37/7K

# REMEDIAL INVESTIGATION REPORT

FOR

# CROSSLEY FARM SITE

HEREFORD TOWNSHIP, BERKS COUNTY
PENNSYLVANIA

## VOLUME II (APPENDICES A-I, L-M)

EPA WORK ASSIGNMENT NO. 009-RICO-03S2
PROJECT NO. 7525

RAC 3 PROGRAM
CONTRACT NO. 68-S6-3003

JULY 2001

TETRA TECH NUS, INC.

AR300790

A

**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-01D
DATE 12-10-98
DRILLER D. TAYLOR, HARDIN-HUISER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0910 | 0 | | | | | BRN | SILTY CLAY LOAM | | DAMP-MOIST |
| | | | | | | ORANGE-BRN | CLAY W/ RK. FRAGMENTS | | MOIST-WET 0.0 PPM |
| | 10 | | | | | BRN | SAND, CLAY, QUARTZITE & GNEISS PIECES & COBBLES. | | DAMP-MOIST |
| 0916 / 0933 | 14 | | | | | GRAY TO LT. GRAY | CLAY, WEATHERED GNEISS FRAGMENTS | | MOIST 0.0 PPM |
| | 20 | | | | | | | | |
| 0943 / 0951 | 24 | | | | | LT. GRAY | CLAY & SANDY CLAY, GNEISS SAPROLITE (SM. OLIVE-BRN WEATH ZONES) | | MOIST 0.0 PPM |
| | 30 | | | | | | | | |
| | | | | | | | | | |
| 1001 / 1042 | 39 | | | | | | | | MOIST-WET 0.0 PPM |
| | | | | | | | | | DAMP-MOIST 0.0 PPM |
| | | | | | | BRN | SANDY CLAY, BECOMING HARDER | | 49' MUCH HARDER |
| 1058 / 1426 | 51 | | | | | BRN & GRAY | SANDY CLAY, SOME RUSTY, VERY WEATHERED QUARTZITE & BLACK RUST-STAINED SHALE OR PHYLLITE | | MOIST-WET 0.0 PPM |
| 1434 | 60 | | | | | | | | |
| 1452 | | | | | | | | | 62' HARDER |
| | 70 | | | | | | POOR RETURNS ... SIMILAR TO ABOVE | | AT 70' BLOWING AIR & WATER FR/ MW-10S NEARBY |

REMARKS 10" DIAM. x 2.5' LONG ROLLER BIT TO 14'; 12" DIAM x 12' LONG ROLLER BIT TO 51'; 10" STEEL CSG TO 37'; 10" DIAM. ROLLER BIT TO 72'; 10" STEEL CSG. TO 55'

BORING NO. HN-01D
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**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM — BORING NO HN-01D

PROJECT NO. 7525 — DATE 12-10-98, 12-14-98, 12-15-98

ELEVATION — DRILLER D. TAYLOR, HARDIN-HUBER

WATER LEVEL DATA — FIELD GEOLOGIST R. GOOD

(DATE. TIME & CONDITIONS)

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 12/10 | 1508 | 72 | | | | | | (NO CUTTINGS RETURNS) | | 72' POSS. HARDER |
| 12/14 | 1501 / 1511 | 73 | | | | | | | | 0.0 PPM |
| | 1517 / 1533 | 78 | | | | | BRN | WEATH. QUARTZITE IN MUD ... | | 78' POSS HARDER |
| | | | | | | | | QTZT IS PINK, BRN, GRAY & RUSTY STAINED | | ALT SM MUD w/ LOST AIR CIRC. 0.0 PPM |
| 12/14 | 1539 | 88 | | | | | | (AS ABOVE ... POOR RETURNS) | | ... |
| 12/15 | 1051 | | | | | | | | | |
| | 1054 / 1106 | 93 | | | | | BRN | WEATH QTZT, CLAY, SAND | | SOME THICK MUD 0.0 PPM |
| | | 100 | | | | | | (POOR RETURNS) (R.O.P. ≥ 6 FT/MIN) | | |
| | | | | | | | | | | THICK SANDY-CLAY MUD |
| | 1114 / 1123 | 108 | | | | | | | | 0.0 PPM |
| | | | | | | | BRN | V. WEATH. QUARTZITE, RUSTY-STAINED, CLAY, SAND. (POOR RETURNS; R.O.P. ≈ 1FT/MIN) | | HARDER |
| | | 120 | | | | | | ↓ | | POSS $H_2O$ @ 117' 0.0 PPM |
| | 1136 / 1150 | 123 | | | | | BRN | V WEATH. BROKEN QUARTZITE & | | $H_2O$ @ 120'-122' EST 5 GPM 0.0 PPM |
| | | 130 | | | | | | DEEPLY WEATH. SANDSTONE, SM. ARGILLACEOUS MAT'L & CLAY; MUM. RUSTY-STAINING | | BROKEN/FRACTURED |
| | | | | | | | | ↓ | | 130'-138' COMPLETELY FRACTURED, V. LG. CUTTINGS: ≥ 3" |
| | 1154 / 1213 | 138 | | | | | | ↓ | | 8-10 GPM 0.0 PPM |

REMARKS 10" OUTSIDE × 7' LONG AIR HAMMER TO 88'; 10" STEEL CSG. TO 85'; 10" AIR HAMMER TO 155'; 10" STEEL CSG. TO 93'.

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* See Legend on Back

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-01D
DATE 12-15-98, 12-16-98, 12-22-98
DRILLER J. TAYLOR, HARDIN-HUISER
FIELD GEOLOGIST

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 140 | | | | | | | | |
| | | | | | | | BRN, TAN, ORN, GRY | V. WEATH., V BROKEN QUARTZITE, NUM RUSTY STAINS, NUM. THIN SHALY OR ARGILLACEOUS | | ≥ 10 GPM 0.0 PPM |
| | | 150 | | | | | | LAYERS | | ≤ 3.2 PPM FR/ DISCHARGE |
| 12/15 | 1222 1331 1355 | 153 | | | | | | | | ≥ 20 PPM FR/ DISCHARGE ... SHEEN ON WATER |
| 12/16 | | 160 | | | | | DK. GRY | FGR, HARD, UNWEATHERED, | | HARDER, MR. COMP. |
| | | | | | 6" CSG. | | TO BLK | QUARTZITE | | ≥ 25 GPM ... ~5-10 PPM FR/ DISCHARGE |
| 12/16 | 1445 | 165 | | | | | | | | |
| 12/22 | 1330 1332 1337 | 167 | | | | | DK. GRY | QTZT AS ABOVE | | DAMP 0.0 PPM |
| | | 170 | | | | | DK. GRY | INTERBEDDED QUARTZITE & SLATE OR PHYLLITE, SM. RUSTY STAINS. | | |
| | | | | | | | BRN - GRY | QUARTZITE & SHALY PHYLLITIC MATERIAL, INTERBEDDED | | DAMP - DRY 0.0 PPM |
| | 1342 1346 | 182 | | | | | | | | |
| | | 190 | | | | | DK. GRY | QUARTZITE & PHYLLITE AS ABV. | | DAMP - DRY 0.0 PPM |
| | 1351 1355 1357 | 197 | | | | | BRN | QUARTZITE & PHYLLITE AS ABV. | | DAMP - DRY 0.0 PPM |
| | 1528 | | | | | | M - LT. GRY | QUARTZITE W/ SM. RUSTY STAINS | | (TRACE WATER THEN DRY @ 200') |
| | | 210 | | | | | | (AS ABOVE, BUT V. LT GRY TO WHITE & CLEAR) | | DAMP - DRY — 0.0 PPM |

REMARKS 10" DIAM AIR HAMMER TO 165'; 6" STEEL CSG. TO 164'
6" DIAM. x 5' LONG AIR HAMMER TO 210'.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-01D
DATE 12-22-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | STRUC. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| 1532 / 1537 | 212 | | | | | M-LT. GRAY | QUARTZITE w/ SM. RUSTY STAINS | | DAMP - DRY 0.0 PPM |
| | 220 | | | | | | | | |
| | | | | | | GRAY, BLW, PINK | VARIEGATED QUARTZITE LYRS w/ SM. RUSTY STAINING | | DAMP - DRY 0.0 PPM |
| 1543 / 1546 | 227 / 230 | | | | | LT-DK GRAY, BRW, | VARIEGATED QUARTZITE LYRS. w/ SM. INTERBEDDED PHYLLITE | | |
| | | | | | | PINK, RUSTY | OR ARGILLITE ... ALT SOFTER & HARDER ZONES | | DAMP - DRY 0.0 PPM |
| | 240 | | | | | | | | |
| 1552 / 1555 | 242 | | | | | | | | |
| | 250 | | | | | | | | DAMP - DRY 0.0 PPM |
| 1600 / 1603 | 257 | | | | | | | | DAMP - DRY 0.0 PPM |
| 12/22 1606 | 260 | | | | | | | | TRACE $H_2O$ @ 260' |
| 1/5 0802 / 0807 | 263.5 | | | T.D. | | | QUARTZITE, AS ABOVE | | EST WATER YIELD ~3 GPM 0.0 PPM |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-06D
DATE 01-27-99/(02-23-99)
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1436 | 0 | | | | | dk. brn | sandy silt with clay w/ roots + quartzite pebbles + cobbles | 0.0 | damp |
| | | | | | | | | | |
| 1437 | 5 | | | poss. cobbles/boulders → occasionally dusty | | brn, dk. brn | sandy + silty clay w/ quartzite fragments mottled appearance | 0.0 | damp/moist |
| | | | | | | | | | |
| 1438 | 10 | | | | | orange brn | sandy clay/clayey sand w/ quartzite fragments | 0.0 | damp/moist |
| 1439 | 12 | | | | | orange brn | as above | 0.0 | damp/moist |
| | | | | | | | | | |
| 1443 | 17 | | | | | orange brn | sandy clay w/ abundant quartzite pebbles | 0.0 | damp/moist |
| | | | | | | | | | |
| 1446 / 1452 | 22 | | | | | brn, orange brn | abundant quartzite gravels in clayey sandy silt matrix | 0.0 | damp/moist EOR = 1 |
| 1456 | 24 | | | | | brn, orange brn | as above w/ gray clay lenses | 0.0 | moist slow drilling → borehole appears |
| 1500 | 27.5 | | | | | brn, orange brn | as above | 0.0 | to be caving |
| | | | | | | | | | |
| 1505 | 32 | | | | | brn, orange brn | as above w/ large chert fragment | 0.0 | moist/wet → poss. perched water zone |

REMARKS IR TH-60 Drill Rig
01-27-99 10" Air Percussion bit (7' bit assembly)
note → boring log entries in parentheses include observations made when borehole was overreamed with 8" ODEX bit
(02-23-99) (8" ODEX Air Percussion Bit [9' bit assembly])

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-06A
DATE 01-27-99 / 01-28-99 / 01-29-99 / (02-23-99) / (02-24-99)
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKU

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1512 | 34.5 | | | | | brn orange | silty clay w/ some sand w/ trace gray argillaceous fragments | 0.0 | wet |
| (02-23-99) (02-24-99) | 1513 | (35) 37 | | | | | brn orange | as above | 0.0 | damp |
| | | | | | | | | | | |
| 01-27-99 01-28-99 | 1515 1117 | 42 | | | | | brn orange | as above | 0.0 | damp EOR=2 |
| | 1120 | 45.5 | | | | | | | | clay rich returns |
| | 1121 | 46 | | | | | brn orange | as above w/ gray clay lenses | 0.0 | damp |
| | | | | | | | | w/ quartzite fragments + fissile argillaceous material → shale | | |
| | 1129 | 51 | | | | | brn orange | as above | 0.0 | damp |
| | | | | | | | | | | |
| | 1149 | 56 | | | | | brn orange | silty clay w/ some sand w/ shale fragments | 0.0 | damp |
| | | | | | | | | | | |
| | 1159 | 61 | | | | | brn orange | silty clay w/ some sand w/ quartzite, shale, + silty mudstones (non-fissile) | 0.0 | damp |
| 1-28-99 1-29-99 | 1159 1029 | 62 | | | | | | | | blow water from borehole EOR=3 |
| | | | | | | | | | | — |

REMARKS 01-29-99
8" Air Percussion bit (7' bit assembly)
01-29-99
8" Tricone roller bit (1.5' bit assembly)

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-06D
DATE 01-29-99/(02-24-99)
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO. | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 67 | | | overburden | | brn orange | silty clay w/ sand w/ quartzite, shale, + silty mudstones | 0.0 | saturated |
| | | | | | | | | | |
| | 72 | | | | | | no sample | | saturated |
| 1035 / 1039 | 76.5 | | | weathered rock | soft / hard | gray → dk gray, brn gray, brn, orange | Shale (some appears phyllitic) w/ quartz + clay seams Fe + Mn-oxide stained fracture surfaces | 0.0 | v. broken rock → gravel-size cuttings saturated Q= 5-10 GPM |
| | | | | | | | | | EOR=4 |
| 1043 | 80 | | | | soft / hard | | as above no quartz | 0.0 | saturated Q= 8-10 GPM |
| | | | | | | | | | |
| 1046 | 85 | | | | soft / hard | gray → dk gray, brn gray, gray brn | as above w/ some laminated shales + poss. carbonate fragments Fe staining | 0.0 | v. broken sulfur odor apparent saturated Q= 8-10 GPM |
| | | | | | | | | | |
| 1051 | 90 | | | | soft / hard | gray → dk gray, brn gray, gray brn | Shale w/ trace quartz + chert heavy Fe staining | 0.0 | poss. fracture saturated Q=20-40 GPM |
| 1058 / 1158 | 94 | | | | hard | | | | refusal w/ 8" tricone roller bit |
| 1200 | 97 | | | | | | no sample nub. fractured rock → bit skipping / dropping | 0.0 | no returns Q=5-7 GPM |
| | (99) | | | | (soft) / (hard) | v. dk. gray → black, brn gray, | (massive, finely crystalline dolomite with interbedded shales Fe staining) | (0.0) | (Q=5-10 GPM since ~73.5') |
| | (101) | | | | (soft) / (hard) | gray brn | (as above w/ trace quartz + calcite veins) | (0.0) | (Q=5-10 GPM) — |

REMARKS 1158 (change to 8" air percussion bit (7' bit assembly)

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS) BORING NO. HN-06D
PROJECT NO. 7525 DATE 01-29-99 / (02-24-99) / (02-25-99)
ELEVATION DRILLER HARDIN-HUBER
WATER LEVEL DATA FIELD GEOLOGIST M. SETH PELEPKO
(DATE, TIME & CONDITIONS)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1201 / 1207 | 102 | | | | | | no sample poss. void space → air hammer stops firing | 0.0 | no returns saturated Q=5-7 GPM EOR=5 |
| | | | | | | | | | |
| | 107 | | | | | | as above | | |
| 1208 | 108 | | | | soft / hard | dk gray, brn gray, brn, lt. gray | massive, finely crystalline dolomite w/ interbedded shales clay infilling structures | 0.0 | saturated Q=3-5 GPM |
| | (108.5) | | | | (soft) / (hard) | (gray → dk gray, brn gray, grey brn) | (massive, finely crystalline dolomite w/ interbedded shales (some laminated) + some org. brn sandy material + chert + quartz + calcite veins + clay) | (0.0) | (UDEX bit + casing advanced easily b/w 102' → 108.5' → likely void space (Q > 30 GPM) |
| 1209 | 111 | | | | | | (Fe stained fracture surfaces) no sample | 0.0 | no returns |
| | (113) | | | | (hard) | (dk gray → black) | (massive, finely crystalline dolomite → large cuttings) | | (Q > 30 GPM) |
| 02-24-99) / 02-25-99) | (114) / (115) | | | | (hard) | (v. dk gray → black) | (as above → smaller cuttings) | (0.0) | (Q > 30 GPM) |
| 1213 | 115.5 | | | | | | no sample | 0.0 | no returns |
| 1214 | 116 | | | | | | no sample prob. fractured rock → bit skipping / dropping | 0.0 | poss fracture → 116' → 118' no returns Q=1-2 GPM |
| | (119) | | | | (soft) / (hard) | (dk gray → black, gray brn) | (massive, finely crystalline dolomite w/ interbedded shales some quartz + chert Fe staining) | (0.0) | (saturated Q=100-150 GPM) |
| 1222 | 121 | | | | | | no sample prob. v. fractured rock → hammer firing intermittently | 0.0 | no returns Q=1-2 GPM |
| | (121.5) | | | | (soft) / (hard) | | (as at 119' w/ less shale) | (0.0) | (saturated Q=100-150 GPM) |
| 1224 / 1236 | 122 | | | | | | no sample | 0.0 | no returns Q=5-7 GPM EOR=6 |

