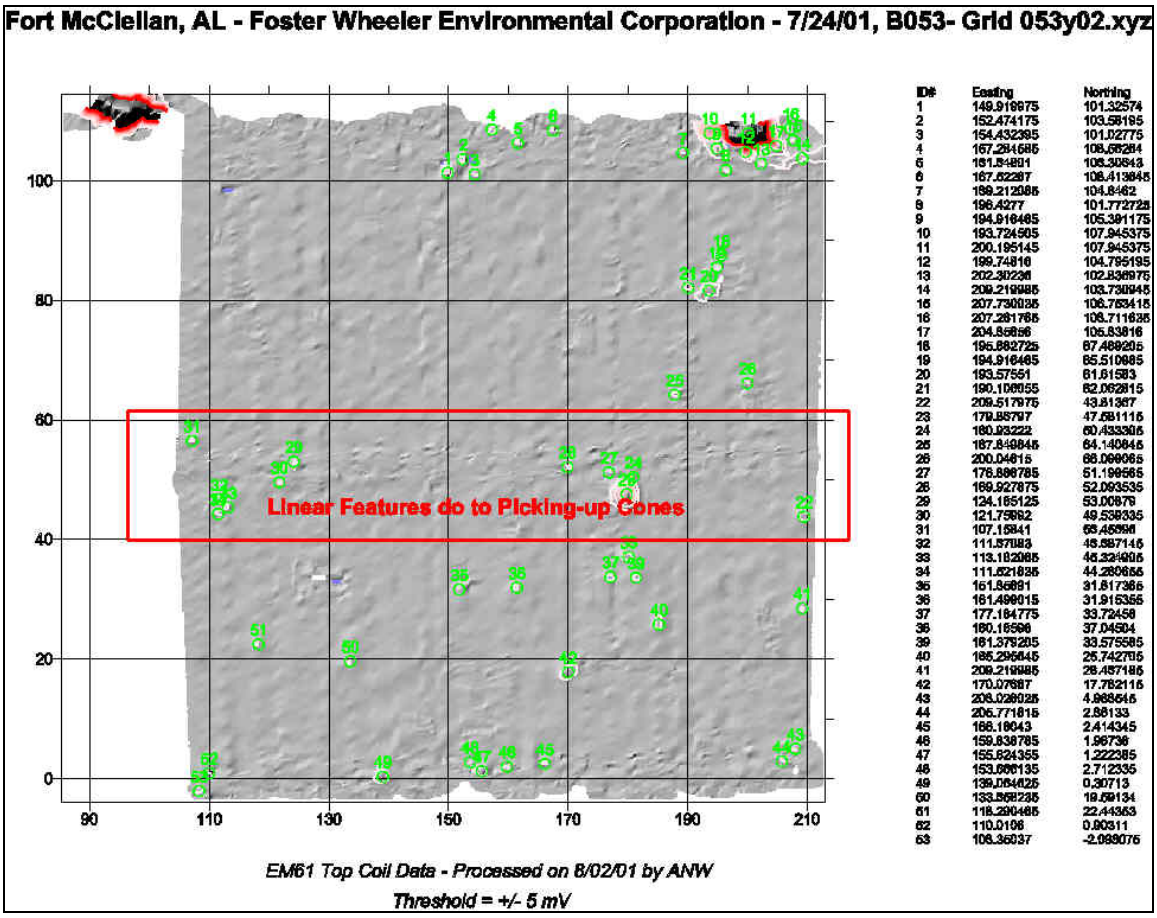



**Figure 6**

5. Finally, CEHNC caught an error in Grid 502s19. The first few lines did not capture any data. The Contractor was informed of the problem and the area of no data was resurveyed.

### 3.4 Comparison of Excavation Results with Geophysical Data Results

Dig results were reviewed and the recovered targets from the selected grid anomalies compared favorably with the recorded geophysical response.

### 3.5 Government QA Field Oversight

Government QA Safety Specialist verified that the geophysical instruments were operational by observing the daily instrument checks. The dig teams were observed to insure that the procedures in the approved Work Plan for the transect sampling were followed. The field QA activities are documented in the Daily Quality Assurance Reports contained in Attachment 2.

## 4.0 Quality Assurance Audit Summary

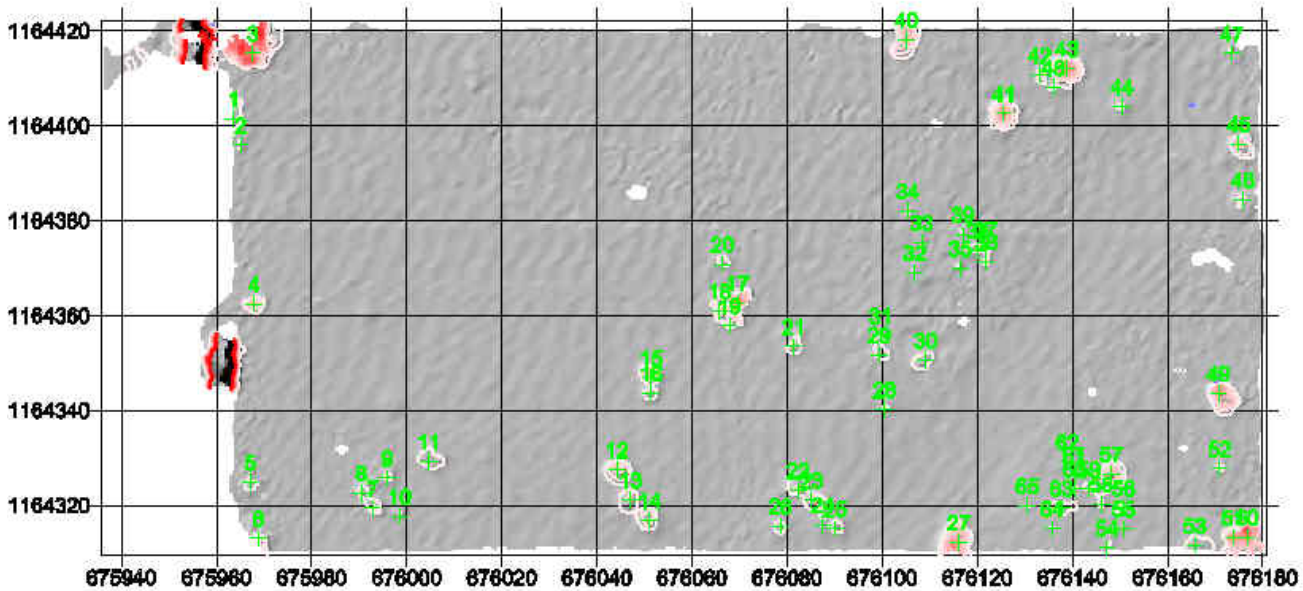
The contractor was successful in meeting all of the Quality Control elements although five minor quality control concerns dealing mostly with data processing issues were addressed and corrected through a root cause analysis and corrective action process.

## ATTACHMENT 1

### Government Geophysical QA Maps of Select areas within the Study Area.

Note: All map units are U.S. Survey Feet, and all maps were made using contour intervals of 5mV, with blue for -10:-5 and pink-to-red for 5:80 mV, unless otherwise noted on map.

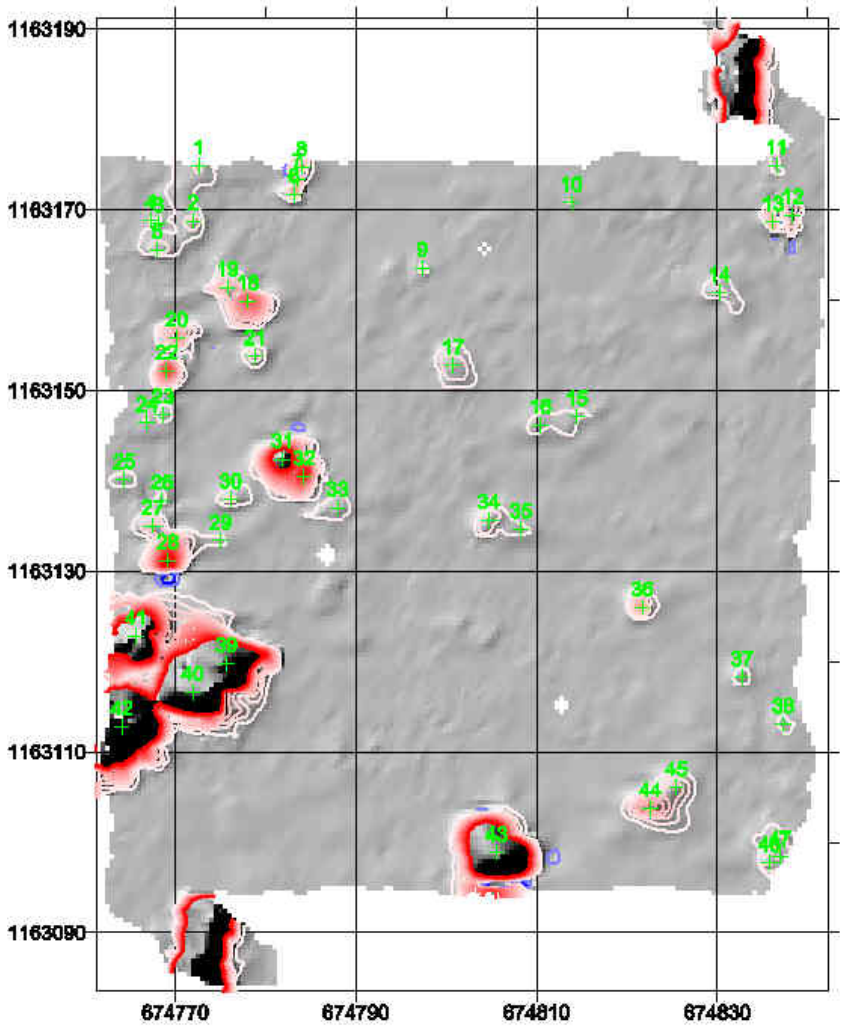
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/10/01 - 031z05.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 675953.076667 | 1164401.495 |
| 2 | 675955.046667 | 1164396.0625 |
| 3 | 675957.016167 | 1164415.3075 |
| 4 | 675957.905 | 1164362.46667 |
| 5 | 675957.0475 | 1164324.9625 |
| 6 | 675958.7525 | 1164313.05083 |
| 7 | 675962.7725 | 1164319.43083 |
| 8 | 675960.465 | 1164322.81583 |
| 9 | 675958.916667 | 1164325.75 |
| 10 | 675956.65 | 1164317.575 |
| 11 | 675954.514167 | 1164329.23083 |
| 12 | 675944.151667 | 1164327.51583 |
| 13 | 675947.04 | 1164321.14583 |
| 14 | 675951.0825 | 1164319.8175 |
| 15 | 675951.383333 | 1164348.87083 |
| 16 | 675951.383333 | 1164343.68583 |
| 17 | 675959.58 | 1164362.755 |
| 18 | 675965.633333 | 1164360.99917 |
| 19 | 675967.865 | 1164357.865 |
| 20 | 675966.396 | 1164370.64 |
| 21 | 675961.421667 | 1164363.45583 |
| 22 | 675962.279167 | 1164323.1575 |
| 23 | 675966.176333 | 1164321.14583 |
| 24 | 675967.005833 | 1164318.08 |
| 25 | 675969.076333 | 1164315.1025 |
| 26 | 675978.6225 | 1164315.67417 |
| 27 | 676118.089167 | 1164312.22333 |
| 28 | 676100.490833 | 1164340.215 |
| 29 | 676099.3475 | 1164351.77083 |
| 30 | 676109.1475 | 1164350.6275 |
| 31 | 676099.633333 | 1164365.61833 |
| 32 | 676106.62 | 1164369.06417 |
| 33 | 676106.29 | 1164375.45417 |
| 34 | 676106.390833 | 1164362.11 |
| 35 | 676118.376 | 1164369.9625 |
| 36 | 676120.131667 | 1164373.73917 |
| 37 | 676121.946667 | 1164374.025 |
| 38 | 676121.946667 | 1164371.41167 |
| 39 | 676119.946667 | 1164377.18917 |
| 40 | 676105.125 | 1164418.22667 |
| 41 | 676125.603333 | 1164402.60833 |
| 42 | 676133.116667 | 1164410.69833 |
| 43 | 676138.916 | 1164412.1225 |
| 44 | 676160.470833 | 1164404.0375 |
| 45 | 676175.011667 | 1164395.23833 |
| 46 | 676175.669167 | 1164364.39667 |
| 47 | 676173.041667 | 1164418.3075 |
| 48 | 676138.016833 | 1164408.08 |
| 49 | 676170.683333 | 1164343.68583 |
| 50 | 676178.736667 | 1164313.34667 |
| 51 | 676173.5275 | 1164313.34667 |
| 52 | 676170.989167 | 1164327.83167 |
| 53 | 676165.7425 | 1164311.83167 |
| 54 | 676147.296833 | 1164311.06 |
| 55 | 676160.756667 | 1164315.1025 |
| 56 | 676160.756667 | 1164312.43083 |
| 57 | 676148.143333 | 1164328.58833 |
| 58 | 676148.101667 | 1164320.23833 |
| 59 | 676143.629167 | 1164323.47333 |
| 60 | 676140.344167 | 1164323.47333 |
| 61 | 676140.344167 | 1164328.3725 |
| 62 | 676138.916 | 1164329.23083 |
| 63 | 676137.730833 | 1164319.43083 |
| 64 | 676135.73 | 1164315.1025 |
| 65 | 676130.633333 | 1164320.0025 |

*EM61 Bottom Coil Data - Processed on 8/23/01 by ANW*

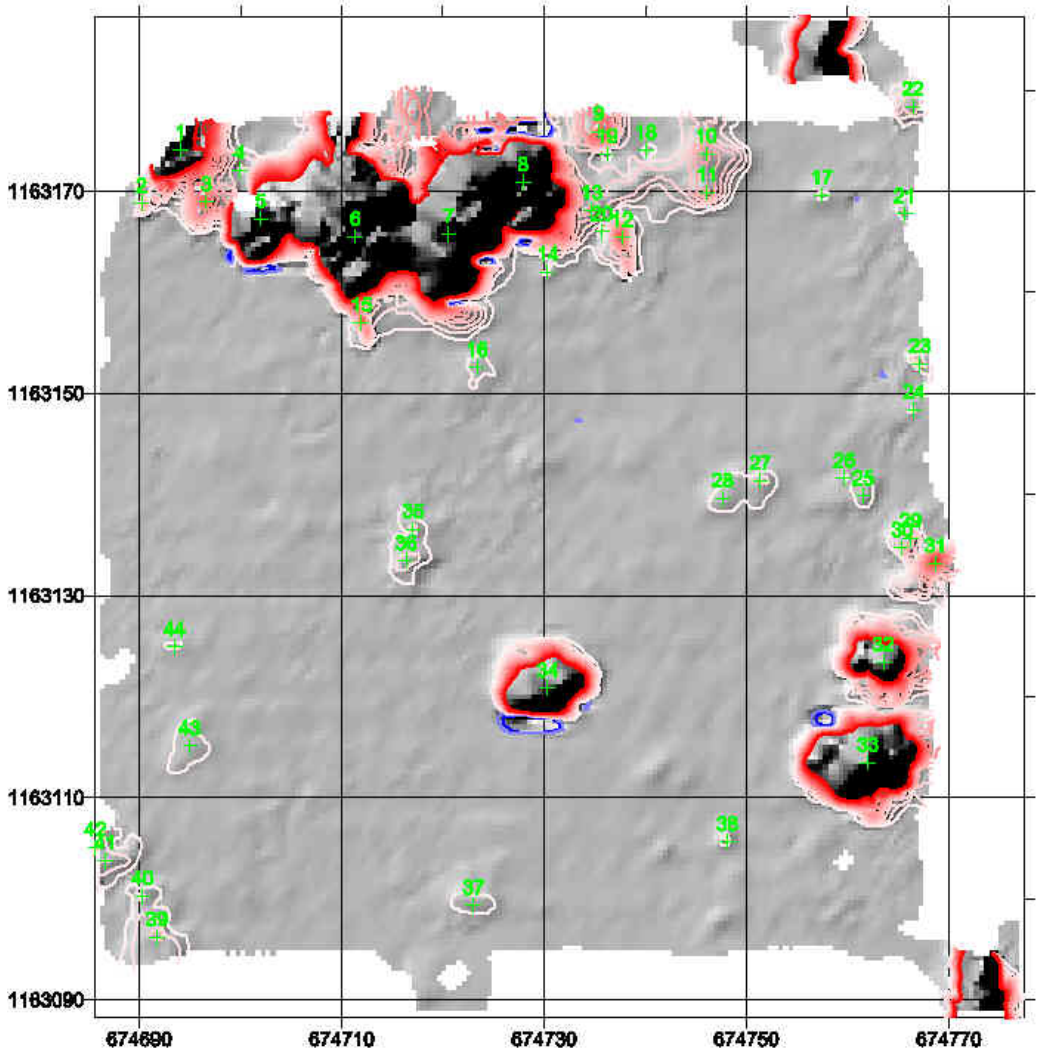
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 005z09.xyz




*EM61 Bottom Coil Data - Processed on 8/27/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 674772.597043 | 1163174.87382 |
| 2 | 674771.951323 | 1163168.77538 |
| 3 | 674768.14875 | 1163168.52424 |
| 4 | 674767.269653 | 1163168.90091 |
| 5 | 674768.023193 | 1163165.60067 |
| 6 | 674783.125667 | 1163171.89903 |
| 7 | 674783.502537 | 1163173.34921 |
| 8 | 674784.004768 | 1163174.74827 |
| 9 | 674797.331707 | 1163163.67372 |
| 10 | 674813.83344 | 1163170.8022 |
| 11 | 674836.54128 | 1163174.87382 |
| 12 | 674838.31699 | 1163169.42108 |
| 13 | 674836.146653 | 1163166.6496 |
| 14 | 674830.19168 | 1163160.79354 |
| 15 | 674814.461223 | 1163147.06993 |
| 16 | 674810.407537 | 1163146.19309 |
| 17 | 674800.75751 | 1163162.79379 |
| 18 | 674778.04979 | 1163159.89671 |
| 19 | 674775.771833 | 1163161.42132 |
| 20 | 674770.175593 | 1163155.84302 |
| 21 | 674776.80313 | 1163153.81818 |
| 22 | 674769.045583 | 1163152.168 |
| 23 | 674768.650977 | 1163147.34104 |
| 24 | 674766.875247 | 1163146.44421 |
| 25 | 674764.346177 | 1163140.11256 |
| 26 | 674766.62542 | 1163137.81667 |
| 27 | 674767.520967 | 1163135.03549 |
| 28 | 674769.17114 | 1163131.21598 |
| 29 | 674775.000557 | 1163133.38531 |
| 30 | 674776.148503 | 1163137.84223 |
| 31 | 674781.852383 | 1163142.39052 |
| 32 | 674784.255877 | 1163140.48923 |
| 33 | 674787.95063 | 1163137.06333 |
| 34 | 674804.86574 | 1163135.66427 |
| 35 | 674808.2372 | 1163134.64188 |
| 36 | 674821.6897 | 1163126.01434 |
| 37 | 674832.72075 | 1163118.26364 |
| 38 | 674837.2946 | 1163113.08201 |
| 39 | 674776.646277 | 1163119.80626 |
| 40 | 674771.951323 | 1163116.63347 |
| 41 | 674765.61968 | 1163122.83955 |
| 42 | 674764.065063 | 1163112.81296 |
| 43 | 674805.562573 | 1163096.85623 |
| 44 | 674822.566533 | 1163103.60675 |
| 45 | 674825.492273 | 1163106.10484 |
| 46 | 674835.769963 | 1163097.72622 |
| 47 | 674836.91793 | 1163098.366 |

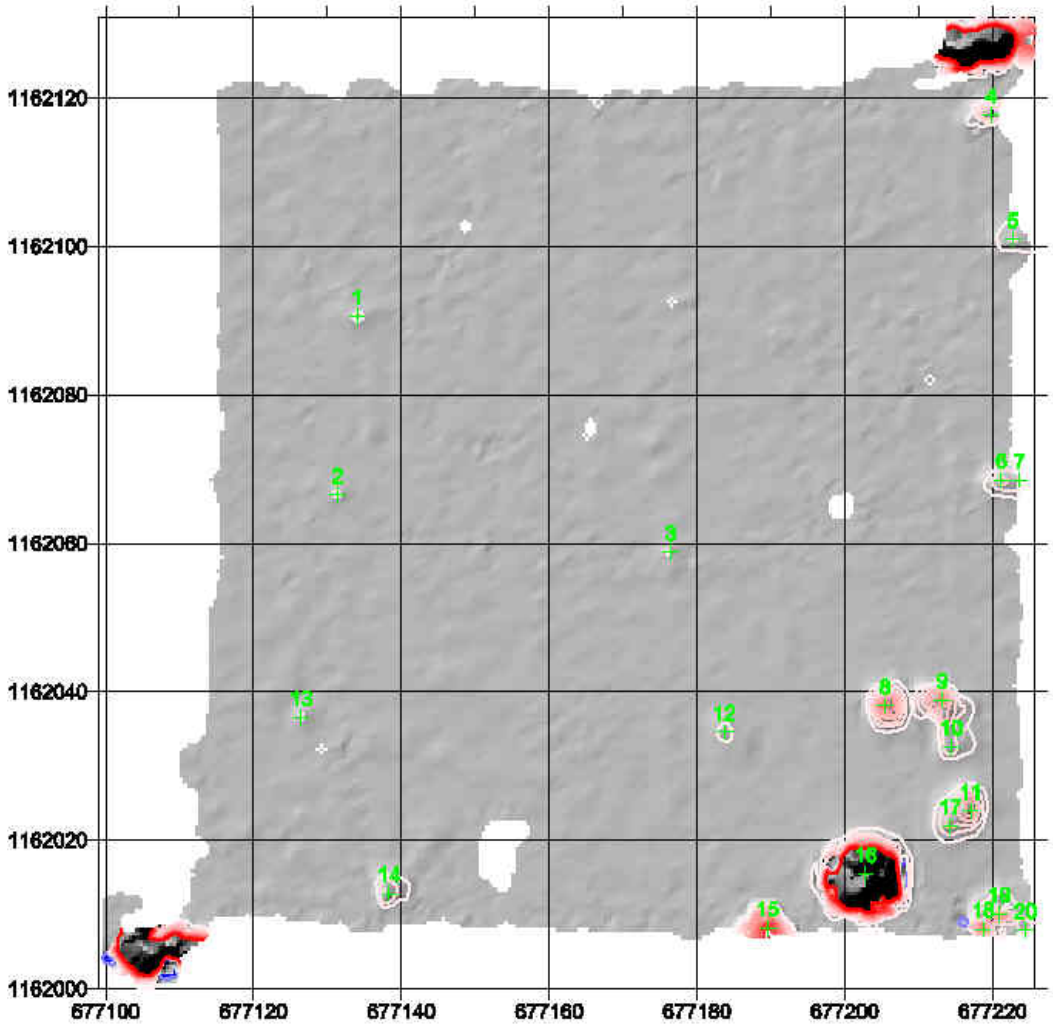
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 005z10.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 674694.06 | 1163174.05 |
| 2 | 674690.219 | 1163166.7665 |
| 3 | 674696.6375 | 1163168.9185 |
| 4 | 674699.9045 | 1163172.07 |
| 5 | 674702.0165 | 1163167.285 |
| 6 | 674711.339 | 1163165.5195 |
| 7 | 674720.5625 | 1163165.767 |
| 8 | 674727.9215 | 1163170.6965 |
| 9 | 674735.396 | 1163175.9145 |
| 10 | 674746.0065 | 1163173.7035 |
| 11 | 674746.121 | 1163169.6425 |
| 12 | 674737.7225 | 1163166.404 |
| 13 | 674734.6865 | 1163168.0935 |
| 14 | 674730.3635 | 1163162.0215 |
| 15 | 674711.933 | 1163157.0055 |
| 16 | 674723.3675 | 1163152.567 |
| 17 | 674757.44 | 1163169.6115 |
| 18 | 674740.049 | 1163174.05 |
| 19 | 674736.2045 | 1163173.7035 |
| 20 | 674735.7425 | 1163166.998 |
| 21 | 674766.624 | 1163167.747 |
| 22 | 674766.4325 | 1163178.3685 |
| 23 | 674767.1255 | 1163152.93 |
| 24 | 674766.548 | 1163148.378 |
| 25 | 674761.532 | 1163139.8455 |
| 26 | 674759.6675 | 1163141.5945 |
| 27 | 674751.3645 | 1163141.3635 |
| 28 | 674747.639 | 1163139.6145 |
| 29 | 674766.2015 | 1163135.6545 |
| 30 | 674766.3755 | 1163134.714 |
| 31 | 674768.6435 | 1163133.196 |
| 32 | 674763.512 | 1163123.395 |
| 33 | 674761.994 | 1163113.4785 |
| 34 | 674730.3635 | 1163120.6375 |
| 35 | 674717.0645 | 1163136.5785 |
| 36 | 674716.3715 | 1163133.427 |
| 37 | 674723.021 | 1163099.3545 |
| 38 | 674746.1175 | 1163105.6575 |
| 39 | 674691.737 | 1163095.203 |
| 40 | 674690.3345 | 1163100.295 |
| 41 | 674686.6055 | 1163103.793 |
| 42 | 674685.665 | 1163105.06 |
| 43 | 674695.004 | 1163115.112 |
| 44 | 674693.486 | 1163124.913 |

*EM61 Bottom Coil Data - Processed on 8/27/01 by ANW*

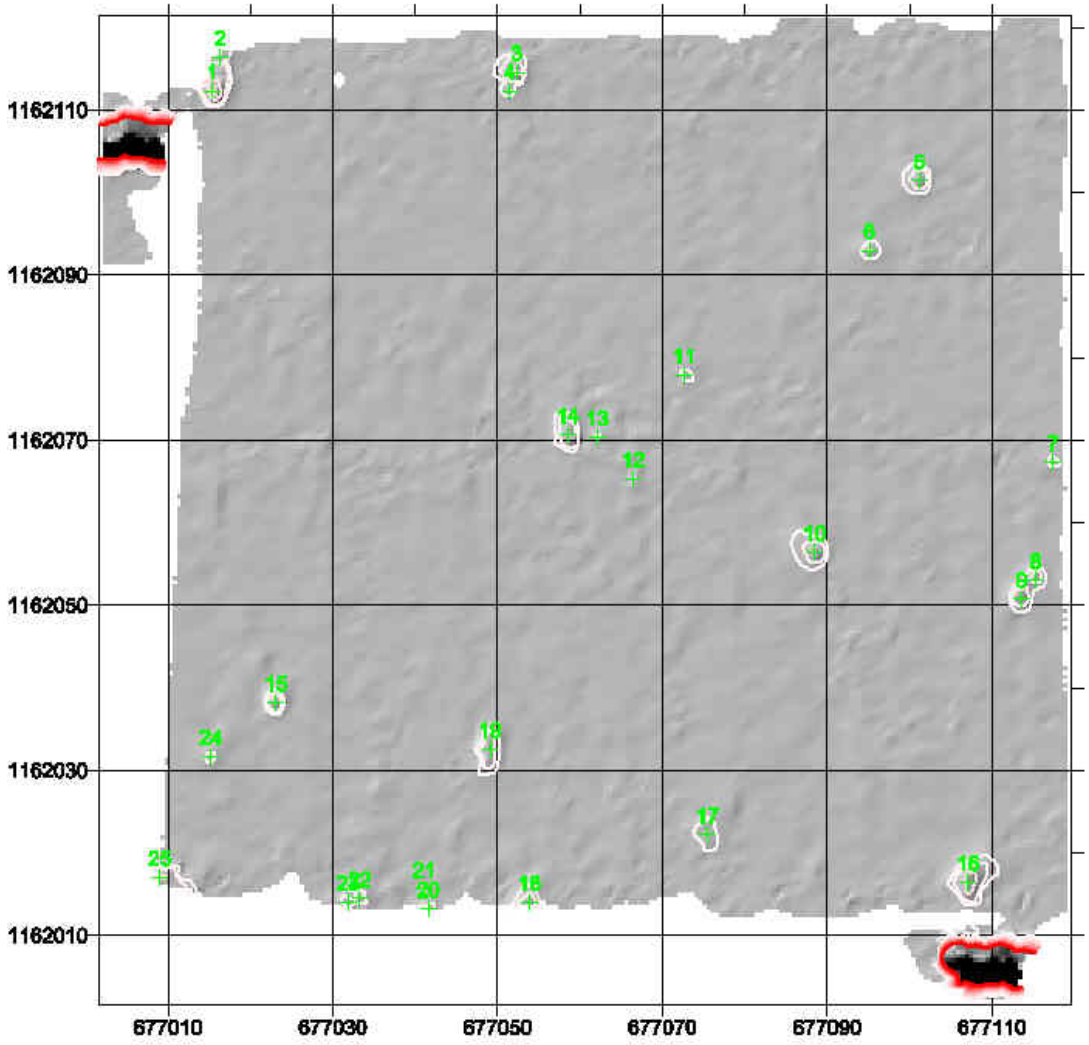
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 017z12.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 677134.025853 | 1162090.69077 |
| 2 | 677131.408253 | 1162066.63067 |
| 3 | 677176.462787 | 1162058.80875 |
| 4 | 677219.817693 | 1162117.74837 |
| 5 | 677222.74066 | 1162100.93029 |
| 6 | 677221.191933 | 1162068.53749 |
| 7 | 677223.65664 | 1162068.53749 |
| 8 | 677205.46452 | 1162036.12971 |
| 9 | 677213.164627 | 1162036.69317 |
| 10 | 677214.407967 | 1162032.66731 |
| 11 | 677217.025587 | 1162023.92923 |
| 12 | 677183.694813 | 1162034.67413 |
| 13 | 677126.456627 | 1162036.68096 |
| 14 | 677138.344893 | 1162012.62834 |
| 15 | 677189.5628 | 1162008.20181 |
| 16 | 677202.825107 | 1162015.44384 |
| 17 | 677214.255293 | 1162021.9224 |
| 18 | 677218.727027 | 1162006.04912 |
| 19 | 677220.866547 | 1162010.05695 |
| 20 | 677224.44212 | 1162007.69643 |

*EM61 Bottom Coil Data - Processed on 8/28/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 017z12a.xyz

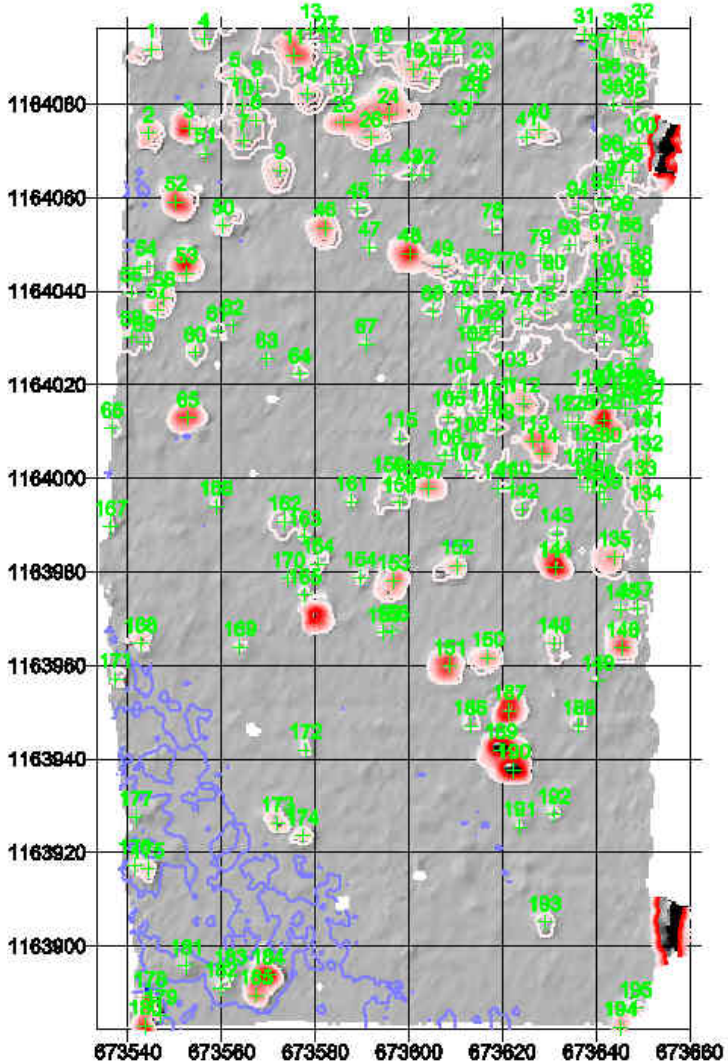



| ID# | Easting | Northing |
|---|---|---|
| 1 | 677015.334625 | 1162112.31882 |
| 2 | 677016.332542 | 1162116.41037 |
| 3 | 677062.317417 | 1162114.67421 |
| 4 | 677061.479167 | 1162112.31882 |
| 5 | 677101.175417 | 1162101.44182 |
| 6 | 677095.106063 | 1162092.87929 |
| 7 | 677117.401542 | 1162067.29292 |
| 8 | 677115.265958 | 1162053.02271 |
| 9 | 677113.5895 | 1162050.78742 |
| 10 | 677086.461958 | 1162058.41562 |
| 11 | 677072.864958 | 1162077.87063 |
| 12 | 677066.447917 | 1162065.31704 |
| 13 | 677062.077042 | 1162070.38546 |
| 14 | 677058.544417 | 1162070.68687 |
| 15 | 677023.096417 | 1162038.21362 |
| 16 | 677107.103042 | 1162016.45904 |
| 17 | 677075.489063 | 1162022.24896 |
| 18 | 677053.674167 | 1162014.06404 |
| 19 | 677049.064167 | 1162032.58542 |
| 20 | 677041.699792 | 1162013.22579 |
| 21 | 677041.040958 | 1162015.62079 |
| 22 | 677033.277167 | 1162014.48317 |
| 23 | 677031.860125 | 1162014.06404 |
| 24 | 677015.194917 | 1162031.70721 |
| 25 | 677006.987875 | 1162017.03783 |

1st Contour Level: 3mV

*EM61 Bottom Coil Data - Processed on 8/28/01 by ANW*

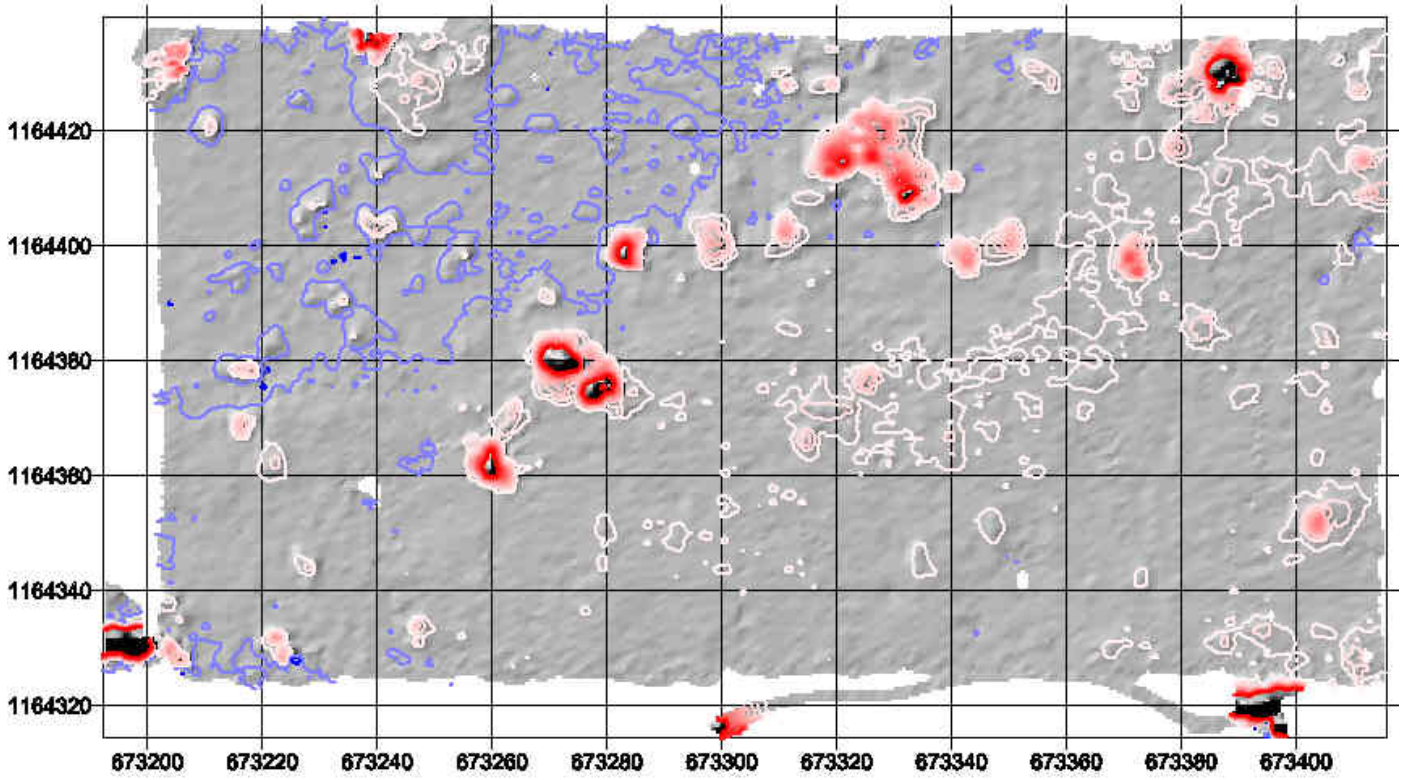
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/10/01 - 027z06.xyz




*EM61 Bottom Coil Data - Processed on 8/22/01 by ANW*

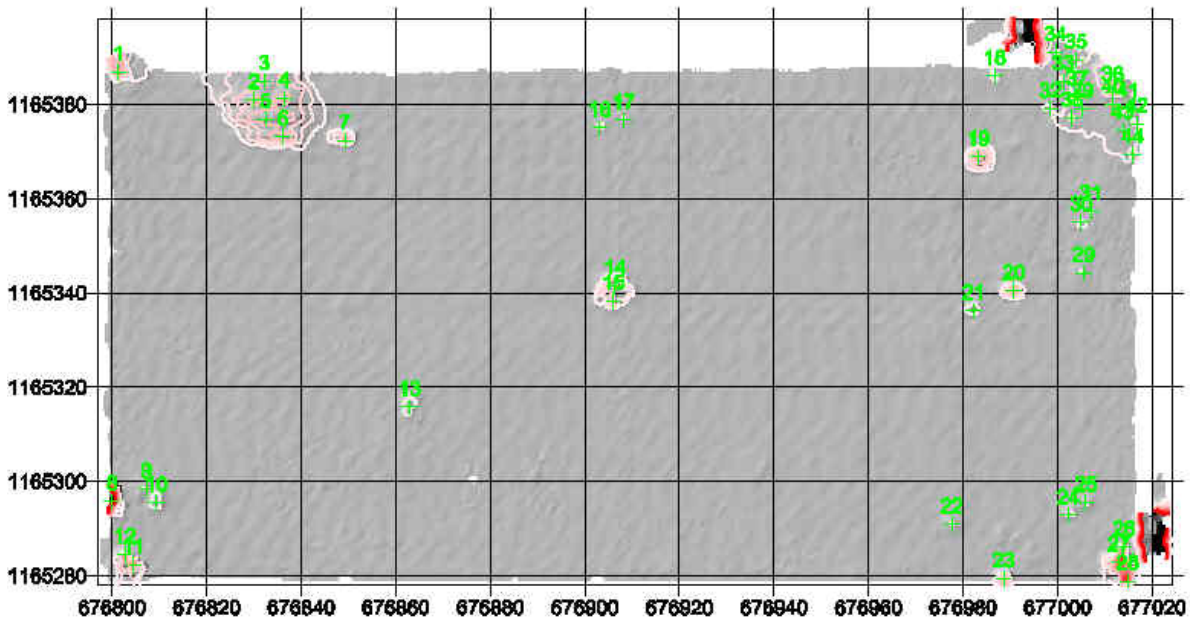
| ID | Easting | Northing | ID | Easting | Northing |
|---|---|---|---|---|---|
| 1 | 673544.844839 | 1164081.82211 | 99 | 673647.69847 | 1164065.49872 |
| 2 | 673544.44472 | 1164078.7674 | 100 | 673642.180087 | 1164021.48845 |
| 3 | 673483.00903 | 1164074.70883 | 101 | 673642.119127 | 1164043.72 |
| 4 | 673539.252883 | 1164069.94035 | 102 | 673619.85568 | 1164027.08485 |
| 5 | 673582.89804 | 1164065.51537 | 103 | 673621.670057 | 1164021.52213 |
| 6 | 673587.593547 | 1164076.86845 | 104 | 673611.071797 | 1164000.2574 |
| 7 | 673584.643873 | 1164072.36297 | 105 | 673625.787773 | 1164018.17144 |
| 8 | 673587.649089 | 1164063.61882 | 106 | 673607.789043 | 1164004.86849 |
| 9 | 673572.485763 | 1164066.90302 | 107 | 673613.253578 | 1164001.92357 |
| 10 | 673584.38768 | 1164061.86433 | 108 | 673613.303007 | 1164007.99031 |
| 11 | 673575.48212 | 1164063.45037 | 109 | 673618.887907 | 1164016.85788 |
| 12 | 673583.3078 | 1164080.86280 | 110 | 673613.389604 | 1164018.95065 |
| 13 | 673579.0251 | 1164084.84481 | 111 | 673618.137067 | 1164016.70810 |
| 14 | 673573.286983 | 1164082.3222 | 112 | 673624.464227 | 1164016.896 |
| 15 | 673583.607113 | 1164084.11883 | 113 | 673628.48238 | 1164007.86691 |
| 16 | 673589.690573 | 1164084.14853 | 114 | 673626.88852 | 1164036.36688 |
| 17 | 673588.479863 | 1164087.1483 | 115 | 673608.98864 | 1164008.63623 |
| 18 | 673584.182247 | 1164092.92269 | 116 | 673604.088868 | 1164017.48283 |
| 19 | 673600.9726 | 1164087.84891 | 117 | 673610.231783 | 1164017.86914 |
| 20 | 673604.80868 | 1164088.91857 | 118 | 673649.617987 | 1164017.48683 |
| 21 | 673593.709652 | 1164091.92286 | 119 | 673645.103883 | 1164016.93017 |
| 22 | 673609.820868 | 1164092.82885 | 120 | 673647.140647 | 1164017.82463 |
| 23 | 673615.98374 | 1164097.94851 | 121 | 673661.488058 | 1164016.866 |
| 24 | 673608.690773 | 1164097.73869 | 122 | 673600.862037 | 1164018.42123 |
| 25 | 673599.08168 | 1164098.06135 | 123 | 673649.388287 | 1164017.73583 |
| 26 | 673591.6723 | 1164102.70917 | 124 | 673617.290063 | 1164035.07962 |
| 27 | 673602.88608 | 1164103.14886 | 125 | 673648.18173 | 1164014.85877 |
| 28 | 673614.898613 | 1164102.58181 | 126 | 673641.66832 | 1164032.42282 |
| 29 | 673619.988873 | 1164106.36375 | 127 | 673634.04364 | 1164013.17331 |
| 30 | 673610.624982 | 1164106.38834 | 128 | 673688.062028 | 1164012.17221 |
| 31 | 673637.489623 | 1164104.84286 | 129 | 673639.088583 | 1164006.86267 |
| 32 | 673649.624987 | 1164108.96451 | 130 | 673641.66832 | 1164008.38488 |
| 33 | 673648.90114 | 1164108.40644 | 131 | 673650.949842 | 1164006.83623 |
| 34 | 673646.42887 | 1164069.96181 | 132 | 673680.863037 | 1164008.62741 |
| 35 | 673648.18889 | 1164109.38883 | 133 | 673649.484883 | 1164008.3501 |
| 36 | 673642.865647 | 1164064.54836 | 134 | 673663.063087 | 1164008.87278 |
| 37 | 673640.030287 | 1164098.36845 | 135 | 673649.683946 | 1164008.11886 |
| 38 | 673649.617987 | 1164076.86413 | 136 | 673688.088583 | 1164008.2301 |
| 39 | 673649.883448 | 1164088.94835 | 137 | 673688.862007 | 1164000.82386 |
| 40 | 673622.73874 | 1164074.84882 | 138 | 673640.622287 | 1164007.25087 |
| 41 | 673635.503647 | 1164073.01785 | 139 | 673641.66832 | 1164008.87644 |
| 42 | 673633.398817 | 1164084.91711 | 140 | 673622.430087 | 1164008.94259 |
| 43 | 673630.472787 | 1164084.91711 | 141 | 673619.188612 | 1164007.70649 |
| 44 | 673683.83944 | 1164084.9673 | 142 | 673624.28482 | 1164008.28888 |
| 45 | 673680.184487 | 1164087.90194 | 143 | 673691.830987 | 1164083.10077 |
| 46 | 673682.883487 | 1164083.90070 | 144 | 673691.370388 | 1164080.80031 |
| 47 | 673691.623889 | 1164088.38836 | 145 | 673645.6633 | 1164071.77491 |
| 48 | 673680.22268 | 1164088.00183 | 146 | 673648.882107 | 1164008.70672 |
| 49 | 673687.039183 | 1164088.36875 | 147 | 673649.685473 | 1164072.37482 |
| 50 | 673680.385887 | 1164084.76825 | 148 | 673691.030673 | 1164084.70886 |
| 51 | 673682.6425 | 1164088.4856 | 149 | 673682.0347183 | 1164084.80378 |
| 52 | 673680.83268 | 1164088.13887 | 150 | 673619.848659 | 1164061.87646 |
| 53 | 673682.608887 | 1164081.71823 | 151 | 673688.78778 | 1164089.02883 |
| 54 | 673643.848187 | 1164084.36875 | 152 | 673610.222387 | 1164061.37482 |
| 55 | 673640.6815835 | 1164088.86885 | 153 | 673688.88 | 1164076.06148 |
| 56 | 673647.722683 | 1164088.58741 | 154 | 673682.63404 | 1164073.84287 |
| 57 | 673645.183887 | 1164088.18885 | 155 | 673684.84884 | 1164083.82889 |
| 58 | 673640.699883 | 1164080.38873 | 156 | 673688.443883 | 1164087.3427 |
| 59 | 673649.408887 | 1164088.06789 | 157 | 673684.345873 | 1164087.70649 |
| 60 | 673684.28424 | 1164088.83875 | 158 | 673687.880083 | 1164084.75412 |
| 61 | 673688.073883 | 1164081.37184 | 159 | 673685.080073 | 1164088.03883 |
| 62 | 673682.583487 | 1164083.82887 | 160 | 673680.273173 | 1164088.04283 |
| 63 | 673688.875183 | 1164088.86471 | 161 | 673687.888707 | 1164088.00283 |
| 64 | 673679.741183 | 1164088.27184 | 162 | 673673.84708 | 1164080.73883 |
| 65 | 673682.789713 | 1164082.92183 | 163 | 673677.74888 | 1164087.44183 |
| 66 | 673686.488883 | 1164081.67287 | 164 | 673680.83284 | 1164081.83443 |
| 67 | 673680.873873 | 1164088.58885 | 165 | 673677.74888 | 1164088.08888 |
| 68 | 673680.084883 | 1164088.86404 | 166 | 673688.823847 | 1164084.0077 |
| 69 | 673614.3988 | 1164088.46842 | 167 | 673688.348547 | 1164086.86081 |
| 70 | 673611.323183 | 1164088.06887 | 168 | 673682.080087 | 1164084.70883 |
| 71 | 673613.83848 | 1164081.08815 | 169 | 673683.888887 | 1164083.88883 |
| 72 | 673671.18848 | 1164081.58145 | 170 | 673674.2874 | 1164076.88183 |
| 73 | 673613.387883 | 1164088.57887 | 171 | 673687.37878 | 1164087.14887 |
| 74 | 673684.23842 | 1164084.11881 | 172 | 673677.880187 | 1164081.30844 |
| 75 | 673688.886183 | 1164084.40483 | 173 | 673671.96814 | 1164088.34678 |
| 76 | 673682.888883 | 1164083.22 | 174 | 673677.340187 | 1164083.88882 |
| 77 | 673613.387883 | 1164082.72 | 175 | 673644.881913 | 1164088.18883 |
| 78 | 673617.88768 | 1164088.51884 | 176 | 673641.411383 | 1164087.34888 |
| 79 | 673687.887287 | 1164087.76182 | 177 | 673641.881 | 1164087.88481 |
| 80 | 673681.080873 | 1164083.28889 | 178 | 673644.884887 | 1164088.86184 |
| 81 | 673687.387113 | 1164084.88481 | 179 | 673648.882187 | 1164088.18883 |
| 82 | 673687.387113 | 1164083.84884 | 180 | 673643.888613 | 1164083.84011 |
| 83 | 673641.88882 | 1164088.3875 | 181 | 673682.888887 | 1164088.75883 |
| 84 | 673643.883487 | 1164080.18883 | 182 | 673688.825873 | 1164081.01883 |
| 85 | 673683.888613 | 1164087.40883 | 183 | 673681.888613 | 1164084.73883 |
| 86 | 673647.48841 | 1164080.38887 | 184 | 673688.5888 | 1164086.76883 |
| 87 | 673640.870883 | 1164083.73883 | 185 | 673687.381887 | 1164088.48145 |
| 88 | 673649.6847 | 1164083.88883 | 186 | 673613.888887 | 1164087.08485 |
| 89 | 673640.6847 | 1164080.04887 | 187 | 673631.42388 | 1164080.32223 |
| 90 | 673649.83887 | 1164083.82887 | 188 | 673688.3822 | 1164087.04885 |
| 91 | 673647.888883 | 1164088.88883 | 189 | 673611.888887 | 1164081.87884 |
| 92 | 673649.60114 | 1164083.33106 | 190 | 673682.480087 | 1164087.83814 |
| 93 | 673634.303147 | 1164088.73883 | 191 | 673623.784887 | 1164083.34883 |
| 94 | 673686.083883 | 1164087.88115 | 192 | 673681.083873 | 1164088.00443 |
| 95 | 673641.388887 | 1164088.80848 | 193 | 673688.888883 | 1164084.1478 |
| 96 | 673648.4883 | 1164084.81178 | 194 | 673645.883883 | 1164083.8883 |
| 97 | 673644.483873 | 1164082.41884 | 195 | 673648.888887 | 1164088.88780 |

**Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 030z12.xyz**




*EM61 Bottom Coil Date - Processed on 8/28/01 by ANW*

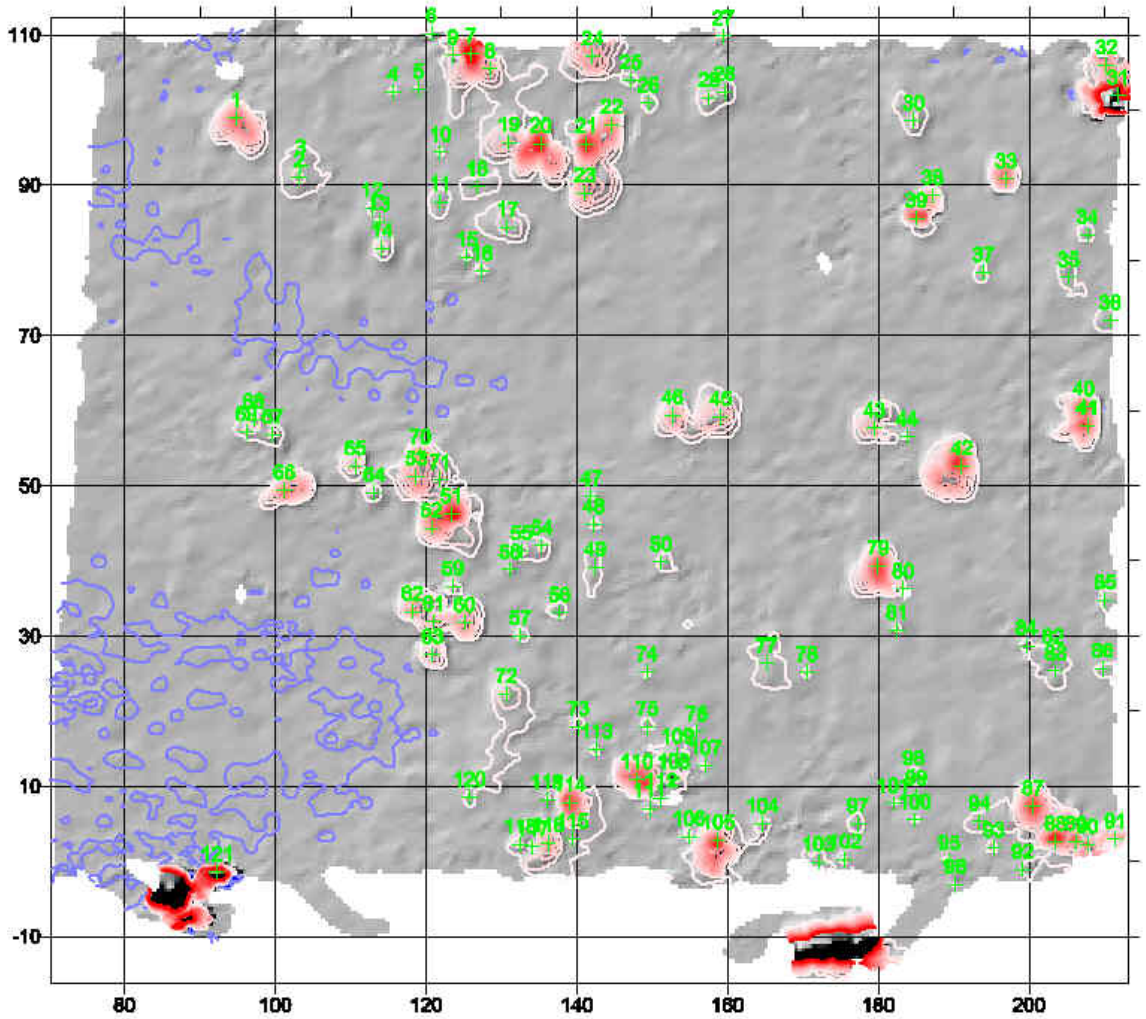
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/10/01 - 038z04.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 676801.31775 | 1165386.848 |
| 2 | 676829.969125 | 1165380.0395 |
| 3 | 676832.148 | 1165384.95425 |
| 4 | 676836.427875 | 1165381.20463 |
| 5 | 676832.413125 | 1165376.92475 |
| 6 | 676836.16275 | 1165373.17512 |
| 7 | 676849.2675 | 1165372.37975 |
| 8 | 676799.992125 | 1165295.75863 |
| 9 | 676807.22625 | 1165298.40967 |
| 10 | 676809.34725 | 1165295.4935 |
| 11 | 676804.537125 | 1165282.35068 |
| 12 | 676802.68125 | 1165284.50975 |
| 13 | 676862.940375 | 1165315.83238 |
| 14 | 676906.345125 | 1165341.5495 |
| 15 | 676906.06 | 1165336.33012 |
| 16 | 676903.12575 | 1165375.031 |
| 17 | 676906.201 | 1165378.65962 |
| 18 | 676986.715875 | 1165388.01475 |
| 19 | 676983.231375 | 1165368.89625 |
| 20 | 676990.730625 | 1165340.489 |
| 21 | 676982.170875 | 1165336.20913 |
| 22 | 676977.588 | 1165290.91063 |
| 23 | 676986.57175 | 1165279.39663 |
| 24 | 677002.244625 | 1165292.60437 |
| 25 | 677005.99425 | 1165295.4935 |
| 26 | 677014.02375 | 1165288.1005 |
| 27 | 677012.96325 | 1165282.88112 |
| 28 | 677014.819125 | 1165278.86638 |
| 29 | 677005.464 | 1165344.23863 |
| 30 | 677004.93375 | 1165354.95725 |
| 31 | 677007.05475 | 1165357.38125 |
| 32 | 676996.495 | 1165379.04575 |
| 33 | 677001.164125 | 1165364.95425 |
| 34 | 676999.5555 | 1165391.12788 |
| 35 | 677003.636375 | 1165389.49925 |
| 36 | 677011.637625 | 1165382.63025 |
| 37 | 677004.138275 | 1165381.73487 |
| 38 | 677003.04 | 1165377.18987 |
| 39 | 677005.196875 | 1165379.04575 |
| 40 | 677011.637625 | 1165360.14412 |
| 41 | 677014.819125 | 1165379.04575 |
| 42 | 677016.712875 | 1165375.86425 |
| 43 | 677013.758625 | 1165374.50075 |
| 44 | 677016.9175 | 1165369.4255 |

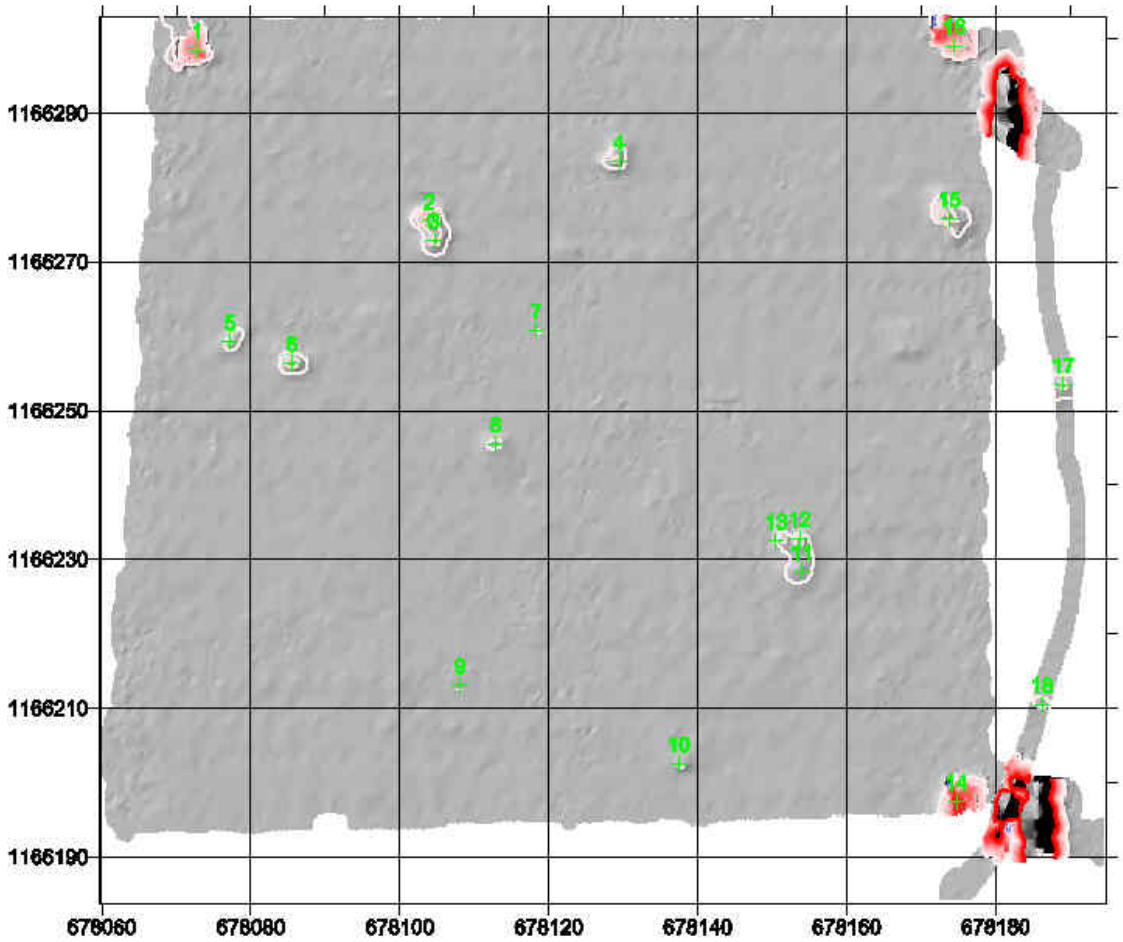
*EM61 Bottom Coil Data - Processed on 8/24/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 042z12.xyz




*EM61 Bottom Coil Data - Processed on 8/28/01 by ANW*

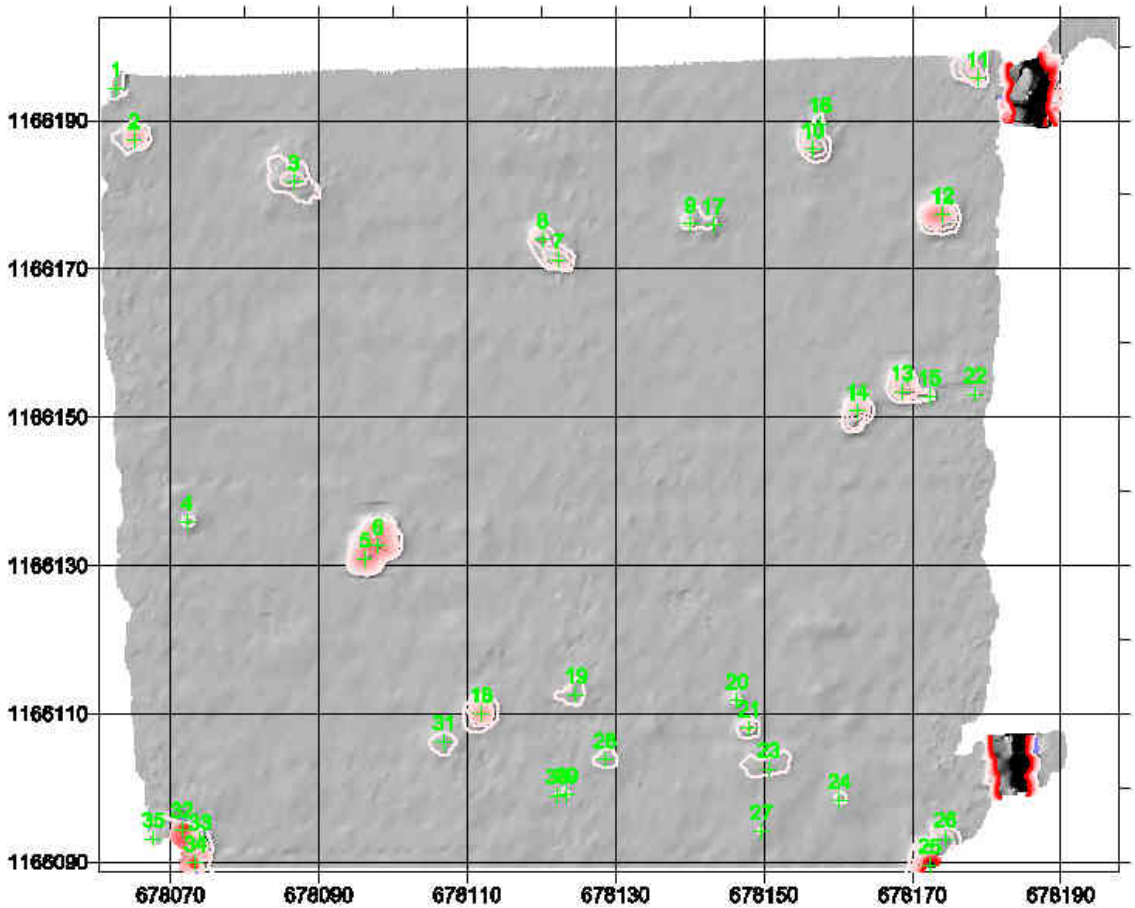
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 043z01.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 678072.77412 | 1166298.42144 |
| 2 | 678103.98684 | 1166275.49608 |
| 3 | 678104.63992 | 1166272.95132 |
| 4 | 678129.47948 | 1166283.46816 |
| 5 | 678077.23308 | 1166259.23684 |
| 6 | 678085.52044 | 1166256.3766 |
| 7 | 678118.33208 | 1166260.83556 |
| 8 | 678112.90476 | 1166245.54448 |
| 9 | 678108.13052 | 1166213.04812 |
| 10 | 678137.45156 | 1166202.5538 |
| 11 | 678154.00376 | 1166228.3392 |
| 12 | 678153.68848 | 1166232.79816 |
| 13 | 678150.51316 | 1166232.48288 |
| 14 | 678174.72216 | 1166197.44176 |
| 15 | 678173.7538 | 1166275.81136 |
| 16 | 678174.40688 | 1166299.07452 |
| 17 | 678189.04488 | 1166253.51656 |
| 18 | 678186.18484 | 1166210.50336 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

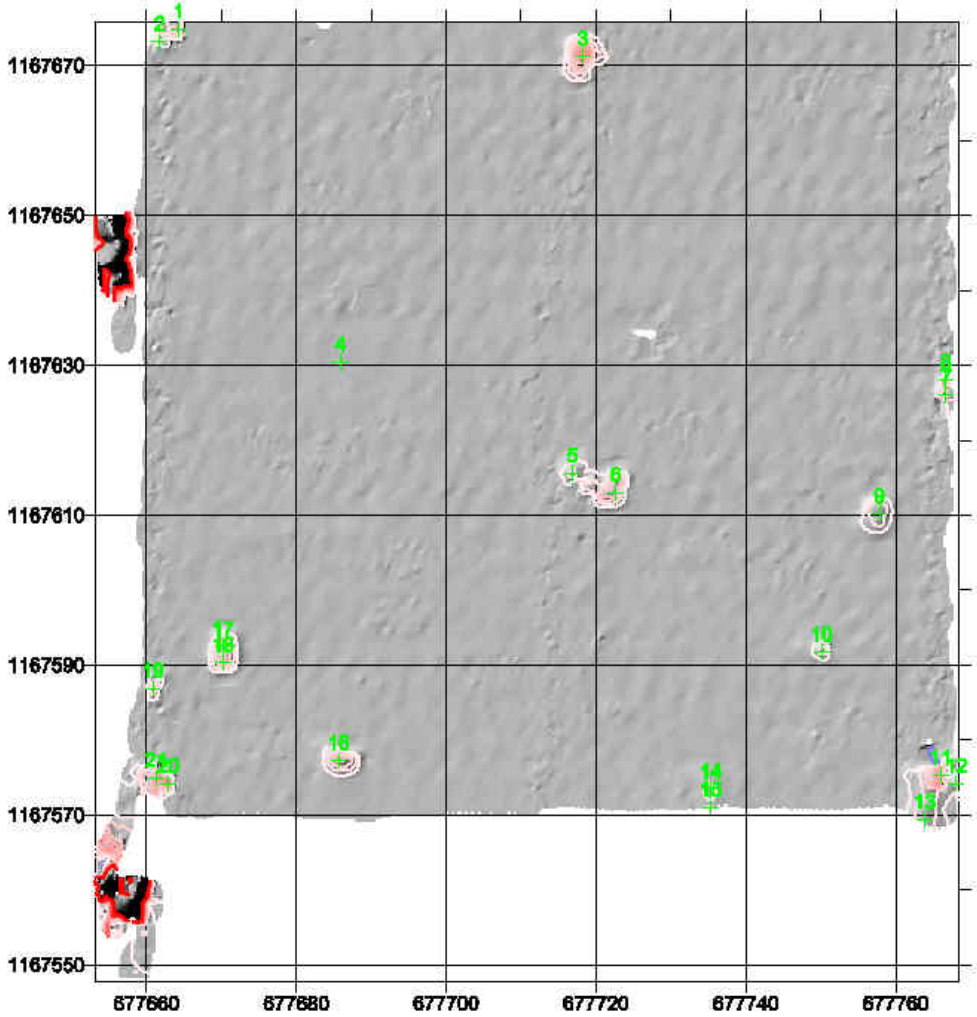
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 043z01a.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 678062.8695 | 1166194.3345 |
| 2 | 678065.09637 | 1166187.37442 |
| 3 | 678066.640565 | 1166181.71936 |
| 4 | 678072.216715 | 1166135.88356 |
| 5 | 678096.18778 | 1166130.86956 |
| 6 | 678097.97359 | 1166132.63247 |
| 7 | 678122.265185 | 1166171.18765 |
| 8 | 678120.158645 | 1166173.93505 |
| 9 | 678140.077495 | 1166176.04139 |
| 10 | 678156.607685 | 1166186.0923 |
| 11 | 678178.79294 | 1166195.63951 |
| 12 | 678174.07657 | 1166177.34641 |
| 13 | 678168.58177 | 1166153.37534 |
| 14 | 678162.58328 | 1166150.78821 |
| 15 | 678172.313865 | 1166152.71139 |
| 16 | 678157.569275 | 1166189.48076 |
| 17 | 678143.145425 | 1166175.88113 |
| 18 | 678111.89375 | 1166109.96643 |
| 19 | 678124.692055 | 1166112.55356 |
| 20 | 678146.396515 | 1166111.75223 |
| 21 | 678148.02206 | 1166108.02035 |
| 22 | 678176.449515 | 1166153.05481 |
| 23 | 678150.809195 | 1166102.52555 |
| 24 | 678160.15641 | 1166098.31287 |
| 25 | 678172.313655 | 1166089.56698 |
| 26 | 678174.419995 | 1166093.1386 |
| 27 | 678149.62471 | 1166094.10019 |
| 28 | 678128.584205 | 1166103.80767 |
| 29 | 678123.409935 | 1166099.11419 |
| 30 | 678122.10492 | 1166098.95393 |
| 31 | 678106.879745 | 1166106.25743 |
| 32 | 678071.575655 | 1166094.42072 |
| 33 | 678074.002525 | 1166092.79517 |
| 34 | 678073.361465 | 1166089.88751 |
| 35 | 678067.683505 | 1166093.1386 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