REMARKS

BORING NO. HN-06D

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-06D
DATE 01-29-99/(02-25-99)/(03-03-99)
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1239 | 126 | | | | | | no sample | 0.0 | no returns Q=5-7 GPM |
| | (126) | | | | (soft) / (hard) | (gray → black) | (massive, finely crystalline dolomite w/ gray → brn gray interbedded shale) | (0.0) | (Q varying, few to 150 GPM) |
| | | | | | | | (+ trace quartz and chert + calcite veins and iron staining) | | |
| 1239 / 1250 | 127 | | | | | | | | |
| | (130) | | | | (soft) / (hard) | (gray → black, brn gray) | (as above) | (0.0) | (saturated Q= varying, few to 150 GPM) |
| 1251 | 131 | | | | | | no sample prob. fractured rock → air hammer firing intermittently | 0.0 | no returns Q= highly variable, $\bar{Q}$=4-6 GPM |
| | (132.5) | | | | (soft) / (hard) | (gray → black, brn gray) | (as at 130') | (0.0) | (borehole yielding v. muddy water Q= varying, few to 150 GPM) |
| 1-25-99) / 3-03-99) | (134) | | | | (soft) / (hard) | (dk gray → black, brn gray) | (as above) | (0.0) | (saturated Q=100-150 GPM) |
| 1254 | 136 | | | TOR=138.5' | | | as at 131' | 0.0 | no returns Q= highly variable. $\bar{Q}$=4-6 GPM |
| 1255 | 138.5 | | | | | | no sample prob. competent rock → air hammer firing consistently | 0.0 | no returns Q=1-3 GPM |
| | (138.5) | | | | (soft) / (hard) | (dk gray → black, brn) | (v. poor returns massive, finely crystalline dolomite, Fe stained weathered fragments. calcite veins, trace quartz + shale) | (0.0) | (saturated Q=1-3 GPM) |
| | (140) | | | | (hard) | (dk gray) | (massive, finely crystalline dolomite w/ calcite veins trace chert, quartz, white hard clays, + Fe staining) | (0.0) | (saturated Q=1-3 GPM) |
| 1256 | 141 | | | | | | no sample prob. competent rock → air hammer firing consistently | | no returns |
| 1257 / 1303 | 142 | | | | | | | | EOR=7 |
| | (142.5) | | | | (hard) | (dk gray) | (as at 140') | (0.0) | (Q= steam to 3 GPM) |

REMARKS

BORING NO. HN-06D

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**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS — BORING NO. HN-06D
PROJECT NO. 7525 — DATE 01-29-99/(03-03-99)/03-04-99/03-04-99/03-17-99
ELEVATION — DRILLER HARDIN-HUBER
WATER LEVEL DATA — FIELD GEOLOGIST M. SETHPELEPKO, ROBERT GOOD
(DATE, TIME & CONDITIONS)

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (143) | | | | | | | (0.0) | (drill bit stuck, flushing v. muddy water w/ rock fragments Q=low to 100 GPM) |
| | 1305 | 144 | | | | | | no sample prob. competent rock → air hammer firing consistently | 0.0 | no returns Q=3-5 GPM |
| 03-03-99) 03-04-99 | | (145) | | | 9" ODEX casing to 145' | | | | | refusal w/ 8" ODEX drilling |
| | 1307 | 146 | | | | | | no sample prob competent rock → air hammer firing consistently | | no returns Q=<1 GPM |
| -29-99 -01-99 | 1309 / 1247 | 150 | | | | | | | | |
| | | 153 | | | | hard | v. dk gray to black | massive, finely crystalline dolomite w/ calcite veins | 0.0 | saturated Q=150-200 GPM |
| | 1251 | 155 | | | | hard | v. dk gray to black | as above | 0.0 | saturated Q=150-200 GPM |
| 3-04-99 04-99 | 1251 / 1431 | 155.5 | | | 4" steel casing to 155' | | | | | |
| | | | | | | | dk gray | fgr dolomite, mostly massive, some platy or argillaceous | 0.0 | damp/moist |
| | | 160 | | | | | brn | v. broken, thin shaly fragments + silt + clay | 0.0 | fractured/broken bet. 159' → 160' muddy, several GPM |
| | 1440 / 1519 | 162 | | | | | | | | |
| -04-99 -17-99 | 1529 / 1207 | 165 | | | | | brn | as above | | muddy, several GPM |
| | 1209 / 1226 | 167 | | | | soft / hard | v. dk gray to black, brn, light gray | massive, finely crystalline dolomite w/ interbedded shales (some phyllitic) or argillaceous dolomite Fe staining | 0.0 | saturated Q=10-20 GPM v. muddy EOR=8 |
| | 1229 | 169 | | | | | | | 0.0 | poss fracture Q=25-50 GPM |

REMARKS 03-04-99 - Attack 6" Air Percussion bit (5' bit assembly)
01-29-99 Borehole advanced to 150' BGS, cased to 106' BGS
03-17-99 Borehole cased ~3' at EOR=8
03-04-99, 03-17-99 Schramm Drill Rig
4" Air Percussion bit (10' bit assembly)

BORING NO. HN-06D
PAGE ~~AR 300801~~

* See Legend on Back

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-06 D
DATE 03-17-99
DRILLER HARDIN-INBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1232 | 172 | | | | soft / hard | dk gray to black, brn | massive, finely crystalline dolomite w/ interbedded shales or argillaceous dolomite + clay Fe staining | 0.0 | saturated Q=25-50 GPM |
| | | | | | | | | | less fracture 175'→176, bit dropping |
| 1235 | 177 | | | | soft / hard | dk gray to black, brn | as above w/ less shale + trace chert | 0.0 | soft. Q=25-50 GPM |
| | | | | | | | | | |
| 1243 | 182 | | | | soft / hard | dk gray to black, brn | massive, finely crystalline dolomite w/ interbedded shales or argillaceous dolomite + silt + clay Fe staining | 0.0 | less fracture 181'→184'; bit dropping soft Q=25-50 GPM |
| 1245 | 185 | | | | | | | | still fractured, bit dropping |
| 1246 / 1402 | 187 | | | | soft / hard | dk gray to black, brn | as above w/ some vein quartz | 0.0 | still fractured soft Q=25-50 GPM FOR=9 |
| 1411 | 189 | | | T.D. 189' | | | | | QT = 25-50 GPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | – |

REMARKS Borehole raved ~5' at FOR=9
Borehole continues to rave at 189' BGS → unable to advance borehole

BORING NO. HN-06D
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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-07 D
DATE 11-2-98
DRILLER O. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1004 | 0 | | | | | BRN | SILT-LOAM, ROOTS, RK FRAGS, QUARTZITE COBBLES | | DAMP |
| 1010 | 5 | | | | | ORANGE BRN | CLAYEY SILT w/ RK. FRAGS | | DAMP 0.0 ppm |
| 1013 / 1020 | 9 | | | | | ORANGE | CLAY w/ SILT & RK. FRAGS | | DAMP |
| 1024 | 15 | | | | | ORANGE | CLAY, SM WEATH DOLOMITE | | MOIST |
| 1026 | 20 | | | | | & GRAY | & QUARTZITE FRAGMENTS | | WET 0.0 ppm |
| 1029 / 1037 | 24 | | | | | ORANGE | CLAY ; (AS REF. POOR RETURNS) | | WET 0.0 ppm |
| 1040 | 30 | | | | | & GRAY | | | |
| 1042 | 35 | | | | | | | | |
| 1045 / 1055 | 39 | | | | | ORANGE & GRAY | CLAY, SM SAND, QUARTZ & WEATH DOLOMITE FRAGS. | | WET - SATURATED 0.0 ppm |
| 1104 / 1522 | 41 | | | | | DARK GRAY | SHALY, ARGILLACEOUS, FINE-GRAINED DOLOMITE ; WEATHERED, BROKEN, | | 41' HARD. ROLLER BIT REF. |
| 1528 | 50 | | | | | | w/ CLAY SEAMS | | MOIST TO WET 0.0 ppm |
| 1540 / 1602 | 53 | | | | | MED - DARK GRAY | DOLOMITE, FINE-GRAINED, SOME SMALL WHITE FRACTURE FILLINGS | | DM |
| 1606 | 60 | | | | | | MORE MASSIVE, LESS ARGILLACEOUS LESS BROKEN & WEATHERED | | |
| 1610 | 65 | | | | | | | | |
| 1613 / 1642 | 68 / 70 | | | | | | | | DRY / DUSTY |

REMARKS 12" DIAM. x 12' LONG ROLLER BIT TO 41'; 10" TEMP CSG TO 39';
10" DIAM x 6' LONG AIR HAMMER TO 70'

BORING NO. HN-07 D
PAGE 1 OF 5

* See Legend on Back

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-07 D
DATE 11-2-98, 11-3-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 70 | | | | | | | | |
| | 1646 | 75 | | | | | MED. TO DARK GRAY | DOLOMITE, FINE-GRAINED, MSV. MASSIVE, SOME SMALL WHITE FRACTURE FILLINGS | | DRY/DUSTY |
| | | 80 | | | | | | ↓ | | |
| 11/2 | 1653 | 83 | | | | | | ↓ | | 0.0 PPM |
| 11/3 | 0745 | | | | | | | | | DAMP, TRACE OF WATER ONLY |
| | 0752 | 90 | | | | | MED TO DARK GRAY | DOLOMITE, FINE-GRAINED, ALT. MASSIVE OR ARGILLACEOUS & PLATY, TRACE VEIN QUARTZ, | | |
| | | | | | | | | SOME SMALL WHITE FRACTURE FILLINGS, SOME CLAY & IRON-STAINING | | 92' POSS FRACTURE & V. SL WATER |
| | 0759 | 98 | | | | | | ↓ | | 0.0 PPM |
| | 0824 | 100 | | | | | | | | |
| | | | | | | | | | | COMPETENT, NOT FRACTURED |
| | | 110 | | | | | | ↓ | | TRACE MUD, 0.0 PPM |
| | 0838 | 113 | | | | | MED GRAY | -AS BEFORE w/ SOME LT. & DK GRAY | | |
| | 0849 | | | | | | | | | |
| | | 120 | | | | | | ↓ | | (LATER LOSING AIR CIRC @ ~125') |
| | | | | | | | | AS BEFORE - POSS MORE MASSIVE, LESS ARGILLACEOUS OR PLATY | | |
| | 0903 | 128 | | | | | | ↓ | | TRACE MUD, 0.0 PPM |
| | 0916 | 130 | | | | | | | | |
| | | | | | | | | | | POSS. BROKEN OR SL. FRACTURED 135'-140'. |
| | | 140 | | | | | | ↓ | | POSS $H_2O$ INCR. |

REMARKS 10" DIAM x 6' LONG AIR HAMMER 70' - 140'.

BORING NO. HN-07 D
PAGE 2 OF 5

* See Legend on Back

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**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-07 D
DATE 11-3-98, 11-6-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | | | | |
| 0929 / 1027 | 143 | | | | | LT-MED GRAY | DOLOMITE, FGR, MOSTLY MASSIVE, TR QTZ, ARG MAT'L, CLAYS, FE-OXIDES. | | EST YIELD 5 GPM 0.0 PPM |
| 1030 | 150 | | | | | | | | EST 5 GPM, 0.0 PPM |
| 1036 / 1038 | 152 | | | | | MED TO DARK GRAY | DOLOMITE, FGR, SM. QTZ, WHITE FRACTURE FILLINGS, ARGILLACEOUS MAT'L, CLAYS & RUSTY STAINING | | DRY 1-2 FT, THEN BROKEN & FRACTURED W/ INCR. WATER |
| | 160 | | | | | | | | APPX 155'-160' * EST 10-20 GPM 0.0 PPM |
| 1046 / 1052 | 167 | | | | | DARK GRAY | DOLOMITE, FINE-GRAINED, MASSIVE OR ARGILLACEOUS & PLASTIC, TR/ WHITE FRACTURE FILLINGS | | ~10-20 GPM 0.0 PPM |
| | 180 | | | | | | | | |
| 1100 / 1107 | 182 | | | | | | AS ABOVE | | AS ABOVE |
| | 190 | | | | | | AS ABOVE | | POSS FRACTURE |
| | | | | | | | | | APPX 190'... APPARENT WATER INCREASE * |
| 1115 / 1123 | 197 | | | | | | | | 0.0 PPM |
| | 200 | | | | | | AS ABOVE | | |
| | | | | | | | (+ SOME LT-MED. GRAY SHALY MAT'L) | | |
| | 210 | | | | | | | | — |

REMARKS 10" DIAM x 6' LONG AIR HAMMER TO 150'; EXTEND 10" TEMP. CSG. TO 41.5'; EXTEND 10" TEMP. CSG TO 43.5'; CLEAR 10" BOREHOLE TO 151'; INSTALL 6" STEEL CSG TO 149.5'; CEMENT GROUT TO 144'; BENTONITE GROUT TO 90'. 6" DIAM x 5' LONG AIR HAMMER TO 210'.

BORING NO. HN-07 D
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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-07D
DATE 11-6-98
DRILLER D. TAYLOR, HARON-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| 1130 / 1136 | 212 | | | | | DARK GRAY. | DOLOMITE, FINE-GRAINED W/ CLAYS & ARGILACEOUS MAT'L | | POSS FRACTURE & WATER INCREASE ~ 210' - 212' * |
| | 220 | | | | | DARK GRAY | DOLOMITE, FINE-GRAINED, USH. | | 0.0 ppm EST YIELD ≥ 50 GPM |
| | | | | | | | MASSIVE, NUM. SMALL WHITE FRACTURE FILLINGS. | | |
| 1144 / 1316 | 227 / 230 | | | | | | - AS ABOVE - | | 0.0 ppm |
| | | | | | | | | | |
| | 240 | | | | | | | | |
| | | | | | | | | | |
| 1325 / 1332 | 247 / 250 | | | | | | - AS ABOVE - | | 0.0 ppm |
| | | | | | | MED TO DARK GRAY | DOLOMITE, FINE-GRAINED, USH. MASSIVE, SOME SMALL WHITE FRACTURE FILLINGS | | |
| | 260 | | | | | | | | 0.0 ppm |
| 1340 / 1351 | 262 | | | | | | - AS ABOVE ... BECOMING OCCASIONALLY ARGILACEOUS OR PLATY. | | |
| | 270 | | | | | | | | |
| | | | | | | | | | |
| 1359 / 1515 | 277 / 280 | | | | | | | | 0.0 ppm — |

REMARKS 6" AIR HAMMER 210' - 280'

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-07D
DATE 11-6-98
DRILLER O. TAYLOR, HAROLD HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | MED. TO DARK GRAY | DOLOMITE, FINE-GRAINED, USU. MASSIVE, OCC. ARGILLACEOUS OR PLATY, TRACE WHITE FRACTURE FILLINGS | | TOT. YIELD EST. ≥ 50 GPM |
| | 290 | | | | | | | | 0.0 PPM |
| 1525 / 1531 | 292 | | | | | | | | |
| | 300 | | | | | | | | |
| 1538 | 302 | | | T.D. | | | | | 0.0 PPM |

REMARKS 6" AIR HAMMER 280'-302'

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-08S
DATE 11-18-98
DRILLER DAVE TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1312 | 0 | | | | | MED. BRN | CLAY & SILT LOAM | | DRY TO DAMP |
| | 5 | | | | | ORANGE BRN. | CLAY, SILT, IRON-STAINED WEATHERED ROCK FRAGMENTS | | DAMP TO MOIST 0.0 PPM |
| | | | | | | MED. TO DK. BRN | SILT, CLAY, V. WEATH. DOLOMITE FRAGMENTS | | MOIST TO WET |
| | 10 | | | | | | | | |
| 1316 | 12 | | | | | BRN. | SL. HARDER, V. WEATH. DOLOMITE, SILT & CLAY. DOLOMITE IS GREY & FE-STAINED | | DAMP TO DRY 0.0 PPM |
| | 15 | | | | | BRN & GRAY. | CLAY & WEATH. DOLOMITE | | MOIST, 0.0 PPM |
| | | | | | | | | | |
| | 20 | | | | | | — AS ABOVE — | | MOIST TO WET 0.0 PPM |
| | | | | | | | | | |
| | 25 | | | | | BUFF TO LT. GRAY | V. WEATH, BROKEN DOLOMITE BEDROCK; RUSTY STAINED, ARGILLACEOUS | | HARDER @ 23' DAMP TO MOIST 0.0 PPM |
| 1326 | 27 | | | | | | — AS ABOVE, HARDER, DRIER | | WATER AFTER ROD CONNECTION, 1-2 GPM EST. |
| 1332 1336 | 30 | | | | | | | | 0.0 PPM |
| 1338 | 32 | | | | | BUFF TO LT. GRAY | WEATH. DOLOMITE, ARGILLACEOUS IN PLACES | | DRY TO DAMP 0.0 PPM |
| | | | | | | | | | — |

REMARKS 6" DIAM x 1.3' LONG ROLLER BIT TO 32' BELOW GRADE. INSTALL 2" PVC WELL SCREEN 20'-30', RISER 0'-20', NO. 1 SAND 17.5'-31', NO. 0 SAND 16.5'-17.5', BENTONITE PELLETS 13'-16.5', CEMENT/BENTONITE GROUT 1'-13'.