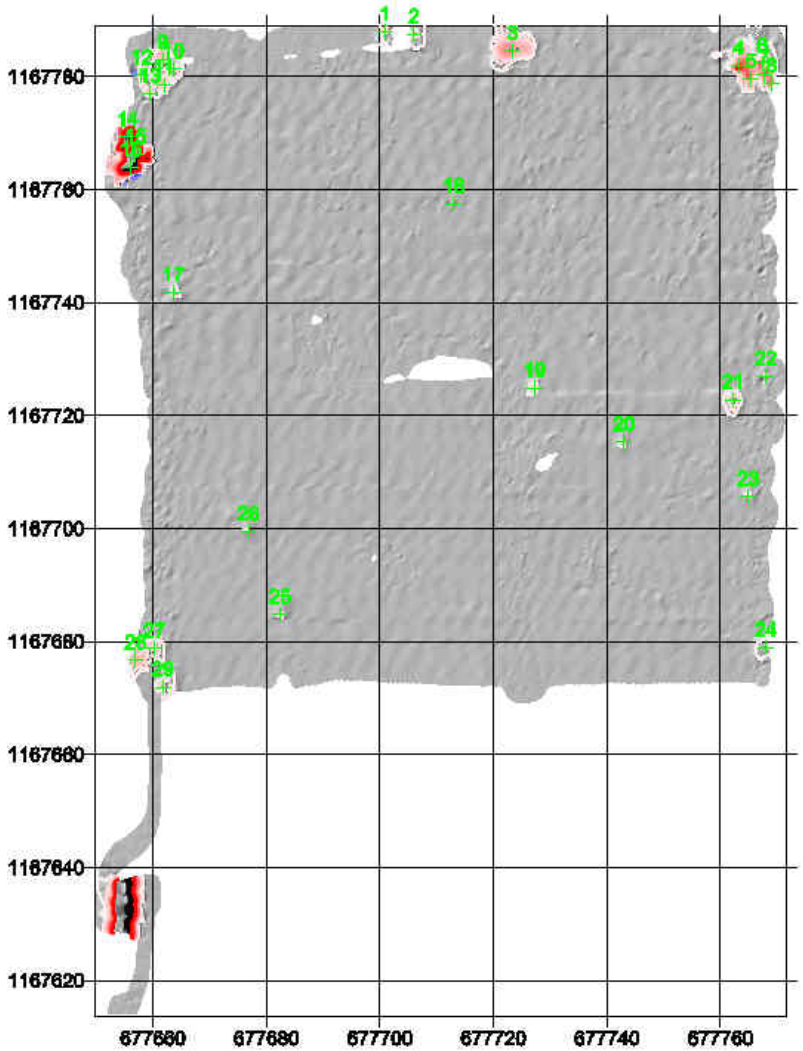
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 050y31.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 677664.33381 | 1167674.81225 |
| 2 | 677661.77121 | 1167673.14656 |
| 3 | 677718.255185 | 1167671.1819 |
| 4 | 677685.923715 | 1167630.39385 |
| 5 | 677716.888465 | 1167615.59484 |
| 6 | 677722.63296 | 1167613.03224 |
| 7 | 677766.731035 | 1167626.01608 |
| 8 | 677766.731035 | 1167627.98074 |
| 9 | 677757.826 | 1167610.14931 |
| 10 | 677750.116845 | 1167591.71995 |
| 11 | 677765.98361 | 1167575.25524 |
| 12 | 677768.097755 | 1167574.18749 |
| 13 | 677763.869465 | 1167569.36126 |
| 14 | 677735.31783 | 1167573.44007 |
| 15 | 677735.31783 | 1167571.02695 |
| 16 | 677685.624745 | 1167577.2199 |
| 17 | 677670.22779 | 1167592.46737 |
| 18 | 677670.22779 | 1167590.35323 |
| 19 | 677660.852945 | 1167586.89372 |
| 20 | 677662.96709 | 1167574.18749 |
| 21 | 677661.3014 | 1167574.95627 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

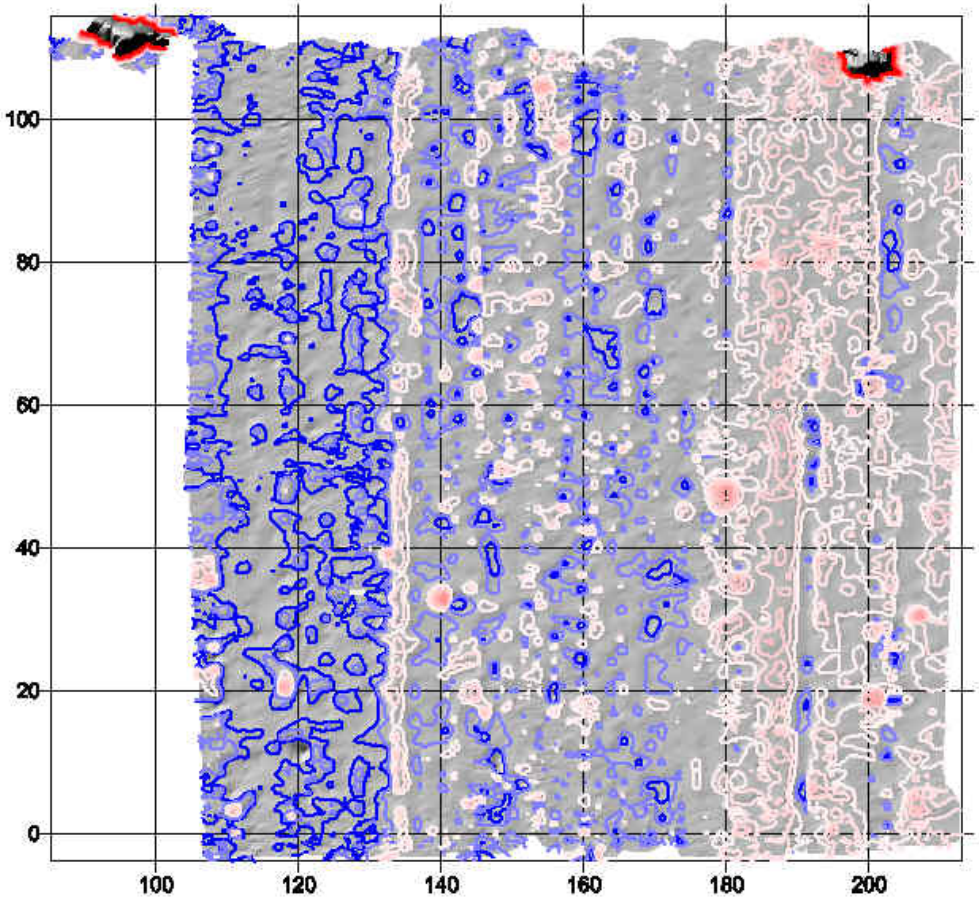
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 050y31a.xyz




*EM61 Bottom Coil Date - Processed on 8/06/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 677700.811595 | 1167787.94778 |
| 2 | 677705.98501 | 1167787.53858 |
| 3 | 677723.34664 | 1167784.64498 |
| 4 | 677763.243315 | 1167781.95597 |
| 5 | 677765.318527 | 1167779.67616 |
| 6 | 677767.36451 | 1167782.36517 |
| 7 | 677767.773707 | 1167780.28996 |
| 8 | 677769.030525 | 1167778.85777 |
| 9 | 677661.733313 | 1167782.97896 |
| 10 | 677663.603927 | 1167781.34218 |
| 11 | 677661.937912 | 1167778.44857 |
| 12 | 677658.021315 | 1167780.28996 |
| 13 | 677659.453503 | 1167776.98716 |
| 14 | 677655.536907 | 1167769.32933 |
| 15 | 677656.969095 | 1167766.23113 |
| 16 | 677656.150702 | 1167763.95132 |
| 17 | 677663.603927 | 1167741.8547 |
| 18 | 677712.99961 | 1167757.55031 |
| 19 | 677727.263237 | 1167724.90226 |
| 20 | 677742.98808 | 1167715.37363 |
| 21 | 677762.191095 | 1167722.82705 |
| 22 | 677768.007533 | 1167726.94825 |
| 23 | 677764.860102 | 1167705.67002 |
| 24 | 677768.007533 | 1167678.98455 |
| 25 | 677682.397745 | 1167684.77176 |
| 26 | 677676.815133 | 1167699.47362 |
| 27 | 677660.271897 | 1167678.77995 |
| 28 | 677656.969095 | 1167676.73397 |
| 29 | 677661.733313 | 1167671.86975 |

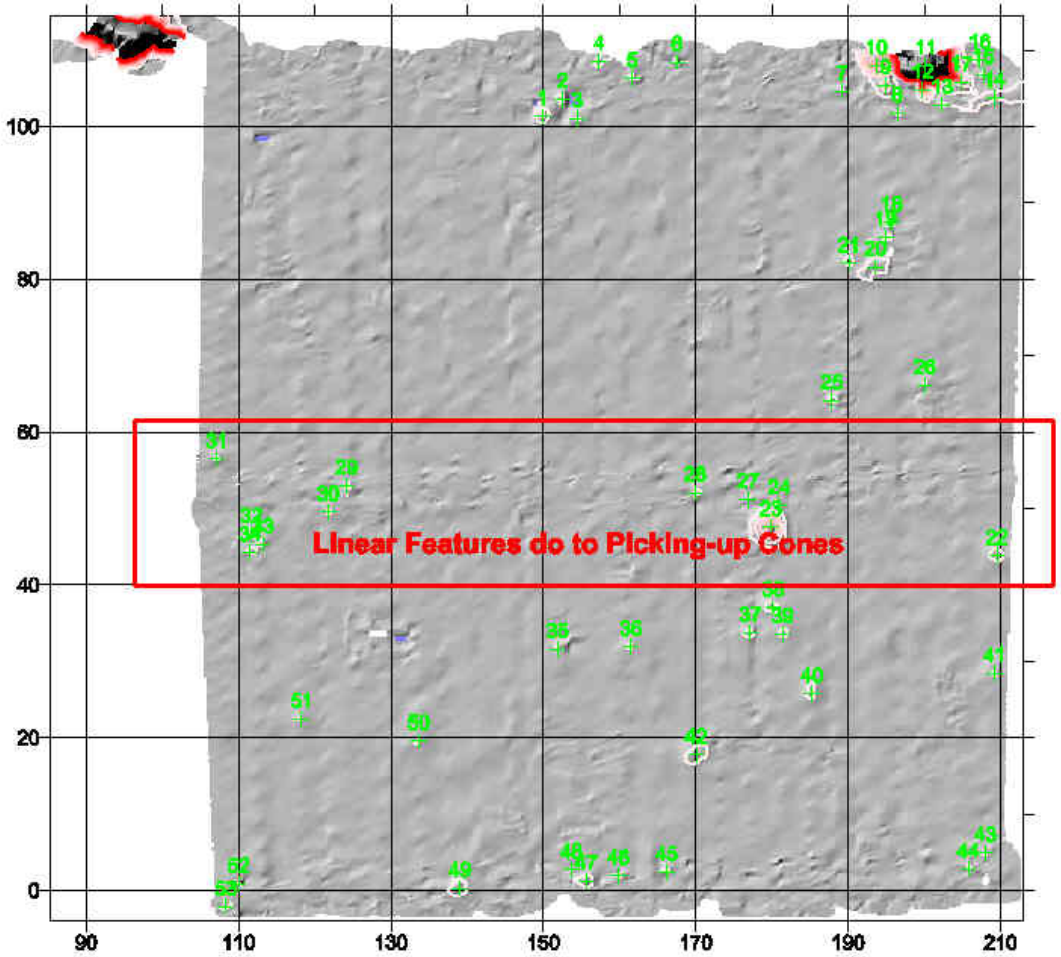
**Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B053- Grid 053y02.xyz**




**Threshold = +/- 5 mV**

*EM61 Bottom Coil Data - Processed on 8/01/01 by ANW*

## Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B053- Grid 053y02.xyz

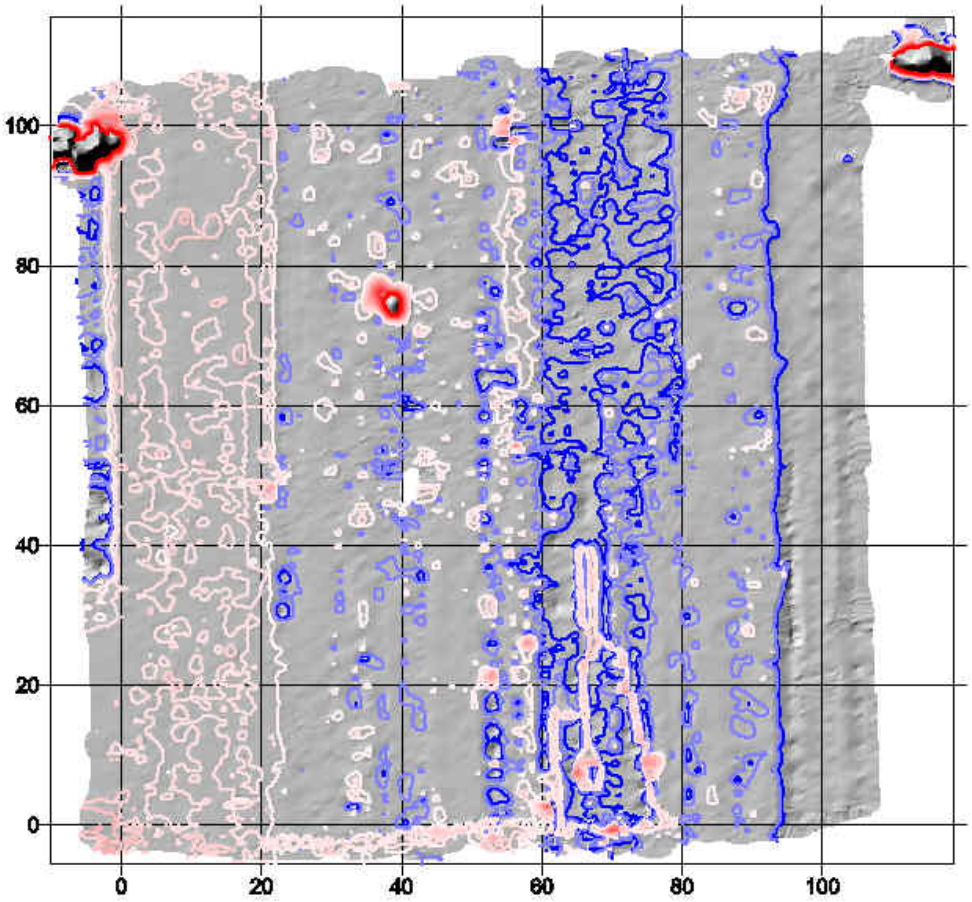



| ID# | Easting | Northing |
|---|---|---|
| 1 | 149.919975 | 101.32574 |
| 2 | 152.474175 | 103.58195 |
| 3 | 154.432395 | 101.02775 |
| 4 | 167.284585 | 108.56264 |
| 5 | 161.84601 | 108.30643 |
| 6 | 167.52267 | 108.413645 |
| 7 | 189.212085 | 104.6452 |
| 8 | 196.4277 | 101.772725 |
| 9 | 194.916485 | 105.391175 |
| 10 | 193.724505 | 107.945375 |
| 11 | 200.195145 | 107.945375 |
| 12 | 199.74818 | 104.795195 |
| 13 | 202.30238 | 102.636975 |
| 14 | 209.219985 | 103.730945 |
| 15 | 207.730035 | 106.753415 |
| 16 | 207.261765 | 108.711635 |
| 17 | 204.85658 | 105.83818 |
| 18 | 195.682725 | 87.469205 |
| 19 | 194.916485 | 85.510985 |
| 20 | 193.57551 | 81.61583 |
| 21 | 190.106055 | 82.062815 |
| 22 | 209.517975 | 43.81367 |
| 23 | 179.86797 | 47.561115 |
| 24 | 180.93222 | 50.433305 |
| 25 | 187.849645 | 64.140845 |
| 26 | 200.04815 | 66.099085 |
| 27 | 176.866785 | 51.199585 |
| 28 | 169.927875 | 52.093535 |
| 29 | 124.165125 | 53.00679 |
| 30 | 121.75992 | 49.539335 |
| 31 | 107.15841 | 56.45696 |
| 32 | 111.87063 | 48.867145 |
| 33 | 113.182085 | 45.324905 |
| 34 | 111.521635 | 44.260655 |
| 35 | 151.85691 | 31.617365 |
| 36 | 161.499015 | 31.915355 |
| 37 | 177.164775 | 33.72458 |
| 38 | 180.16598 | 37.04504 |
| 39 | 181.379205 | 33.575585 |
| 40 | 185.295645 | 25.742705 |
| 41 | 209.219985 | 28.467165 |
| 42 | 170.07887 | 17.762115 |
| 43 | 208.028025 | 4.968545 |
| 44 | 205.771815 | 2.86133 |
| 45 | 166.16043 | 2.414345 |
| 46 | 159.838785 | 1.96738 |
| 47 | 155.624355 | 1.222385 |
| 48 | 153.666135 | 2.712335 |
| 49 | 139.064625 | 0.30713 |
| 50 | 133.658235 | 19.59134 |
| 51 | 118.290485 | 22.44353 |
| 52 | 110.0106 | 0.90311 |
| 53 | 108.36037 | -2.098075 |

*EM61 Top Coil Data - Processed on 8/02/01 by ANW*

*Threshold = +/- 5 mV*

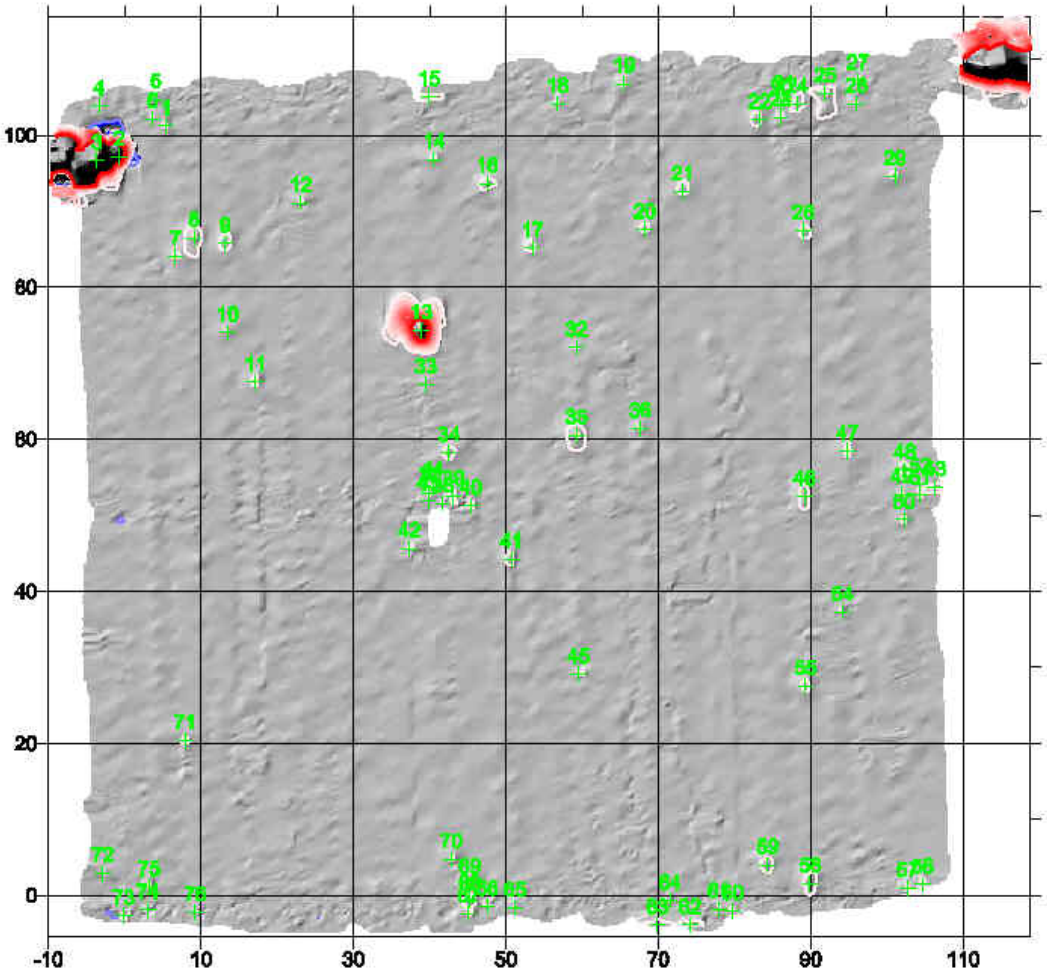
**Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B053- Grid 053y02r.xyz**




**Threshold = +/- 5 mV**

*EM61 Bottom Coil Data - Processed on 8/01/01 by ANW*

## Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B053- Grid 053y02r.xyz

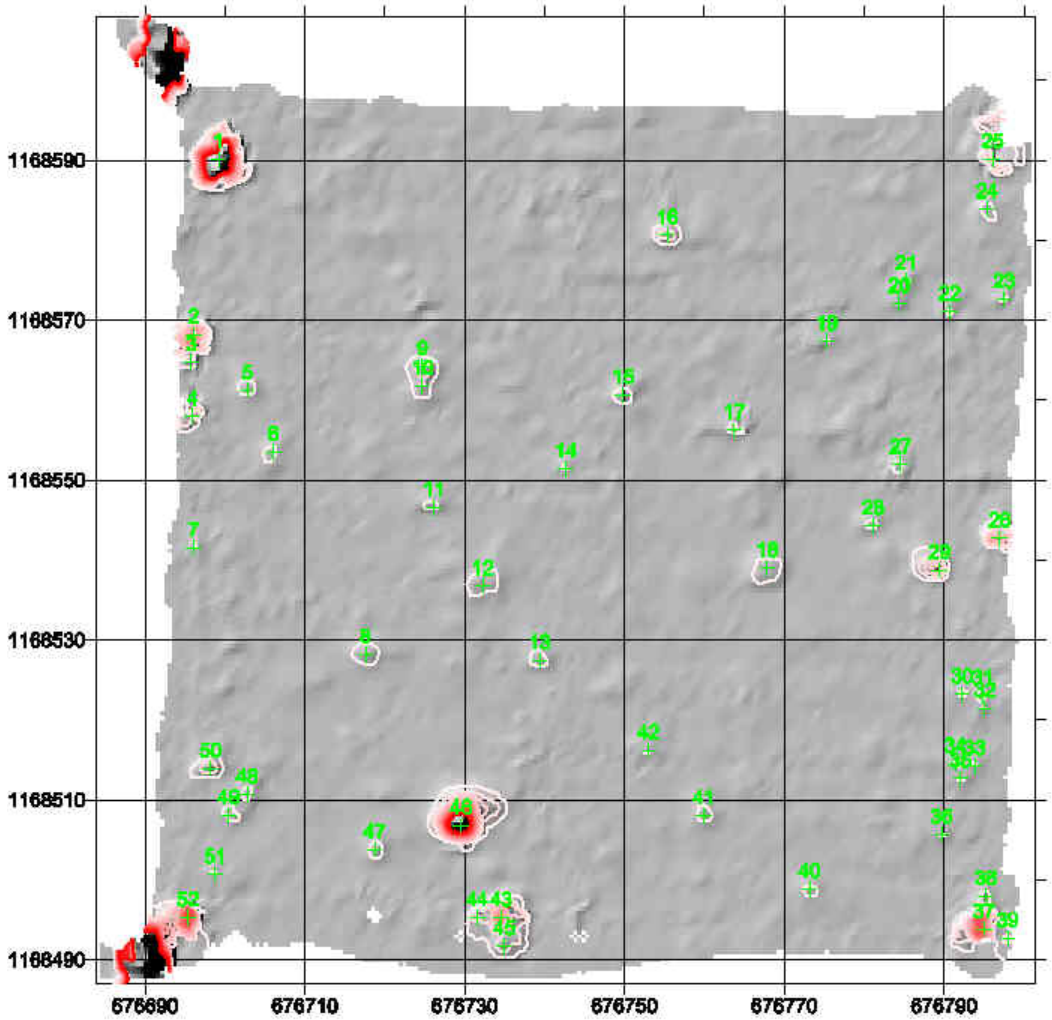



*EM61 Top Coil Data - Processed on 8/02/01 by ANW*

*Threshold = +/- 5 mV*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 5.45245 | 101.244166667 |
| 2 | -0.777716666667 | 97.14085 |
| 3 | -3.87796666667 | 96.6897 |
| 4 | -3.3772 | 103.94385 |
| 5 | 4.07751666667 | 104.74595 |
| 6 | 3.62636666667 | 102.16795 |
| 7 | 5.65551666667 | 84.0789833333 |
| 8 | 9.08513333333 | 86.6066 |
| 9 | 13.18645 | 86.7846833333 |
| 10 | 13.4872166667 | 74.0482666667 |
| 11 | 17.1393833333 | 87.6183333333 |
| 12 | 23.0887833333 | 91.08255 |
| 13 | 38.8805166667 | 74.3470333333 |
| 14 | 40.5562166667 | 96.8400833333 |
| 15 | 38.9332 | 105.0467166667 |
| 16 | 47.5393 | 93.66055 |
| 17 | 53.4677 | 86.15315 |
| 18 | 56.7978166667 | 104.144416667 |
| 19 | 58.4768833333 | 105.722416667 |
| 20 | 68.2052666667 | 87.6807666667 |
| 21 | 73.2108833333 | 92.6863833333 |
| 22 | 83.2436 | 102.017666667 |
| 23 | 86.9718833333 | 102.318333333 |
| 24 | 88.2492166667 | 104.144416667 |
| 25 | 91.9018833333 | 105.487666667 |
| 26 | 88.0228166667 | 97.4303833333 |
| 27 | 98.1550833333 | 107.173666667 |
| 28 | 98.0047 | 104.144416667 |
| 29 | 101.0319 | 94.56285 |
| 30 | 86.1223666667 | 103.84385 |
| 31 | 86.4448166667 | 104.446183333 |
| 32 | 59.2467166667 | 72.0598 |
| 33 | 39.48205 | 67.2146666667 |
| 34 | 42.6112 | 66.2860166667 |
| 35 | 58.2467166667 | 80.63325 |
| 36 | 67.6037333333 | 81.43555 |
| 37 | 38.9332 | 52.92815 |
| 38 | 41.7592833333 | 51.5747 |
| 39 | 43.1342166667 | 52.477 |
| 40 | 45.41145 | 51.25245 |
| 41 | 50.7178833333 | 44.2703666667 |
| 42 | 37.3552 | 45.6483 |
| 43 | 39.7628166667 | 61.6754666667 |
| 44 | 40.36435 | 63.70165 |
| 45 | 59.6474833333 | 39.08165 |
| 46 | 69.173 | 62.477 |
| 47 | 94.8018333333 | 66.4064 |
| 48 | 102.38625 | 55.9767833333 |
| 49 | 101.9341 | 52.7777666667 |
| 50 | 102.234866667 | 49.4283666667 |
| 51 | 104.361716667 | 52.8273833333 |
| 52 | 104.361716667 | 54.1537 |
| 53 | 106.338183333 | 53.70165 |
| 54 | 94.1766166667 | 37.2862833333 |
| 55 | 89.3233833333 | 27.5583333333 |
| 56 | 104.652483333 | 1.4826 |
| 57 | 102.666016667 | 0.969966666667 |
| 58 | 89.9249166667 | 1.86298333333 |
| 59 | 84.3177666667 | 4.0108 |
| 60 | 78.7418166667 | -2.06918333333 |
| 61 | 77.9372166667 | -1.78641666667 |
| 62 | 74.1348666667 | -3.88526666667 |
| 63 | 68.8909666667 | -3.89526666667 |
| 64 | 71.5351833333 | -0.715733333333 |
| 65 | 51.1904666667 | -1.61803333333 |
| 66 | 47.5383 | -1.46766 |
| 67 | 45.1105833333 | -2.38995 |
| 68 | 45.2610666667 | -0.715733333333 |
| 69 | 45.2610666667 | 1.4826 |
| 70 | 42.83345 | 4.78261666667 |
| 71 | 7.88006666667 | 20.4286666667 |
| 72 | -2.90466666667 | 2.92643333333 |
| 73 | -0.17618333333 | -2.67071666667 |
| 74 | 3.00335 | -1.9168 |
| 75 | 3.17521666667 | 1.11035 |
| 76 | 9.23351666667 | -2.21958666667 |

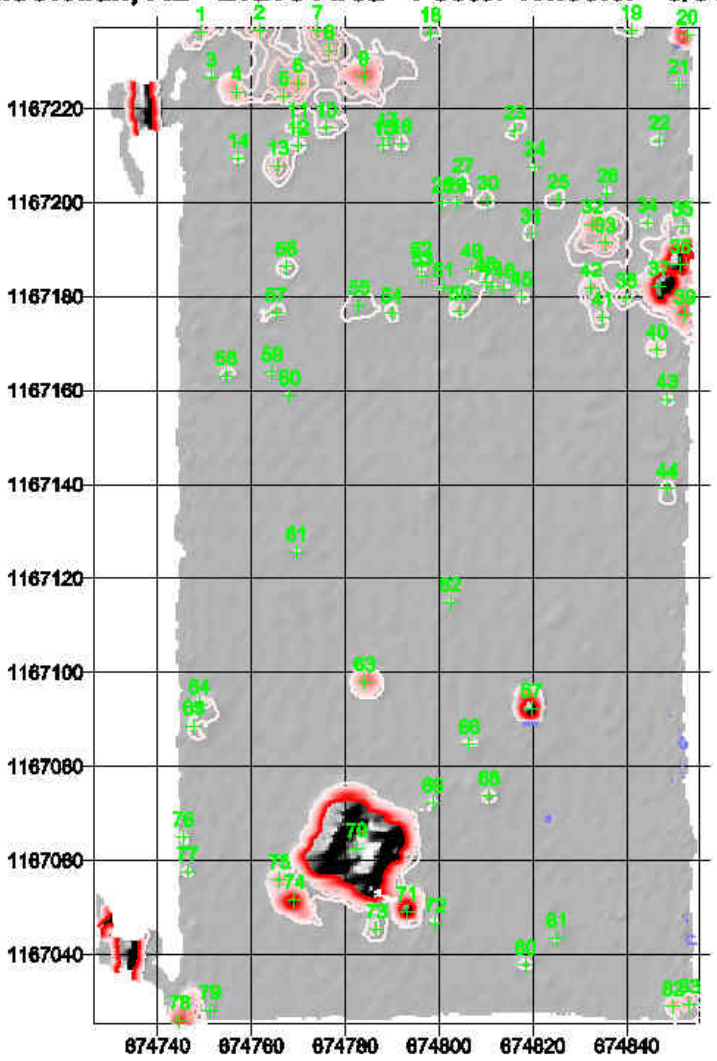
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 055y26.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 676699.20384 | 1168590.17108 |
| 2 | 676696.06076 | 1168568.23138 |
| 3 | 676695.776707 | 1168564.60643 |
| 4 | 676695.919733 | 1168557.97571 |
| 5 | 676702.7696 | 1168561.26061 |
| 6 | 676706.03336 | 1168553.56459 |
| 7 | 676696.06076 | 1168541.57732 |
| 8 | 676717.5774 | 1168528.19993 |
| 9 | 676724.70932 | 1168564.24232 |
| 10 | 676724.70932 | 1168561.62472 |
| 11 | 676726.139733 | 1168546.57369 |
| 12 | 676732.26432 | 1168538.74212 |
| 13 | 676739.376093 | 1168527.47465 |
| 14 | 676742.66 | 1168551.42904 |
| 15 | 676749.79192 | 1168560.67636 |
| 16 | 676755.3524 | 1168580.84171 |
| 17 | 676763.75356 | 1168556.26424 |
| 18 | 676767.883827 | 1168539.01869 |
| 19 | 676775.2978 | 1168567.3652 |
| 20 | 676784.403883 | 1168572.07937 |
| 21 | 676785.2702 | 1168574.9402 |
| 22 | 676790.869653 | 1168571.09219 |
| 23 | 676797.619373 | 1168572.64348 |
| 24 | 676795.383827 | 1168583.90547 |
| 25 | 676796.06896 | 1168590.17108 |
| 26 | 676796.955267 | 1168542.72568 |
| 27 | 676784.585067 | 1168551.99315 |
| 28 | 676781.140133 | 1168544.29712 |
| 29 | 676789.400287 | 1168536.73664 |
| 30 | 676792.261093 | 1168523.20356 |
| 31 | 676794.81972 | 1168523.06253 |
| 32 | 676795.101773 | 1168521.49109 |
| 33 | 676793.812287 | 1168514.23829 |
| 34 | 676791.394787 | 1168514.62035 |
| 35 | 676792.09992 | 1168512.66685 |
| 36 | 676769.66232 | 1168505.67596 |
| 37 | 676794.960747 | 1168493.84967 |
| 38 | 676795.2426 | 1168497.97993 |
| 39 | 676797.942453 | 1168492.72165 |
| 40 | 676773.162053 | 1168496.84824 |
| 41 | 676769.905547 | 1168508.09356 |
| 42 | 676753.05568 | 1168518.23281 |
| 43 | 676734.640893 | 1168495.28028 |
| 44 | 676731.63904 | 1168495.28028 |
| 45 | 676734.963973 | 1168491.71432 |
| 46 | 676729.54452 | 1168506.82432 |
| 47 | 676718.72576 | 1168503.62247 |
| 48 | 676702.7696 | 1168510.67233 |
| 49 | 676700.47288 | 1168508.09356 |
| 50 | 676696.196307 | 1168513.93609 |
| 51 | 676696.78066 | 1168500.69973 |
| 52 | 676695.366527 | 1168495.28028 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