BORING NO. HN-08S
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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS

PROJECT NO. 7525

ELEVATION

WATER LEVEL DATA

(DATE. TIME & CONDITIONS)

BORING NO. HN-09S

DATE 12-16-98

DRILLER HARDNY-HUBER

FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1057 | 0 | | | | | dk brn | silty clay; organic rich, with roots + heavily weathered gneiss pebbles + micas | | dry ↓ damp |
| 1059 | 3 | | | | | orange brn | sandy clay with weathered gneiss fragments | 0.0 | damp |
| | | | | | | | | | |
| 1130 | 7 | | | | | yellow brn | clayey sand with abundant weathered gneiss pebbles | 0.0 | damp |
| | | | | SUBSOIL / weathered rock | | | | | |
| 1104 | 12 | | | | hard | dk gren gray ↓ black | weathered gneiss (mainly hornblende + quartz + magnetite) iron staining | 0.0 | damp / dry alternating hard/soft |
| 1106 | 14.5 | | | | | | | | dusty alternating hard/soft |
| 1108 | 17 | | | | hard | dk gren gray ↓ black | as above | 0.0 | damp/dry dusty alternating hard/soft |
| 1116 | 20 | | | | | | | | dusty consistent drilling → harder material |
| 1118 | 22 | | | | hard | dk gren gray ↓ black | as above | 0.0 | |
| 1119 / 1122 | 23 | | | | | | | | EOR=1 |
| 1124 | 26.5 | | | | hard | dk gren gray ↓ black | as above | 0.0 | damp/dry dusty |
| 1133 | 30 | | | TOR=33' refusal | hard | dk gren gray ↓ black | as above | 0.0 | dry/dusty |
| 1136 | 33 | | | | hard | dk gren gray ↓ black | as above competent formational material as evidenced by smaller cuttings, consistent drilling (bit not skipping) | 0.0 | dry/dusty — |

**REMARKS** Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
10" Air Percussion drill bit (6' bit assembly)

**BORING NO.**

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-095
DATE 12-16-98 / 12-17-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 12-16-98 / 12-17-98 | 1138 / 0751 | 35 | | | 6" running to 35' | hard | dk gray → black | gneiss iron staining | 0.0 | dry/dusty |
| | 0751 | 37 | | | | hard | dk gray → black | as above | 0.0 | dump |
| | | | | | | | | | | |
| | 0753 / 0756 | 42 | | | | hard | v. dk gray → black | as above mostly ferromagnesian minerals | 0.0 | dump/dry FOR = 2 |
| | 0757 | 46 | | | | hard | dk gray → black | gneiss trace iron staining | 0.0 | dry / dusty |
| | | | | | | | | | | |
| | 0759 | 51 | | | | hard | dk gray → black | as above | 0.0 | dry/dusty |
| | | 53 | | | | | | | | poss. small fracture → iron stripe |
| | 0902 | 56 | | | | hard | dk gray → black | as above w/o iron staining | 0.0 | dry/dusty |
| | | | | | | | | | | |
| | 0905 | 61 | | | | hard | dk gray → black | as above | 0.0 | dry/dusty |
| | 0906 / 0837 | 62 | | | | | | | | FOR = 3 |
| | | 63.5 | | | | | | | 0.0 | cuttings dump from 62' → 63.5' |
| | 0940 | 66 | | | | hard | dk green gray → black | as above | 0.0 | — |

**REMARKS**
12-17-98 Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
6" Air Percussion drill bit (5' bit assembly)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
BORING NO. HN-095
PROJECT NO. 7525
DATE 12-17-98
ELEVATION
DRILLER HARDIN-HUBER
WATER LEVEL DATA
FIELD GEOLOGIST M SETH PELEPKO
(DATE, TIME & CONDITIONS)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0844 | 71 | | | | hard | dk green gray ↓ black | gneiss lesser black, ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0847 | 76 | | | | hard | green gray ↓ black | as above with more plagioclase + quartz + poss. biotite (brown, reflective mineral) | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0850 | 81 | | | | hard | lt green gray ↓ black | gneiss equal percentages of quartz + plagioclase and ferromagnesian minerals | 0.0 | dry/dusty |
| 0850 / 0854 | 82 | | | | hard | green gray ↓ black | as above iron staining | 0.0 | possible fracture dry/dusty EOR=4 |
| 0856 | 86 | | | | hard | green gray ↓ black | as above w/o iron staining | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0859 | 91 | | | | hard | dk green gray ↓ black | gneiss w/ poss. biotite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0901 | 96 | | | | hard | dk gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0904 | 101 | | | | hard | dk green gray ↓ black | as above w/ poss. pyrite (brass colored, metallic luster) | 0.0 | dry/dusty |
| 0905 | 102 | | | TD=102' | | | | | Total QK 1 GPM EOR=5 |

REMARKS

BORING NO.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *Crossley Farm RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *MN-09 I*
DATE *12-16-98*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. Seth Pelepko*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0811 | 0 | | | | | dk. brn | silty clay, organic rich, with roots + heavily weathered gneiss pebbles + micas | | dry ↓ dump |
| 0812 | 3 | | | | | yellow brn, brn | sandy clay with weathered gneiss pebbles | 0.0 | dump |
| | | | | | | | | | |
| 0816 | 7.5 | | | | | orange brn | sandy clay micaceous with ↓ weathered, iron staining rock fragments + weathered gneiss pebbles | 0.0 | damp |
| | | | | | | | | | |
| 0817 | 12.5 | | | | | orange brn, brn | as above | 0.0 | dump |
| | | | | | | | | | |
| 0819 | 17.5 | | | | | yellow brn | sandy clay w/ weathered gneiss pebbles + some micaceous material | 0.0 | dump |
| | | | | Subsoil / weathered rock | | | | | |
| 0822 | 22 | | | | hard | dk green gray ↓ black | gneiss (mainly hornblende + quartz + plagioclase) w/ some brown clay iron staining | 0.0 | dump attempting hard/wet |
| 0824 / 0826 | 23 | | | | | | | | FOR=1 |
| 0827 | 24 | | | | hard | dk green gray ↓ black | gneiss iron staining | 0.0 | dump/dry |
| 0831 | 29 | | | | hard | dk green gray ↓ black | as above | 0.0 | |
| 0834 | 33 | | | | hard | dk green gray ↓ black | as above | 0.0 | |

**REMARKS** *Ingersoll Rand TH-60 Drill Rig*
*Air Rotary Drilling*
*10" Air Percussion Drill bit (6' bit assembly)*

**BORING NO.**
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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-09 I*
DATE *12-16-98 / 12-17-98*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TUR=35' | | | | | |
| | 35 | | | | | | | | bit not skipping → consistent drilling |
| 0837 | 38 | | | | hard | dk green gray ↓ black | gneiss iron staining | 0.0 | damp/dry some dust |
| 0840 | 40 | | | | hard | lt green gray ↓ black | as above with more plagioclase + quartz | 0.0 | damp/dry some dust |
| 12-16-98 0842 | 43 | | | 6" steel casing to 43' | | | | | |
| 12-17-98 1121 | | | | | | | | | EUR=2 |
| 1123 | 45 | | | | hard | dk green gray ↓ black | gneiss iron staining | 0.0 | damp/dry |
| | | | | | | | | | |
| 1125 | 50 | | | | hard | yellow, white | gneiss plagioclase + quartz rich seam, trace ferromagnesian minerals iron staining | 0.0 | dry/dusty |
| | | | | | | | | | poss fracture b/w 50 → 55' |
| 1127 | 55 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | damp minimal dust |
| | | | | | | | | | |
| 1130 | 60 | | | | hard | dk green gray ↓ black | as above poss. biotite (brown, reflective mineral) | 0.0 | damp/dry minimal dust |
| 1131 / 1141 | 61 | | | | | | | | EUR=3 blow bucket → Q=16PM, decreasing w/ time |
| 1142 | 65 | | | | hard | dk green gray ↓ black | as above trace iron staining | 0.0 | damp (moisture from above or poss fracture) |
| | | | | | | | | | — |

**REMARKS**

12-17-98 Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
6" Air Percussion drill bit (5' bit assembly)

**BORING NO.**

**PAGE** 2 **OF** 5

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AR300813

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09 I
DATE 12-17-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1145 | 70 | | | | hard | dk green gray ↓ black | gneiss trace iron staining | 0.0 | damp/dry some dust |
| | | | | | | | | | |
| 1148 | 75 | | | | hard | dk green gray ↓ black | as above w/o iron staining w/ increased quartz + plagioclase | 0.0 | |
| | | | | | | | | | |
| 1151 | 80 | | | | hard | green gray ↓ black | gneiss plagioclase + quartz rich seams, lesser ferromagnesian minerals | 0.0 | dry/dusty |
| 1151 / 1156 | 81 | | | | | | | | EOR = 4 blow borehole → Q = 1 GPM, decreasing w/ time |
| 1159 | 85 | | | | hard | dk green gray ↓ black | gneiss poss. pyrite (brass colored, metallic luster) | 0.0 | damp/dry some dust |
| | | | | | | | | | |
| 1202 | 90 | | | | hard | dk green gray ↓ black | as above | 0.0 | |
| | | | | | | | | | |
| 1205 | 95 | | | | hard | dk green gray ↓ black | as above w/ increased quartz + plagioclase | 0.0 | |
| | | | | | | | | | |
| 1208 | 100 | | | | hard | dk green gray ↓ black | as above | 0.0 | |
| 1209 / 1212 | 101 | | | | | | poss. slight water increase since EOR = 4 | | EOR = 5 blow borehole → Q = 1 → 1.5 GPM, decreasing w/ time |

REMARKS

BORING NO.

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AR300814

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09 I
DATE 12-17-98
DRILLER HARDIN · HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1216 | 105 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | damp/dry |
| | | | | | | | | | |
| 1220 | 110 | | | | hard | dk green gray ↓ black | as above | 0.0 | |
| | 113.5 | | | | | | | | poss. small fracture → but ships slightly |
| 1225 | 115 | | | | hard | dk green gray ↓ black | as above w/ increased quartz + plagioclase | 0.0 | damp |
| | | | | | | | | | |
| 1229 | 120 | | | | hard | dk green gray ↓ black | gneiss w/ poss. pyrite | 0.0 | |
| 1230 / 1233 | 121 | | | | | | poss. slight water increase since EOR=5 | | EOR=6 blow bucket → Q=2→3 GPM, decreasing w/ time |
| 1236 | 125 | | | | hard | dk green gray ↓ black | gneiss trace iron staining | 0.0 | poss. small fracture damp/dry dusty |
| | | | | | | | | | |
| 1239 | 130 | | | | hard | dk green gray ↓ black | as above w/ poss pyrite + biotite | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 1242 | 135 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | damp/dry dusty |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300815

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09I
DATE 12-17-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1246 | 140 | | | | hard | dk yellow gray ↓ black | gneiss | 0.0 | damp/dry dusty |
| 1247 / 1250 | 141 | | | | | | poss. slight water increase since EOR = 6 | | EOR = 7 blow back → Q = 2-4 GPM, decreasing w/ time |
| 1254 | 145 | | | | hard | dk yellow gray ↓ black | as above | 0.0 | damp/dry |
| 1256 | 147 | | | | | | | | dust increases |
| 1257 | 149 | | | | hard | dk yellow gray ↓ black | as above w/ increased quartz + plagioclase | 0.0 | damp/dry dusty |
| 1258 | 150 | | | TD=150' | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |

REMARKS

BORING NO.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-090
DATE 12-10-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1319 | 0 | | | | | dk brn | silty clay, organic rich, with roots + heavily weathered gneiss pebbles + micas | | dry ↓ dump |
| 1320 | 2 | | | | | yellow brn | sandy clay with weathered gneiss pebbles | 0.0 | dump |
| 1322 | 7 | | | | | orange brn | as above micaceous | 0.0 | dump |
| 1324 / 1326 | 9 | | | | | | | | |
| 1329 | 10 | | | subsoil / weathered rock | | yellow brn | clayey sand with weathered gneiss pebbles | 0.0 | dump |
| 1334 | 14.5 | | | | hard | dk green gray ↓ black | gneiss (mainly hornblende + quartz + plagioclase) iron staining | 0.0 | rods bouncing since 14' dump |
| 1338 | 15 | | | | hard | dk green gray ↓ black | as above | 0.0 | alternating hard/soft dump |
| 1347 | 17 | | | | hard | dk green gray ↓ black | as above | 0.0 | dump |
| 1357 | 20 | | | | | | | | |
| 1401 / 1408 | 21 | | | | hard | dk green gray ↓ black | as above | 0.0 | dump |
| 1410 / 1614 | 21.5 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 1621 / 1622 | 23 | | | | | | | | FUR=1 |
| 1624 | 24 | | | | hard | dk green gray ↓ black | as above | 0.0 | dump |
| 1128 | 28 | | | | hard | dk green gray ↓ black | as above | 0.0 | dump |

REMARKS Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
10" Tricone Roller Bit with reamer (12' bit assembly)
Install 10" temporary casing to 21.5'
10" air percussion bit (7' bit assembly)

BORING NO.
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AR300817

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09D
DATE 12-10-98 / 12-11-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1631 | 32 | | | TOR=34.5' | hard | dk green gray ↓ black | gneiss iron staining | 0.0 | dump |
| 1636 | 34.5 | | | | hard | dk green gray ↓ black | as above | 0.0 | bit stuck shipping → pull TOR dry/dusty |
| 1652 | 36 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 12-10-98 1702 / 12-11-98 0800 | 37 | | | | | | | | |
| 0801 | 42 | | | | hard | dk green gray ↓ black | as above trace iron staining | 0.0 | dry/dusty |
| 0802 / 0828 | 43 | | | | | | | | EOR=2 |
| 0832 | 47 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0839 | 52 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 0843 | 56 | | | | hard | dk gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0850 | 61 | | | | hard | dk gray ↓ black | as above no iron staining | 0.0 | dry/dusty |
| 0852 / 0854 | 62 | | | | | | | | EOR=3 |
| 0900 | 66 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |

REMARKS 12-11-98 → 10" air percussion bit (6' bit assembly)

BORING NO.

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AR300818

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09D
DATE 12-11-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0905 | 71 | | | | hard | green gray ↓ black | gneiss plagioclase + quartz rich seam, lesser ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0911 | 76 | | | | hard | green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0916 | 81 | | | | hard | dk green gray ↓ black | gneiss (equal hornblende + quartz + plagioclase) | 0.0 | dry/dusty |
| 0917 / 0941 | 82 | | | | | | | | poss small fracture + dust suppression EOR = 4 Q<16PM |
| 0946 | 84 | | | | hard | dk green gray ↓ black | as above trace iron staining | 0.0 | poss small fracture damp larger cuttings |
| 0953 | 87.5 | | | | hard | dk green gray ↓ black | as above no iron staining | 0.0 | damp/dry minimal dust |
| 1000 | 91 | | | | hard | dk green gray ↓ black | as above | 0.0 | damp/dry minimal dust |
| 1008 | 95 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| | | | | | | | | | |
| 1019 | 101 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 1022 / 1025 | 102 | | | | | | | | EOR = 5 |

REMARKS

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AR300819

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09D
DATE 12-11-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1029 | 104.5 | | | | hard | dk grn gray ↓ black | gneiss | 0.0 | poss. small fracture GL1GPM damp |
| 1034 | 106 | | | | hard | dk grn gray ↓ black | as above | 0.0 | damp |
| | 107 | | | | | | | | dusty |
| 1043 | 111 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1056 | 116 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1109 | 121 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| 1113 / 1146 | 122 | | | | | | | | EUR = 6 |
| 1149 | 123.5 | | | | hard | dk grn gray ↓ black | as above trace iron staining | 0.0 | poss. small fracture GL1GPM damp |
| 1153 | 124.5 | | | | hard | dk grn gray ↓ black | as above with poss. accessory biotite (brown, reflective material) increased iron staining | 0.0 | wet poss small fracture GL1GPM |
| 1200 | 126 | | | | hard | dk grn gray ↓ black | gneiss iron staining | 0.0 | wet poss. small fracture GL 1GPM |
| | | | | | | | | | |
| 1214 | 131 | | | | | | no sample | | no returns |

REMARKS

BORING NO.