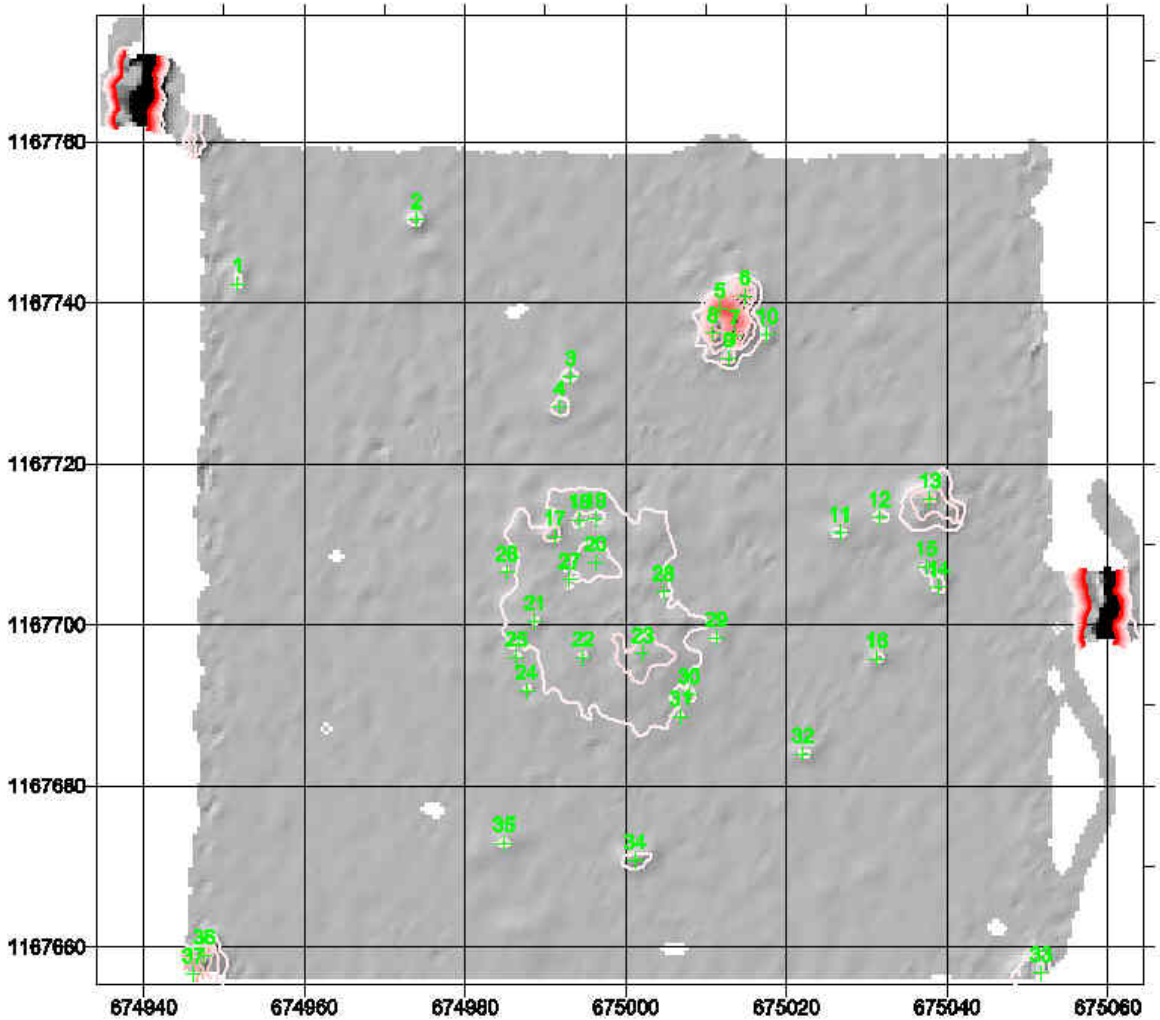
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/31/01 - 073z30.xyz




*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 674748.181353 | 1167236.88087 |
| 2 | 674761.0889343 | 1167234.6 |
| 3 | 674761.442087 | 1167226.80087 |
| 4 | 674768.918353 | 1167226.58183 |
| 5 | 674768.518087 | 1167222.408 |
| 6 | 674768.622 | 1167226.394 |
| 7 | 674774.362 | 1167229.5 |
| 8 | 674778.672087 | 1167232.35 |
| 9 | 674783.514 | 1167226.848 |
| 10 | 674776.5087 | 1167216.80353 |
| 11 | 674765.522 | 1167216.89883 |
| 12 | 674768.322 | 1167212.114 |
| 13 | 674765.662 | 1167207.83087 |
| 14 | 674767.168087 | 1167206.868 |
| 15 | 674768.164 | 1167212.114 |
| 16 | 674761.8883353 | 1167218.35133 |
| 17 | 674768.531353 | 1167212.84353 |
| 18 | 674768.183353 | 1167206.10883 |
| 19 | 674849.584087 | 1167236.8 |
| 20 | 674852.384087 | 1167206.88087 |
| 21 | 674851.168353 | 1167206.11087 |
| 22 | 674848.579 | 1167210.10883 |
| 23 | 674816.189 | 1167216.35487 |
| 24 | 674823.413353 | 1167207.88133 |
| 25 | 674839.3883353 | 1167203.88353 |
| 26 | 674836.883353 | 1167201.88133 |
| 27 | 674805.148353 | 1167204.38883 |
| 28 | 674803.662 | 1167198.88883 |
| 29 | 674803.883353 | 1167198.88883 |
| 30 | 674815.414 | 1167200.348 |
| 31 | 674818.671353 | 1167198.362 |
| 32 | 674852.088087 | 1167198.308 |
| 33 | 674856.384087 | 1167191.32353 |
| 34 | 674844.484087 | 1167192.81133 |
| 35 | 674851.883353 | 1167184.87133 |
| 36 | 674861.883087 | 1167186.88087 |
| 37 | 674848.579 | 1167188.118 |
| 38 | 674838.582 | 1167178.80733 |
| 39 | 674842.38 | 1167176.13833 |
| 40 | 674848.383353 | 1167168.88087 |
| 41 | 674844.5 1167179.51457 | |
| 42 | 674852.581353 | 1167161.88087 |
| 43 | 674848.514087 | 1167160.13087 |
| 44 | 674848.644087 | 1167150.11833 |
| 45 | 674817.667353 | 1167176.88087 |
| 46 | 674819.512 | 1167161.88133 |
| 47 | 674811.168 | 1167152.118 |
| 48 | 674809.918353 | 1167153.10833 |
| 49 | 674808.918 | 1167158.88133 |
| 50 | 674801.667353 | 1167176.88133 |
| 51 | 674800.982353 | 1167161.88087 |
| 52 | 674788.174087 | 1167160.368 |
| 53 | 674784.482 | 1167154.37733 |
| 54 | 674788.628087 | 1167176.38087 |
| 55 | 674782.524087 | 1167178.12833 |
| 56 | 674767.413353 | 1167156.288 |
| 57 | 674763.667353 | 1167170.804 |
| 58 | 674754.588 | 1167168.10087 |
| 59 | 674764.41 | 1167166.834 |
| 60 | 674758.168353 | 1167166.88087 |
| 61 | 674758.674087 | 1167138.818 |
| 62 | 674802.383353 | 1167144.87087 |
| 63 | 674754.181353 | 1167087.38087 |
| 64 | 674748.584 | 1167083.14087 |
| 65 | 674747.862 | 1167088.88353 |
| 66 | 674805.621353 | 1167084.88087 |
| 67 | 674818.671353 | 1167088.40087 |
| 68 | 674813.881353 | 1167078.84087 |
| 69 | 674788.649 | 1167072.10087 |
| 70 | 674782.48 | 1167062.854 |
| 71 | 674793.171353 | 1167048.13087 |
| 72 | 674788.178 | 1167046.88833 |
| 73 | 674788.67 | 1167046.41133 |
| 74 | 674789.18 | 1167061.88833 |
| 75 | 674795.628353 | 1167064.83353 |
| 76 | 674788.488 | 1167064.81833 |
| 77 | 674788.428353 | 1167057.372 |
| 78 | 674784.684 | 1167036.80733 |
| 79 | 674781.18 | 1167028.18087 |
| 80 | 674818.368353 | 1167037.87333 |
| 81 | 674808.148 | 1167046.43087 |
| 82 | 674848.881353 | 1167026.88087 |
| 83 | 674849.379353 | 1167003.40833 |

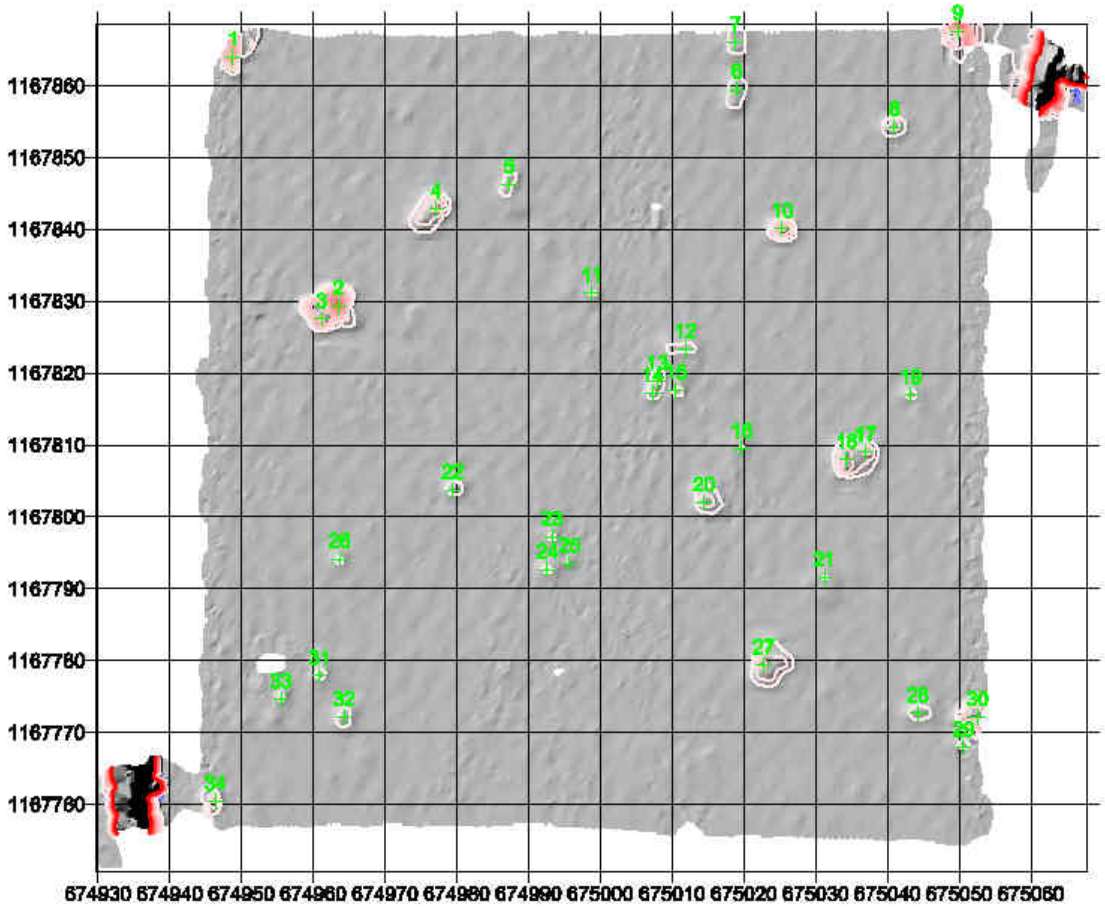
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/24/01 - 081z22.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 674951.676413 | 1167742.3273 |
| 2 | 674973.939705 | 1167750.29792 |
| 3 | 674993.138712 | 1167730.79485 |
| 4 | 674991.770457 | 1167727.10275 |
| 5 | 675011.729605 | 1167739.24329 |
| 6 | 675014.813808 | 1167740.78529 |
| 7 | 675013.575663 | 1167735.67895 |
| 8 | 675010.817435 | 1167736.16101 |
| 9 | 675012.615522 | 1167733.097 |
| 10 | 675017.571837 | 1167736.02898 |
| 11 | 675028.628382 | 1167711.44383 |
| 12 | 675031.558443 | 1167713.28988 |
| 13 | 675037.85576 | 1167716.59203 |
| 14 | 675038.920958 | 1167704.68943 |
| 15 | 675037.378957 | 1167707.1436 |
| 16 | 675031.232868 | 1167695.76319 |
| 17 | 674991.140625 | 1167710.96774 |
| 18 | 674994.224628 | 1167712.96563 |
| 19 | 674996.222715 | 1167713.13786 |
| 20 | 674996.222715 | 1167707.76171 |
| 21 | 674988.686453 | 1167700.3892 |
| 22 | 674994.680713 | 1167696.93694 |
| 23 | 675002.064947 | 1167696.39302 |
| 24 | 674987.622255 | 1167691.76702 |
| 25 | 674986.38431 | 1167695.91522 |
| 26 | 674985.168063 | 1167706.51377 |
| 27 | 674992.988683 | 1167705.60159 |
| 28 | 675004.671147 | 1167704.05959 |
| 29 | 675011.27352 | 1167696.36939 |
| 30 | 675007.88546 | 1167691.31093 |
| 31 | 675006.621282 | 1167688.5527 |
| 32 | 675022.024095 | 1167683.94842 |
| 33 | 675051.65962 | 1167666.76706 |
| 34 | 675001.131056 | 1167670.72195 |
| 35 | 674984.842308 | 1167672.87207 |
| 36 | 674947.530212 | 1167658.60718 |
| 37 | 674946.140238 | 1167656.58332 |

*EM61 Bottom Coil Data - Processed on 9/20/01 by ANW*

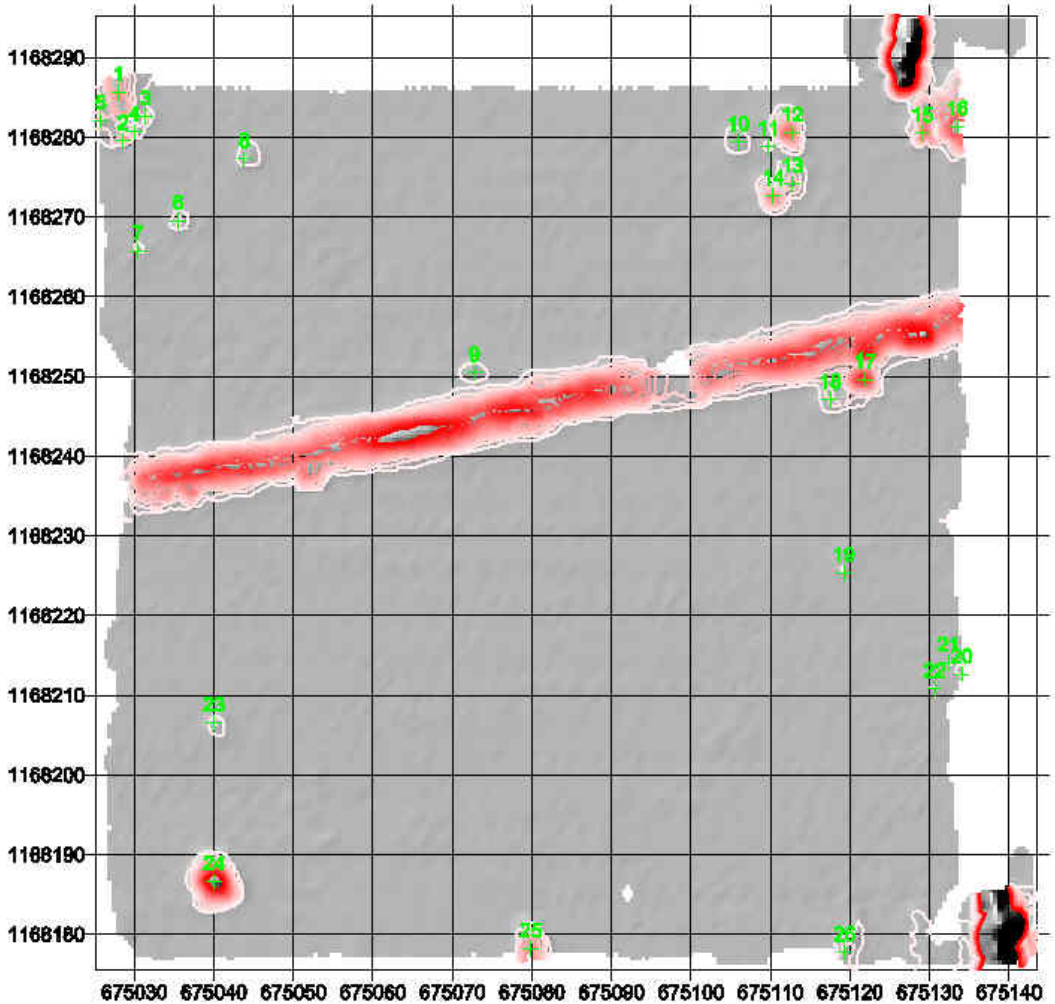
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/24/01 - 081z22a.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 674948.81194 | 1167864.00718 |
| 2 | 674963.478742 | 1167829.33855 |
| 3 | 674961.197597 | 1167827.54066 |
| 4 | 674977.151812 | 1167842.85026 |
| 5 | 674987.258123 | 1167848.28049 |
| 6 | 675019.005002 | 1167859.44889 |
| 7 | 675018.84385 | 1167865.96402 |
| 8 | 675040.990699 | 1167864.24599 |
| 9 | 675049.78497 | 1167867.59858 |
| 10 | 675025.358982 | 1167840.08767 |
| 11 | 674998.615 | 1167831.13224 |
| 12 | 675011.845263 | 1167823.30467 |
| 13 | 675007.93156 | 1167818.90773 |
| 14 | 675007.266973 | 1167817.27319 |
| 15 | 675010.533028 | 1167817.61852 |
| 16 | 675019.649606 | 1167809.48685 |
| 17 | 675036.915858 | 1167808.96639 |
| 18 | 675034.31441 | 1167807.99546 |
| 19 | 675043.269838 | 1167816.95069 |
| 20 | 675014.446712 | 1167801.96681 |
| 21 | 675031.206485 | 1167791.55799 |
| 22 | 674979.430757 | 1167803.75948 |
| 23 | 674993.268778 | 1167797.24434 |
| 24 | 674992.622172 | 1167792.68805 |
| 25 | 674995.707075 | 1167793.51483 |
| 26 | 674963.637893 | 1167794.15944 |
| 27 | 675022.757633 | 1167779.35651 |
| 28 | 675044.236748 | 1167772.68022 |
| 29 | 675050.590728 | 1167767.93778 |
| 30 | 675052.54767 | 1167772.17375 |
| 31 | 674960.875293 | 1167777.88312 |
| 32 | 674964.2825 | 1167772.17375 |
| 33 | 674955.468223 | 1167774.61404 |
| 34 | 674946.371643 | 1167760.45572 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

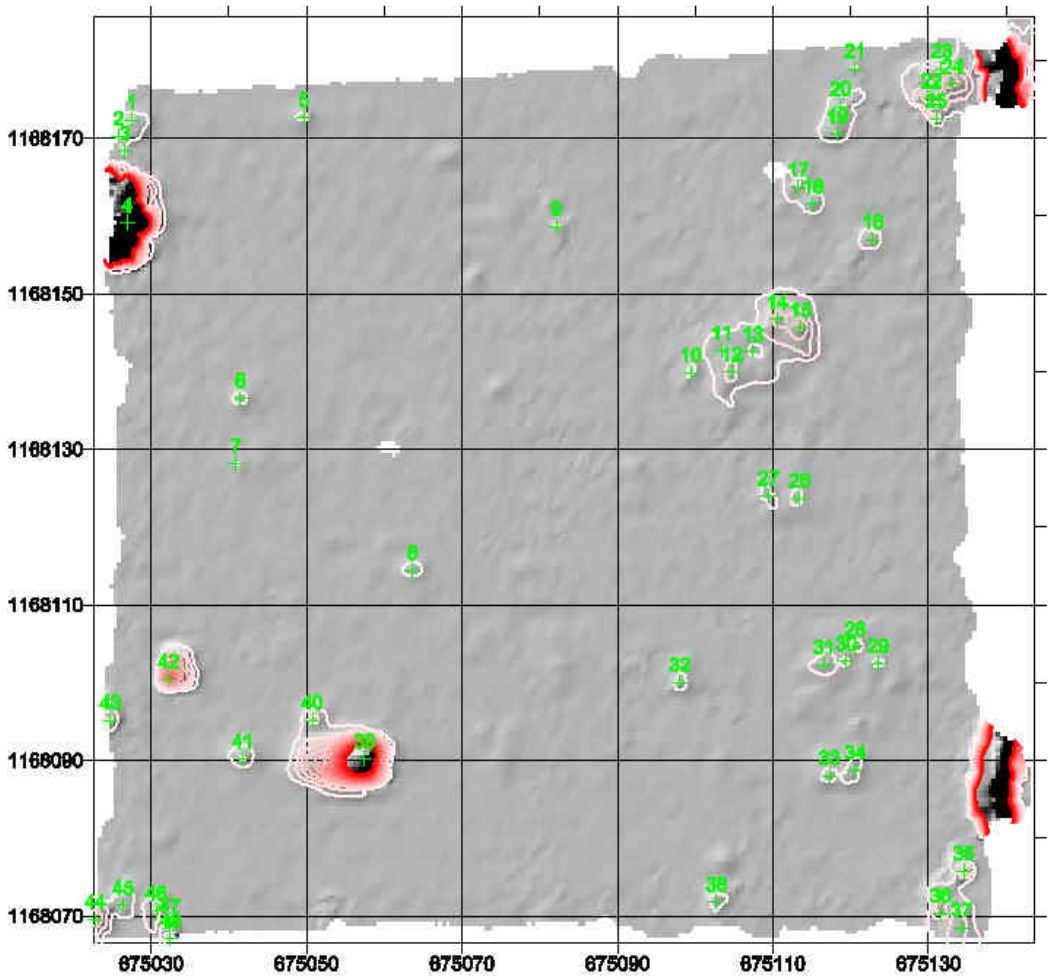
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/31/01 - 083z23.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 675028.022583 | 1168285.63006 |
| 2 | 675028.561417 | 1168279.54279 |
| 3 | 675031.4155 | 1168282.65629 |
| 4 | 675029.996458 | 1168280.68042 |
| 5 | 675026.767292 | 1168282.09746 |
| 6 | 675036.506958 | 1168269.62371 |
| 7 | 675030.417583 | 1168265.71187 |
| 8 | 675043.829583 | 1168277.2875 |
| 9 | 675072.769167 | 1168250.4635 |
| 10 | 675105.939917 | 1168279.40306 |
| 11 | 675109.751958 | 1168276.84425 |
| 12 | 675112.72575 | 1168280.54071 |
| 13 | 675112.72575 | 1168274.19396 |
| 14 | 675110.33075 | 1168272.63721 |
| 15 | 675129.091583 | 1168280.54071 |
| 16 | 675133.482417 | 1168281.37896 |
| 17 | 675121.906583 | 1168249.84521 |
| 18 | 675117.51575 | 1168247.09054 |
| 19 | 675119.212208 | 1168225.35592 |
| 20 | 675134.04125 | 1168212.84246 |
| 21 | 675132.344792 | 1168214.0595 |
| 22 | 675130.646333 | 1168210.80629 |
| 23 | 675040.017542 | 1168208.57512 |
| 24 | 675040.017542 | 1168185.67557 |
| 25 | 675079.834417 | 1168178.21433 |
| 26 | 675119.351917 | 1168177.77525 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

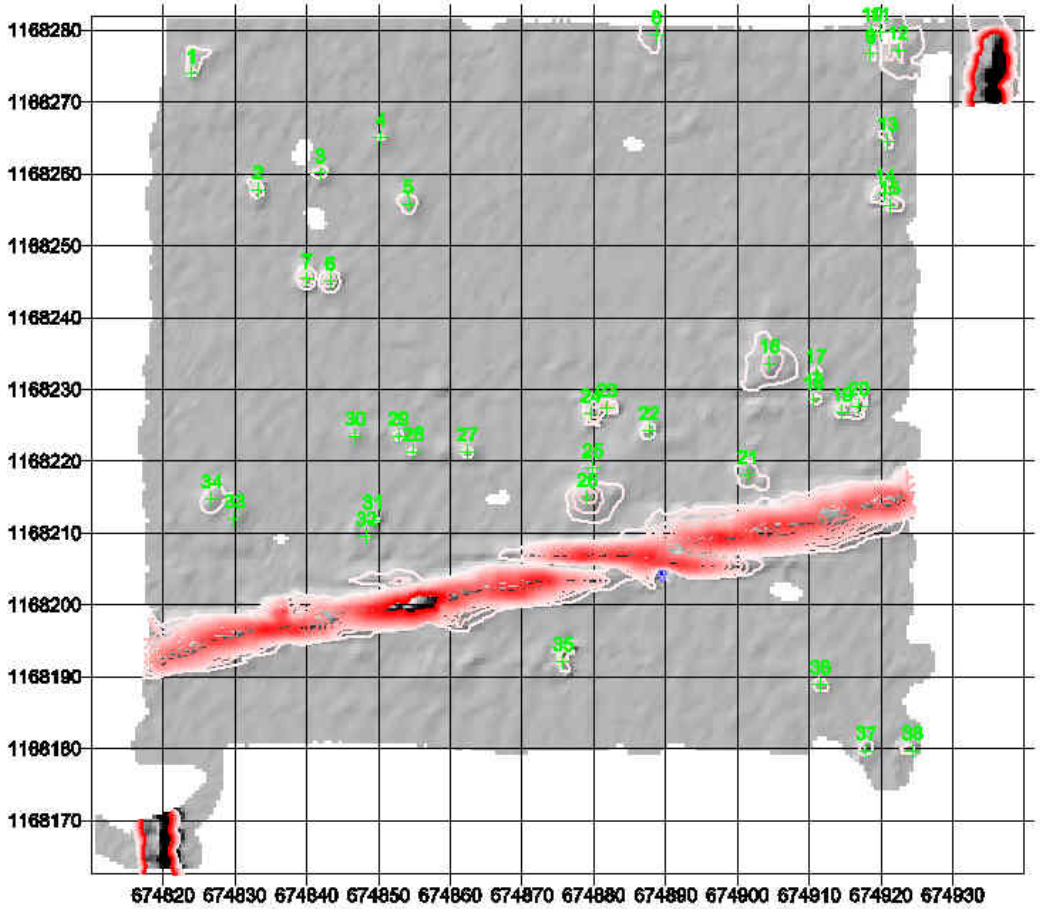
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/31/01 - 083z23a.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 675027.492577 | 1168172.37492 |
| 2 | 675025.797737 | 1168170.21602 |
| 3 | 675026.646157 | 1168168.35976 |
| 4 | 675026.92763 | 1168159.09667 |
| 5 | 675049.62638 | 1168172.65739 |
| 6 | 675041.495183 | 1168136.54118 |
| 7 | 675040.91006 | 1168128.12749 |
| 8 | 675063.60661 | 1168114.42753 |
| 9 | 675082.151167 | 1168158.65479 |
| 10 | 675099.422998 | 1168139.82996 |
| 11 | 675103.417378 | 1168142.67487 |
| 12 | 675104.70668 | 1168139.97119 |
| 13 | 675107.412353 | 1168142.53383 |
| 14 | 675110.559913 | 1168146.66965 |
| 15 | 675113.566237 | 1168145.66119 |
| 16 | 675122.627327 | 1168158.95995 |
| 17 | 675113.263587 | 1168163.9566 |
| 18 | 675116.11964 | 1168181.61967 |
| 19 | 675118.2674 | 1168170.61867 |
| 20 | 675118.69111 | 1168174.05976 |
| 21 | 675120.547363 | 1168178.93234 |
| 22 | 675130.393577 | 1168175.07859 |
| 23 | 675131.684883 | 1168176.93234 |
| 24 | 675133.117427 | 1168178.93485 |
| 25 | 675130.9767 | 1168172.51616 |
| 26 | 675113.425 | 1168123.7068 |
| 27 | 675109.409643 | 1168123.99127 |
| 28 | 675120.547363 | 1168104.56132 |
| 29 | 675123.563687 | 1168102.44259 |
| 30 | 675119.41747 | 1168102.72507 |
| 31 | 675116.552383 | 1168102.30136 |
| 32 | 675088.010027 | 1168100.02139 |
| 33 | 675117.258567 | 1168086.03645 |
| 34 | 675120.547363 | 1168086.74284 |
| 35 | 675134.529793 | 1168075.76904 |
| 36 | 675131.543647 | 1168070.34152 |
| 37 | 675134.24732 | 1168068.48628 |
| 38 | 675102.71119 | 1168071.77406 |
| 39 | 675067.475108 | 1168090.17518 |
| 40 | 675060.765273 | 1168096.17899 |
| 41 | 675041.777857 | 1168090.17518 |
| 42 | 675032.213917 | 1168100.4451 |
| 43 | 675024.788903 | 1168095.17899 |
| 44 | 675022.791413 | 1168069.47382 |
| 45 | 675026.362883 | 1168071.33017 |
| 46 | 675030.640137 | 1168070.62399 |
| 47 | 675032.355153 | 1168069.05021 |
| 48 | 675032.49539 | 1168067.05272 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

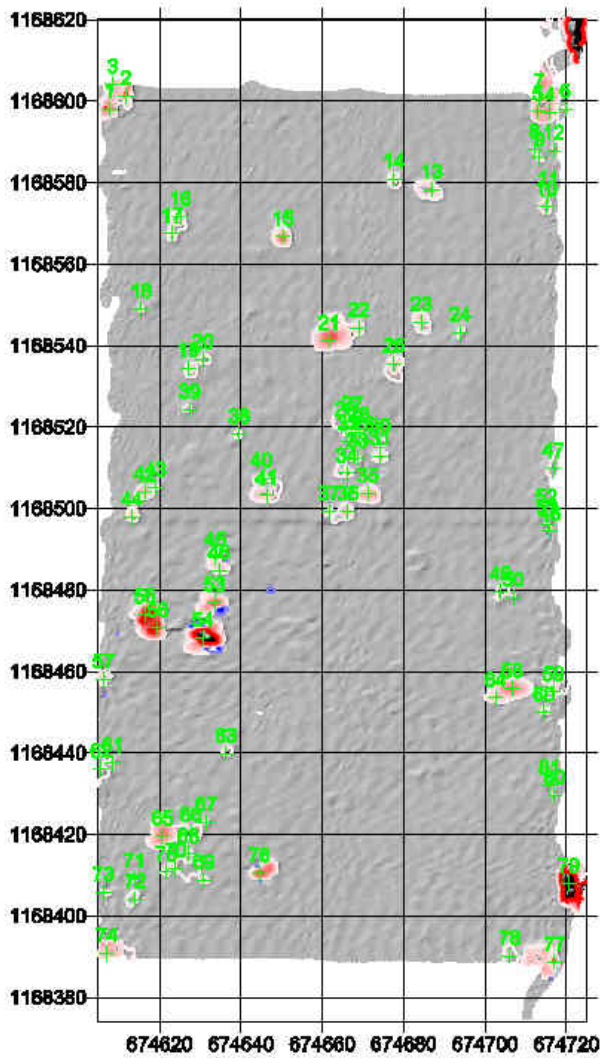
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/14/01 - 085s05.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 674823.994013 | 1168273.96327 |
| 2 | 674833.189597 | 1168267.76677 |
| 3 | 674841.909173 | 1168260.04926 |
| 4 | 674850.325837 | 1168255.11224 |
| 5 | 674854.155527 | 1168255.7852 |
| 6 | 674843.272283 | 1168245.05505 |
| 7 | 674840.070057 | 1168245.35796 |
| 8 | 674898.73092 | 1168279.32753 |
| 9 | 674916.567883 | 1168276.73113 |
| 10 | 674918.740977 | 1168279.80353 |
| 11 | 674919.95283 | 1168279.80353 |
| 12 | 674922.397573 | 1168277.1566 |
| 13 | 674920.883007 | 1168264.48477 |
| 14 | 674920.558457 | 1168257.3014 |
| 15 | 674921.18592 | 1168255.61374 |
| 16 | 674904.50405 | 1168233.58596 |
| 17 | 674910.93014 | 1168232.20287 |
| 18 | 674910.627227 | 1168226.52463 |
| 19 | 674914.806373 | 1168226.63697 |
| 20 | 674916.90185 | 1168227.61589 |
| 21 | 674901.431848 | 1168218.1174 |
| 22 | 674887.570723 | 1168224.34067 |
| 23 | 674881.85048 | 1168227.48444 |
| 24 | 674879.558973 | 1168226.66552 |
| 25 | 674879.859687 | 1168219.04777 |
| 26 | 674879.102803 | 1168214.91517 |
| 27 | 674862.420733 | 1168221.34126 |
| 28 | 674864.91261 | 1168221.34126 |
| 29 | 674862.77078 | 1168223.48329 |
| 30 | 674846.79906 | 1168223.48329 |
| 31 | 674849.244008 | 1168211.84278 |
| 32 | 674848.336283 | 1168209.54928 |
| 33 | 674829.985733 | 1168211.99422 |
| 34 | 674826.783507 | 1168214.74206 |
| 35 | 674875.727283 | 1168192.11012 |
| 36 | 674911.535967 | 1168186.68628 |
| 37 | 674917.962057 | 1168179.71231 |
| 38 | 674924.388147 | 1168179.71231 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

## Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B089- Grid 089y17.xyz



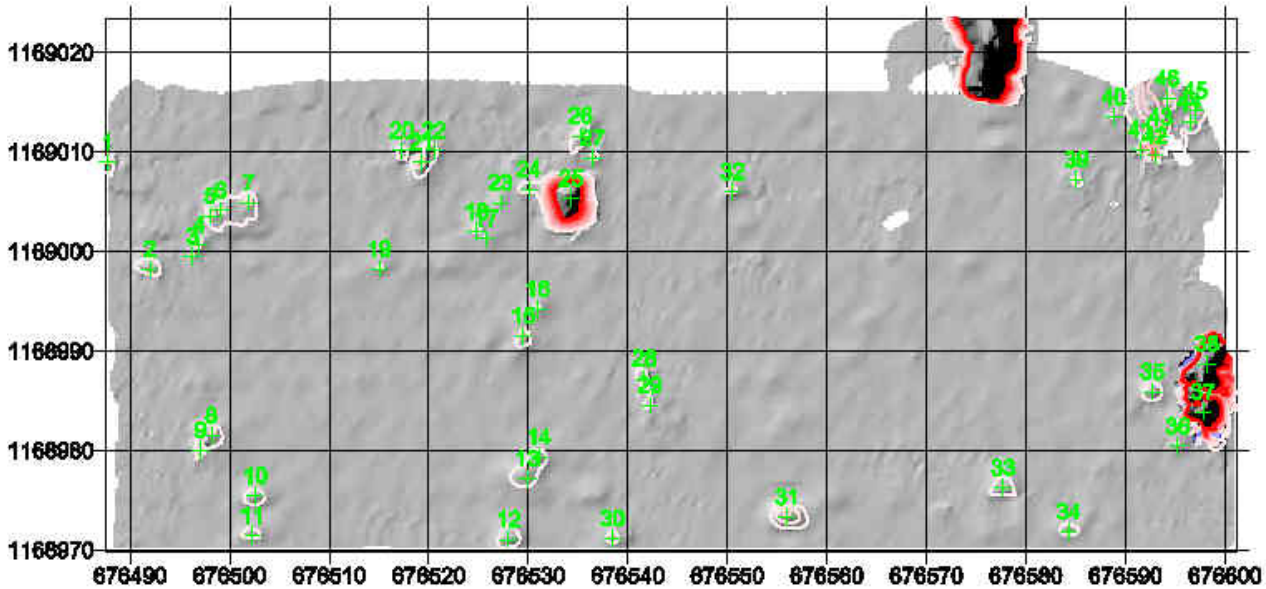

Threshold = +/- 5 mV

*EM61 Bottom Coil Data - Processed on 8/01/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 674607.632917 | 1168598.04958 |
| 2 | 674611.695042 | 1168601.20979 |
| 3 | 674608.494792 | 1168604.12375 |
| 4 | 674715.900833 | 1168597.14667 |
| 5 | 674713.027917 | 1168597.43398 |
| 6 | 674719.879687 | 1168598.04858 |
| 7 | 674713.316208 | 1168600.83521 |
| 8 | 674712.169042 | 1168598.15854 |
| 9 | 674713.316208 | 1168596.1475 |
| 10 | 674715.038958 | 1168574.24542 |
| 11 | 674715.813542 | 1168576.54375 |
| 12 | 674716.80375 | 1168587.87125 |
| 13 | 674688.834375 | 1168576.30854 |
| 14 | 674677.608958 | 1168580.89417 |
| 15 | 674680.31625 | 1168586.69375 |
| 16 | 674625.078625 | 1168571.61578 |
| 17 | 674623.023542 | 1168587.86362 |
| 18 | 674615.471875 | 1168546.96375 |
| 19 | 674627.088687 | 1168534.47804 |
| 20 | 674630.576208 | 1168536.48708 |
| 21 | 674681.84375 | 1168541.12475 |
| 22 | 674683.908125 | 1168544.32804 |
| 23 | 674684.28875 | 1168545.7625 |
| 24 | 674693.881458 | 1168543.17587 |
| 25 | 674677.608958 | 1168536.62521 |
| 26 | 674665.708875 | 1168519.84729 |
| 27 | 674667.430625 | 1168521.36375 |
| 28 | 674668.908125 | 1168518.81083 |
| 29 | 674670.087292 | 1168516.45575 |
| 30 | 674674.120417 | 1168515.88417 |
| 31 | 674674.120417 | 1168512.87021 |
| 32 | 674686.281458 | 1168516.46875 |
| 33 | 674688.820833 | 1168512.38562 |
| 34 | 674685.994167 | 1168508.81879 |
| 35 | 674671.308458 | 1168503.89479 |
| 36 | 674668.281458 | 1168499.34487 |
| 37 | 674661.84375 | 1168499.34487 |
| 38 | 674639.883333 | 1168516.22354 |
| 39 | 674627.373958 | 1168524.29771 |
| 40 | 674645.103958 | 1168507.47082 |
| 41 | 674646.283125 | 1168503.12021 |
| 42 | 674616.33375 | 1168503.98208 |
| 43 | 674618.960417 | 1168508.13125 |
| 44 | 674613.173542 | 1168487.86867 |
| 45 | 674603.778458 | 1168488.01888 |
| 46 | 674604.838333 | 1168484.81562 |
| 47 | 674716.80375 | 1168509.76896 |
| 48 | 674715.900833 | 1168494.41937 |
| 49 | 674703.711458 | 1168479.80333 |
| 50 | 674708.912708 | 1168476.12583 |
| 51 | 674716.82625 | 1168495.65583 |
| 52 | 674715.038958 | 1168498.4625 |
| 53 | 674633.469167 | 1168476.97667 |
| 54 | 674630.576208 | 1168486.27583 |
| 55 | 674616.33375 | 1168474.06271 |
| 56 | 674619.535 | 1168470.81521 |
| 57 | 674606.198458 | 1168458.0975 |
| 58 | 674706.825417 | 1168455.79817 |
| 59 | 674716.80375 | 1168454.93729 |
| 60 | 674714.464375 | 1168449.97125 |
| 61 | 674608.494792 | 1168437.49458 |
| 62 | 674605.621875 | 1168438.05813 |
| 63 | 674638.362083 | 1168439.63398 |
| 64 | 674702.662292 | 1168453.46979 |
| 65 | 674620.884167 | 1168419.81583 |
| 66 | 674627.86125 | 1168420.38021 |
| 67 | 674631.437083 | 1168423.00866 |
| 68 | 674627.088687 | 1168415.16792 |
| 69 | 674630.8625 | 1168408.76542 |
| 70 | 674623.885417 | 1168411.83833 |
| 71 | 674613.748125 | 1168409.05271 |
| 72 | 674614.035417 | 1168404.09867 |
| 73 | 674606.198458 | 1168405.85146 |
| 74 | 674607.058333 | 1168390.74812 |
| 75 | 674621.887083 | 1168410.77546 |
| 76 | 674644.468333 | 1168410.46917 |
| 77 | 674717.091042 | 1168388.73708 |
| 78 | 674706.080833 | 1168390.17354 |
| 79 | 674720.678083 | 1168407.8625 |
| 80 | 674717.091042 | 1168429.85362 |
| 81 | 674715.900833 | 1168431.85398 |

## Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B097- Grid 097y18a.xyz

**Threshold = +/- 5 mV**

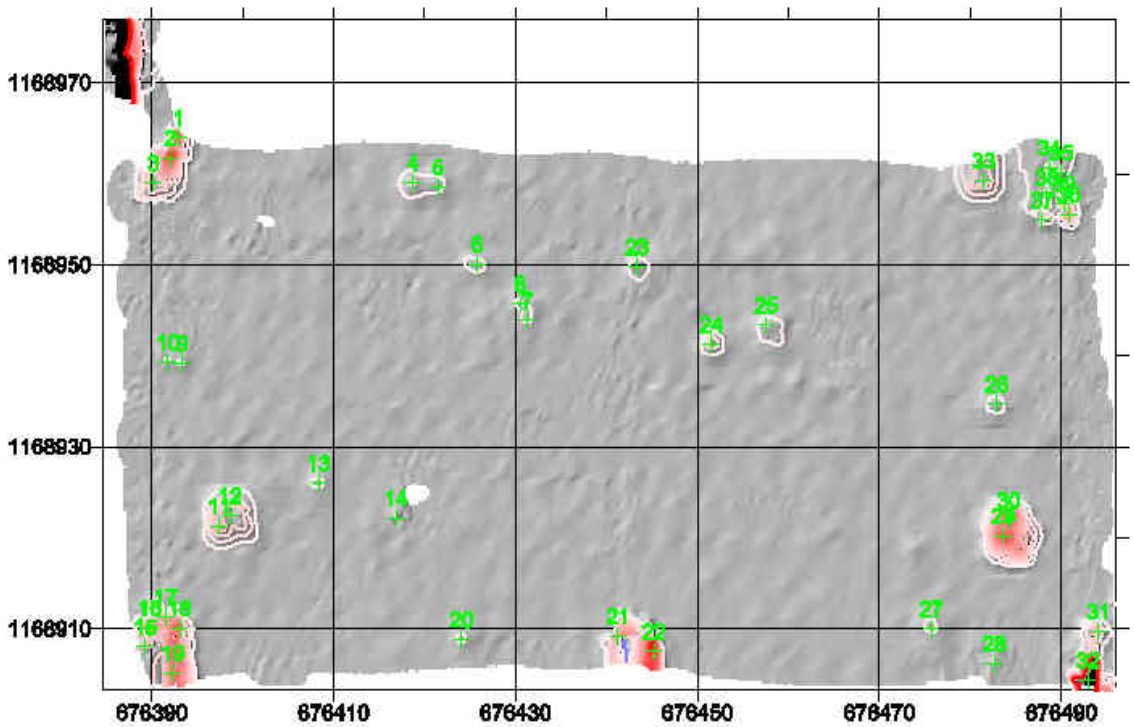



| ID# | Easting | Northing |
|---|---|---|
| 1 | 676487.692568 | 1169008.95885 |
| 2 | 676491.972632 | 1168998.23976 |
| 3 | 676496.262695 | 1168989.58544 |
| 4 | 676496.934475 | 1169000.64493 |
| 5 | 676497.996022 | 1169009.59931 |
| 6 | 676499.074607 | 1169004.12958 |
| 7 | 676501.896318 | 1169004.92499 |
| 8 | 676498.146528 | 1168981.49827 |
| 9 | 676497.067043 | 1168980.02108 |
| 10 | 676502.55916 | 1168975.45694 |
| 11 | 676502.294023 | 1168971.44202 |
| 12 | 676528.01228 | 1168971.04431 |
| 13 | 676529.887175 | 1168977.19927 |
| 14 | 676531.099228 | 1168979.3393 |
| 15 | 676529.48947 | 1168991.53659 |
| 16 | 676530.947722 | 1168994.20589 |
| 17 | 676525.73968 | 1169001.30777 |
| 18 | 676524.792763 | 1169001.98955 |
| 19 | 676515.020563 | 1168998.23976 |
| 20 | 676517.293163 | 1169010.15197 |
| 21 | 676519.300647 | 1169008.95885 |
| 22 | 676520.5127 | 1169010.15197 |
| 23 | 676527.197932 | 1169004.92499 |
| 24 | 676530.019743 | 1169006.26981 |
| 25 | 676534.299807 | 1169005.34163 |
| 26 | 676535.246723 | 1169011.62916 |
| 27 | 676536.439838 | 1169009.35656 |
| 28 | 676541.666816 | 1168987.25552 |
| 29 | 676542.21603 | 1168984.56628 |
| 30 | 676538.46624 | 1168971.17688 |
| 31 | 676556.003137 | 1168973.31691 |
| 32 | 676560.51102 | 1169006.00447 |
| 33 | 676577.706487 | 1168976.27129 |
| 34 | 676584.278068 | 1168971.83972 |
| 35 | 676592.705627 | 1168985.9109 |
| 36 | 676595.262302 | 1168990.41879 |
| 37 | 676597.800038 | 1168983.90344 |
| 38 | 676596.197743 | 1168988.71376 |
| 39 | 676585.073478 | 1169007.21653 |
| 40 | 676588.823268 | 1169013.50405 |
| 41 | 676591.512512 | 1169010.28454 |
| 42 | 676592.970763 | 1169008.6217 |
| 43 | 676593.519975 | 1169011.49659 |
| 44 | 676596.466417 | 1169012.97378 |
| 45 | 676597.004628 | 1169014.1669 |
| 46 | 676594.182817 | 1169016.37895 |

*EM61 Bottom Coil Data - Processed on 8/01/01 by ANW*

## Fort McClellan, AL - Foster Wheeler Environmental Corporation - 7/24/01, B097- Grid 097y18b.xyz

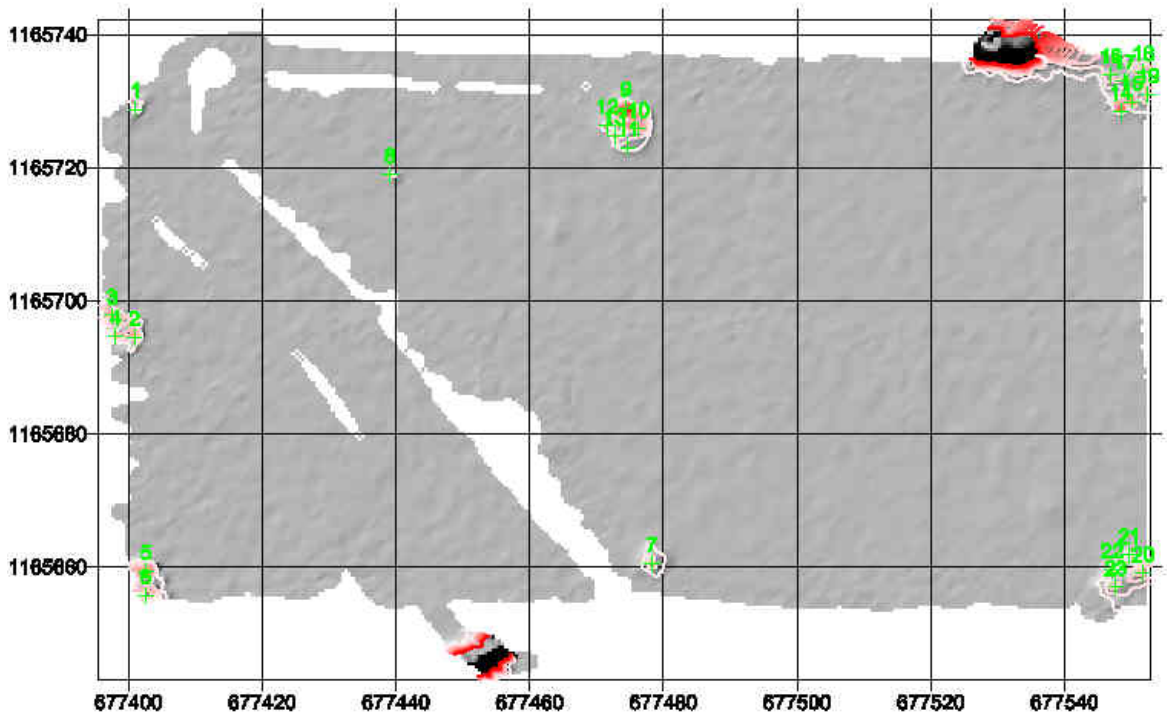
**Threshold = +/- 5 mV**




*EM61 Bottom Coil Data - Processed on 8/01/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 676392.931535 | 1168963.96173 |
| 2 | 676392.021523 | 1168961.73313 |
| 3 | 676390.182928 | 1168958.98453 |
| 4 | 676418.690437 | 1168958.96453 |
| 5 | 676421.439043 | 1168958.57595 |
| 6 | 676425.766242 | 1168950.05156 |
| 7 | 676431.300598 | 1168943.86719 |
| 8 | 676430.502017 | 1168945.70579 |
| 9 | 676393.32154 | 1168939.14999 |
| 10 | 676391.76152 | 1168939.27999 |
| 11 | 676397.407307 | 1168921.28404 |
| 12 | 676398.577322 | 1168922.45406 |
| 13 | 676408.308875 | 1168926.00125 |
| 14 | 676416.851842 | 1168922.19405 |
| 15 | 676389.254345 | 1168908.0053 |
| 16 | 676389.774352 | 1168910.1039 |
| 17 | 676391.482945 | 1168911.29249 |
| 18 | 676393.061537 | 1168910.1039 |
| 19 | 676392.281527 | 1168905.12669 |
| 20 | 676424.07622 | 1168908.80388 |
| 21 | 676441.273583 | 1168909.19389 |
| 22 | 676445.210777 | 1168907.4853 |
| 23 | 676443.372182 | 1168949.77298 |
| 24 | 676451.525143 | 1168941.24858 |
| 25 | 676457.560935 | 1168943.34718 |
| 26 | 676482.91126 | 1168934.67421 |
| 27 | 676475.686882 | 1168909.9739 |
| 28 | 676482.651257 | 1168906.16671 |
| 29 | 676483.57984 | 1168920.22546 |
| 30 | 676484.229848 | 1168921.93405 |
| 31 | 676494.091403 | 1168909.7139 |
| 32 | 676492.902817 | 1168904.32811 |
| 33 | 676481.481242 | 1168959.24453 |
| 34 | 676488.70562 | 1168960.69312 |
| 35 | 676490.005637 | 1168960.15454 |
| 36 | 676490.804218 | 1168955.56734 |
| 37 | 676487.907038 | 1168954.89876 |
| 38 | 676488.427045 | 1168957.40593 |
| 39 | 676490.26564 | 1168956.73735 |

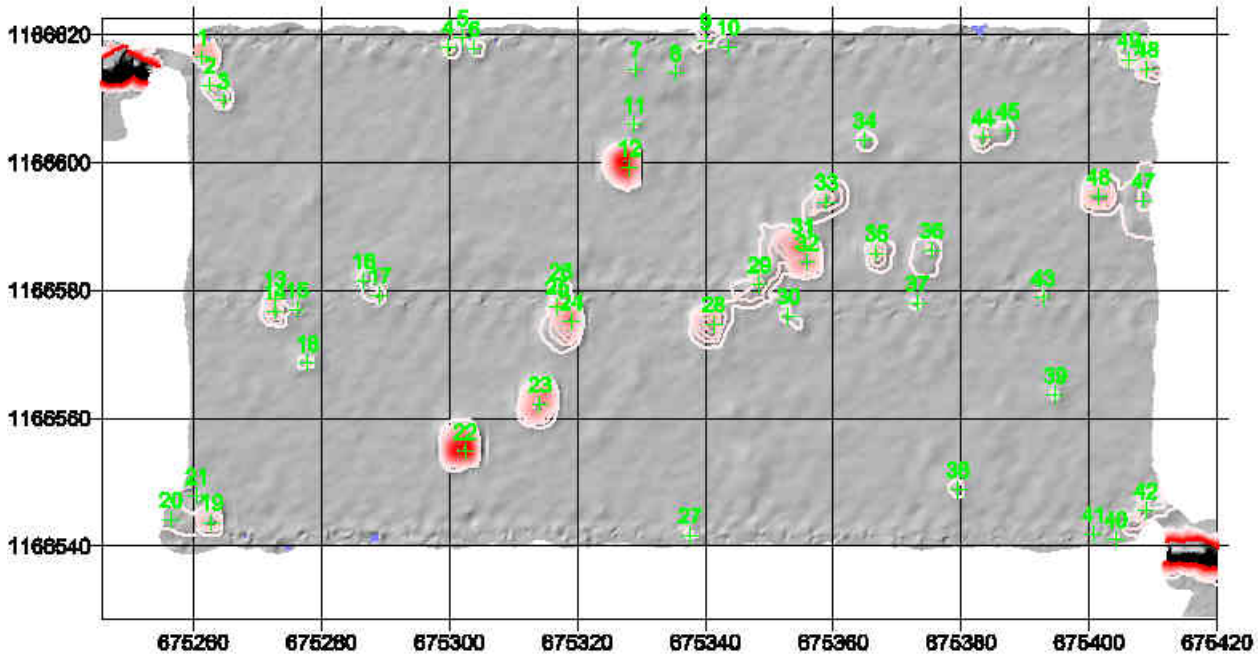
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/10/01 - 100z02.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 677401.06699 | 1165728.79617 |
| 2 | 677400.90338 | 1165694.48733 |
| 3 | 677397.57217 | 1165697.81854 |
| 4 | 677398.123 | 1165694.67094 |
| 5 | 677402.5821 | 1165659.41782 |
| 6 | 677402.5821 | 1165655.69316 |
| 7 | 677478.26188 | 1165660.51948 |
| 8 | 677439.12049 | 1165718.95992 |
| 9 | 677474.37361 | 1165726.97978 |
| 10 | 677476.23594 | 1165725.83218 |
| 11 | 677474.74083 | 1165723.0618 |
| 12 | 677471.69323 | 1165726.38301 |
| 13 | 677472.72112 | 1165724.73052 |
| 14 | 677546.39467 | 1165728.42895 |
| 15 | 677550.07339 | 1165729.92406 |
| 16 | 677546.92579 | 1165733.96971 |
| 17 | 677546.97173 | 1165733.07188 |
| 18 | 677551.75211 | 1165734.35693 |
| 19 | 677552.46655 | 1165731.02572 |
| 20 | 677551.75211 | 1165659.0506 |
| 21 | 677549.70617 | 1165661.63098 |
| 22 | 677547.1094 | 1165659.60143 |
| 23 | 677547.66023 | 1165657.00466 |

*EM61 Bottom Coil Data - Processed on 8/24/01 by ANW*

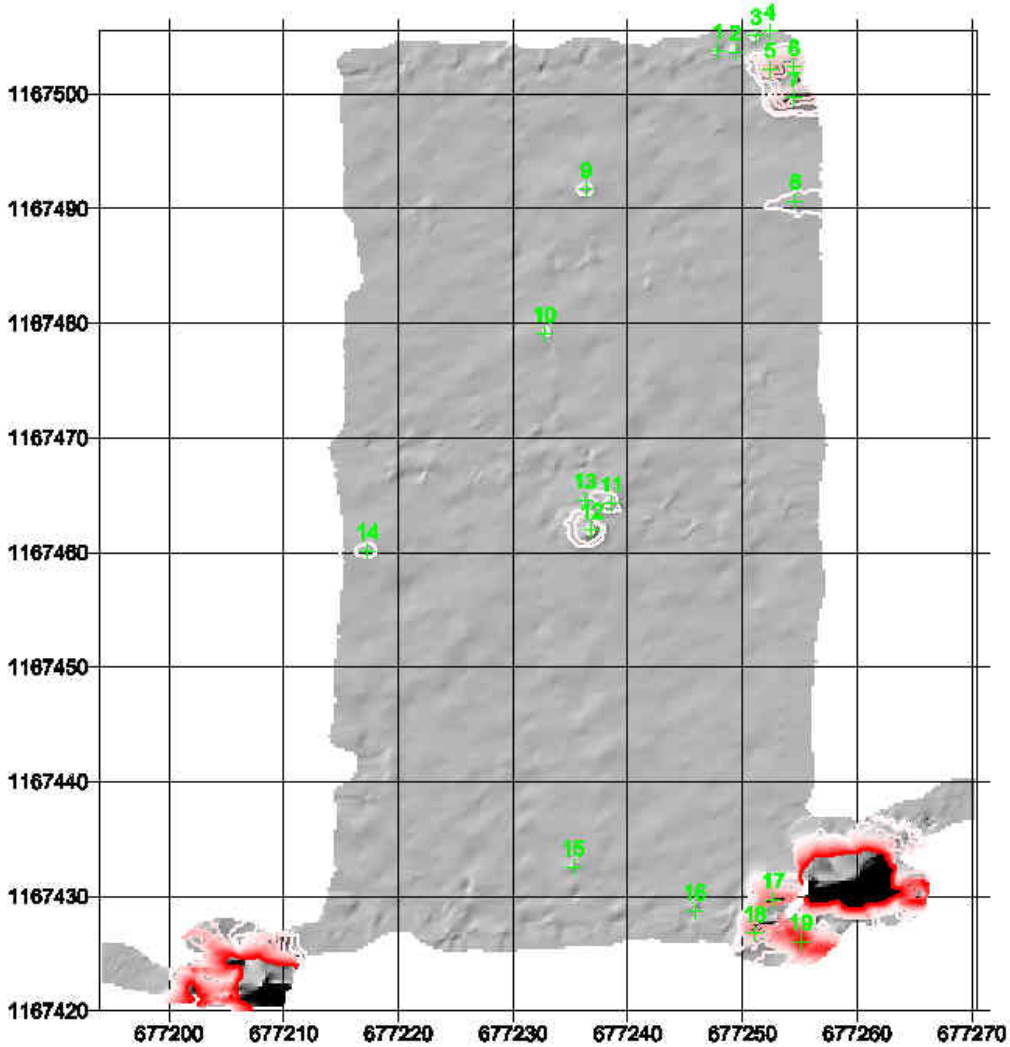
# Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 104y24.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 675261.374417 | 1166616.46667 |
| 2 | 675262.623208 | 1166612.12846 |
| 3 | 675264.686167 | 1166609.65992 |
| 4 | 675299.796642 | 1166618.082 |
| 5 | 675302.061792 | 1166619.53408 |
| 6 | 675303.920458 | 1166617.87871 |
| 7 | 675329.186708 | 1166614.597 |
| 8 | 675335.343542 | 1166613.96713 |
| 9 | 675340.046292 | 1166616.92421 |
| 10 | 675343.662333 | 1166618.082 |
| 11 | 675328.964375 | 1166606.97183 |
| 12 | 675328.141208 | 1166599.20492 |
| 13 | 675272.671625 | 1166578.64342 |
| 14 | 675272.671625 | 1166576.61379 |
| 15 | 675276.185667 | 1166577.01708 |
| 16 | 675286.640667 | 1166581.51854 |
| 17 | 675289.109208 | 1166579.25329 |
| 18 | 675277.612 | 1166566.595 |
| 19 | 675262.6266 | 1166543.73533 |
| 20 | 675260.466375 | 1166544.14192 |
| 21 | 675260.66125 | 1166547.83021 |
| 22 | 675302.468375 | 1166554.82925 |
| 23 | 675314.172167 | 1166562.20583 |
| 24 | 675319.10925 | 1166575.15842 |
| 25 | 675316.644 | 1166577.42367 |
| 26 | 675317.453875 | 1166579.69221 |
| 27 | 675337.606792 | 1166541.67338 |
| 28 | 675341.297083 | 1166574.76183 |
| 29 | 675348.470875 | 1166580.90667 |
| 30 | 675353.000875 | 1166576.97158 |
| 31 | 675355.266125 | 1166587.0635 |
| 32 | 675355.876 | 1166584.39367 |
| 33 | 675358.954417 | 1166593.66125 |
| 34 | 675364.907958 | 1166603.50308 |
| 35 | 675368.786625 | 1166585.64575 |
| 36 | 675375.392 | 1166566.25233 |
| 37 | 675373.12675 | 1166578.03354 |
| 38 | 675379.466875 | 1166548.67571 |
| 39 | 675394.704708 | 1166563.65792 |
| 40 | 675404.14325 | 1166541.0635 |
| 41 | 675400.65625 | 1166541.87667 |
| 42 | 675406.877042 | 1166545.56496 |
| 43 | 675392.646042 | 1166576.64871 |
| 44 | 675363.4075 | 1166603.90967 |
| 45 | 675367.299083 | 1166604.95517 |
| 46 | 675401.471417 | 1166594.67442 |
| 47 | 675408.470458 | 1166594.06454 |
| 48 | 675409.080333 | 1166614.597 |
| 49 | 675406.205208 | 1166616.04908 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/10/01 - 109z01a.xyz

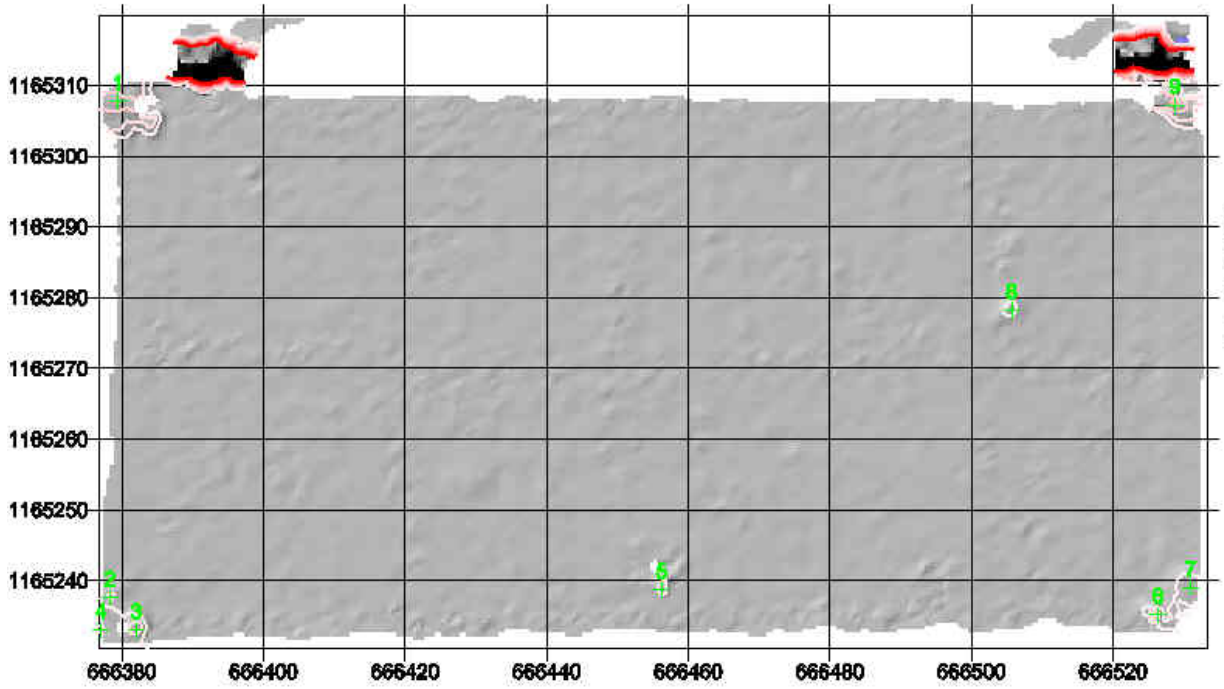



| ID# | Easting | Northing |
|---|---|---|
| 1 | 677247.85225 | 1167503.7815 |
| 2 | 677249.36275 | 1167503.86175 |
| 3 | 677251.1725 | 1167505.0725 |
| 4 | 677252.36375 | 1167505.48575 |
| 5 | 677252.36375 | 1167502.15125 |
| 6 | 677254.507 | 1167502.36075 |
| 7 | 677254.507 | 1167499.629 |
| 8 | 677254.60675 | 1167480.68875 |
| 9 | 677236.3525 | 1167491.6775 |
| 10 | 677232.733 | 1167479.06825 |
| 11 | 677236.5755 | 1167464.2605 |
| 12 | 677236.6655 | 1167461.93775 |
| 13 | 677236.25275 | 1167464.55975 |
| 14 | 677217.3145 | 1167460.128 |
| 15 | 677235.25625 | 1167432.6115 |
| 16 | 677245.82875 | 1167428.67925 |
| 17 | 677252.683 | 1167428.69 |
| 18 | 677251.07275 | 1167426.78875 |
| 19 | 677255.1055 | 1167426.05625 |