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AR300820

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-09D*
DATE *12-11-98 / 12-15-98*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1223 | 136 | | | | hard | dk green gray ↓ black | gneiss with poss accessory biotite | 0.0 | driller blows borehole → wet QL 1GPM |
| | | | | | | | | | |
| 1234 | 141 | | | | hard | dk green gray ↓ black | as above | 0.0 | wet QL1GPM |
| 1234 / 1253 | 142 | | | | | | | | EUR = 7 |
| 1307 | 146 | | | | hard | green gray ↓ black | gneiss plagioclase + quartz rich seam trace iron staining | 0.0 | saturated QL1GPM |
| | 149 | | | 2" rosary to 150' | hard | dk green gray ↓ black | gneiss | 0.0 | saturated QL 1GPM |
| 1318 | 151 | | | | hard | dk green gray ↓ black | as above with poss. accessory biotite | 0.0 | saturated QL 1GPM |
| 12-11-98 / 12-15-98 1319 / 0912 | 152 | | | | | | | | |
| 0913 | 153 | | | | hard | dk gray ↓ black | gneiss | 0.0 | wet/muddy |
| 0917 | 157 | | | | hard | dk gray ↓ black | as above with poss accessory biotite | 0.0 | wet/muddy |
| 0921 / 0925 | 161.5 | | | | | | | | EUR = 9 |
| 0926 | 162 | | | | hard | dk green gray ↓ black | as above | 0.0 | damp |
| | | | | | | | | | |
| 0928 | 167 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty — |

**REMARKS** *12-15-98 → 6" air percussion bit (5' bit assembly)*

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AR300821

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-04D*
DATE *12-15-96*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0932 | 172 | | | | hard | dk green gray ↓ black | gneiss with poss accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0935 | 177 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 0939 / 0955 | 181.5 | | | | | | | | EOR = 9 |
| 0956 | 182 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1000 | 187 | | | | hard | lt. green gray ↓ black | gneiss plagioclase + quartz rich seam trace ferromagnesian minerals with poss. pyrite (brass colored mineral w/ metallic luster) | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1004 | 192 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1008 | 197 | | | | hard | lt green gray ↓ black | gneiss plagioclase + quartz rich seam with poss. accessory biotite | 0.0 | dry/dusty |
| 1012 / 1018 | 201.5 | | | | | | | | EOR = 10 |
| 1018 | 202 | | | | hard | dk green gray ↓ black | gneiss with poss accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | — |

REMARKS

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AR300822

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS

PROJECT NO. 7625

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. HN-04 D

DATE 12-15-99

DRILLER HARDIN-HUBER

FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1023 | 207 | | | | hard | dk green gray ↓ black | gneiss with poss. accessory biotite + pyrite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1028 | 212 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1032 | 217 | | | | hard | green gray ↓ black | gneiss with increased plagioclase + quartz + poss. accessory biotite + pyrite | 0.0 | dry/dusty |
| 1036 / 1039 | 221.5 | | | | | | | | EQR = 11 |
| 1039 | 222 | | | | hard | H. green gray ↓ black | gneiss plagioclase + quartz rich seam trace ferromagnesian minerals, w/ poss. pyrite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1042 | 227 | | | | hard | dk gray ↓ black | hornblende-biotite gneiss | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1046 | 232 | | | | hard | dk gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1049 | 237 | | | | hard | H. green gray ↓ black | gneiss plagioclase + quartz rich seam trace ferromagnesian minerals | 0.0 | dry/dusty |
| 1051 / 1056 | 241.5 | | | | | | | | EQR = 12 |

REMARKS

BORING NO.

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AR300823

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-04D
DATE 12-15-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1056 | 242 | | | | hard | lt. green gray ↓ black | gneiss equal percentages of quartz + plagioclase and ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1101 | 247 | | | | hard | lt green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1105 | 252 | | | | hard | lt. green gray ↓ black | gneiss plagioclase + quartz rich seam trace ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1109 | 257 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| 1113 / 1116 | 261.5 | | | | | | | | EOR = 13 |
| 1117 | 262 | | | | hard | dk green gray ↓ black | as above with poss. accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1122 | 267 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1126 | 272 | | | | hard | dk green gray ↓ black | as above with poss. accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300824

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*

PROJECT NO. *7525*

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. *HN-01D*

DATE *12-15-96*

DRILLER *HARDIN-HUBER*

FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1130 | 277 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| 1134 / 1137 | 281.5 | | | | | | | | EUR = 14 |
| 1138 | 282 | | | | hard | dk green gray ↓ black | as above with poss accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1142 | 287 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1147 | 292 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1151 | 297 | | | | hard | dk green gray ↓ black | gneiss | 0.0 | dry/dusty |
| 1153 | 300 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| 1154 / 1232 | 301.5 | | | | | | | | EUR = 15 |
| 1233 | 302 | | | | hard | dk green gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1237 | 307 | | | | hard | dk green gray ↓ black | as above with poss. accessory biotite | 0.0 | dry/dusty |

REMARKS

BORING NO.

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AR300825

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-09D
DATE 12-15-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1242 | 312 | | | | hard | dk grn gray ↓ black | gneiss with pois accessory biotite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1247 | 317 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| 1251 / 1254 | 321.5 | | | | | | | | |
| 1255 | 322 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1259 | 327 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1303 | 332 | | | | hard | dk grn gray ↓ black | gneiss equal percentages of plagioclase + quartz and ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1308 | 337 | | | | hard | dk grn gray ↓ black | gneiss | 0.0 | dry/dusty |
| 1312 / 1316 | 341.5 | | | | | | | | FOR=17 |
| 1317 | 342 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry/dusty |
| | | | | | | | | | — |

REMARKS

BORING NO.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS

BORING NO. HN-04D

PROJECT NO. 7525

DATE 12-15-98

ELEVATION

DRILLER HARDIN-HUBER

WATER LEVEL DATA

FIELD GEOLOGIST M. SETH PELEPKO

(DATE, TIME & CONDITIONS)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1322 | 347 | | | | hard | dk grn gray ↓ black | gneiss | 0.0 | dry / dusty |
| | | | | | | | | | |
| 1326 | 352 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry / dusty |
| | | | | | | | | | |
| 1330 | 357 | | | | hard | dk grn gray ↓ black | as above with poss. accessory biotite | 0.0 | dry / dusty |
| 1333 | 360 | | | | hard | dk grn gray ↓ black | as above | 0.0 | dry / dusty |
| 1334 | 361.5 | | | TD=361.5' | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS

BORING NO.

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AR300827

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS) 3-17-99 clear - breezy - mild → Mid 50s °F

BORING NO. HN-10S
DATE 3-17-99
DRILLER Mark
FIELD GEOLOGIST Vince Shickora

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGES | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1120 | 0 | | | | | | | | |
| | | | | | | Gray Brown Tan | Silt/Sand/clay with rock Fragments and Quatzite boulders | | frozen damp to moist 0.0 ppm |
| | 10' | | | | | " | Same as above | | damp to moist 0.0 ppm |
| | | | | | | Gray/to Brown-Gro/ | clay & sandy clay with Quartz feldspar sand grains (saprolite - very weathered) | | moist 0.0 ppm |
| 1130 | 20' | | | | | | | | |
| 1132 ↓ | | | | | | | | | |
| | 30' | | | | | clear, Gray, white pink | very weathered gniess Quartz, feldspar, Hornblende clays with phyllitic zones | | wet clumping mud 0.0 ppm |
| | | | | | | | and Rust stained surfaces | | Harder drilling |
| 1145 1155 ↓ | 37' 40' | | | | | | | | estimated 1.0 gpm 0.0 ppm |
| 1203 | | | | | | | | | |
| | 50' | | | | | | | | estimated 2.0 gpm at 52 ft. |
| | | | | | | | | | |
| | 60' | | | | | clear white gray Pink | Gniess, slightly weathered Quartz, Hornblende gniess, K-spar, Plagioclase | | 58' Harder more competent Rock roughly 2-3 gpm 0.0 ppm |
| 1238 | 61' | | | EOB | | | | | |
| | | | | | | | | | |

REMARKS 6" diameter X 6' long Air hammer to 61'.
- Hole collapsed to 48' when rods first pulled from hole. The hole was reamed out 3 times before the hole stayed open to 57.5'

BORING NO. HN-10S
PAGE 1 OF 1

AR300828

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10I
DATE 03-10-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1350 | 0 | | | | | gray, pink, brn | quartzite boulders, sand, silt, clay, rock fragments | | damp |
| 1357 | 2 | | | | | brn | sandy clay/clayey sand w/ abundant quartzite fragments (cobbles + boulders) | 0.0 | damp/moist |
| | | | | subsoil/ colluvium | | | | | |
| 1418 | 6.5 | | | saprolite | | brn, orange brn | as above mica-rich | 0.0 | damp |
| 1421 | 8 | | | | | | sandy clay, micaceous → gneissic + toric evident (saprolite) + weathered gneiss fragments | 0.0 | damp |
| 1425 / 1614 | 11 | | | | | | as above w/ mica-rich fragment → resembles schist | 0.0 | damp EOR=1 |
| 1616 | 13 | | | | | | mica-rich sandy clay (gneiss saprolite) | 0.0 | damp/moist |
| 1621 | 15.5 | | | | | yellow brn | alternating sandy clay/clayey sand, some mica-rich, w/ weathered gneiss fragments | 0.0 | |
| 1626 | 18 | | | | | | as above | 0.0 | |
| 1636 | 22 | | | | | lt brn, yel. brn, white, gray | silt sized material → prob. pulverized, v. weathered gneiss w/ gneiss fragments + sandy clay seams | 0.0 | damp dry/dusty at 23' |
| 1655 / 1716 | 24 | | | | hard | lt. → dk. gray, black | weathered gneiss (hornblende, plagioclase, quartz) iron staining | 0.0 | 23.5' borehole recharging, water noted along rods Steam/wet |
| | | | | | | | | | 1716 blow very muddy water out of discharge pipe |
| 1719 | 26 | | | | hard | lt. → dk. gray, black, pink | as above w/ microcline | 0.0 | wet/saturated muddy |
| 1723 | 28.5 | | | | soft | lt. brn | sandy clay/clayey sand w/ gneiss fragments | 0.0 | 26.5' → bit drops, broken rock or soft material moist |

v broken, large rock fragments in returns

REMARKS IR 7H-60 Drill Rig
10" ODEX Air Percussion bit (7' bit assembly)

BORING NO. HN-10I
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* See Legend on Back

**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS — BORING NO. HN-10I
PROJECT NO. 7625 — DATE 03-10-99 / 03-11-99
ELEVATION — DRILLER HARBIN-HUBER
WATER LEVEL DATA — FIELD GEOLOGIST M. SETH PELEPKO
(DATE, TIME & CONDITIONS)

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 03-10-99 / 03-11-99 | 1728 / 0951 | 31 | | | | soft | lt. brn, gray | sandy clay/clayey sand/clay w/ gneiss fragments | 0.0 | damp/moist FOR = 2 |
| | 0956 | 33.5 | | | | soft / hard | white, lt. gray, pink, lt. brn | weathered gneiss (quartz, microcline, plagioclase) some black hornblende, lt. green chlorite, sandy clay Fe staining | 1.0 | wet/muddy |
| | 1000 | 35.5 | | | | | | as above, no chlorite | 0.0 | wet/v. muddy poor returns |
| | 1007 | 38 | | | | | | | 0.0 | |
| | 1015 | 41 | | | | | | | 0.0 | |
| | 1017 | 42.5 | | | | soft | yellow brn | sandy clay, mica-rich w/ gneiss fragments | 0.0 | damp/moist |
| | 1022 | 45 | | | | | | alternating sandy clay/clayey sand w/ gneiss fragments | 0.0 | |
| | 1032 | 49.5 | | | | | | | 0.0 | |
| | 1044 / 1049 | 51 | | | | | | | 0.0 | FOR = 3 |
| | 1053 / 1328 | 53 | | | | | | sandy clay (mainly quartz sand) + some mica since 52' BGS | 0.0 | damp/moist 1328 - blow out water |
| | 1329 | 55 | | | | soft / hard | yel brn, gray, black, white, pink | weathered gneiss (quartz, mica, plagioclase, some hornblende) + clay Fe staining | 0.0 | wet |
| | 1331 | 58 | | | | as above | as above | as above, clay-rich returns | 0.0 | wet/sat. v. muddy |
| | 1332 | 62 | | | TOR = 63' | | | | | 59' → 60' → poss. fracture or soft seam Q = 3-5 GPM |
| | 1338 | 63 | | | | hard | dk green gray, blackish gray | gneiss (hornblende, plagioclase, quartz) poor returns | 0.0 | saturated/muddy Q = 3-5 GPM |

REMARKS 03-11-99
1053 - pull ODEX tools at 53' BGS → switch to 8" Air Percussion bit (8' bit assembly)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10I
DATE 03-11-99 / 03-12-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1345 | 66.5 | | | | hard | dk gray, gray, black, gray, pink, white | gneiss (equal percentages of feldspars and ferromagnesians) | 0.0 | Q=3-5 GPM Sat. / muddy |
| 1346 | 67.5 | | | | hard | v. dk gray → black | gneiss mainly dk ferromagnesians trace white/pink/gray plag., qtz, microcline + Fe staining | 0.0 | Sat. → water quality improving (less turbid) Q=3-5 GPM |
| 03-11-99 1347 / 03-12-99 0935 | 70 | | | 6" steel casing to 70' | | | | 0.0 | Q=2-5 GPM |
| 0837 | 71 | | | | hard | black, gray, pink, white | gneiss equal percentages of dk ferromagnesian and qtz/microcline/plagioclase | 0.0 | wet / muddy |
| 0839 | 75 | | | | hard | green-gray, black, pink, gray | gneiss increased qtz/microcline/plag. some Fe staining | 0.0 | poss. fract. → 73'-74' Sat. Q=5-7 GPM |
| 0842 | 77 | | | | hard | black, dk gray, green, pink, white | gneiss more dk ferromagnesians than qtz/microcline/plag. trace Fe staining | 0.0 | Q↑ 8-10 GPM at 75.5' (poss fract.) poss fract. → Q=10-15 GPM |
| 0843 / 0852 | 79 | | | | hard | as above | as above | 0.0 | FOR=4 |
| 0853 | 80 | | | | | | | | Sat. Q=15-20 GPM |
| 0855 | 84 | | | | hard | dk gray gray → black | gneiss (almost entirely black) mainly dk ferromagnesians | 0.0 | |
| 0858 / 0910 | 89 | | | | hard | green, gray, white, pink | gneiss mainly qtz. / microcline / plag. | 0.0 | |
| 0911 | 91 | | | | hard | dk green gray, black, pink, white | gneiss equal percentages of dk ferromagnesians and qtz/micro/plag. | 0.0 | |
| 0913 | 94 | | | | hard | black, gray, pink, green, white | as above increased qtz / micro. / plag. | 0.0 | |

REMARKS 03-12-99
8" Air Percussion bit (8' bit assembly)
qtz. = quartz
plag. = plagioclase feldspar
micro. = microcline

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE. TIME & CONDITIONS)