1st Contour Level: 3mV

*EM61 Bottom Coil Data - Processed on 8/24/01 by ANW*

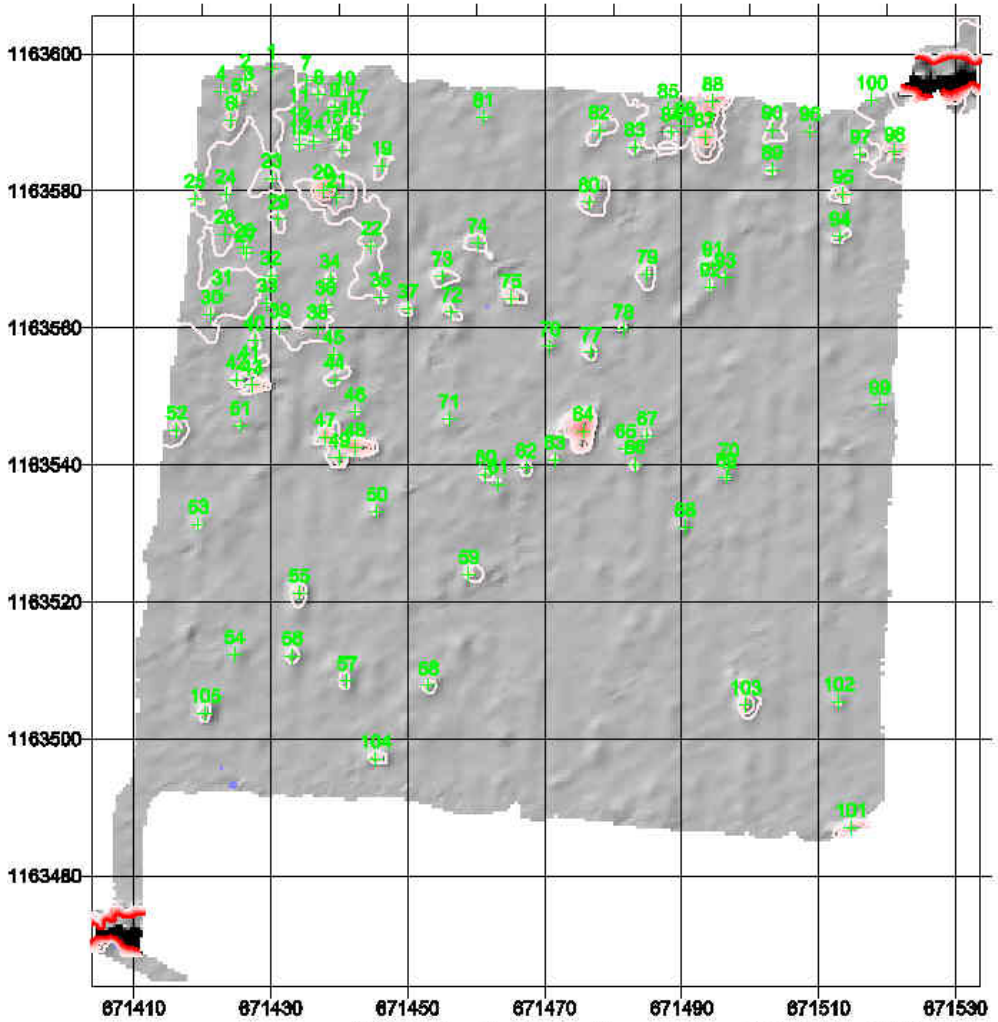
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/24/01 - 138z21.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 666379.4195 | 1165307.73594 |
| 2 | 666378.297415 | 1165237.69258 |
| 3 | 666382.002905 | 1165232.99966 |
| 4 | 666377.01875 | 1165232.99995 |
| 5 | 666466.19099 | 1165238.71468 |
| 6 | 666526.33435 | 1165235.19184 |
| 7 | 666530.953165 | 1165239.06 |
| 8 | 666505.66711 | 1165278.1964 |
| 9 | 666526.73509 | 1165307.18794 |

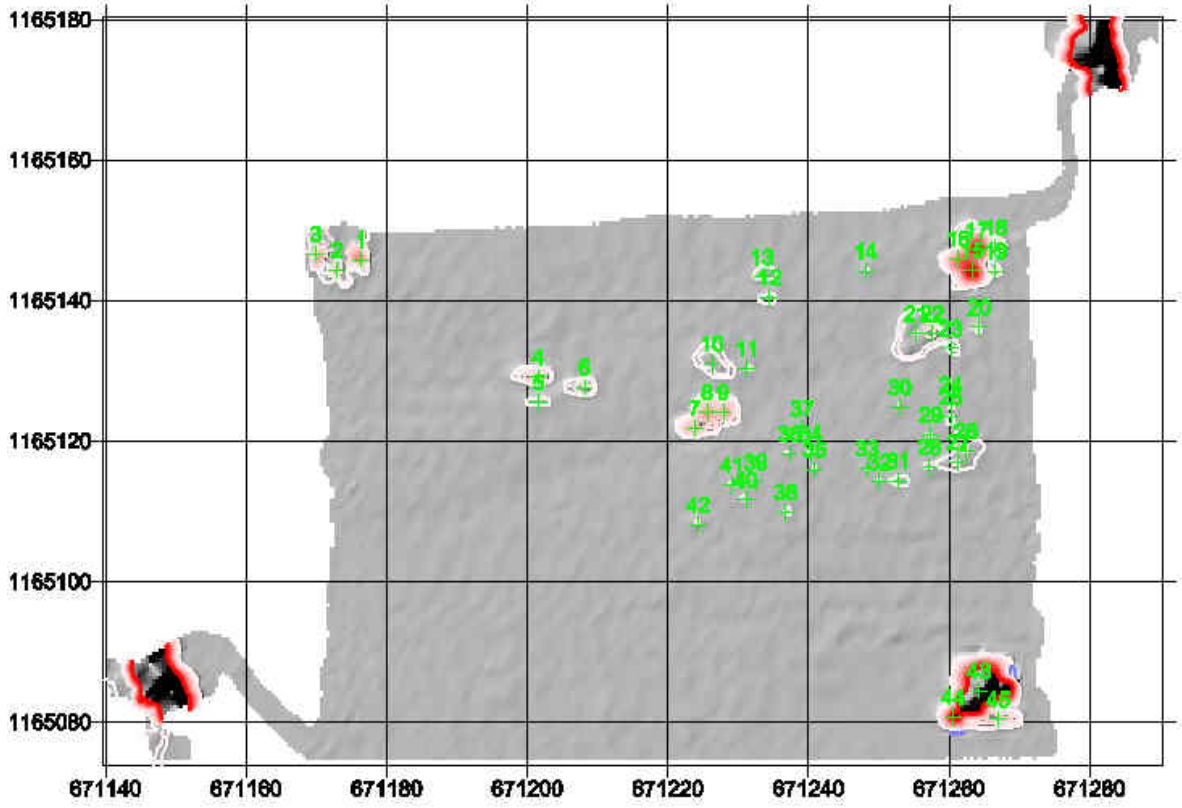
*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/14/01 - 148s01.xyz




*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

# Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/17/01 - 156z14b.xyz

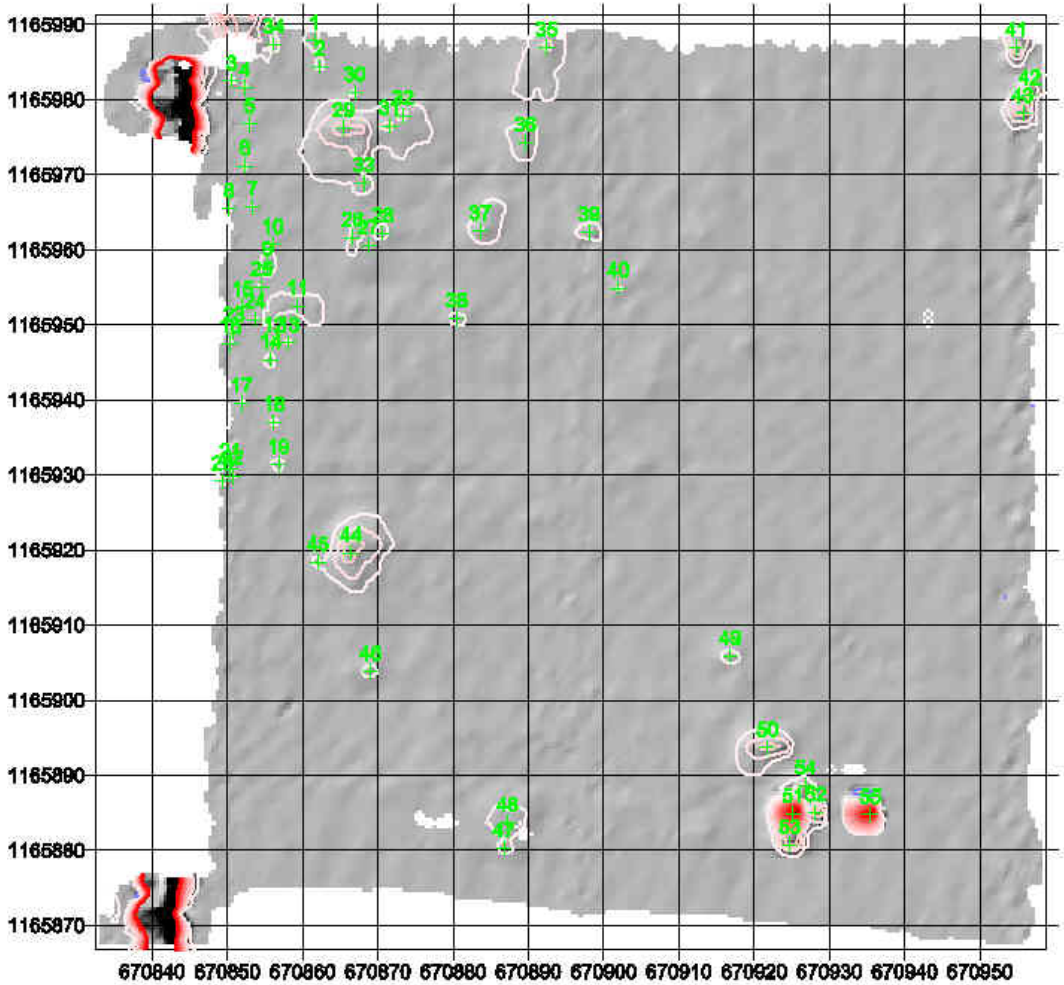



| ID# | Easting | Northing |
|---|---|---|
| 1 | 671176.29141 | 1165145.81273 |
| 2 | 671172.92196 | 1165144.37947 |
| 3 | 671169.90456 | 1165146.69281 |
| 4 | 671201.562135 | 1165129.09131 |
| 5 | 671201.562135 | 1165125.52072 |
| 6 | 671206.12498 | 1165127.65804 |
| 7 | 671223.790315 | 1165121.79926 |
| 8 | 671225.57551 | 1165124.1126 |
| 9 | 671227.863805 | 1165124.1126 |
| 10 | 671226.27967 | 1165131.05282 |
| 11 | 671231.25638 | 1165130.32342 |
| 12 | 671234.451795 | 1165140.48199 |
| 13 | 671233.395705 | 1165143.32338 |
| 14 | 671246.15582 | 1165144.20346 |
| 15 | 671263.257965 | 1165144.37947 |
| 16 | 671261.306655 | 1165145.96675 |
| 17 | 671263.972025 | 1165147.22086 |
| 18 | 671266.637395 | 1165147.59603 |
| 19 | 671266.637395 | 1165144.20346 |
| 20 | 671264.324055 | 1165136.20735 |
| 21 | 671255.271655 | 1165135.32727 |
| 22 | 671257.585195 | 1165135.32727 |
| 23 | 671260.250565 | 1165133.16995 |
| 24 | 671260.250565 | 1165125.16669 |
| 25 | 671260.250565 | 1165123.40654 |
| 26 | 671262.38789 | 1165118.60584 |
| 27 | 671261.306655 | 1165116.00656 |
| 28 | 671257.233165 | 1165116.2925 |
| 29 | 671257.40918 | 1165120.91918 |
| 30 | 671252.958515 | 1165124.61666 |
| 31 | 671252.7625 | 1165114.33119 |
| 32 | 671250.11713 | 1165114.15518 |
| 33 | 671248.331835 | 1165116.11649 |
| 34 | 671240.336725 | 1165118.22867 |
| 35 | 671240.86377 | 1165116.94047 |
| 36 | 671237.29318 | 1165118.22867 |
| 37 | 671239.078475 | 1165121.79926 |
| 38 | 671236.765195 | 1165109.88053 |
| 39 | 671232.490485 | 1165114.15518 |
| 40 | 671231.062385 | 1165111.68582 |
| 41 | 671229.121055 | 1165113.60315 |
| 42 | 671224.31636 | 1165108.09523 |
| 43 | 671264.324055 | 1165084.46894 |
| 44 | 671260.602595 | 1165080.71233 |
| 45 | 671267.01467 | 1165080.3603 |

1st Contour Level: 3mV

*EM61 Bottom Coil Data - Processed on 8/28/01 by ANW*

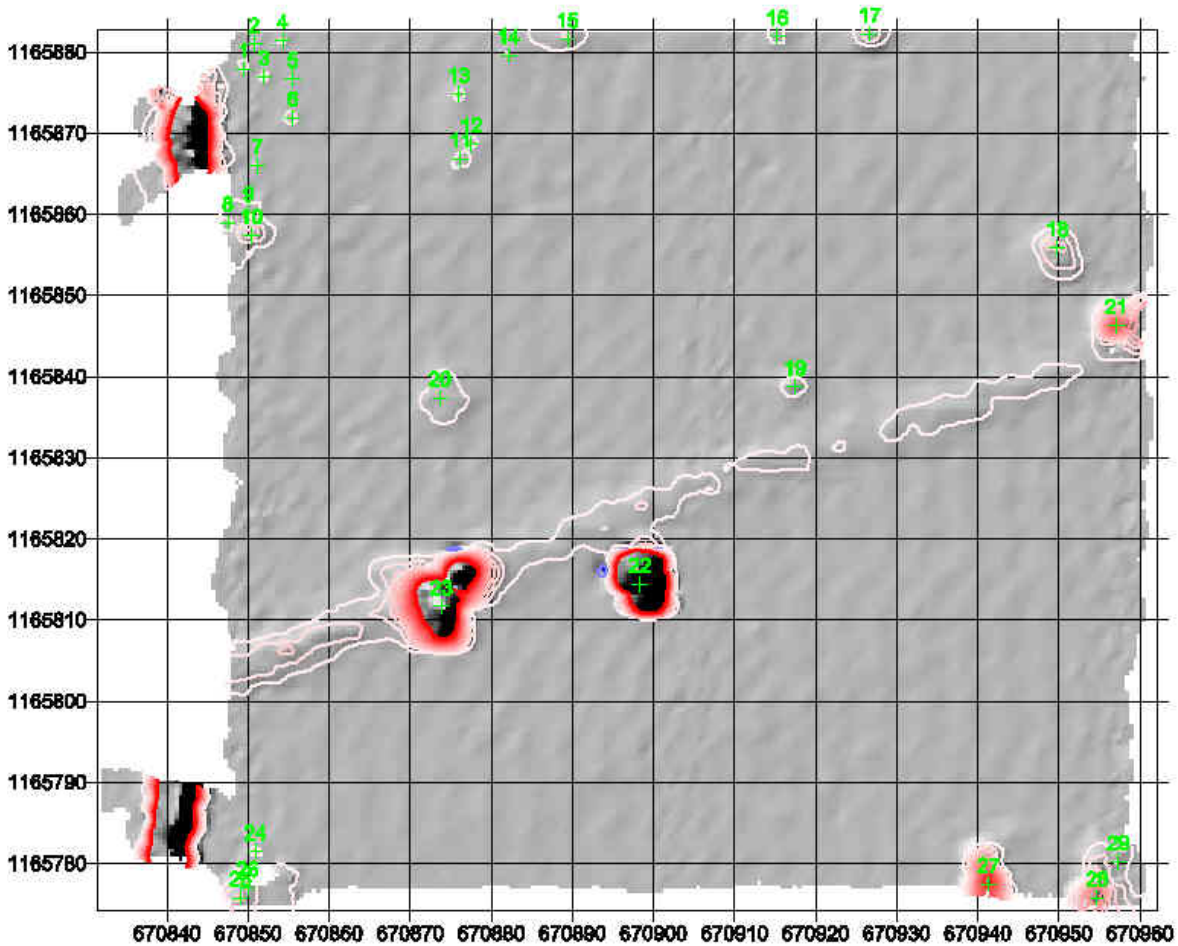
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/24/01 - 163z19.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 670861.5574 | 1165987.65095 |
| 2 | 670862.304617 | 1165984.41783 |
| 3 | 670860.581277 | 1165982.4798 |
| 4 | 670862.320897 | 1165981.57406 |
| 5 | 670862.951483 | 1165976.61577 |
| 6 | 670862.320897 | 1165971.14773 |
| 7 | 670863.373783 | 1165968.79764 |
| 8 | 670862.235327 | 1165965.50276 |
| 9 | 670865.31159 | 1165957.75145 |
| 10 | 670858.048807 | 1165960.72138 |
| 11 | 670858.334867 | 1165952.62774 |
| 12 | 670858.19625 | 1165947.61999 |
| 13 | 670858.134077 | 1165947.61999 |
| 14 | 670855.75892 | 1165945.38727 |
| 15 | 670852.02571 | 1165942.3803 |
| 16 | 670850.38277 | 1165947.47254 |
| 17 | 670851.876267 | 1165939.57579 |
| 18 | 670855.19626 | 1165937.04619 |
| 19 | 670856.607067 | 1165931.36016 |
| 20 | 670849.360667 | 1165929.14744 |
| 21 | 670850.36277 | 1165930.78932 |
| 22 | 670850.68672 | 1165929.68466 |
| 23 | 670850.846183 | 1165948.94666 |
| 24 | 670853.68886 | 1165950.72738 |
| 25 | 670854.674373 | 1165955.05534 |
| 26 | 670866.6228 | 1165961.6271 |
| 27 | 670869.70737 | 1165960.57394 |
| 28 | 670870.645897 | 1165962.21686 |
| 29 | 670865.445063 | 1165976.22599 |
| 30 | 670865.93666 | 1165960.98431 |
| 31 | 670871.55142 | 1165976.51686 |
| 32 | 670873.341803 | 1165977.86693 |
| 33 | 670868.116097 | 1165968.91602 |
| 34 | 670869.19626 | 1165967.36736 |
| 35 | 670892.40412 | 1165966.94623 |
| 36 | 670888.581833 | 1165974.29617 |
| 37 | 670883.62071 | 1165962.51176 |
| 38 | 670880.482273 | 1165950.8848 |
| 39 | 670898.070157 | 1165962.38432 |
| 40 | 670901.94581 | 1165954.9079 |
| 41 | 670954.63584 | 1165958.94623 |
| 42 | 670958.626223 | 1165960.54196 |
| 43 | 670955.7206 | 1165973.15182 |
| 44 | 670866.475167 | 1165919.62682 |
| 45 | 670862.00973 | 1165918.42621 |
| 46 | 670869.02382 | 1165903.82932 |
| 47 | 670866.736063 | 1165880.25061 |
| 48 | 670867.201477 | 1165883.71383 |
| 49 | 670918.837587 | 1165906.91459 |
| 50 | 670921.796407 | 1165893.66785 |
| 51 | 670925.176867 | 1165884.91444 |
| 52 | 670928.18986 | 1165885.06189 |
| 53 | 670924.738337 | 1165880.7499 |
| 54 | 670926.621607 | 1165868.64285 |
| 55 | 670935.457873 | 1165864.787 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

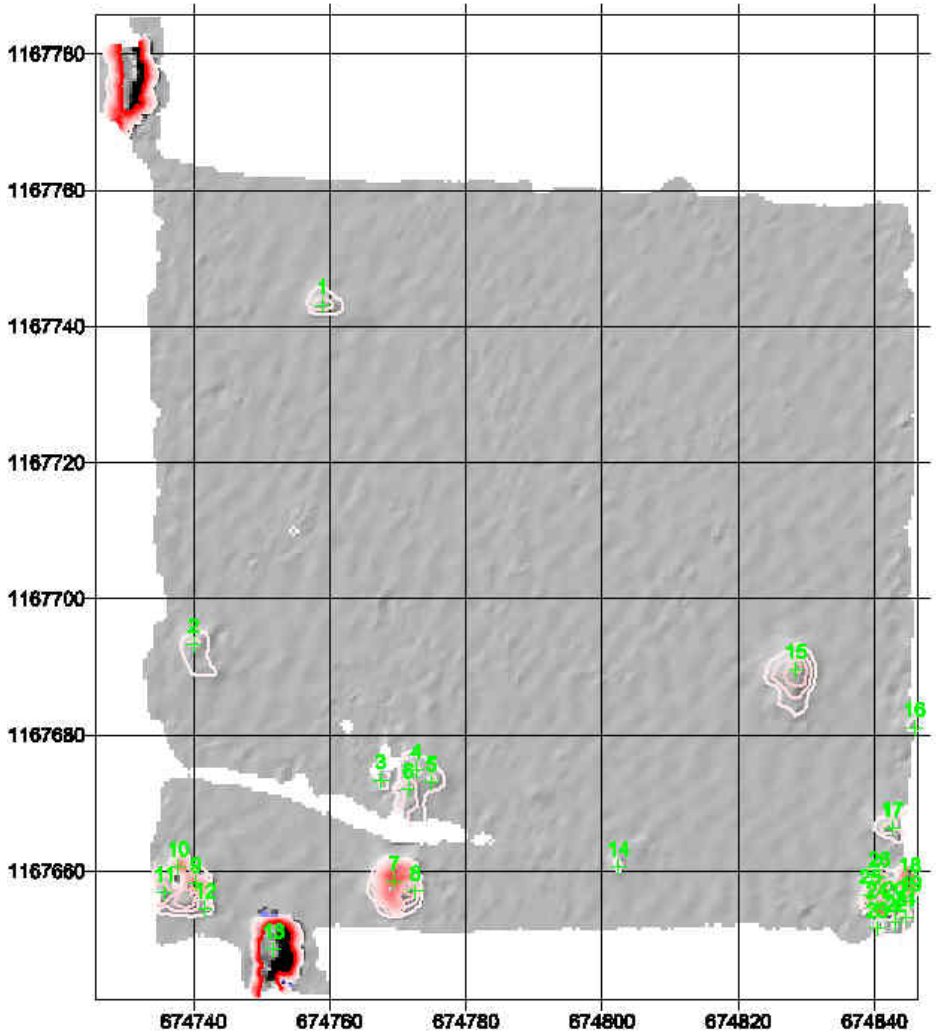
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/24/01 - 163z20.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 670848.497002 | 1165877.90617 |
| 2 | 670850.736557 | 1165880.97738 |
| 3 | 670851.95633 | 1165876.96955 |
| 4 | 670854.267187 | 1165881.43479 |
| 5 | 670855.608742 | 1165876.65481 |
| 6 | 670855.608742 | 1165871.59443 |
| 7 | 670851.195972 | 1165866.03616 |
| 8 | 670847.493068 | 1165858.05611 |
| 9 | 670850.106888 | 1165860.17589 |
| 10 | 670850.411832 | 1165857.40962 |
| 11 | 670876.157782 | 1165868.79752 |
| 12 | 670877.530007 | 1165866.64896 |
| 13 | 670876.00529 | 1165874.61317 |
| 14 | 670882.14772 | 1165879.60614 |
| 15 | 670889.401015 | 1165881.56727 |
| 16 | 670915.277535 | 1165881.91399 |
| 17 | 670926.691228 | 1165882.21894 |
| 18 | 670949.801577 | 1165855.86312 |
| 19 | 670917.43402 | 1165836.76451 |
| 20 | 670873.674852 | 1165837.37048 |
| 21 | 670957.03309 | 1165846.30097 |
| 22 | 670896.331498 | 1165814.41281 |
| 23 | 670873.648905 | 1165811.64833 |
| 24 | 670850.691028 | 1165781.45695 |
| 25 | 670849.039587 | 1165775.75015 |
| 26 | 670849.954417 | 1165776.95992 |
| 27 | 670941.328508 | 1165777.44012 |
| 28 | 670954.724233 | 1165775.75015 |
| 29 | 670957.338033 | 1165760.21539 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

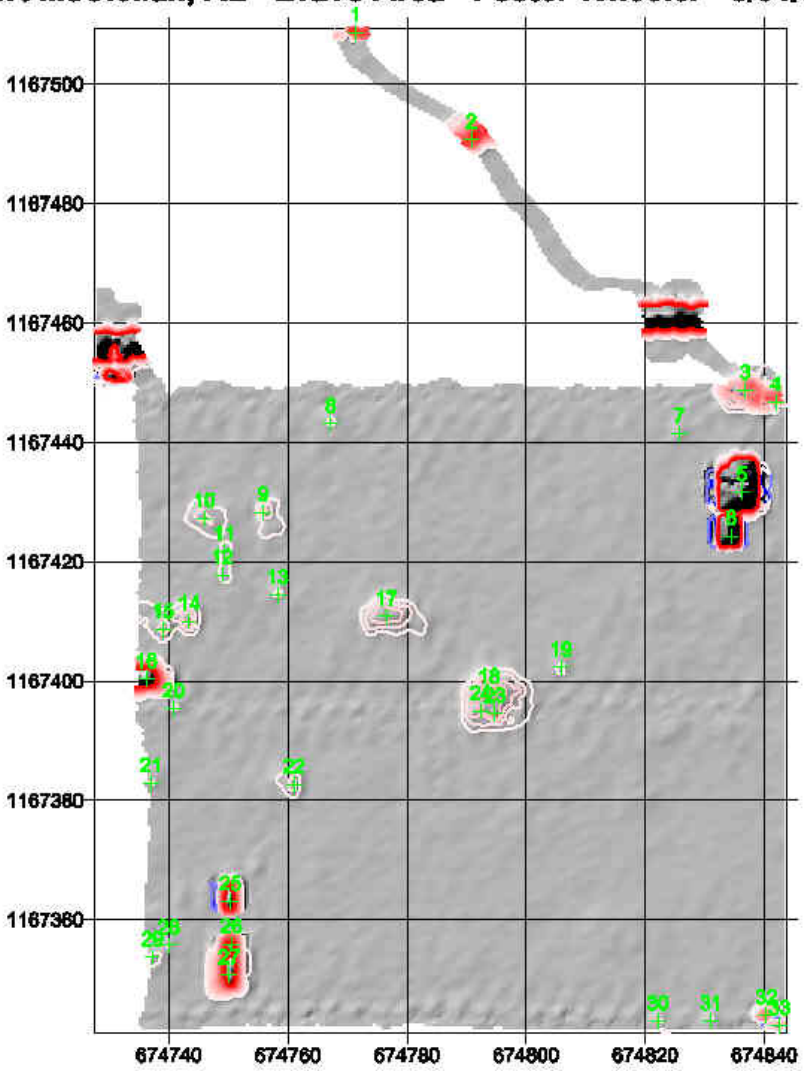
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/14/01 - 184z25.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 674768.91875 | 1167743.1112 |
| 2 | 674739.997638 | 1167693.31372 |
| 3 | 674767.45133 | 1167673.38026 |
| 4 | 674772.72996 | 1167674.89677 |
| 5 | 674774.947467 | 1167673.01871 |
| 6 | 674771.546897 | 1167672.00637 |
| 7 | 674769.500113 | 1167656.53281 |
| 8 | 674772.581237 | 1167657.0141 |
| 9 | 674740.33608 | 1167658.19516 |
| 10 | 674737.780127 | 1167660.58139 |
| 11 | 674735.731348 | 1167656.82127 |
| 12 | 674741.70897 | 1167654.43504 |
| 13 | 674751.76008 | 1167648.48152 |
| 14 | 674802.401163 | 1167660.58139 |
| 15 | 674828.46097 | 1167669.5777 |
| 16 | 674845.863577 | 1167661.04512 |
| 17 | 674842.629627 | 1167666.39029 |
| 18 | 674845.16458 | 1167658.19516 |
| 19 | 674845.353303 | 1167656.47148 |
| 20 | 674842.967073 | 1167654.62787 |
| 21 | 674844.67841 | 1167653.26398 |
| 22 | 674843.135797 | 1167652.41036 |
| 23 | 674840.41212 | 1167651.54284 |
| 24 | 674840.41212 | 1167654.43504 |
| 25 | 674839.39978 | 1167656.48382 |
| 26 | 674840.749567 | 1167659.03678 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

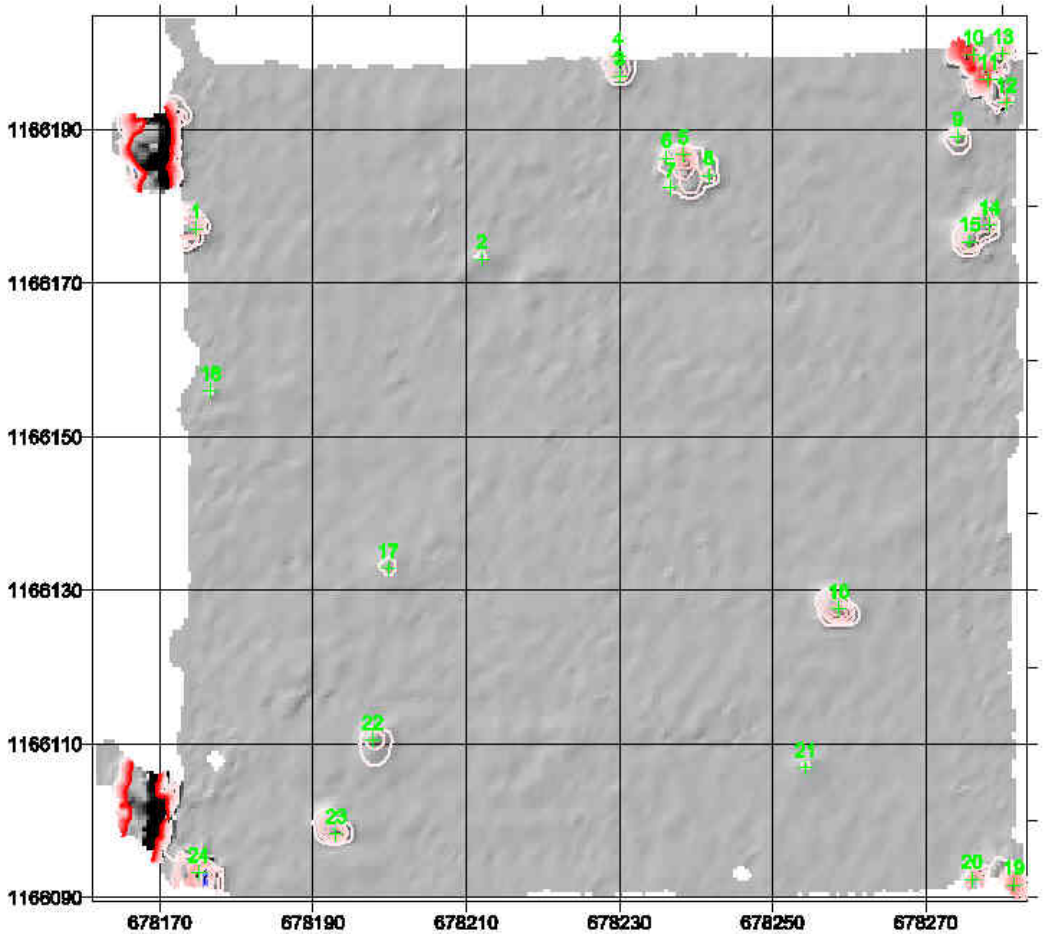
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/31/01 - 185z24.xyz




*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

| ID# | Easting | Northing |
|---|---|---|
| 1 | 674771.351792 | 1167508.60504 |
| 2 | 674790.784887 | 1167490.77054 |
| 3 | 674836.801042 | 1167448.70604 |
| 4 | 674841.960706 | 1167446.74512 |
| 5 | 674836.212167 | 1167431.65871 |
| 6 | 674834.4175 | 1167424.31179 |
| 7 | 674825.896542 | 1167441.36917 |
| 8 | 674767.173583 | 1167443.15579 |
| 9 | 674766.872792 | 1167428.29371 |
| 10 | 674745.974083 | 1167427.28421 |
| 11 | 674749.339083 | 1167421.73196 |
| 12 | 674746.9465 | 1167417.77806 |
| 13 | 674758.258333 | 1167414.41306 |
| 14 | 674743.39425 | 1167410.03858 |
| 15 | 674739.01975 | 1167406.66454 |
| 16 | 674736.243625 | 1167400.33617 |
| 17 | 674778.511458 | 1167410.82375 |
| 18 | 674793.757083 | 1167397.75533 |
| 19 | 674806.871083 | 1167402.29908 |
| 20 | 674740.814417 | 1167395.37279 |
| 21 | 674737.028792 | 1167382.89425 |
| 22 | 674761.032458 | 1167382.69796 |
| 23 | 674794.786583 | 1167394.58782 |
| 24 | 674792.363042 | 1167394.96021 |
| 25 | 674750.320542 | 1167363.06879 |
| 26 | 674750.516833 | 1167355.91817 |
| 27 | 674750.12425 | 1167360.7585 |
| 28 | 674740.001208 | 1167355.72188 |
| 29 | 674737.225083 | 1167353.73092 |
| 30 | 674822.13525 | 1167343.019 |
| 31 | 674831.0525 | 1167343.019 |
| 32 | 674840.362333 | 1167344.0285 |
| 33 | 674842.549583 | 1167342.23383 |

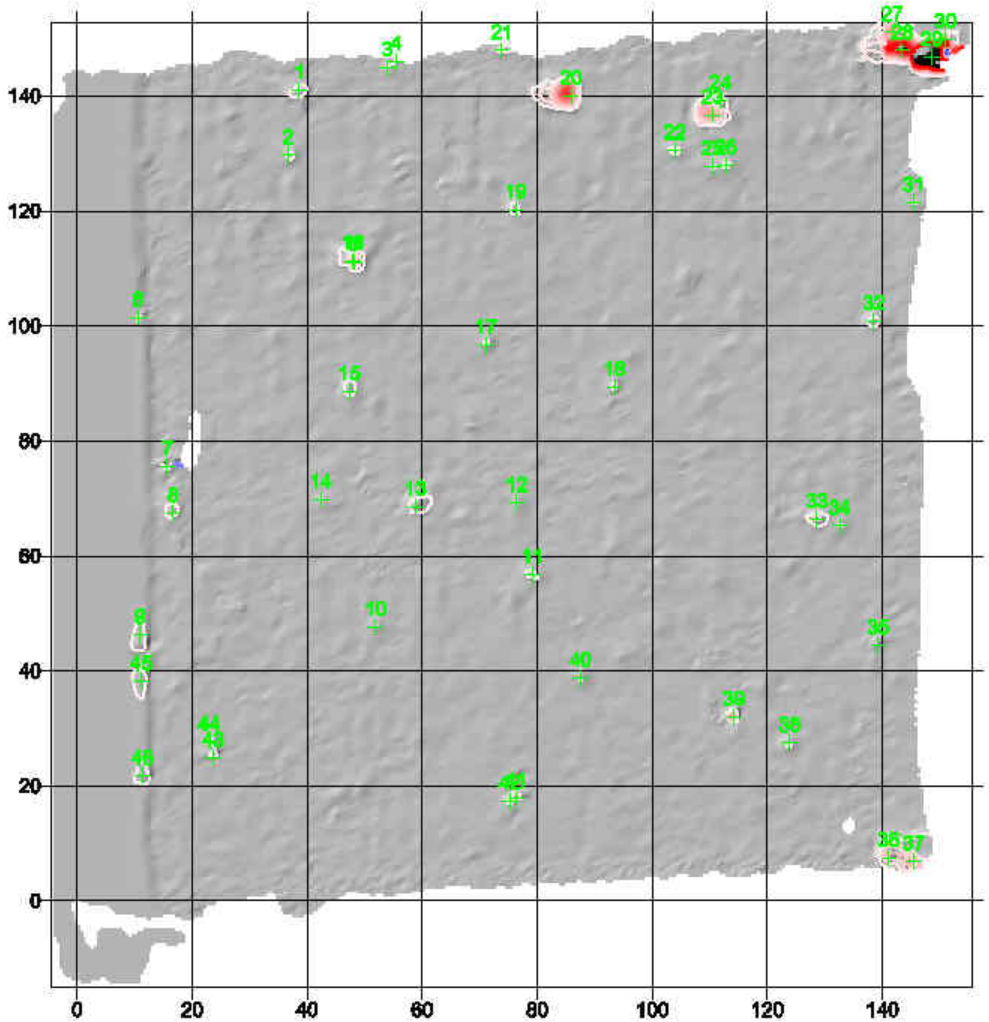
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 8/03/01 - 188z01.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 678174.73866 | 1166177.11504 |
| 2 | 678212.007647 | 1166173.08706 |
| 3 | 678229.991153 | 1166196.99048 |
| 4 | 678229.84875 | 1166199.57408 |
| 5 | 678238.33192 | 1166186.75778 |
| 6 | 678236.175527 | 1166186.33057 |
| 7 | 678236.62308 | 1166182.445 |
| 8 | 678241.647883 | 1166184.03178 |
| 9 | 678274.176673 | 1166189.07692 |
| 10 | 678276.190663 | 1166199.71649 |
| 11 | 678278.204853 | 1166196.54293 |
| 12 | 678280.50365 | 1166193.53211 |
| 13 | 678280.07644 | 1166199.85869 |
| 14 | 678278.347257 | 1166177.5628 |
| 15 | 678275.74331 | 1166175.4062 |
| 16 | 678258.634567 | 1166127.61971 |
| 17 | 678199.781303 | 1166132.80726 |
| 18 | 678176.610247 | 1166155.97832 |
| 19 | 678281.500473 | 1166091.6527 |
| 20 | 678276.04846 | 1166092.38506 |
| 21 | 678254.32178 | 1166106.9102 |
| 22 | 678197.767313 | 1166110.51097 |
| 23 | 678193.008973 | 1166098.28463 |
| 24 | 678175.023467 | 1166093.23948 |

*EM61 Bottom Coil Data - Processed on 8/06/01 by ANW*

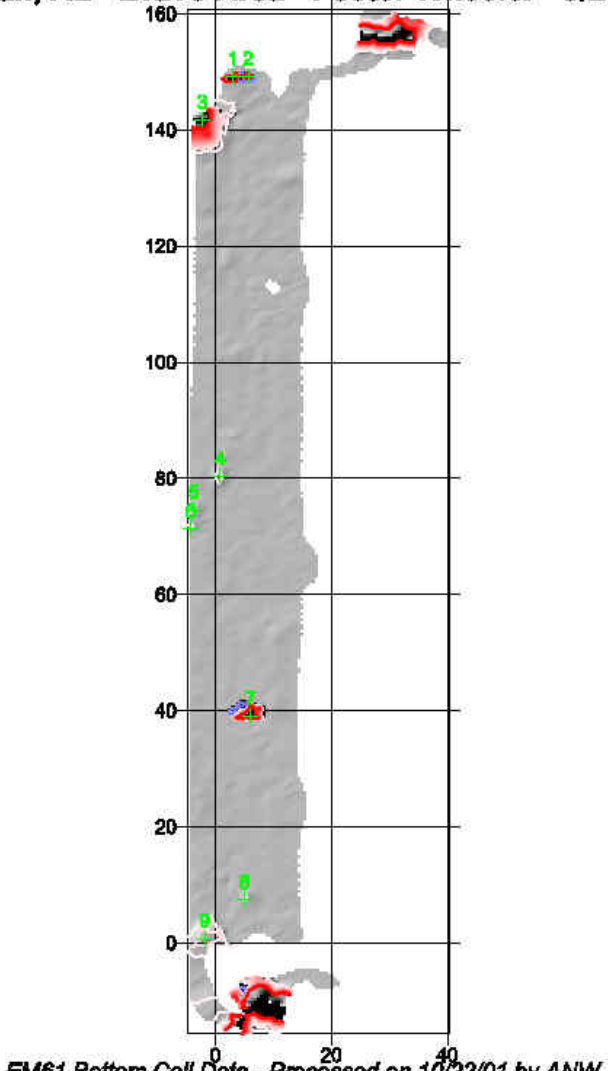
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01 - 502s19.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 38.6374733333 | 141.001326667 |
| 2 | 38.6520766667 | 129.732103333 |
| 3 | 53.8495266667 | 144.97212 |
| 4 | 55.4434366667 | 145.950636667 |
| 5 | 48.1170433333 | 111.136466667 |
| 6 | 10.6343233333 | 101.461173333 |
| 7 | 15.6795766667 | 76.6391633333 |
| 8 | 16.6862566667 | 67.4297966667 |
| 9 | 10.9537733333 | 46.2615533333 |
| 10 | 51.8920933333 | 47.65972 |
| 11 | 79.1843066667 | 56.7478033333 |
| 12 | 78.4159366667 | 69.21945 |
| 13 | 58.7990366667 | 68.8042566667 |
| 14 | 42.38456 | 69.80666 |
| 15 | 47.33407 | 88.69804 |
| 16 | 47.9213 | 111.33223 |
| 17 | 71.07494 | 96.7074066667 |
| 18 | 93.4176433333 | 89.3810133333 |
| 19 | 76.2201933333 | 120.22457 |
| 20 | 85.8955066667 | 140.02261 |
| 21 | 73.84331 | 147.936233333 |
| 22 | 103.903693333 | 130.515076667 |
| 23 | 110.41935 | 136.66701 |
| 24 | 111.817516667 | 139.239636667 |
| 25 | 110.41935 | 127.746706667 |
| 26 | 112.796233333 | 127.94246 |
| 27 | 141.882366667 | 151.09609 |
| 28 | 143.47201 | 147.936233333 |
| 29 | 148.5693 | 146.73361 |
| 30 | 150.966183333 | 149.893666667 |
| 31 | 145.429443333 | 121.426993333 |
| 32 | 138.5225 | 100.84596 |
| 33 | 128.82346 | 66.45106 |
| 34 | 132.694273333 | 66.2486666667 |
| 35 | 139.305473333 | 44.4719 |
| 36 | 141.095126667 | 7.47641 |
| 37 | 145.429443333 | 6.88918 |
| 38 | 123.869713333 | 27.4701933333 |
| 39 | 114.1944 | 32.0262166667 |
| 40 | 87.4894166667 | 38.7394166667 |
| 41 | 76.4159366667 | 17.7669166667 |
| 42 | 75.2135133333 | 17.37643 |
| 43 | 23.5932 | 24.8975666667 |
| 44 | 23.00597 | 27.6669366667 |
| 45 | 11.1495155667 | 38.1621866667 |
| 46 | 11.34526 | 21.73771 |

*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

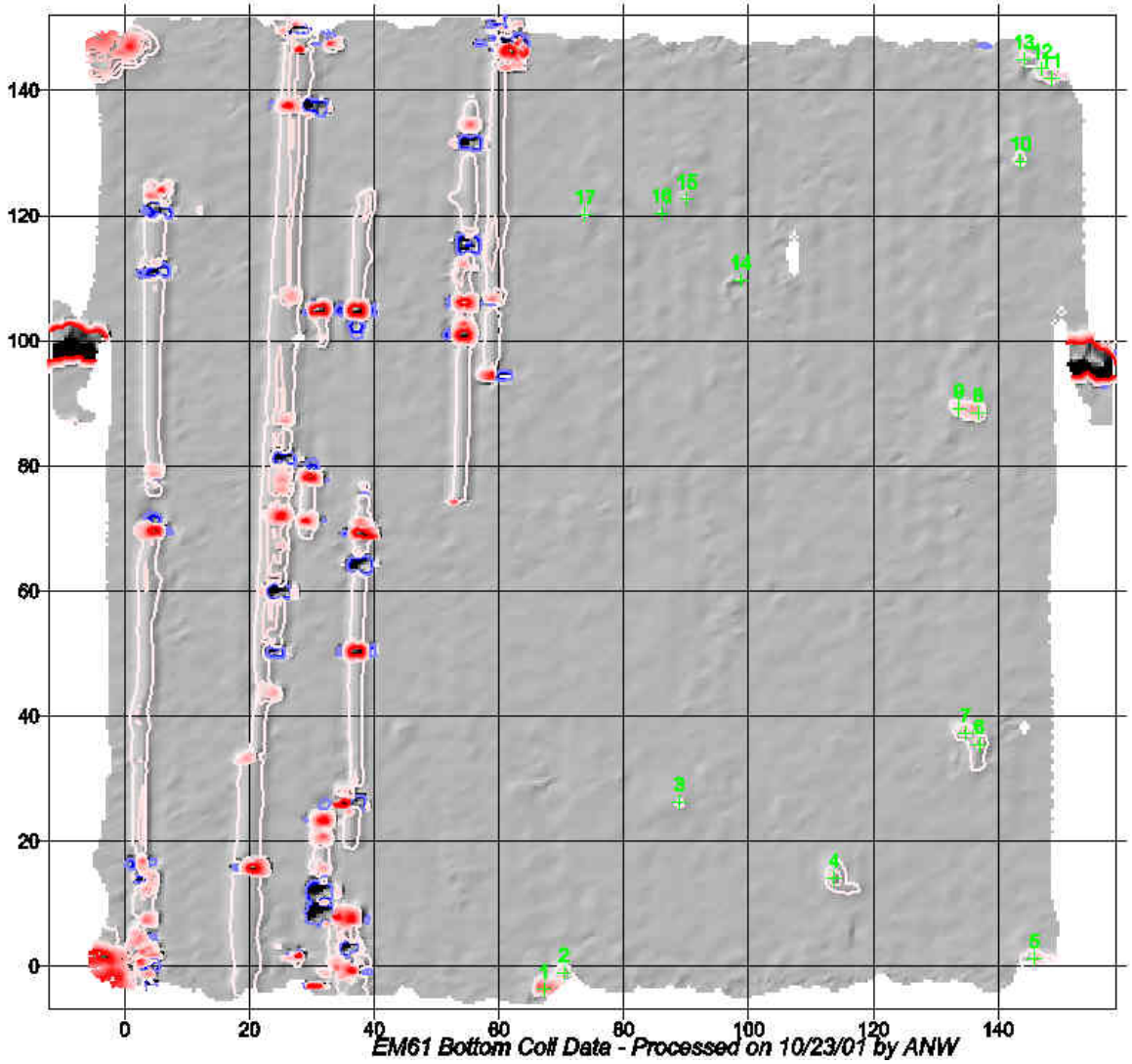
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01 - 502s24.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 2.99787333333 | 149.2663 |
| 2 | 6.70236666667 | 149.2663 |
| 3 | -2.20533666667 | 141.798546667 |
| 4 | 0.91071 | 80.4477033333 |
| 5 | -3.84577333333 | 74.6271633333 |
| 6 | -4.26310333333 | 71.30534 |
| 7 | 8.11392 | 38.0865933333 |
| 8 | 5.08503666667 | 7.45678 |
| 9 | -1.79378333333 | 0.782736666667 |

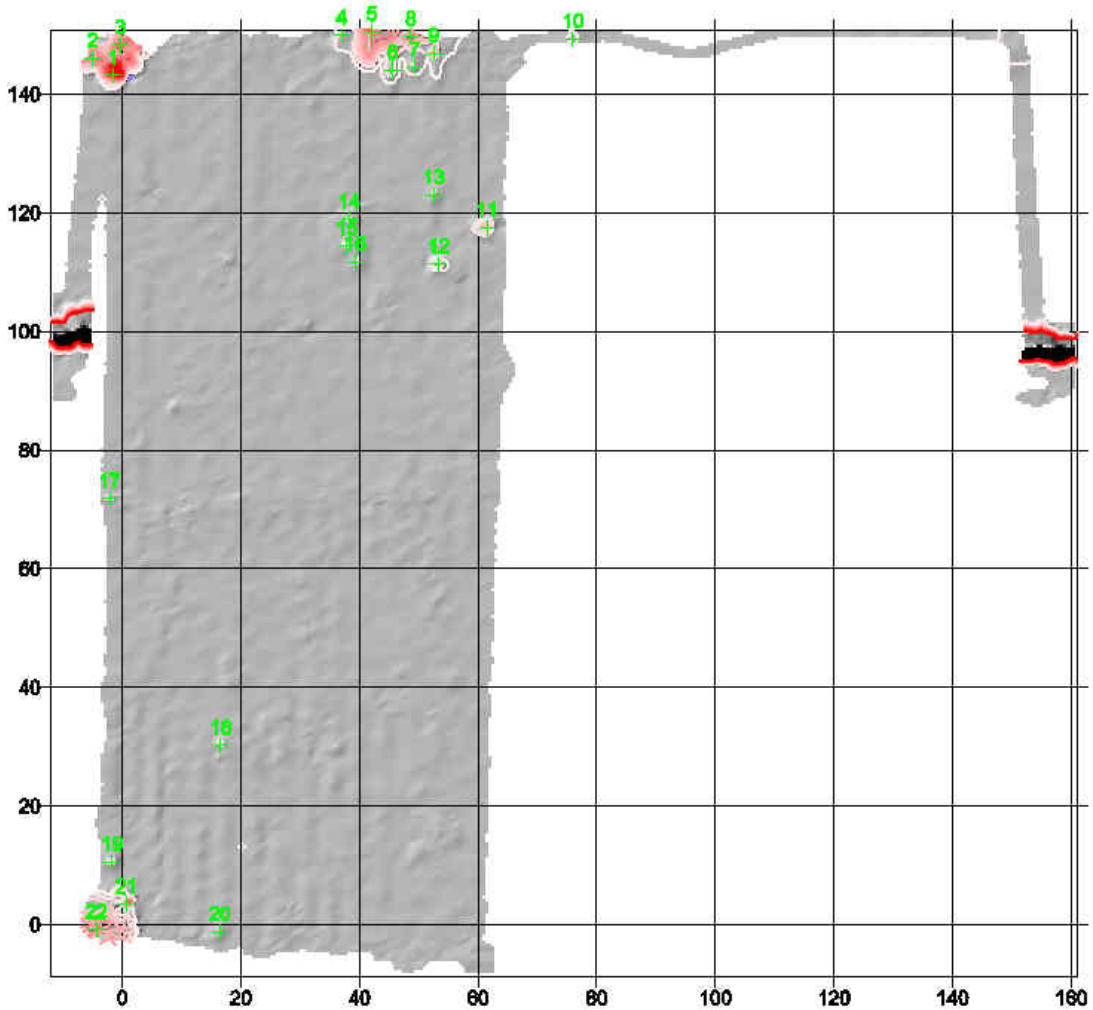
*EM61 Bottom Coil Data - Processed on 10/22/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01, B511r 511s20.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 67.201 | -3.742 |
| 2 | 70.417 | -1.006 |
| 3 | 88.921 | 26.306 |
| 4 | 113.713 | 14.09 |
| 5 | 146.801 | 1.202 |
| 6 | 135.959 | 35.474 |
| 7 | 134.761 | 37.346 |
| 8 | 136.801 | 88.442 |
| 9 | 133.729 | 89.114 |
| 10 | 143.593 | 126.666 |
| 11 | 148.513 | 141.914 |
| 12 | 146.977 | 143.45 |
| 13 | 144.097 | 144.962 |
| 14 | 98.761 | 109.958 |
| 15 | 90.121 | 122.57 |
| 16 | 86.041 | 120.362 |
| 17 | 73.825 | 120.194 |

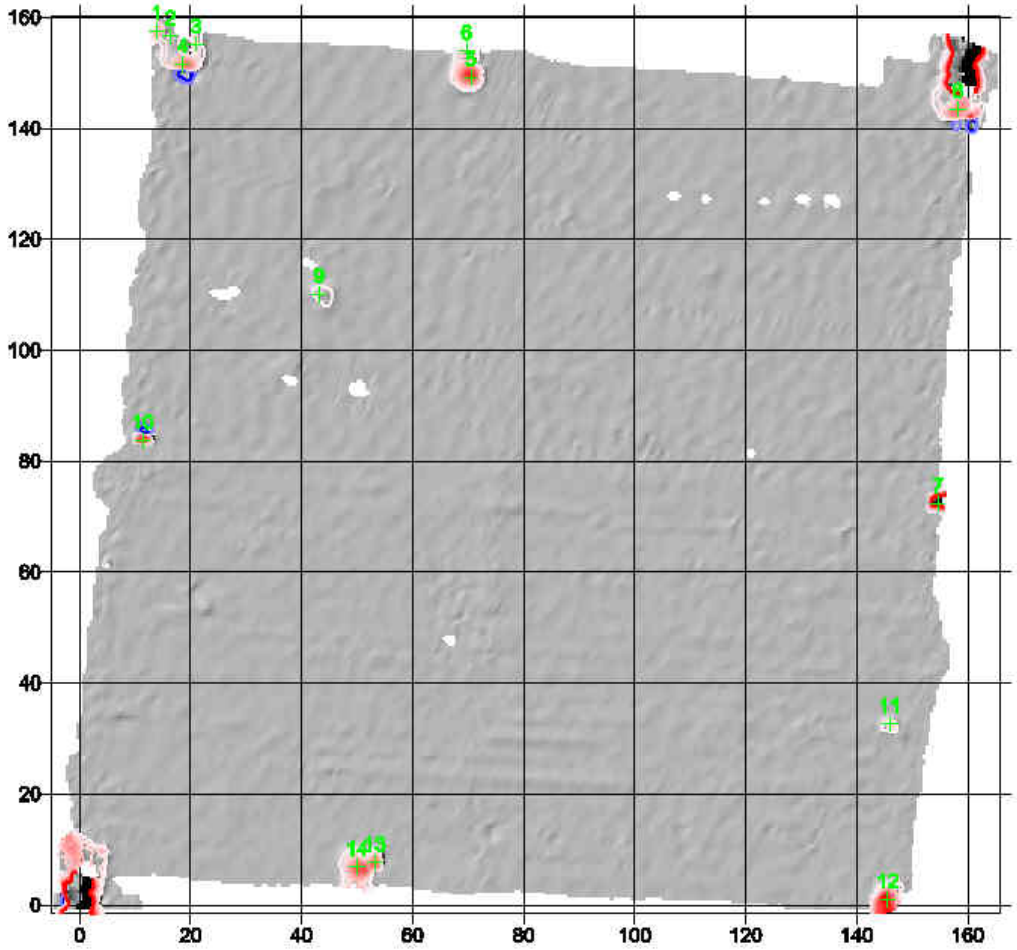
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01 B511r, 511s25.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | -1.52173 | 143.19284 |
| 2 | -5.010766 | 146.047606 |
| 3 | -0.31066 | 148.296835 |
| 4 | 37.030685 | 149.911395 |
| 5 | 42.105825 | 150.51693 |
| 6 | 45.59466 | 144.00022 |
| 7 | 49.256705 | 144.805755 |
| 8 | 48.85117 | 149.70955 |
| 9 | 52.51506 | 146.854865 |
| 10 | 75.98875 | 149.30586 |
| 11 | 61.482745 | 117.600855 |
| 12 | 53.32244 | 111.369 |
| 13 | 52.51506 | 123.00834 |
| 14 | 38.241735 | 116.91377 |
| 15 | 37.836045 | 114.41551 |
| 16 | 39.25096 | 111.791525 |
| 17 | -2.1561 | 71.79736 |
| 18 | 16.815485 | 30.186475 |
| 19 | -1.723576 | 10.60961 |
| 20 | 16.41364 | -1.21284 |
| 21 | 0.7274 | 3.46843 |
| 22 | -4.376395 | -0.80915 |

*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

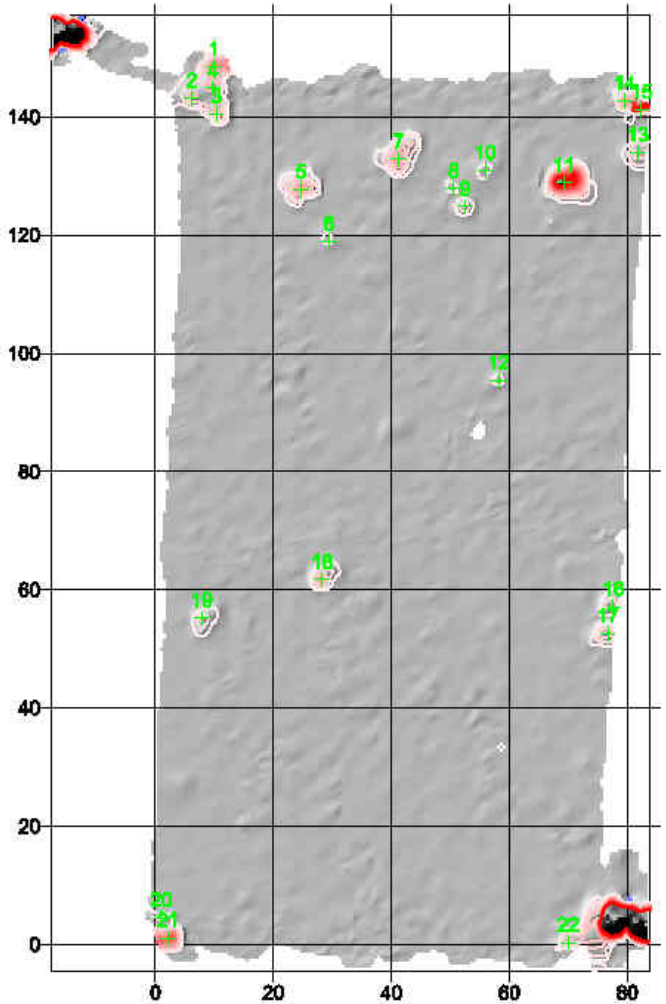
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 10/05/01 - 512s27.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 13.96669 | 157.581365 |
| 2 | 16.3946963333 | 156.585673333 |
| 3 | 20.9933283333 | 155.163256667 |
| 4 | 18.57522 | 151.550318333 |
| 5 | 70.4934283333 | 149.13221 |
| 6 | 69.696675 | 153.968426667 |
| 7 | 154.61515 | 72.2648133333 |
| 8 | 158.228086333 | 143.49944 |
| 9 | 43.1261315667 | 110.101096667 |
| 10 | 11.3493433333 | 83.7294015667 |
| 11 | 145.966856667 | 32.636265 |
| 12 | 145.56658 | 1.03016666667 |
| 13 | 53.196841667 | 7.68709666667 |
| 14 | 49.98218 | 6.862095 |

*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

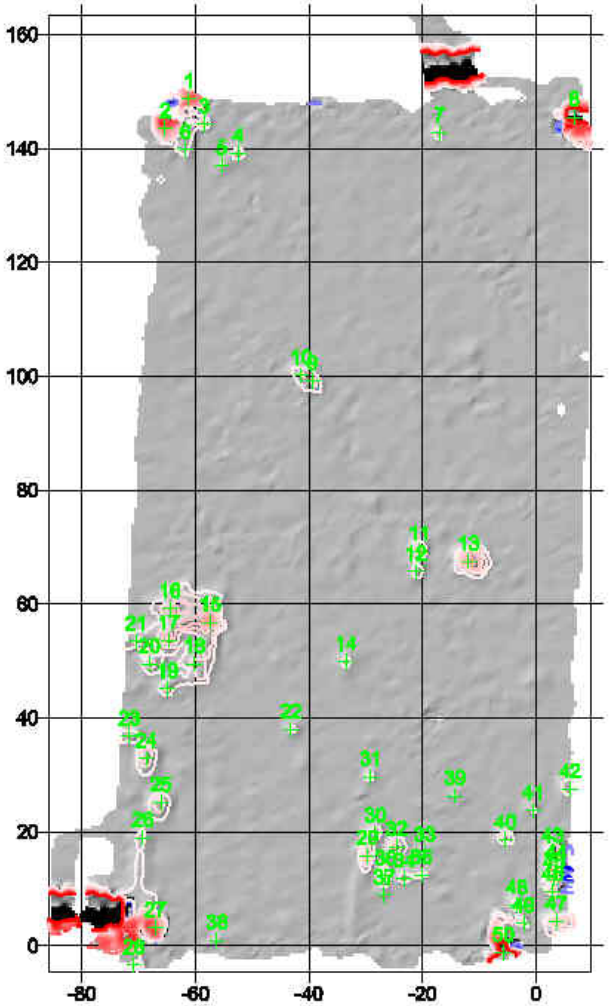
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 10/12/01 - 522o04.xyz




| ID# | X | Y |
|---|---|---|
| 1 | 9.94162 | 148.48267 |
| 2 | 6.140866 | 143.14668 |
| 3 | 10.31869 | 140.477035 |
| 4 | 9.752635 | 144.843745 |
| 5 | 24.631995 | 127.700365 |
| 6 | 29.40303 | 118.913035 |
| 7 | 41.20932 | 132.84677 |
| 8 | 50.582705 | 127.88905 |
| 9 | 52.47651 | 124.843135 |
| 10 | 56.899795 | 130.934965 |
| 11 | 69.24262 | 128.532475 |
| 12 | 58.19097 | 95.462185 |
| 13 | 81.830505 | 133.98088 |
| 14 | 79.53933 | 142.76821 |
| 15 | 82.39656 | 141.231775 |
| 16 | 77.625525 | 57.15913 |
| 17 | 76.6821 | 52.57675 |
| 18 | 28.243965 | 61.714525 |
| 19 | 7.83903 | 55.245325 |
| 20 | 0.99246 | 4.516015 |
| 21 | 2.12467 | 1.09273 |
| 22 | 69.98726 | 0.33799 |

*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

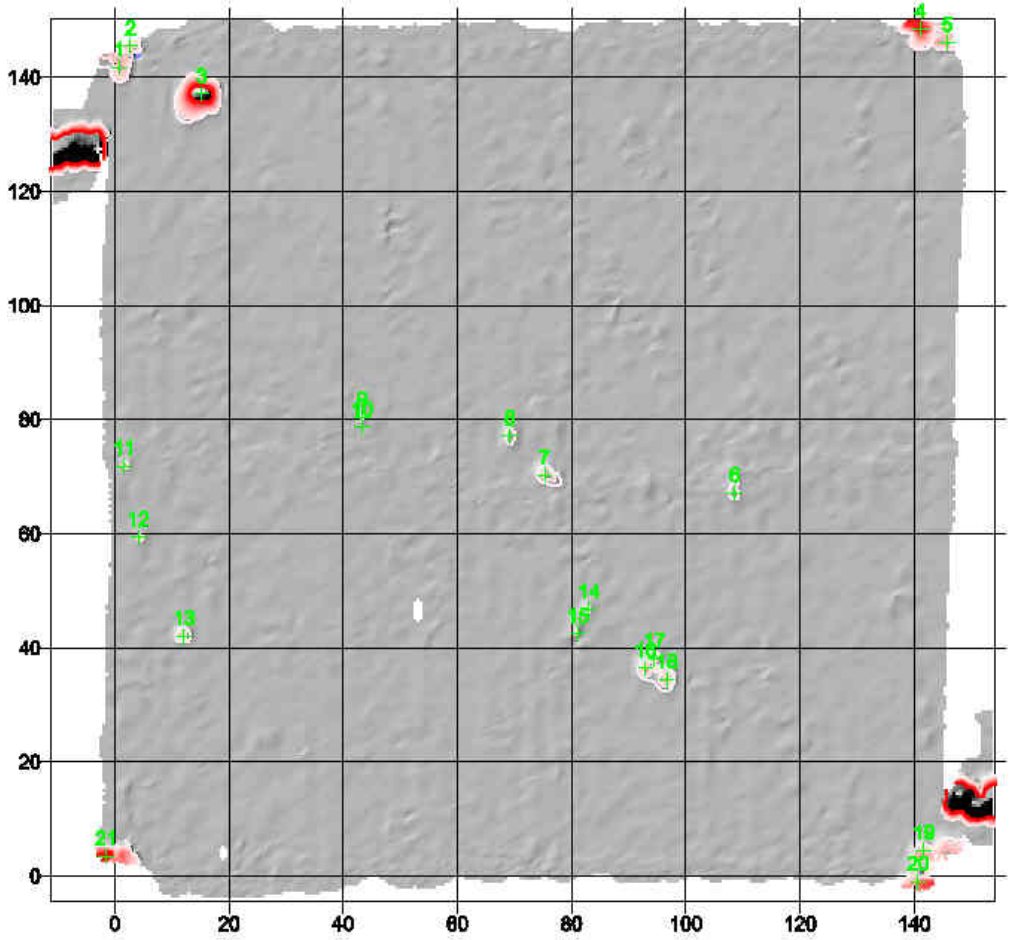
## Fort McClellan, AL - Bravo Area - Foster Wheeler - 10/12/01 - 522o04a.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | -61.1599733333 | 148.664966667 |
| 2 | -65.3299666667 | 143.50544 |
| 3 | -58.3892933333 | 144.269066667 |
| 4 | -52.45812 | 139.13952 |
| 5 | -55.4227066667 | 136.95656 |
| 6 | -61.7478933333 | 139.755226667 |
| 7 | -17.025 | 142.721613333 |
| 8 | 6.73688 | 146.492493333 |
| 9 | -39.3863466667 | 99.17466 |
| 10 | -41.3734 | 100.164093333 |
| 11 | -20.5793066667 | 69.2568133333 |
| 12 | -21.1870266667 | 65.7025066667 |
| 13 | -11.8754533333 | 67.4936533333 |
| 14 | -33.4531733333 | 49.8620533333 |
| 15 | -57.40976 | 56.8027466667 |
| 16 | -64.5183733333 | 59.1816133333 |
| 17 | -64.7422566667 | 53.8402533333 |
| 18 | -60.18044 | 49.47024 |
| 19 | -64.9381733333 | 45.1323066667 |
| 20 | -68.1006666667 | 49.47024 |
| 21 | -70.4795333333 | 53.4443466667 |
| 22 | -43.1845466667 | 37.9957066667 |
| 23 | -71.6549733333 | 36.79226 |
| 24 | -68.6663066667 | 32.84616 |
| 25 | -66.1136133333 | 25.12184 |
| 26 | -69.2781066667 | 18.99276 |
| 27 | -67.0931466667 | 3.16230666667 |
| 28 | -70.6713466667 | -3.39657333333 |
| 29 | -29.70296 | 15.80228 |
| 30 | -28.3036266667 | 19.7763866667 |
| 31 | -29.0872533333 | 29.6836666667 |
| 32 | -24.5534133333 | 17.39752 |
| 33 | -19.5997733333 | 16.4179666667 |
| 34 | -23.15406 | 11.85616 |
| 35 | -20.1674933333 | 12.44366 |
| 36 | -26.51248 | 12.2479733333 |
| 37 | -26.7363733333 | 8.88957333333 |
| 38 | -56.2063333333 | 0.969346666667 |
| 39 | -14.25432 | 26.29728 |
| 40 | -6.35466 | 18.67296 |
| 41 | -0.40092 | 23.7225066667 |
| 42 | 5.95205333333 | 27.5007066667 |
| 43 | 2.95746 | 16.22206 |
| 44 | 3.57318666667 | 13.2275066667 |
| 45 | 3.18137333333 | 11.8602533333 |
| 46 | 2.95748 | 9.47729333333 |
| 47 | 3.57318666667 | 4.32774666667 |
| 48 | -3.36750666667 | 7.09842666667 |
| 49 | -2.16408 | 3.93593333333 |
| 50 | -5.74637333333 | -1.21361333333 |