BORING NO. HN-10 I
DATE 03-12-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0917 / 0936 | 99 | | | | | | | | EOR=5 |
| 0937 | 100 | | | | hard | green-gray, black, pink, white | gneiss mainly dk ferromagnesians + plag. Fe staining | 0.0 | Sat. Q=15-20 GPM |
| 0940 | 104 | | | | hard | as above + lt.gray | gneiss mainly qtz./micro./plag. | 0.0 | |
| 0943 / 1018 | 107.5 | | | | hard | lt green-gray, grey, pink | as above | 0.0 | |
| 1018 | 108 | | | | hard | green-gray, black, pink, gray white | gneiss equal percentages of dk ferromagnesians and qtz./micro./plag | 0.0 | |
| 1021 | 112 | | | | hard | | as above | 0.0 | |
| 1023 | 115 | | | | hard | black | gneiss almost entirely ferromagnesians trace qtz./plag./micro/chlorite | 0.0 | |
| 1024 | 116 | | | | | | | 0.0 | poss. fract. → 116'-117'; bit drops, slight Q↑ |
| 1024 | 118 | | | | hard | pink, black, gray, white | gneiss mainly qtz./micro./plag. iron staining | 0.0 | Sat. Q=15-20 GPM |
| 1026 / 1038 | 119 | | | | | | | | EOR=6 |
| 1042 | 123 | | | | hard | lt.green gray, pink, gray, white | gneiss mainly qtz./plag. since 121' | 0.0 | Sat. Q=15-20 GPM |
| 1042 / 1158 | 124 | | | | | | | | |
| 1159 | 125 | | | | hard | dk gray-gray, black | gneiss mainly dk. ferromagnesian/ plag. Fe staining | 0.0 | |
| | 126.5 | | | | | white, green, pink, gray | gneiss mainly qtz./micro./plag. | 0.0 | |

REMARKS

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**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10I
DATE 03-12-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1203 | 130 | | | | hard | green-gray, green, black, pink | gneiss equal percentages of dk. ferromagnesians and qtz./plag./micro. | 0.0 | Sat. Q = 15-20 GPM |
| 1204 / 1220 | 130.5 | | | | | pink, white | trace pyrite (brass-colored metallic) | | |
| 122 | 132 | | | | hard | dk. gray-green, black | gneiss mainly dk. ferromagnesians trace pyrite | 0.0 | |
| | | | | | | | | | |
| 1225 | 137.5 | | | | hard | pink, lt. gray | gneiss microcline-rich, some qtz./plag. (since 134') | 0.0 | |
| 1227 | 138.5 | | | | hard | green-gray, gray, black, pink | gneiss equal percentages of dk. ferromagnesians and qtz./micro./plag., trace pyrite | 0.0 | |
| 1227 / 1242 | 139 | | | | | | | | |
| 1243 | 140.5 | | | | hard | as above | as above | 0.0 | |
| 1247 | 144 | | | | hard | dk. green-gray, lt. gray, pink, | gneiss (microcline rich) mainly qtz./micro./plag. trace ferromagnesians (black) | 0.0 | |
| 1250 | 147 | | | | hard | white, green-gray, gray, pink | as above | 0.0 | |
| 1252 | 149 | | | TD=150' | hard | lt. green, green-gray, black, pink, | as above with increased ferromagnesians | 0.0 | |
| 1252 | 150 | | | | | gray, lt. green | | 0.0 | Q = 15-20 GPM |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS

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AR300833

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10D
DATE 1-14-99, 1-18-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0916 | 0 | | | | | GRAY, PINK, BRN | QUARTZITE BOULDERS, SAND, SILT, CLAY, ROCK FRAGMENTS | | FROZEN DAMP TO MOIST 0.0 ppm |
| | | | | | | BRN | SILT, SAND, CLAY, SOME COBBLES | | MOIST, SOFTER 0.0 ppm |
| | 10 | | | | | BRN | SANDY CLAY, CLAYEY SAND, Sm | | |
| | | | | | | | V. WEATH. QTZT FRAGMENTS (COLLUVIUM) | | MOIST 0.0 ppm |
| 0922 / 0957 | 18 | | | | | LIGHT GRAY & BRN-GRAY | CLAY & SANDY CLAY (VERY WEATHERED GNEISS SAPROLITE) QTZ & FELDSPAR SAND GRAINS | | MOIST TO WET |
| 1/14 1000 | 24 | | | | | | | | |
| 1/18 1249 | | | | | | | | | MOIST TO WET 0.0 ppm STEAM & WET CUTTINGS |
| 1251 / 1301 | 33 | | | | | CLEAR, WHT, LT GRAY, DK GRAY, | V. WEATH. GNEISS ... QUARTZ, PLAGIOCLASE, POTASSIUM FELDSPAR, HORNBLENDE. | | SL. HARD @ 30' SATURATED 0.0 ppm |
| | | | | | | PINK | NUM. CLAYS & PHYLLITIC OR ARGILLACEOUS ZONES Sm RUSTY STAINED SURFACES | | PROD STEAM & THICK MUD |
| | | | | | | | V. BROKEN THROUGHOUT | | 0.0 ppm |
| 1307 / 1314 | 48 | | | | | | | | EST 1-2 GPM |
| | | | | | | | | | 0.0 ppm |
| | | | | HEMFIE | | CLEAR, WHITE, LT GRAY, DK GRAY, | GNEISS, SL. WEATH QTZ, PLAG, K-SPAR, HBLD GNEISS HBLD, PLAG, QTZ GNEISS | | 55' HARDER, MORE COMPETENT ROCK |
| 1322 / 1329 | 63 | | | | | PINK | NUM. LT GREENISH-GRAY CLAYS & PHYLLITIC OR ARGILLACEOUS MAT'L | | 0.0 ppm |
| | 70 | | | | | | | | — |

**REMARKS** 10" DIAM. X 6' LONG AIR HAMMER 0' TO 18'. 12" DIAM. X 12' LONG ROLLER BIT & REAMER TO 24'. 10" TEMP. STEEL CSG 24'. 10" AIR HAMMER TO 93'. 10" TEMP STEEL CSG. TO 45'. 10" AIR HAMMER TO 153'. 10" TEMP STEEL CSG. TO 57.5'. 10" AIR HAMMER TO 154'.

**BORING NO.** HN-10D
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AR300834

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10D
DATE 1-18-99, 1-19-99, 1-21-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 70 | | | | | | | | |
| | | | | | | | CLEAR, WHITE, LT. GRAY, DK. GRAY, | QUARTZ, PLAGIOCLASE, K-SPAR, HBLD GNEISS AS BEFORE NUM. PHYLLITIC OR ARGILLACEOUS | | APPX 73'-75' POSS. FRACTURE FEW TO SEVERAL GPM |
| | 1340/1350 | 78 | | | | | PINK | FRAGMENTS, SM RUSTY STAINS | | 0.0 PPM |
| | | | | | | | | | | |
| | | | | | | | DARK GREENISH GRAY | HORNBLEND GNEISS | | EST 10 GPM |
| 1/18 | 1403 | 93 | | | | | CLEAR, WHITE, LT. GRAY, PINK | MIXED QTZ-PLAGIOCLASE GNEISS & HBLD GNEISS | | 0.0 PPM |
| 1/19 | 1141 | | | | | | DK. GRAY | MUCH HARDER, TR/ RUSTY WEATH SURFACES, TR/ ARGILLACEOUS MAT'L | | EST 10-15 GPM 0.0 PPM |
| | | | | | | | | | | |
| 1/19 | 1154 | 108 | | | | | | GNEISS AS ABOVE... TRACE | | EST ≥10-15 GPM |
| 1/21 | 0819 | | | | | | | PYRITE AS V. SMALL FLECKS | | 0.0 PPM |
| | | | | | | | DARK GREENISH GRAY | HORNBLENDE GNEISS | | POSS FRACTURED ? |
| | 0838/0844 | 123 | | | | | VAR. | MIXED GNEISSES AS BEFORE | | EST ≥10-15 GPM 0.0 PPM |
| | | | | | | | | | | |
| | | | | | | | DARK GREENISH GRAY | HORNBLENDE GNEISS, TR/ VFGR PYRITE | | POSS FRACTURED ? |
| | 0901/0919 | 138 | | | | | | | | EST 15-20 GPM 0.0 PPM |

REMARKS

BORING NO. HN-10D
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AR300835

**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS — BORING NO. HN-10D
PROJECT NO. 7525 — DATE 1-21-99, 1-25-99
ELEVATION — DRILLER D. TAYLOR, HARDIN-HUBER
WATER LEVEL DATA — FIELD GEOLOGIST R. GOOD
(DATE, TIME & CONDITIONS)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | DK. GREEN-GRAY | HORNBLEND GNEISS | | 15-20 GPM 0.0 PPM |
| | 150 | | | 6" STEEL CSG. | | VAR. | QTZ-PLAG.-K-SPAR GNEISS & HBLD GNEISS AS BEFORE | | SOME CUTTINGS & WATER FROM SHALLOW ZONES |
| 1/21 0936 / 1/25 1135 | 153 3/4 | | | 10" BOREHOLE | | DARK | | | 15-20 GPM 0.0 PPM |
| | | | | 6" BOREHOLE | | GREEN-GRAY, PINK, LT. GRAY | HBLD GNEISS W/ SOME QUARTZ-PLAGIOCLASE - K-FELDSPAR GNEISS | | WET CUTTINGS, NO WATER 0.0 PPM |
| | | | | | | VAR. AS | QTZ/PLAG/K-SPAR GNEISS W/ SM. | | MOIST TO WET |
| 1142 / 1147 | 167 | | | | | ABOVE | HBLD GNEISS | | 0.0 PPM |
| | | | | | | | OCC. LAYERS OF PRIMARILY HORNBLENDE, TRACE VFG. PYRITE & RUSTY STAINED SURFACES. | | |
| | | | | | | DARK GREEN-GRAY | HORNBLENDE GNEISS ... ALT. LYRS HBLD AND HBLD/PLAG. GNEISS | | MOIST TO WET 0.0 PPM |
| 1155 / 1158 | 182 | | | | | | ↓ | | |
| | | | | | | AS | HBLD GNEISS AS ABOVE | | MOIST TO WET |
| | | | | | | ABOVE | ↓ | | 0.0 PPM POSS. SOFT ZONE OR FRACTURE AROUND * |
| 1206 / 1211 | 197 | | | | | | ↓ | | 194'-195' WATER AFTER ROD CONNECT |
| | | | | | | AS | HBLD. GNEISS AS ABOVE | | 0.0 PPM FEW GAL/MIN |
| | 210 | | | | | ABOVE | ↓ | | 0.0 PPM |

REMARKS 10" AIR HAMMER TO 154'; 6" STEEL CASING TO 152'; 6" DIAM x 5' LONG AIR HAMMER TO 302'. DEVELOP 10" HOLE W/ AIR APPX 16 MIN.

BORING NO. HN-10D
PAGE 3 OF 5

* See Legend on Back

AR300836

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10D
DATE 1-25-99
DRILLER D. TAYLOR, HARDING-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | STRAT. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| 1220 / 1231 | 212 | | | | | DARK GREEN-GRAY | HBLD GNEISS AS BEFORE | | EST 7-8 GPM 0.0 PPM |
| | | | | | | VAR. | HBLD GNEISS W/ SM. QTZ/PLAG/K-SPAR GNEISS | | |
| | | | | | | DARK GREEN-GRAY | HBLD W/ SOME LT. GREENISH GRAY MAT'L | | |
| 1239 / 1248 | 227 | | | | | VAR. | HBLD W/ SM. QTZ/PLAG/K-SPAR GNEISS | | EST. 7-8 GPM 0.0 PPM |
| | | | | | | VAR: CLEAR, LT. GRAY, | ALTERNATING LAYERS: QTZ/PLAG/K-SPAR GNEISS | | |
| | | | | | | PINK, DK GREEN-GRAY | HBLD/PLAG. GNEISS HBLD W/ POSS CHLORITE | | |
| 1257 / 1306 | 242 | | | | | | | | EST 7-8 GPM 0.0 PPM |
| | | | | | | VAR. | BANDED OR LAYERED GNEISS & HORNBLENDE AS ABOVE | | |
| 1315 / 1319 | 257 | | | | | | | | EST 8-10 GPM 0.0 PPM |
| | | | | | | VAR. | LAYERED GNEISS & HORNBLENDE AS ABOVE | | |
| 1327 / 1332 | 272 | | | | | | | | EST 8-10 GPM 0.0 PPM |
| | 280 | | | | | VAR. | LAYERED GNEISS & HORNBLENDE AS ABOVE | | |

REMARKS

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AR300837

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-10D
DATE 1-25-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | | | | |
| | | | | | | VAR | LAYERED GNEISS & HORNBLENDE | | EST 8-10 GPM |
| 1340 / 1344 | 287 | | | | | DK GRY & PINK | AS BEFORE ... MORE K-SPAR / HORNBLENDE GNEISS | | 0.0 PPM |
| | | | | | | | | | |
| | | | | | | VAR DK. GRY & PINK | GNEISS AS ABOVE NUM. K-SPAR & HALO GNEISS | | EST. 8-10 GPM |
| 1352 | 302 | | | T.D. | | | | | 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
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REMARKS

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AR300838

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-119
DATE 01-25-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1454 | 0 | | | | | brn, orange brn | sand + silt + clay with roots + quartzite pebbles, rubbles, and boulders | | wet |
| 1454 | 6 | | | | | brn, orange brn | sandy clay with weathered quartzite fragments | 0.0 | moist |
| 1457 | 11 | | | | | brn, orange brn | as above | 0.0 | damp |
| 1459 | 16 | | | | | orange | silty, v.f. sand with clay with quartzite fragments iron staining | 0.0 | damp |
| 1501 / 1506 | 21 | | | | | | | 0.0 | dusty FOR=1 |
| 1507 | 26 | | | | | | | 0.0 | damp/dry |
| 1508 | 31 | | | | soft / hard | orange-pink, orange | poorly consolidated, v.f.g. sandstone (v. weathered quartzite) with competent quartzite seams + prob. soft (argillaceous or clay) seams iron staining | 0.0 | damp/dry |
| 1509 | 36 | | | | soft / hard | | | 0.0 | damp/dry |
| 1510 / 1515 | 41 | | | | soft / hard | | | 0.0 | damp/moist FOR=2 |
| 1516 | 46.5 | | | | | | harder material → prob. competent quartzite ledge | 0.0 | |
| 1518 | 51 | | | | soft / hard | orange, pink, gray, purple | poorly consolidated v.f.g. sandstone with competent quartzite seams + prob. soft (argillaceous or clay) seams iron staining | 0.0 | soft or broken zone since 49.5' |
| 1520 | 56 | | | | soft / hard | | as above | 0.0 | harder formational material |
| 1523 | 61 | | | | soft / hard | | as above | 0.0 | dry/dusty since 59' |
| | | | | | | | | | 1532 → blow bulehole → water evident – |

REMARKS Ingersoll-Rand TH-60 Drill Rig
6" Air Percussion Bit (5' bit assembly)

BORING NO.
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AR300839

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RIFS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11 I
DATE 01-22-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0822 | 0 | | | | | brn, orange brn | Sand + silt + clay with roots + quartzite pebbles, cobbles, and boulders | | wet |
| 0824 | 2.5 | | | | | brn, orange brn | Sandy clay with large quartzite fragments exhibiting varying degrees of weathering | 0.0 | moist |
| | | | | | | | | | |
| 0826 | 6 | | | | | brn, orange brn | as above | 0.0 | moist |
| | | | | | | | | | |
| 0827 | 11 | | | | | brn, orange brn | clayey sand with quartzite fragments | 0.0 | moist |
| 0827 | 14 | | | | | orange | silty v.f. sand with some clay with quartzite fragments + some gneiss iron staining | | damp/moist |
| 0828 | 16 | | | | | orange | as above w/o gneiss | 0.0 | damp/moist |
| | | | | | | | | | |
| | 21 | | | | | orange | as above | 0.0 | damp/moist |
| 0830 / 0834 | 23 | | | | | | | | EOR=1 |
| 0837 | 27 | | | | | orange | as above | 0.0 | |
| 0838 | 30 | | | | | | | | formational material getting harder |
| 0840 | 32 | | | | | orange-pink | poorly consolidated, v.f.g. sandstone (v weathered quartzite) with competent quartzite seams + soft (argillaceous or clay) seams iron staining | 0.0 | turn on second air compressor dry/dusty |

REMARKS Ingersoll Rand TH-60 Drill Rig
10" Air Percussion Bit (7' bit assembly)