*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 10/05/01 - 569o01.xyz

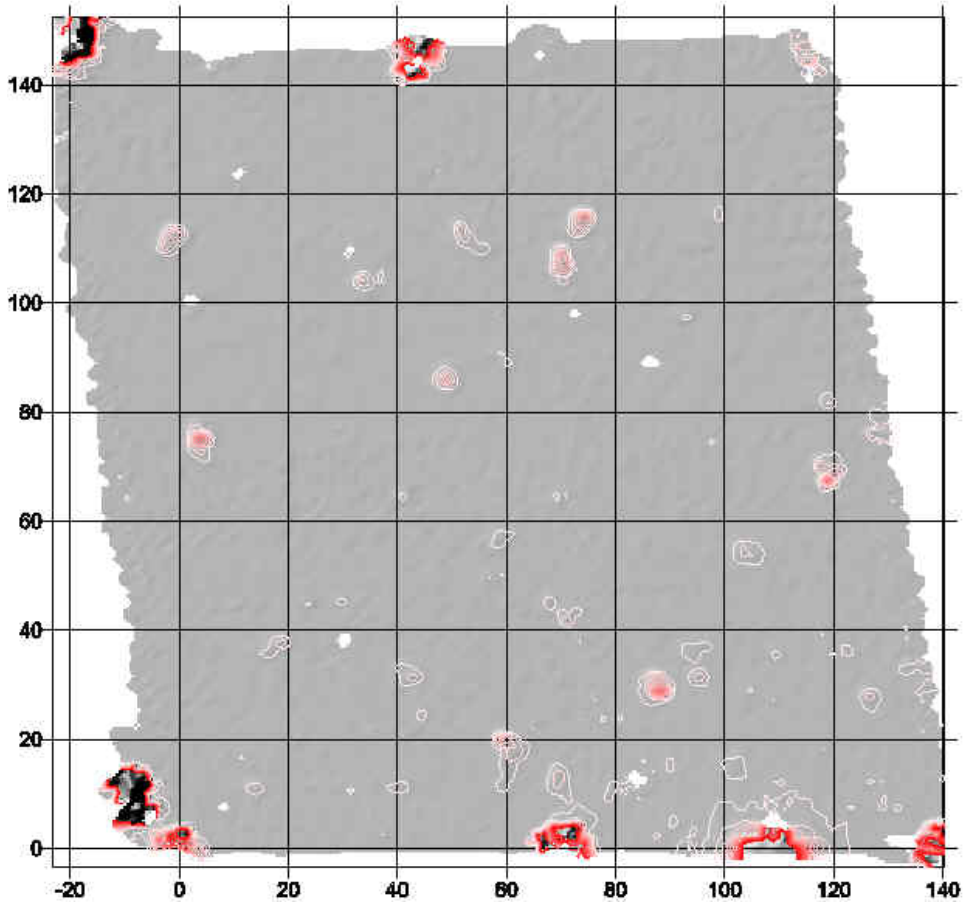


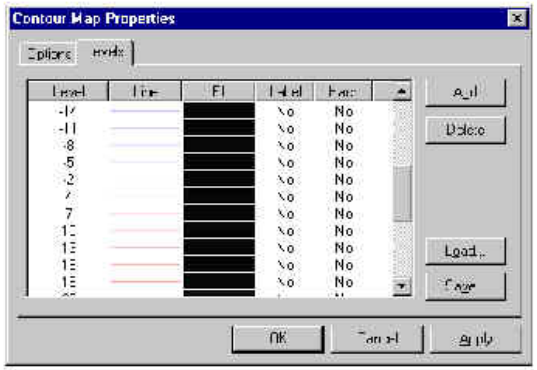

| ID# | X | Y |
|---|---|---|
| 1 | 0.834098333333 | 141.795990667 |
| 2 | 2.75178166667 | 145.486123333 |
| 3 | 15.2368466667 | 137.11447 |
| 4 | 141.069291667 | 148.492725 |
| 5 | 145.740808333 | 146.091966667 |
| 6 | 108.53652 | 67.1946416667 |
| 7 | 75.242675 | 70.3064733333 |
| 8 | 69.1842416667 | 77.13588 |
| 9 | 43.2982083333 | 80.44058 |
| 10 | 43.2982083333 | 76.6781266667 |
| 11 | 1.60517166667 | 71.6761583333 |
| 12 | 4.13869833333 | 69.4012933333 |
| 13 | 12.124815 | 42.0795816667 |
| 14 | 83.0360233333 | 46.73966 |
| 15 | 81.0608016667 | 42.4852183333 |
| 16 | 92.9488233333 | 38.4343233333 |
| 17 | 94.5195083333 | 36.1882383333 |
| 18 | 96.6874983333 | 34.4791016667 |
| 19 | 141.865135 | 4.48965666667 |
| 20 | 140.673766 | -0.962733333333 |
| 21 | -1.60666 | 3.49647666667 |

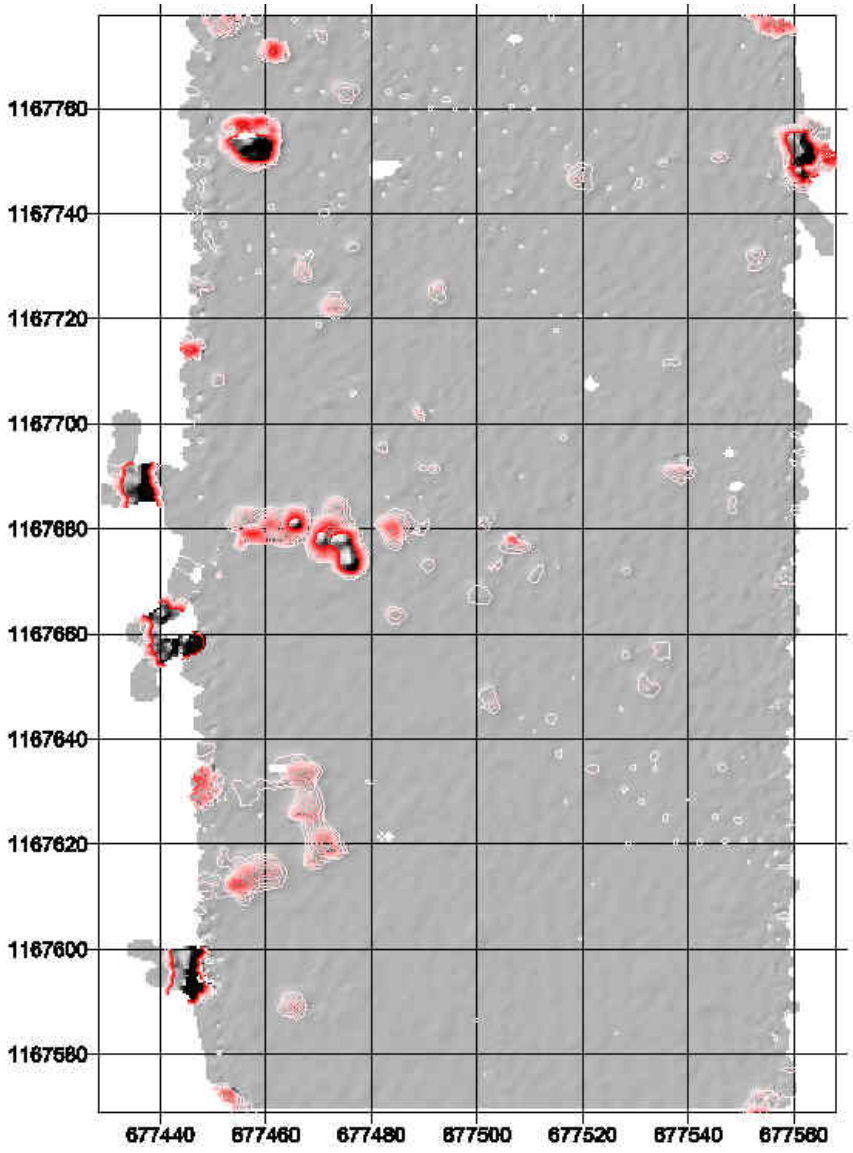
*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

## Foster Wheeler Grid 571o15 McClellan EM61MKII

### CEHNC JAD Feb 20 2003

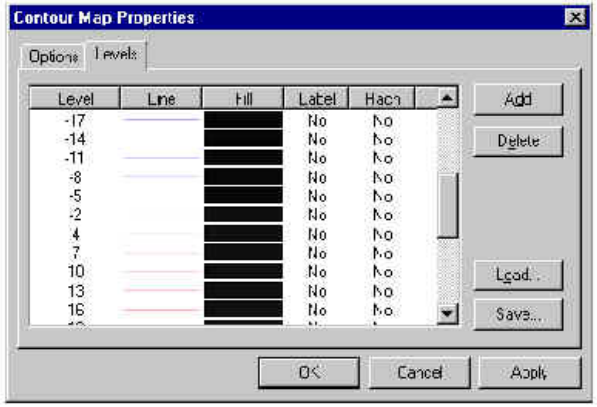


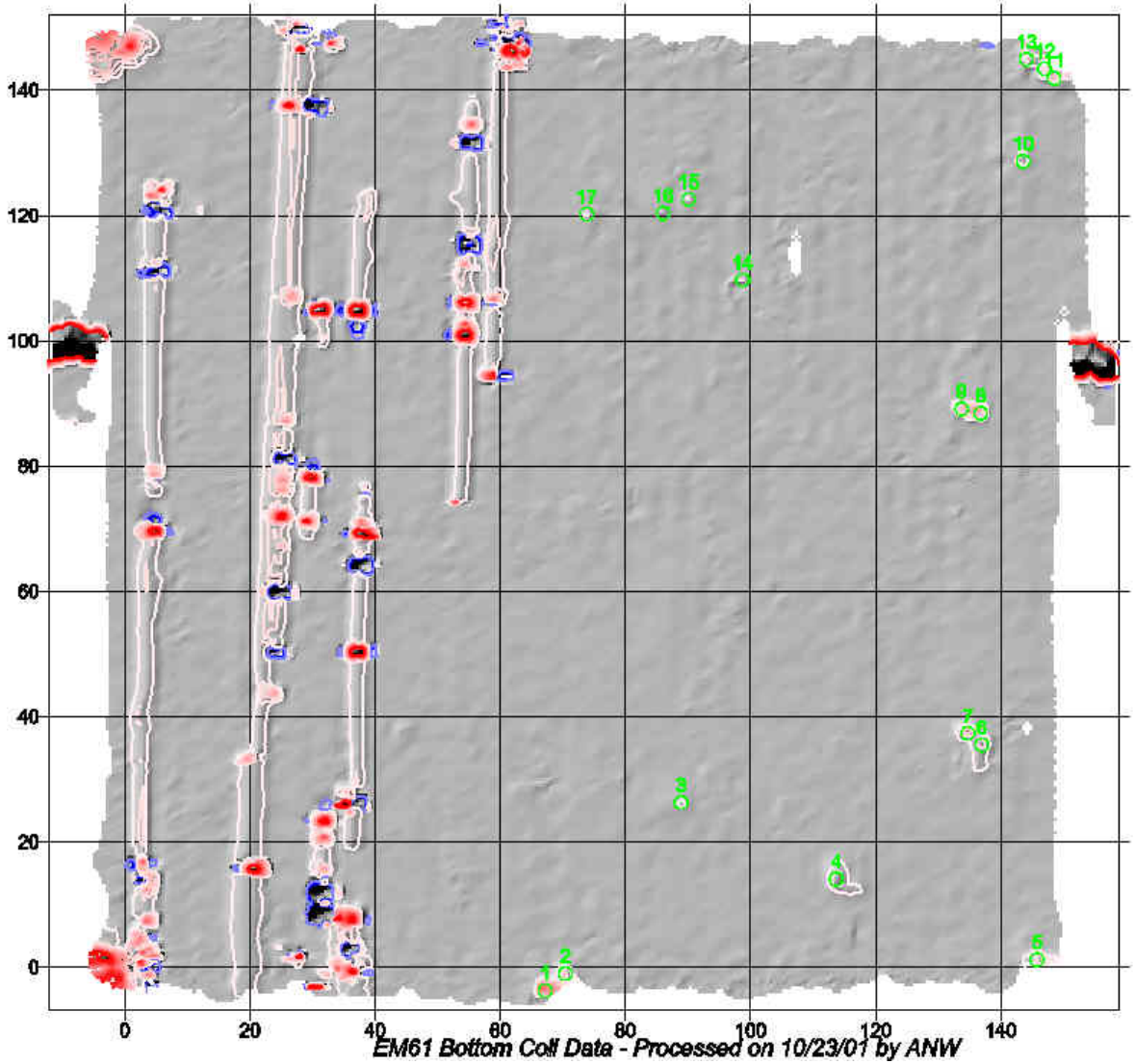



**Foster Wheeler B049 McClellan EM61MKII**

**CEHNC JAD 20 Feb 2003**

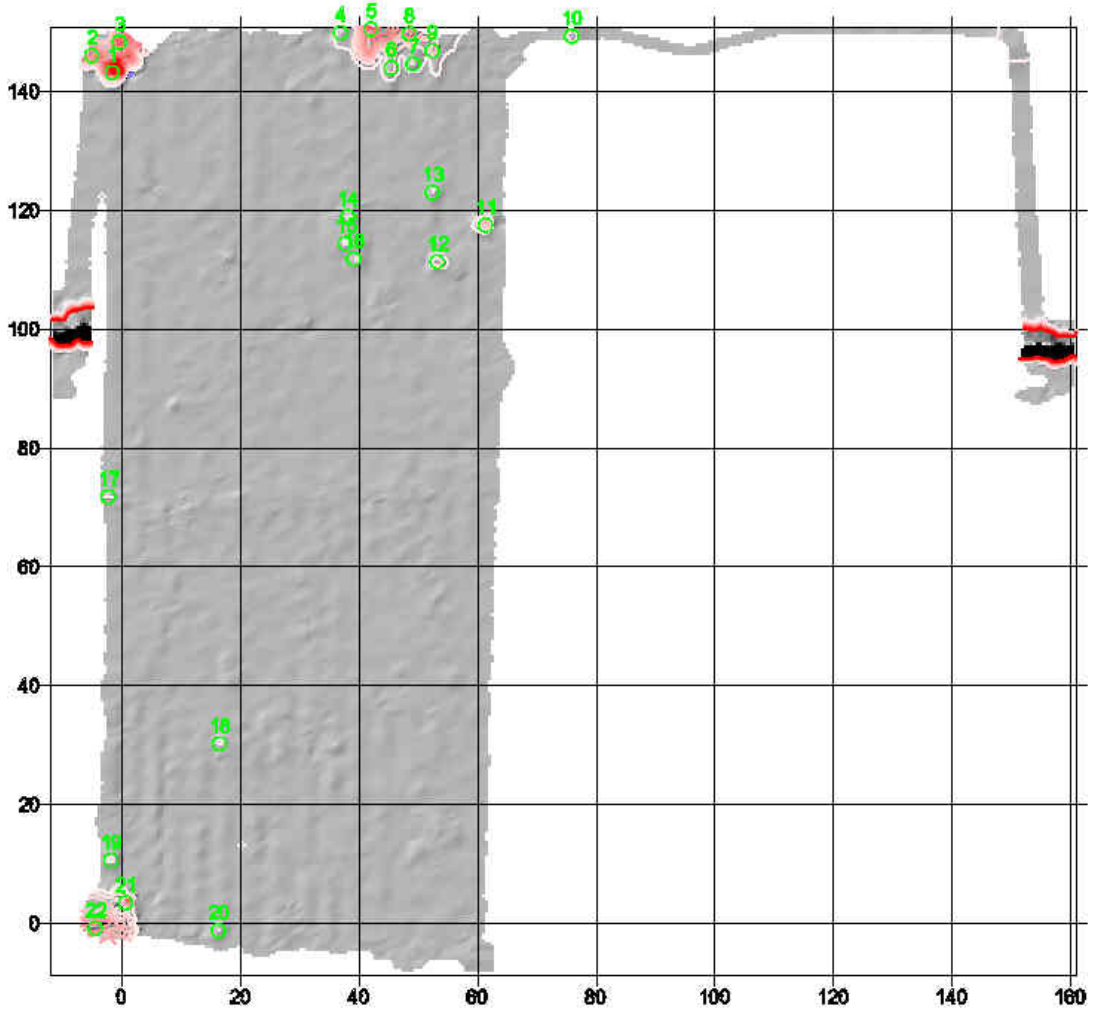


## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01, B511r 511s20.xyz




| ID# | Easting | Northing |
|---|---|---|
| 1 | 67.201 | -3.742 |
| 2 | 70.417 | -1.006 |
| 3 | 88.921 | 26.306 |
| 4 | 113.713 | 14.09 |
| 5 | 145.801 | 1.202 |
| 6 | 136.969 | 36.474 |
| 7 | 134.761 | 37.346 |
| 8 | 136.801 | 89.442 |
| 9 | 133.729 | 89.114 |
| 10 | 143.593 | 126.666 |
| 11 | 146.513 | 141.914 |
| 12 | 146.977 | 143.45 |
| 13 | 144.097 | 144.962 |
| 14 | 98.761 | 109.668 |
| 15 | 90.121 | 122.57 |
| 16 | 86.041 | 120.362 |
| 17 | 73.825 | 120.194 |

## Fort McClellan, AL - Bravo Area - Foster Wheeler - 9/28/01 B511r, 511s25.xyz

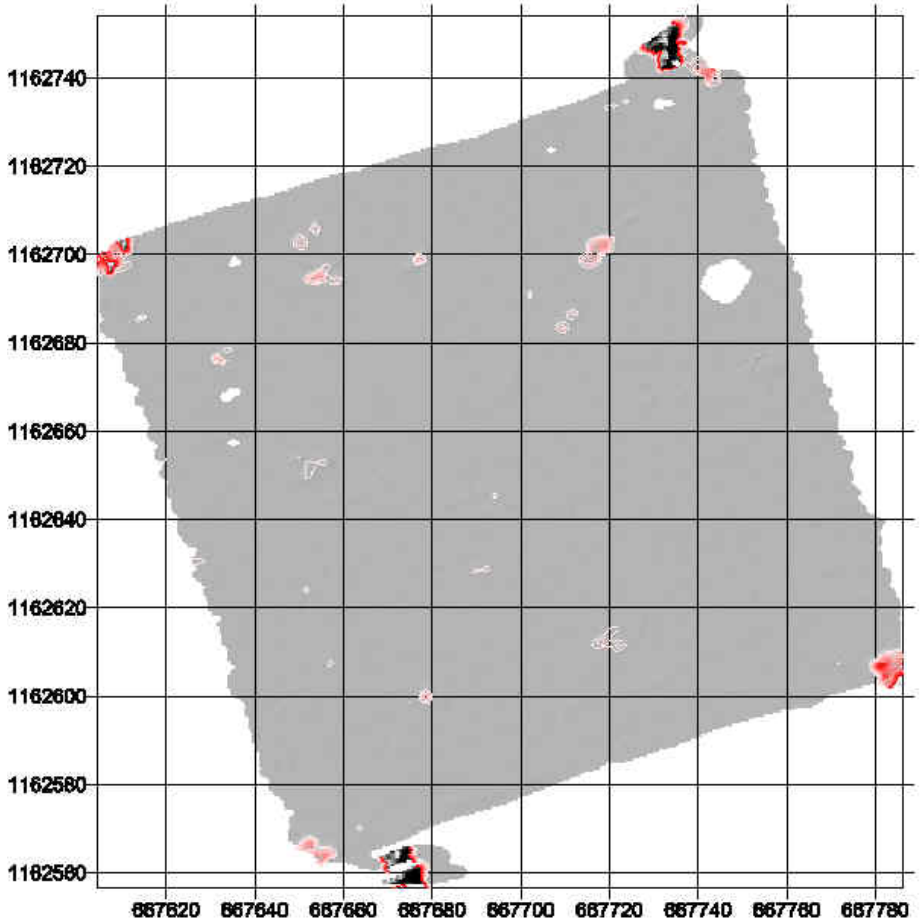


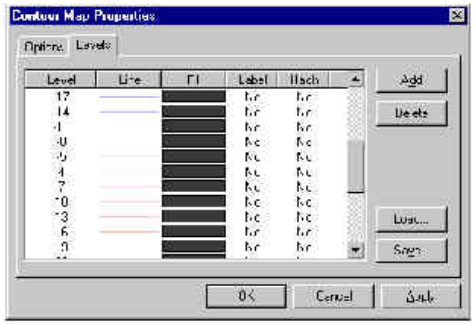

| ID# | Easting | Northing |
|---|---|---|
| 1 | -1.52173 | 143.19284 |
| 2 | -5.010786 | 146.047605 |
| 3 | -0.31868 | 148.296635 |
| 4 | 37.030665 | 149.911395 |
| 5 | 42.105625 | 150.51693 |
| 6 | 45.59466 | 144.90022 |
| 7 | 49.256705 | 144.605755 |
| 8 | 48.85117 | 149.70955 |
| 9 | 52.51606 | 146.854885 |
| 10 | 75.98675 | 149.30588 |
| 11 | 61.482745 | 117.600855 |
| 12 | 53.32244 | 111.369 |
| 13 | 52.51606 | 123.00934 |
| 14 | 38.241735 | 119.91377 |
| 15 | 37.838045 | 114.41551 |
| 16 | 39.25096 | 111.791525 |
| 17 | -2.1561 | 71.79739 |
| 18 | 16.615485 | 30.188475 |
| 19 | -1.723576 | 10.69951 |
| 20 | 18.41364 | -1.21284 |
| 21 | 0.7274 | 3.45843 |
| 22 | -4.376395 | -0.80915 |

*EM61 Bottom Coil Data - Processed on 10/23/01 by ANW*

**Foster Wheeler Grid 517 McClellan EM61MKII**

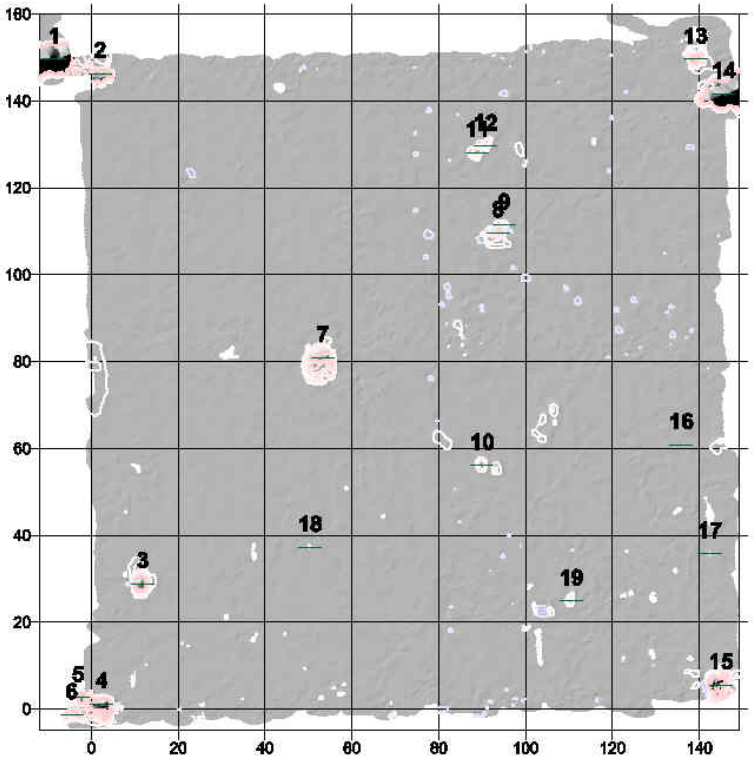
**CEHNC JAD Feb 20 2003**



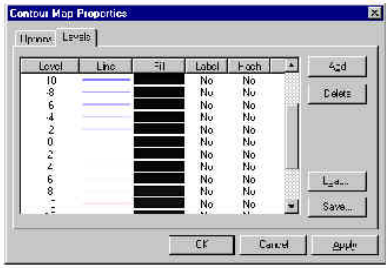



**Ft. McClellan - Foster Wheeler Environmental Corporation - Grid B576**

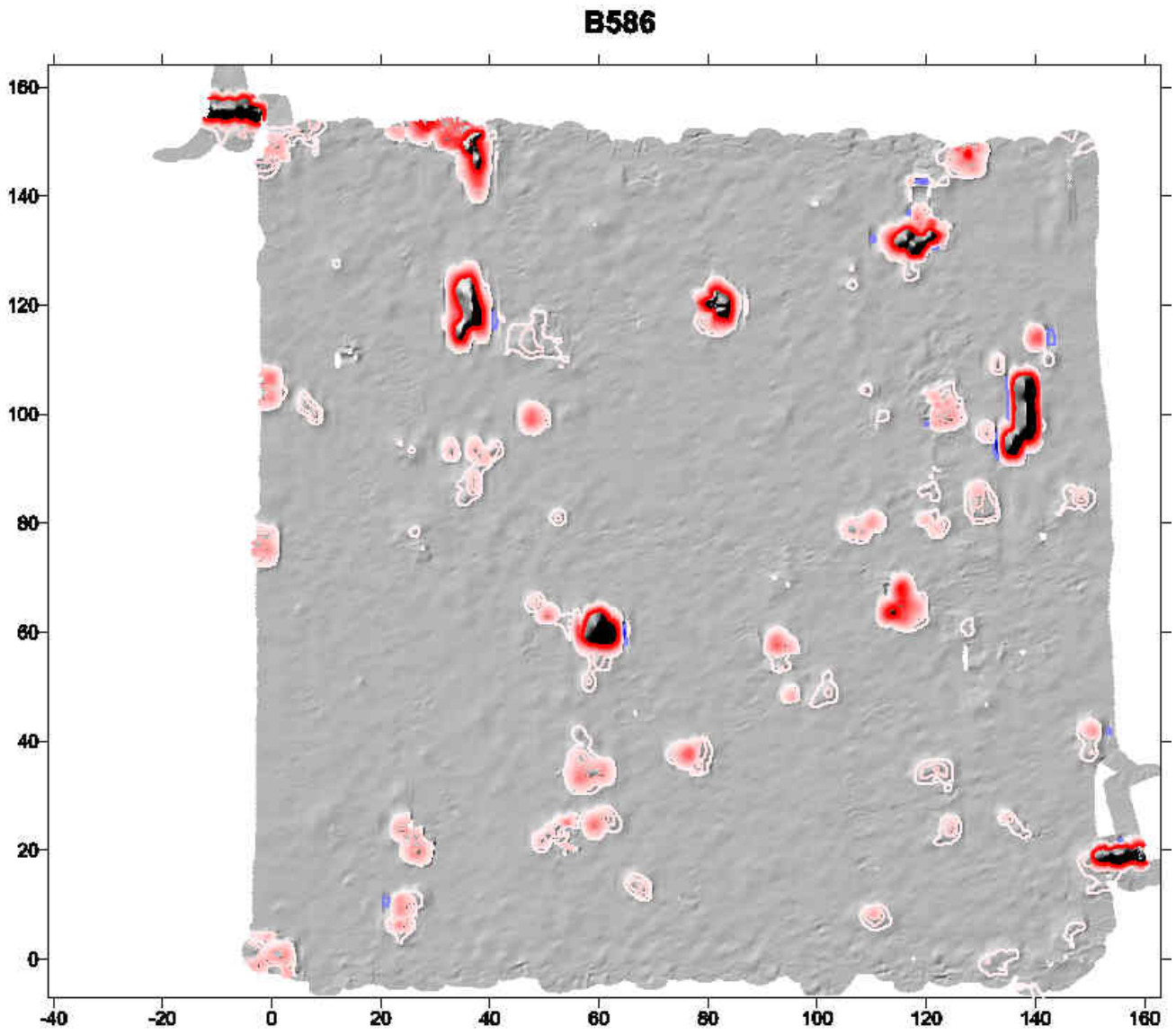
## Foster Wheeler Grid B576n14_c McClellan EM61MKII



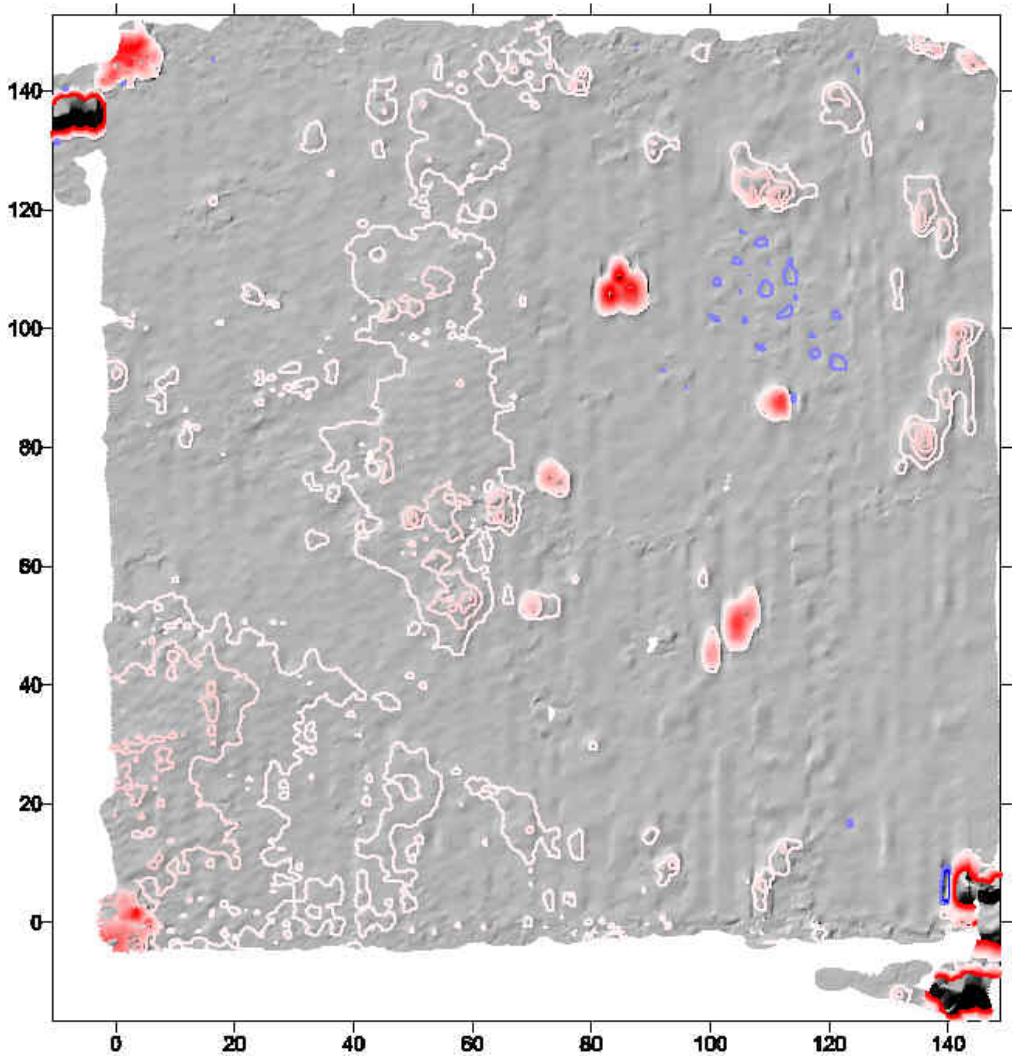

| ID# | Easting (ft) | Northing (ft) |
|---|---|---|
| 1 | -8.547 | 149.614 |
| 2 | 1.998 | 146.327 |
| 3 | 11.821 | 28.85 |
| 4 | 2.359 | 1.205 |
| 5 | -3.094 | 2.649 |
| 6 | -4.557 | -1.341 |
| 7 | 53.279 | 80.853 |
| 8 | 93.673 | 109.6 |
| 9 | 95.117 | 111.405 |
| 10 | 90.025 | 56.115 |
| 11 | 88.942 | 128.144 |
| 12 | 90.747 | 129.607 |
| 13 | 139.14 | 149.614 |
| 14 | 145.676 | 141.596 |
| 15 | 144.954 | 5.556 |
| 16 | 135.853 | 60.846 |
| 17 | 142.408 | 35.747 |
| 18 | 50.372 | 37.21 |
| 19 | 110.545 | 24.868 |

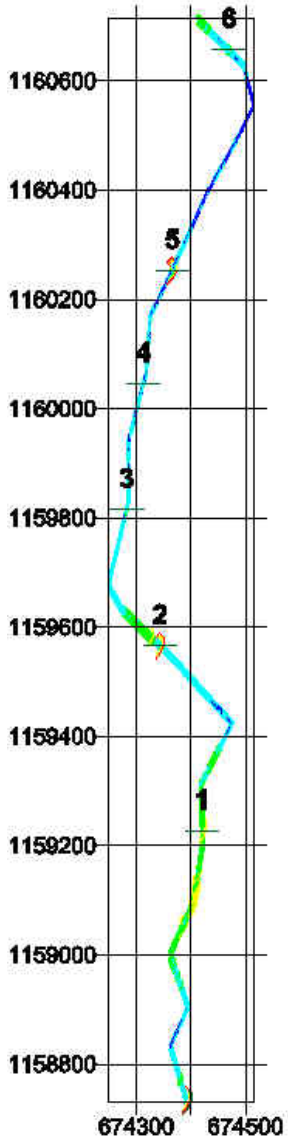



*EM 61 - Bottom Coil Leveled - Processed by DWP on 12-4-2001*


B586
160
140
120
100
80
60
40
20
0
-40
-20
0
20
40
60
80
100
120
140
160

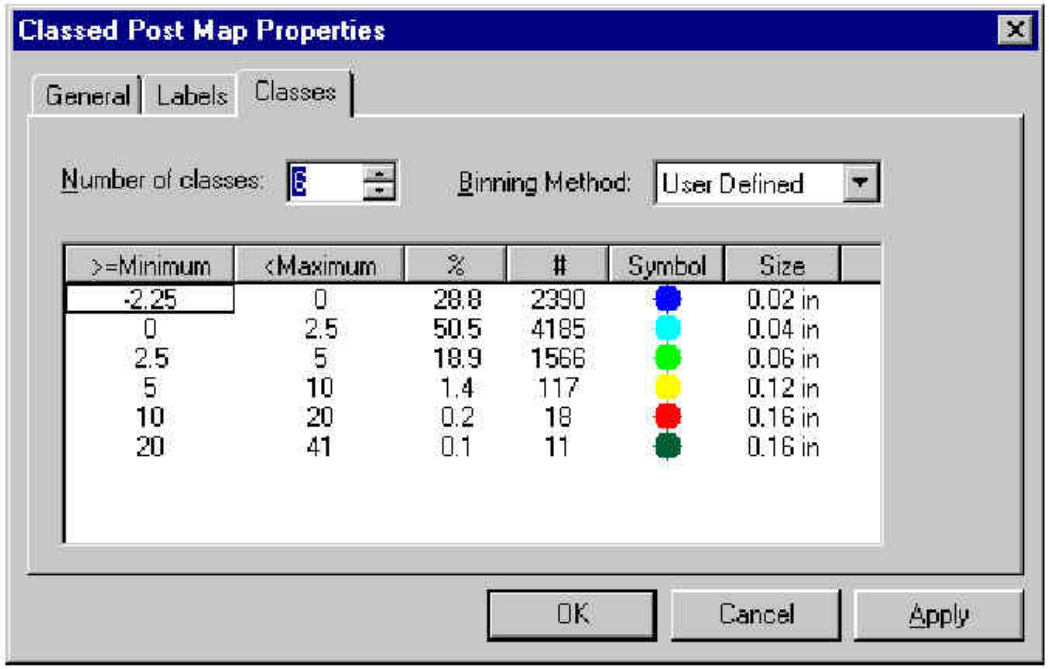
## B587






## Foster Wheeler Transect 311001 McClellan EM61MKII

### CEHNC JAD Sep 2002




| >=Minimum | <Maximum | % | # | Symbol | Size |
|---|---|---|---|---|---|
| -2.25 | 0 | 28.8 | 2390 | | 0.02 in |
| 0 | 2.5 | 50.5 | 4185 | | 0.04 in |
| 2.5 | 5 | 18.9 | 1566 | | 0.06 in |
| 5 | 10 | 1.4 | 117 | | 0.12 in |
| 10 | 20 | 0.2 | 18 | | 0.16 in |
| 20 | 41 | 0.1 | 11 | | 0.16 in |

**FW Picks**