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AR300840

**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11 I
DATE 01-22-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0840 | 35 | | | | soft / hard | orange-pink, pink, gray, purple | poorly consolidated, v.f.g. sandstone (v weathered quartzite) with competent quartzite seams + prob. soft (argillaceous or clay) seams | 0.0 | alternating damp/dry seams dry/dusty |
| 0844 | 38 | | | | soft / hard | orange-pink, pink, gray, purple | as above iron staining | 0.0 | |
| | | | | | | | | | |
| 0845 | 42 | | | | soft / hard | orange-pink, pink, gray, purple | as above | 0.0 | dry/damp |
| 0846 / 0851 | 43 | | | | | | | | EOR=2 |
| | | | | | | | | | |
| 0852 | 48 | | | | soft / hard | orange, pink, gray, purple | as above with increased clay seams or lenses | 0.0 | damp |
| | 52 | | | | | | | | more competent formational material begins |
| 0854 | 53 | | | | soft / hard | orange, pink, gray, purple | as above | 0.0 | moist |
| | | | | | | | | | |
| | 59 | | | | | | | | v. soft or broken zone b/w 53'→59' |
| 0856 | 60 | | | | soft / hard | orange, gray, pink, purple | v.f.g. / f.g. quartzite + poorly consolidated, v.f.g. sandstone | 0.0 | moist |
| 0857 / 0903 | 63 | | | | | | | | EOR=3 v. soft or broken zone b/w 62'→63' |
| | | | | | | | | | blow borehole → v. muddy returns |

REMARKS

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AR300841

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11I
DATE 01-22-99/01-25-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0903 | 69 | | | TOR=71' | | | no sample | 0.0 | v. soft or broken zone b/w 63'→70' moist returns |
| 0904 | 71 | | | | hard | | | | competent formational material begins |
| 0906 | 73 | | | | hard | gray, pink, purple | v.f.g./f.g. quartzite iron staining | 0.0 | dry/dusty |
| 0908 | 76 | | | | hard | lt.→dk. gray, pink | as above | 0.0 | dry/dusty |
| 0910 | 80 | | | | hard | lt.→dk. gray, pink, purple | as above with some microcrystalline quartzite | 0.0 | dry/dusty |
| | | | | | | | | | |
| 11-22-99 0912 / 1113 | 83 | | | 6" steel casing to 83' | | | | | EOR = 4 |
| 1114 | 85 | | | | hard | lt gray, pink, purple | v.f.g./f.g./microcrystalline quartzite iron staining | 0.0 | moist/muddy→ some gravel size cuttings→frac.? |
| | | | | | | | | | |
| 1116 | 90 | | | | soft / hard | lt.gray, pink, purple | as above w/ some interbedded, gray argillaceous material | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 1118 | 95 | | | | hard | lt.gray, pink, purple | as above w/o argillaceous material | 0.0 | damp/dry |
| | | | | | | | | | |
| 1120 | 100 | | | | hard | lt.→med. gray, pink, purple | as above | 0.0 | damp/dry |

REMARKS 01-25-99: 6" Air Percussion Bit (5' bit assembly)

BORING NO.

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AR300842

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE. TIME & CONDITIONS)

BORING NO. HN-11 I
DATE 01-25-99
DRILLER HARDW-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1120 / 1127 | 101 | | | | | | | | blw borehole → v little muddy water (Q<1GPM) FOR=5 |
| 1127 | 105 | | | | hard | H. and gray, pink, purple | v.f.g./f.g./m.g./microcrystalline quartzite gravel size iron stained returns | 0.0 | damp/moist |
| | | | | | | | | | |
| 1130 | 110 | | | | hard | H and gray, pink, purple | as above | 0.0 | damp/moist. |
| | | | | | | | | | |
| 1131 | 115 | | | | soft / hard | H. and gray, pink, purple | v.f.g./microcrystalline quartzite w/ trace gray, interbedded argillaceous material iron staining | 0.0 | poss. fracture blw 113'→115', bit drops, firing intermit. |
| | | | | | | | | | damp/moist |
| 1135 | 120 | | | | hard | H. and gray, pink, purple | f.g. microcrystalline quartzite iron staining | 0.0 | damp/moist |
| 1135 / 1141 | 121 | | | | | | | | blow borehole → v muddy water FOR=6 |
| 1142 | 125 | | | | soft / hard | H. gray, pink, purple | v.f.g./f.g./microcrystalline quartzite w/ trace interbedded, gray argillaceous material iron stained fract. surfaces | 0.0 | moist/muddy poss. fracture blw 123'→126' |
| | | | | | | | | | bit firing intermittently |
| 1145 | 130 | | | | hard | med→ dk gray, pink, purple | as above w/o argillaceous material + iron staining | 0.0 | moist/muddy |
| | | | | | | | | | |
| 1147 | 135 | | | | hard | H. and gray, pink, purple | as above trace iron staining | 0.0 | moist/wet muddy |

REMARKS

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AR300843

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11I
DATE 01-25-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1149 | 140 | | | | hard | H→med. gray, pink, purple | vf.g. /f.g/microcrystalline quartzite trace iron staining | 0.0 | poss fracture b/w 137'→139'→ hammer firing intermittently |
| 1150 / 1157 | 141 | | | | | | | | blow out v. muddy returns → cleaning slightly Q=3-5 GPM, decreasing to 1-3 GPM |
| 1158 | 145 | | | | hard | med.→dk. gray, pink, purple | as above iron staining | 0.0 | saturated/muddy Q=1-3 GPM |
| 1200 | 149 | | | | hard | H-gray, pink, purple | as above | 0.0 | ↓ |
| 1201 | 150 | | | TD=150' | | | | 0.0 | develop borehole → water clearing slightly, still rust-colored |
| | | | | | | | | | $Q_{Total}$ = 2-4 GPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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REMARKS

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AR300844

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-110*
DATE *01-13-99*
DRILLER *HARDIN - HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0737 | 0 | | | | | brn, orange brn | sand + silt + clay, with roots + quartzite pebbles, cobbles, and boulders | | damp/moist |
| 0737 | 2 | | | | | orange brn, brn | sandy clay / clayey sand with roots + iron stained quartzite fragments | 0.0 | rods bouncing → poss. cobbles + boulders damp |
| 0740 | 3.5 | | | | | brn | clayey sand with quartzite fragments | 0.0 | v. hard ledge → poss. cobble/boulder damp |
| 0745 | 5.0 | | | | | | | | v. hard ledge → poss cobble / boulder |
| 0748 | 7.0 | | | | | orange brn | Sandy silt with clay with abundant, iron stained quartzite fragments + trace gneiss fragments | 0.0 | damp |
| 0749 / 0800 | 7.5 | | | | | | | | blow borehole → dry/damp returns |
| 0803 | 11 | | | | | orange | silty sand with trace clay with abundant quartzite fragments iron staining | 0.0 | alternating hard / soft damp |
| | | | | | | | | | |
| 0806 | 16 | | | | | orange | silty v.f. sand with trace clay with quartzite fragments + some argillaceous material iron staining | 0.0 | damp |
| | | | | | | | | | |
| 0809 | 21 | | | | | orange | as above | 0.0 | |
| | | | | | | | | | |
| 0814 | 26 | | | | | orange | as above | 0.0 | damp/moist |
| 0815 / 0830 | 27 | | | | | | | | smooth drilling since 21' EOR = 1 |

REMARKS *Ingersoll Rand TH-60 Drill Rig*
*12" Tricone Roller Bit with Reamer (12' bit assembly)*

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AR300845

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *MN-11D*
DATE *01-13-99*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0825<br>0830 | 30.5 | | | | | | | | borehole caving |
| 0831 | 31 | | | | | | no returns → prob. silty v.f. sand with clay | | |
| 0831 | 32 | | | | | orange | silty v.f. sand with increased clay (clay lenses) and gray argillaceous material - heavily weathered quartzite | 0.0 | damp |
| 0837<br>0840 | 34.5 | | | Top of weathered rock @ 34' | soft | | harder formational material since 34' → rods bouncing, v slow penetration rate | | poor returns since 34' → prob. caving from above blow borehole |
| 0859<br>1345 | 36 | | | | soft | orange-pink | silty v.f. sand → poss. v. weathered quartzite → weathered to poorly consolidated v.f.y sandstone with some argillaceous material + clay lenses | 0.0 | blow borehole at 1345 → dry/dusty |
| | | | | | | | | | |
| 1347 | 36.5 | | | | soft / hard | orange-pink, pink, purple, lt gray | as above with competent quartzite seams (v.f.y to f.y.) iron staining | 0.0 | damp |
| | | | | | | | | | |
| 1350 | 41.5 | | | | soft / hard | | as above with trace gray interbedded argillaceous material | 0.0 | damp |
| 1350<br>1355 | 42.5 | | | | | | | | EUR = 2 |
| 1357 | 46.5 | | | | soft / hard | | as above w/o argillaceous material | 0.0 | damp |
| 1358<br>1406 | | | | | | | | | well diverter akp 10" temporary casing |
| 1407 | 51.5 | | | | soft / hard | | as above with some interbedded argillaceous material | 0.0 | damp |
| | | | | | | | | | — |

**REMARKS** Stop drilling at 0859 (36') to set 10" temporary casing
10" temporary casing set to 33' → attach 10" Air Percussion bit (7' bit assembly)
poor returns b/w 46.5' → 51.5' (caving + transfer hose partially blocked)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11D
DATE 01-13-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1408 | 57.5 | | | | soft / hard | orange pink, purple, pink, lt. gray, | poorly consolidated v.f.g. sandstone (weathered quartzite) + compacted v.f.g. to f.g. quartzite seams with some interbedded argillaceous material iron staining | 0.0 | damp/moist |
| | | | | | | | | | v. fast penetration b/w 57.5' → 62.5' + plus. soft or broken formational material |
| 1409 / 1414 | 62.5 | | | | soft / hard | lt. gray, purple, pink | quartzite with interbedded argillaceous material iron staining | | EOR = 3 |
| 1417 | 66.5 | | | | soft / hard | lt. → dk. gray, purple, pink | v.f.g. to f.g. quartzite, some microcrystalline iron staining | 0.0 | damp |
| | | | | | | | | | v. soft or broken material b/w 68' → 71.5' |
| 1419 | 71.5 | | | TOR = 75' | | | no sample | | no returns |
| | 75 | | | | | | | | more compacted formational material |
| 1421 | 76.5 | | | | soft / hard | lt. gray, purple, pink | v.f.g. to f.g. quartzite with lt gray, interbedded argillaceous material iron staining | 0.0 | damp/moist |
| | | | | | | | | | |
| 1426 | 81.5 | | | | hard | lt. gray, gray, purple, pink | as above w/o argillaceous material | 0.0 | damp/moist |
| 1427 / 1432 | 82.5 | | | | | | | | EOR = 4 |
| 1435 | 87 | | | | soft / hard | | prob. as above w/ some interbedded argillaceous material | 0.0 | poor returns |
| | | | | | | | | | |
| 1439 | 93 | | | | soft / hard | lt. → dk. gray, purple, pink | as above | 0.0 | wet/muddy — |

REMARKS

BORING NO.

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AR300847

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11D
DATE 01-13-99/01-14-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 01-13-99 / 01-14-99 | 1445 / 0909 | 97 | | | | soft / hard | M. dk. gray, purple | v.f.g. to m.g. quartzite w/ trace interbedded argillaceous material iron staining | 0.0 | blow borehole → wet/muddy returns on 01-13-99 |
| | | | | | | | | | | saturated, Q=3-5 GPM at 97' BGS on 01-14-99 |
| | 0914 | 101 | | | | hard | M. gray, purple, pink | f.g. quartzite iron staining | 0.0 | |
| | 0915 / 0924 | 102.5 | | | | | | | | blow borehole → Q=3-5 GPM decreasing to 1-3 GPM FOR=5 |
| | 0926 | 106 | | | | hard | M. gray, purple, pink | v.f.g. to f.g. quartzite iron staining | 0.0 | poss. soft or fractured zone → 105' to 106' wet/muddy |
| | 0929 | 108 | | | | soft / hard | M. med gray, purple, pink | as above w/ trace interbedded argillaceous material | 0.0 | wet/muddy |
| | 0931 | 111 | | | | hard | M. med gray, purple, pink | as above w/o interbedded argillaceous material | 0.0 | wet/muddy |
| | 0936 | 116 | | | | hard | M. med gray, purple, pink | as above | 0.0 | wet/muddy |
| | 0937 / 0941 | 117.5 | | | | | | | | |
| | 0944 | 121 | | | | hard | M. med. gray, purple, pink | as above w/ some m.g. quartzite | 0.0 | wet/muddy |
| | 0945 / 0951 | 122.5 | | | | | | | | FOR=6 |
| | 0953 | 126 | | | | soft / hard | M. med gray, purple, pink | f.g. quartzite w/ trace interbedded argillaceous material iron staining | 0.0 | wet/muddy |
| | 0958 / 1001 | 130.5 | | | | | | | | |
| | 1002 | 131 | | | | hard | M. med gray, purple, pink | as above w/o argillaceous material w/ some microcrystalline quartzite iron staining | 0.0 | wet/muddy |

REMARKS

BORING NO.

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* See Legend on Back

AR300848

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-11D*
DATE *01-13-99 / 01-18-99 / 01-21-99*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1008 | 136 | | | | | | no sample | | no returns |
| | | | | | | | | | | |
| | 1013 | 140.5 | | | 6" steel casing to 141' | hard | lt. → dk. gray, purple, pink | f.g. quartzite, some microcrystalline quartzite | 0.0 | blow borehole → wet/muddy |
| 01-13-99 / 01-18-99 | 1014 / 1318 | 142.5 | | | | | | | | EOR = 7 |
| | 1319 / 1330 | 143 | | | | | | | | blow borehole Q = 3-5 GPM, water clearing slightly |
| | 1332 | 146 | | | | hard | lt. → med gray, purple, pink | v.f.g. to f.g. quartzite + microcrystalline quartzite iron staining | 0.0 | saturated |
| | 1334 | 148 | | | | hard | ↓ | v.f.g. to f.g. quartzite + trace microcrystalline quartzite, some dk gray quartzite iron staining | 0.0 | saturated |
| | 1337 | 150 | | | | hard | ↓ | as above w/o dk. gray quartzite | 0.0 | saturated |
| 01-18-99 / 01-21-99 | 1339 / 0948 | 152 | | | | | | | | blow borehole → Q = 3-5 GPM |
| | 0949 | 154 | | | | hard | lt. gray, purple, pink | f.g. / v.f.g. / microcrystalline quartzite iron staining | 0.0 | saturated/muddy. poss fracture Q = 1-3 GPM |
| | 0951 | 157.5 | | | | hard | lt. gray, pink | v.f.g. / microcrystalline quartzite trace iron staining | 0.0 | wet/muddy Q = < 1 GPM |
| | 0952 / 1058 | 161 | | | | | | | | blow borehole → muddy + sandy returns EOR = 8 |
| | 1058 | 162 | | | | hard | lt. gray, pink | as above heavy iron staining | 0.0 | saturated/muddy Q = 1-3 GPM |
| | 1059 | 165 | | | | hard | lt. gray, pink | v.f.g / f.g / microcrystalline quartzite iron staining | 0.0 | saturated/muddy Q = 1-3 GPM |

**REMARKS** *Advance 10" temporary casing to ~3' BGS on 01-18-99*
*Most cuttings samples contained gravel-sized fragments → prob. partly unconsolidated formational material caving from 38' → 75' interval*
*01-21-99 attach 6" air percussion bit (5' bit assembly)*

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AR300849

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11D
DATE 01-21-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1101 | 170 | | | | hard | lt. gray, pink | v.f.g./f.g./microcrystalline quartzite iron staining | 0.0 | Saturated/muddy Q=1-3 GPM |
| | | | | | | | | | poss. fracture from 171'→174', hammer tinny intermittently |
| 1103 | 175 | | | | soft / hard | lt gray, pink, purple | as above with trace interbedded argillaceous material | 0.0 | very muddy returns saturated Q=1-3 GPM |
| | | | | | | | | | |
| 1105 | 180 | | | | soft / hard | lt gray, pink, purple | as above | 0.0 | saturated/v muddy Q=1-3 GPM |
| 1105 / 1110 | 181 | | | | | | | | poss. slight Q increase EOR=9 |
| 1112 | 185 | | | | soft / hard | lt. gray, pink | as above | 0.0 | poss. fracture from 182'→184' saturated Q=6-8 GPM |
| | | | | | | | | | |
| 1115 | 190 | | | | hard | lt. gray, buff | v.f.g./f.g./microcrystalline quartzite iron stained fracture surfaces | 0.0 | saturated Q=8-10 GPM |
| | | | | | | | | | |
| 1118 | 195 | | | | hard | lt. gray, buff, red | as above | 0.0 | poss. fracture → bit drops slightly saturated Q=8-10 GPM |
| | | | | | | | | | |
| 1120 | 200 | | | | | | no sample | | Saturated Q=8-10 GPM |
| 1120 / 1125 | 201 | | | | | | | | EOR=10 |

REMARKS

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AR300850

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-110
DATE 01-21-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1127 | 205 | | | | hard | lt gray, buff | v.f.g. fmicrocrystalline quartzite iron stained fracture surfaces | 0.0 | saturated Q= 5-10 GPM |
| | | | | | | | | | |
| 1130 | 210 | | | | hard | lt gray, buff | as above | 0.0 | |
| | | | | | | | | | |
| 1132 | 215 | | | | hard | lt. gray, buff | as above with trace micaceous, reflective cuttings → poss. phyllite | 0.0 | |
| | | | | | | | | | |
| 1136 | 220 | | | | hard | lt. gray, buff | as above with trace gray/black cuttings → poss. gneiss | 0.0 | |
| 1137 / 1142 | 221 | | | | | | | | FOR=11 |
| | 223 | | | | hard | green-gray ↓ black | gneiss (mainly hornblende + quartz + plagioclase) | 0.0 | |
| 1144 | 225 | | | | hard | dk green-gray ↓ black | as above | 0.0 | |
| | | | | | | | | | |
| 1148 | 230 | | | | hard | dk green gray, dk gray, black, pink | as above with pink microcline | 0.0 | |
| | | | | | | | | | |
| 1151 | 235 | | | | hard | lt. gray ↓ black | gneiss v. heavy iron staining | 0.0 | poss. fracture, no apparent Q increase |

REMARKS

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AR300851

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-110
DATE 01-21-99
DRILLER HARDN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1154 | 240 | | | | medium hard | black | gneiss almost entirely hornblende + other ferromagnesian minerals trace quartz / feldspars | 0.0 | saturated Q=5-10 GPM |
| 1154 / 1219 | 241 | | | | | | | | EOR=12 |
| 1221 | 245 | | | | medium hard | black | as above | 0.0 | Saturated Q=5-10 GPM |
| | | | | | | | | | |
| 1224 | 250 | | | | hard | black, gray, pink | gneiss mainly hornblende + other ferromagnesian minerals some quartz / feldspars | 0.0 | |
| | | | | | | | | | |
| 1228 | 255 | | | | hard | black, gray, pink, white | gneiss more ferromagnesian minerals than quartz + feldspars trace green chlorite | 0.0 | |
| | | | | | | | | | |
| 1231 | 260 | | | | hard | black, gray, pink | gneiss mainly ferromagnesian minerals | 0.0 | |
| 1232 / 1236 | 261 | | | | | | | | EOR=13 |
| 1239 | 265 | | | | hard | black, green, gray, pink | as above | 0.0 | |
| | | | | | | | | | |
| 1244 | 270 | | | | | green-gray ↓ black white | gneiss equal percentages of ferromagnesian minerals and quartz + plagioclase | 0.0 | |
| | | | | | | | | | |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RIFS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-11D
DATE 01-21-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1248 | 275 | | | | hard | H. grey-grey ↓ black, white | gneiss more quartz + plagioclase than ferromagnesian minerals trace pink microcline | 0.0 | saturated Q=8-10 GPM |
| | | | | | | | | | |
| 1252 | 280 | | | | hard | H. grey-grey ↓ black, white | gneiss equal percentages of ferromagnesian minerals and quartz + plagioclase | 0.0 | |
| 1252 / 1258 | 281 | | | | | | | | blow bubbles → water becoming less cloudy FOR=14 |
| 1301 | 285 | | | | hard | H. grey-grey ↓ black, white | as above poss. accessory pyrite → brass colored, reflective mineral | 0.0 | poss. fracture ~283.5' → discharge changes to rusty color briefly |
| | | | | | | | | | saturated Q=8-10 GPM |
| 1306 | 290 | | | | hard | V. H. green-grey, H. grey, white, pink | gneiss feldspars + quartz rich seam | 0.0 | |
| 1310 | 295 | | | | hard | dk. grey-grey ↓ black | gneiss mainly ferromagnesian minerals trace white / H. grey quartz + feldspars | 0.0 | |
| 1316 | 300 | | | | hard | green-grey ↓ black | as above | 0.0 | |
| 1317 | 301 | | | TD=301' | | | | | develop borehole Q=8-10 GPM water becoming increasingly clear |
| | | | | | | | | | |
| | | | | | | | | | – |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-12S*
DATE *01-07-99*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1407 | 0 | | | | | dk brn | clayey silt, organic rich, with roots + gneiss pebbles, cobbles, and boulders | 0.0 | dry ↓ dump |
| 1410 | 2.5 | | | | | orange brn | sandy silt with clay with weathered gneiss fragments | 0.0 | dump |
| | | | | | | | | | |
| 1411 | 8 | | | | | light brn | as above | 0.0 | dump/dri- minimal dust |
| | | | | | | | | | |
| | | | | | | | | | |
| 1412 | 16 | | | | | orange brn | as above | 0.0 | dump |
| | | | | | | | | | |
| 1412 / 1416 | 21 | | | overburden weathered rock | | yellow brn | as above | 0.0 | dump EOP=1 |
| 1416 | 25 | | | | | | probable weathered gneiss | | poor return, dump |
| 1417 | 28 | | | | | | | | |
| | | | | | | | | | |
| 1418 | 31 | | | | Soft / hard | black gray white | gneiss iron staining | 0.0 | dry/dusty |
| | | | | | | | | | — |

REMARKS *Ingersoll Rand TH-60 Drill Rig*
*Air Rotary Drilling*
*6" Air Percussion bit (5' bit assembly)*

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AR300854

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12S
DATE 01-07-99
DRILLER Harden-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1419 | 36 | | | | soft / hard | black gray white | gneiss iron staining | 0.0 | dry/dusty |
| 1420 | 40 | | | | soft / hard | black gray white | as above | 0.0 | dry/dusty |
| 1420 / 1423 | 41 | | | | | | | | EUR-2 |
| 1424 | 44 | | | | soft / hard | black gray white | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| | | | | | | | | | |
| 1425 | 51 | | | | soft / hard | black gray white | as above | 0.0 | damp/dry |
| | | | | | | | | | |
| 1426 | 56 | | | | soft / hard | black gray white | as above | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1427 / 1433 | 61 | | | | | | | | blow borehole → saw wet, muddy returns EUR-3 |
| 1433 | 65 | | | | soft / hard | black gray white | as above | 0.0 | damp/dry dust suppression |
| | | | | | | | | | |
| 1434 | 70 | | | | medium hard | black gray pink white | gneiss mainly dark, ferromagnesian minerals | 0.0 | more consistent formational material as consistent driving dry/dusty |

REMARKS

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AR300855

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-125
DATE 01-07-99
DRILLER HARDIN - HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1436 | 75 | | | | medium hard | black gray pink white | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1438 | 80 | | | | medium hard | black gray green | gneiss mainly dark, ferromagnesian minerals iron staining | 0.0 | damp |
| 1438 | 81 | | | TD=81' | | | | | blow borehole → $Q_{total}$ = 1 GPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

REMARKS

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AR300856

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12I
DATE 01-05-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1353 | 0 | | | | | dark brn | clayey silt, organic rich with roots + gneiss pebbles, cobbles, + boulders | | dry ↓ dump |
| 1354 | 3 | | | | | orange brn, brn | Sandy silt with clay with weathered gneiss fragments | 0.0 | dump |
| | | | | | | | | | |
| 1356 | 8 | | | | | orange brn | as above | 0.0 | dump |
| | | | | | | | | | |
| 1359 | 13 | | | | | orange brn | as above | 0.0 | dump |
| 1400 | 15 | | | | | black gray white | mainly gneiss fragments | | probable gneiss boulder |
| 1401 | 18 | | | | | yellow brn | Sandy silt with clay with weathered gneiss fragments | 0.0 | dump |
| 1402 | 21 | | | weathered rock | soft / hard | black gray white | gneiss iron staining | 0.0 | dump/dry dusty |
| 1402 / 1415 | 22 | | | | | | | | FUR-1 |
| 1416 | 26 | | | | | | prob. weathered gneiss | 0.0 | poor returns dry/dusty |
| 1419 / 1441 | 30 | | | | | | | | |
| 1441 | 31 | | | | soft / hard | gray white | gneiss quartz + plagioclase rich iron staining | 0.0 | dry/dusty |
| | | | | | | | | | |

REMARKS Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
10" Air Percussion Bit (6' Drill assembly)

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AR300857

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12I
DATE 01-05-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1443 | 36 | | | | soft / hard | gray white | gneiss, mainly quartz + plagioclase with trace dark, ferromagnesian minerals iron staining | 0.0 | damp/dry |
| | | | | | | | | | |
| 1445 | 41 | | | | soft / hard | pink white gray black | as above with microcline and increased ferromagnesian minerals + foliated, saprolitic returns → | 0.0 | damp/dry |
| 1445 / 1452 | 42 | | | | | | resemble phyllite or schist → friable | | |
| 1454 | 46 | | | | soft / hard | gray white | gneiss quartz + plagioclase rich iron staining | 0.0 | damp/dry |
| | | | | | | | | | |
| 1455 | 51 | | | | soft / hard | gray white | as above | 0.0 | damp/dry |
| | | | | | | | | | |
| 1457 | 56 | | | | soft / hard | gray white | as above with saprolite | 0.0 | damp/dry |
| | | | | | | | | | |
| 1459 | 61 | | | | soft / hard | pink white gray | as above with microcline and trace dark ferromagnesian minerals + chlorite (green) | 0.0 | damp/dry |
| 1459 / 1509 | 62 | | | | | | | | dry/dusty FOR = 3 |
| 1512 | 66 | | | FOR=[illegible] | soft / hard | | probable weathered gneiss | 0.0 | blow borehole → poor, moist returns |
| | 69 | | | | | | | | packed water blow 60' → 60' consistent — drilling begins |

REMARKS

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AR300858

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12I
DATE 01-05-99 / 01-07-99
DRILLER HARDIN-MUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1514 | 71 | | | | medium hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline iron staining | 0.0 | moist |
| | | | | | | | | | | |
| | 1516 | 75.5 | | | | medium hard | black gray green white pink | as above | 0.0 | moist |
| | | | | | | | | | | |
| 01-05-99 / 01-07-99 | 1519 / 0901 | 80 | | | 6" steel casing to 79.5' | medium hard | black gray green | gneiss mainly dark ferromagnesian minerals iron staining | 0.0 | moist |
| | 0902 | 83.5 | | | | medium hard | black gray white pink | as above with increased quartz + microcline | 0.0 | damp |
| | | | | | | | | | | |
| | 0903 | 88 | | | | medium hard | black gray green white | gneiss with more ferromagnesian minerals than quartz heavy iron staining | 0.0 | damp/dry many dust |
| | 0905 | 91 | | | | medium hard | black gray white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microline iron staining | 0.0 | dry/dusty |
| | 0906 | 95 | | | | medium hard | black gray white pink | as above | 0.0 | dry/dusty |
| | 0908 | 99 | | | | medium hard | black gray green white pink | gneiss with more ferromagnesian minerals than quartz + microline iron staining | 0.0 | poss small fracture blw 96' → 100' (most spaced) |
| | 0909 / 0913 | 101 | | | | | black gray green white pink | gneiss mainly dark ferromagnesian minerals trace iron staining | 0.0 | Cut-5 blw [illegible] → 2-1-3 ppm |
| | 0916 | 105 | | | | hard | black gray green white pink | as above with increased iron staining | 0.0 | [illegible] → possible fracture saturated 2-3-5 ppm |
| | | | | | | | | | | |

REMARKS
01-07-99
6" Air Percussion Bit (5' bit assembly)

BORING NO.
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AR300859

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12I
DATE 01-07-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0920 | 110 | | | | hard | pink white gray black | gneiss microcline + quartz rich seam | 0.0 | saturated Q=3-5 GPM |
| | | | | | | | | | |
| 0922 | 115 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | saturated Q=3-5 GPM |
| | | | | | | | | | |
| 0925 | 120 | | | | hard | black gray green white | gneiss mainly dark, ferromagnesian minerals iron staining | 0.0 | saturated Q=3-5 GPM |
| 0925 / 0932 | 121 | | | | | | | | EOR=6 blow borehole → Q=3-7 GPM decreasing w/ time |
| 0933 | 125 | | | | hard | black gray green white pink | gneiss more dark, ferromagnesian minerals than quartz + microcline | 0.0 | discharge cleaning up saturated Q=3-5 GPM |
| 0936 | 129 | | | | | | | | poss small fracture → rods bouncing |
| 0936 | 130 | | | | hard | black gray green white pink | as above | 0.0 | saturated Q=3-5 GPM |
| | | | | | | | | | |
| 0934 | 135 | | | | hard | black gray white pink | gneiss mainly dark, ferromagnesian minerals iron staining | 0.0 | rods bouncing b/w 130'-135' → poss. small fracture Q=3-5 GPM |
| | | | | | | | | | saturated |
| 0942 | 140 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline iron staining | 0.0 | rods bouncing saturated Q=3-5 GPM |
| 0943 / 0947 | 141 | | | | | | lime green mineral → chlorite | | EOR=7 blow borehole → Q=3-7 GPM decreasing w/ time |

REMARKS

BORING NO.

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AR300860

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RIFS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12 I
DATE 01-07-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M SETH PEUFRU

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0950 | 145 | | | | hard | black gray green white | gneiss mainly dolic, ferromagnesian minerals | 0.0 | Saturated Q = 3-5 GPM |
| 0953 | 149 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + feldspar | 0.0 | Saturated Q = 3-5 GPM |
| 0954 | 150 | | | TD=150' | | | | | $Q_{Total}$ = 5-7GPM |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

**REMARKS** drilled borehole at 150'; discharge water becoming clear

**BORING NO.**

**PAGE** 5 **OF** 5

* See Legend on Back

AR300861

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. MN-12D
DATE 12-22-98
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0946 | 0 | | | | | dk. brn | clayey silt, organic rich, with roots + gneiss pebbles, cobbles, + boulders | | dry ↓ damp |
| 0948 | 1.5 | | | | | orange brn | sandy clay with weathered gneiss fragments | 0.0 | moist |
| | | | | | | | | | |
| 0951 | 6 | | | | | orange brn | Sandy silt with clay with heavily weathered, iron stained gneiss fragments | 0.0 | dump |
| 0952 / 0954 | 7 | | | | | | | | |
| 0957 | 11 | | | | | orange brn | as above | 0.0 | rods bouncing → poss. cobbles/boulders damp |
| 0959 | 12 | | | | | yellow brn | as above | 0.0 | dump |
| 1002 | 16 | | | | | yellow brn | as above with saprolite → clay with gneissic fabric still evident | 0.0 | dump |
| 1004 | 20.5 | | | overburden | | yellow brn | as above | 0.0 | rods bouncing → very hard dump |
| 1010 | 22 | | | weathered rock | soft / hard | black white gray | gneiss mainly ferromagnesian minerals with less quartz + plagioclase iron staining | 0.0 | dump |
| 1021 / 1229 | 24 | | | | | | | | stop to install 10" temporary casing |
| 1230 | 27 | | | | soft / hard | black gray green white | gneiss with increased quartz + plagioclase iron staining | 0.0 | dry / dusty |
| 1232 | 30 | | | | soft / hard | black gray white | gneiss quartz rich | 0.0 | dump |
| | | | | | | | | | — |

REMARKS Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
12" Tricone Roller Bit with reamer (12' bit assembly)
Attach 10" Air Percussion bit at 24' (6' bit assembly)

BORING NO.
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AR300862

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-22-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1234 | 35 | | | | soft / hard | pink white gray | gneiss microcline + quartz rich seam | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1235 | 40 | | | | soft / hard | pink white gray | as above with some dark ferromagnesian minerals iron staining | 0.0 | damp/dry |
| 1236 / 1238 | 41 | | | | | | | | EOR=2 |
| 1239 | 45 | | | TOR=49' | soft / hard | pink white gray | as above | 0.0 | damp/dry |
| | 49 | | | | | | | | poss. water b/w 48'→49' |
| 1240 | 50 | | | | medium hard | pink white gray | as above | 0.0 | damp/dry minimal dust |
| | | | | | | | | | |
| 1243 | 55 | | | | medium hard | black gray green white pink | gneiss mainly dark ferromagnesian minerals iron staining | 0.0 | dry/dusty |
| | | | | | | | | | |
| 1246 | 60 | | | | medium hard | black gray | as above trace microcline + quartz | 0.0 | dry/dusty |
| 1246 / 1254 | 61 | | | | | | | | blow borehole Q<1GPM |
| 1256 | 65 | | | | hard | black gray | as above | 0.0 | poss. fracture b/w 60'→65' Q<1GPM wet |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300863

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-22-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1300 | 70 | | | | hard | black gray pink white | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | wet |
| | | | | | | | | | |
| 1304 | 75 | | | | hard | black gray pink white | as above | 0.0 | wet |
| | | | | | | | | | |
| 1307 | 80 | | | | hard | black gray pink white | as above heavy iron staining | 0.0 | poss fracture at 76' wet |
| 1307 / 1317 | 81 | | | | | | | | blow borehole → Q= 2-3 GPM. decreasing w/ time EOR = 4 |
| 1319 | 85 | | | | hard | black gray white | gneiss large quartz crystals evident heavy iron staining | 0.0 | wet |
| | | | | | | | | | |
| 1326 | 90 | | | | hard | black gray pink white | gneiss slightly more ferromagnesian minerals than quartz + microcline trace iron staining | 0.0 | wet |
| | | | | | | | | | |
| 1333 | 95 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline trace iron staining | 0.0 | wet |
| | | | | | | | | | |
| 1341 | 100 | | | | hard | black gray green white pink | as above | 0.0 | wet |
| 1342 / 1347 | 101 | | | | | | | | blow borehole → Q= 3-5 GPM, decreasing w/ time EOR = 5 |

REMARKS

BORING NO.

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AR300864

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*

PROJECT NO. *7525*

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. *HN-12D*

DATE *12-22-98*

DRILLER *HARDIN - HUBER*

FIELD GEOLOGIST *M. SETH PELEPKO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1350 / 1432 | 102 | | | | | | | | |
| 1433 | 102.5 | | | | hard | black gray green white | gneiss mainly dark, ferromagnesian minerals trace iron staining | 0.0 | poss fracture Q = 1-3 GPM saturated |
| 1437 | 105 | | | | hard | black gray green white | as above with increased quartz | 0.0 | Q = 1-3 GPM saturated |
| | | | | | | | | | |
| 1444 | 110 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline highly chloritized (green) | 0.0 | Q = 1-3 GPM saturated |
| | | | | | | | | | |
| 1457 | 115 | | | | hard | black gray green white pink | as above with increased quartz + microcline | 0.0 | Q = 1-3 GPM saturated |
| 1500 / 1504 | 116 | | | | | | | | |
| 1506 | 117 | | | | hard | green pink white gray | gneiss microcline + quartz rich seam with some dark, ferromagnesian minerals | 0.0 | Q = 1-3 GPM saturated |
| 1510 | 120 | | | | hard | black gray green white pink | gneiss | 0.0 | poss. fracture b/w 119' → 120' Q = 3-5 GPM |
| 1511 / 1516 | 121 | | | | | | | | FOR = 6 |
| 1520 | 125 | | | | hard | black gray green white pink | as above equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | saturated Q = 3-5 GPM |
| | | | | | | | | | |
| 1524 | 130 | | | | hard | black gray green white pink | gneiss with increased ferromagnesian minerals | 0.0 | saturated Q = 3-5 GPM |

REMARKS

BORING NO.

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AR300865

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-22-98 / 12-28-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1531 | 135 | | | | hard | pink white gray green | gneiss microcline + quartz rich seam with trace, dark ferromagnesian minerals | 0.0 | rods bouncing 131'→133' → poss. fracture, saturated Q=3-5 GPM |
| | | | | | | | | | |
| 1536 | 140 | | | | hard | pink white gray green | as above | 0.0 | saturated Q=3-5 GPM |
| 1538 / 1615 | 141 | | | | | | | | EOR=7 |
| 1619 | 145 | | | | hard | black gray green white | gneiss increased ferromagnesian minerals iron staining | 0.0 | saturated Q=3-5 GPM |
| | | | | | | | | | |
| 1625 | 150 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline iron staining | 0.0 | saturated Q=3-5 GPM |
| 12-22-98 / 12-28-98 1627 / 1632 | 152 | | | 6" steel casing to 152' | | | | | |
| 1634 | 155 | | | | hard | black gray green | gneiss mainly dark, ferromagnesian minerals | 0.0 | dry / dusty |
| 1636 | 159 | | | | hard | black gray green | as above | 0.0 | dry / dusty |
| 1636 / 1640 | 160 | | | | | | | | poss. small fracture b/w 152' → 160' Q=16GPM EOR=8 |
| 1643 | 164 | | | | hard | pink white gray black | gneiss microcline + quartz rich seam with some dark, ferromagnesian minerals | 0.0 | dump / dry minimal dust |
| | | | | | | | | | |
| 1647 | 169 | | | | hard | pink white gray black | as above | 0.0 | dry / dusty |

**REMARKS**
12-28-98
6" Air Percussion bit (5' bit assembly)

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AR300866

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-29-98 / 12-29-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1650 | 174 | | | | hard | pink white gray | gneiss microcline + quartz rich seam trace ferromagnesian minerals | 0.0 | dry/dusty |
| | | | | | | | | | | |
| | 1654 | 179 | | | | hard | black gray white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | dry/dusty |
| 12-28-98 / 12-29-98 | 1655 / 0744 | 180 | | | | | | | | EOR=9 blow borehole → some water (12-29-98) |
| | 0747 | 184 | | | | hard | black gray green white pink | as above | 0.0 | damp/moist |
| | | | | | | | | | | |
| | 0752 | 184 | | | | hard | black gray white pink | gneiss mainly dark, ferromagnesian minerals | 0.0 | damp |
| | 0757 | 193.5 | | | | | | | | dusty |
| | 0758 | 194 | | | | hard | black gray white pink | as above with increased quartz + microcline | 0.0 | damp/dry minimal dust |
| | | 198.5 | | | | | | | | rods bouncing → poss. small fracture |
| | 0804 | 199 | | | | hard | black gray | gneiss mainly dark, ferromagnesian minerals | 0.0 | damp/dry minimal dust |
| | 0805 / 0810 | 200 | | | | | | | | EOR=10 |
| | 0814 | 204 | | | | hard | black gray green white pink | as above | 0.0 | poss. fracture → muddy cuttings damp/moist |
| | | | | | | | | | | — |

REMARKS

BORING NO.

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AR300867

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7535
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-29-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0820 | 209 | | | | hard | black gray white pink | gneiss mainly dark, ferromagnesian minerals some microcline + quartz | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0826 | 214 | | | | hard | black gray white pink | as above | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0834 | 219 | | | | hard | black gray white pink | as above trace microcline + quartz | 0.0 | dry/dusty |
| 0835 / 0843 | 220 | | | | | | | | blow borehole → some mud at bottom of hole EUR=11 |
| 0847 | 224 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | poss. small fracture b/w 221' → 222' Q=1GPM, blows dry by 223.5' |
| | | | | | | | | | damp/dry dusty |
| 0852 | 229 | | | | hard | black gray white pink | gneiss mainly dark, ferromagnesian minerals some microcline + quartz | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0858 | 234 | | | | hard | black gray white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | dry/dusty |
| | | | | | | | | | |
| 0905 | 239 | | | | hard | pink white gray black | gneiss microcline + quartz rich seam with some dark, ferromagnesian minerals | 0.0 | dry/dusty |
| 0907 / 0911 | 240 | | | | | | | | EUR = 12 |

REMARKS

BORING NO.



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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-120
DATE 12-29-95
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0915 | 244 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0921 | 249 | | | | hard | black gray white pink | gneiss mainly dark, ferromagnesian minerals with some quartz + microcline | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0927 | 254 | | | | hard | pink white | gneiss microcline + quartz rich seam trace dark, ferromagnesian minerals | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0933 | 259 | | | | hard | pink white gray black | as above with increased ferromagnesian minerals | 0.0 | dry/dusty |
| 0934 / 0939 | 260 | | | | | | | | EUR=13 |
| 0943 | 264 | | | | hard | black gray green white pink | gneiss mainly dark, ferromagnesian minerals with some quartz + microcline iron staining | 0.0 | muddy/wet poss. small fracture |
| | | | | | | | | | |
| 0947 | 269 | | | | hard | black gray white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | damp/dry dusty |
| | | | | | | | | | |
| 0952 | 274 | | | | hard | pink white | gneiss microcline + quartz rich seam | 0.0 | dry/dusty |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300869

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-12D
DATE 12-29-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEAKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0957 | 279 | | | | hard | pink white | gneiss mainly microcline some quartz + trace dark, ferromagnesian minerals | 0.0 | dry/dusty |
| 0958 / 1110 | 280 | | | | | | | | blow borehole at 1110 → 10 to 20 gallons blown out EOR = 14 |
| | 281 | | | | | | | | poss. fracture Q = 1-2 GPM |
| 1114 | 284 | | | | hard | pink white gray | as above | 0.0 | wet/muddy Q < 1 GPM |
| | | | | | | | | | |
| 1118 | 289 | | | | hard | pink white gray | as above | 0.0 | wet/muddy Q < 1 GPM |
| | | | | | | | | | |
| 1124 | 294 | | | | hard | pink white gray black | as above with increased dark, ferromagnesian minerals | 0.0 | rots bouncing btw 293' → 294' poss. fracture damp/moist |
| | 295.5 | | | | | | | | fracture Q = 5-7 GPM |
| 1129 | 299 | | | | hard | black gray green white pink | gneiss equal percentages of ferromagnesian minerals and quartz + microcline | 0.0 | saturated Q = 5-7 GPM |
| 1130 / 1139 | 300 | | | | | | | | EOR = 15 |
| 1142 | 304 | | | | hard | black gray green white pink | as above with increased chlorite (green) | 0.0 | saturated Q = 5-7 GPM |
| 1144 | 305 | | | TD: 305' | | | | | $Q_{total}$ = 8-10 GPM |
| | | | | | | | | | — |

REMARKS develop borehole for 10 minutes at 305' → formational water becoming clear

BORING NO.

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AR300870

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13S
DATE 11-30-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1224 | 0 | | | | | GRAY | ASPHALT & STONE | | 0.24 |
| | | | | | | BRN | SILT, CLAY, SAND RK. | | 0.0 ppm |
| | | | | | | | FRAGS, COBBLES, BOULDERS | | DAMP |
| 1227 | 5 | | | | | | | | |
| | | | | | | BRN & ORANGE | CLAY, SILT, RK. FRAGS, COBBLES & BOULDERS OF | | MOIST 0.0 ppm |
| 1229 | 10 | | | | | BRN | DOLOMITE, CHERT, QTZ | | |
| | | | | | | | | | POOR RETURNS, BOREHOLE CAVING- MOIST-WET |
| | 15 | | | | | MED. TO DK GRAY | WEATH, BROKEN, FGR DOLOMITE | | 0.0 ppm |
| 1236 | 17.5 | | | | | | | | |
| 1245 1251 | 18 20 | | | | | MED TO DK. GRAY | DOLOMITE, FGR, MASSIVE OR PLATY & ARGILLACEOUS | | CUTTINGS DAMP TO 0.24 |
| | | | | | | | HARDER, LESS WEATHERED | | 0.0 ppm |
| 1254 | 25 | | | | | | | | BEGIN WATER YIELD UP TO 2-3 GPM |
| | 27 | | | T.D. | | | | | 0.0 ppm |

REMARKS 6" DIAM AIR HAMMER TO 27'. OVER-REAM BOREHOLE w/ 10" AIR HAMMER & 10" ROLLER BIT TO 27'.

BORING NO. HN-13S
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AR300871

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13I
DATE 11-24-98, 11-25-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1212 | 0 | | | | | | | | |
| | | | | | | GRAY | ASPHALT & STONE | | DRY |
| | | | | | | BRN | SILT, SAND, CLAY, ROCK FRAGS, COBBLES, BOULDERS | | DAMP |
| | 10 | | | | | BRN & ORANGE-BRN. | CLAY, SILT, RK. FRAGS, BOULDERS, SM WEATH. DOLOMITE | | MOIST |
| | | | | | | DK-MED GRAY | DOLOMITE, V. WEATHERED, FGR, BROKEN, SM. QTZ | | WET TO SATURATED 0.0 ppm |
| 1218 / 1224 | 17 | | | | | | AS ABOVE, HARDER, STILL BROKEN | | DRIER WATER AFTER ROD CONNECTION |
| | | | | | | | 20' AS ABOVE, STILL HARDER | | 0.0 ppm |
| | | | | | | DK-MED GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS. | | DAMP-MOIST ROCK CUTTINGS FDT YLD ~2-3 GPM |
| 11/24 / 11/25 1235 / 0844 / 0854 | 31 / 32 | | | | | | | | 0.0 ppm DRY, DUSTY |
| | | | | | | | AS ABOVE, SM WHITE FRACT. FILLINGS | | |
| | | | | | | | (40' 43' POSS MORE SHALY OR SFT) | | APPX 40'-47' SFT. POSS TRACE MOISTURE 0.0 ppm |
| 0405 / 0410 | 47 | | | | | M-DK GRAY | DOLOMITE, AS ABOVE | | DRY - DUSTY |
| | | | | | | | (58' POS SFT OR SHALY) | | 58' POSS. TRACE MOISTURE 0.0 ppm |
| 0918 / 0920 | 62 | | | | | | | | DRY, DUSTY |
| | 70 | | | | | | | | |

REMARKS 10" DIAM. x 6' LONG AIR HAMMER TO 31'; 6" STEEL CASING TO 30'; 6" DIAM. x 5' LONG AIR HAMMER TO 70'.

BORING NO. HN-13I
PAGE 1 OF 3

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AR300872

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13 I
DATE 11-25-98
DRILLER O. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 70 | | | | | MED-DK GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS; TRACE WHITE FRACTURE FILLINGS | | DRY, V. DUSTY |
| 0428 / 0432 | 77 | | | | | | | | TRACE MOISTURE @ ROD CONNECT 0.0 PPM |
| | | | | | | | | | DRY, DUSTY |
| | | | | | | | | | |
| 0439 / 0442 | 92 | | | | | M-DK GRAY | DOLOMITE, AS ABOVE | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 0449 / 0451 | 107 | | | | | M-DK GRAY | DOLOMITE, AS ABOVE | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | 110' POSS SFT ZONE, TRACE MOISTURE ? |
| | | | | | | | | | |
| 0459 / 1002 | 122 | | | | | M-DK GRAY | DOLOMITE, AS ABOVE | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1010 / 1014 | 137 | | | | | | (AS ABOVE, W/ NUM CLEAR TO WHITE QTZ FRAGMENTS) | | DRY, DUSTY 0.0 PPM |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER, 70'-140'

BORING NO. HN-13I
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* See Legend on Back

AR300873

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13I
DATE 11-25-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | MED-DK GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| 1022/1025 | 152 | | | | | M-DK GRAY | DOLOMITE, AS BEFORE, TRACE QTZ. | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1034/1037 | 167 | | | | | M-DK GRAY SM LT. | DOLOMITE, AS ABOVE | | DRY, DUSTY 0.0 PPM |
| | | | | | | GRAY | | | |
| | | | | | | | | | |
| 1046/1050 | 182 | | | | | M-DK GRAY | DOLOMITE, AS ABOVE (DARKER, POSS MORE SHALY) | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | M-DK GRAY | DOLOMITE AS ABOVE | | POSS SFT ZN @ 195' DRY, DUSTY |
| 1102 | 202 | | | T.D. | | | | | |
| | | | | | | | | | — |

REMARKS 6" DIAM AIR HAMMER 140'-202'. DEVELOP BOREHOLE w/ AIR ... EST. YIELD ≤ 1 GPM EST.

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AR300874

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-19-98, 11-20-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | STRATIG. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1434 | 0 | | | | | | | | |
| | | | | | | GRAY BRN | ASPHALT, STONE SILT, CLAY, SAND, ROCK FRAGS, COBBLES & BOULDERS OF QTZ, CHERT, DOLOMITE | | DRY DAMP-MOIST |
| 1442 / 1551 | 7 | | | | | BRN | AS ABOVE w/ MORE WEATH DOLOMITE | | 0.0 ppm MOIST-WET |
| | | | | | | DK. GRAY TO BLK | DOLOMITE, WEATHERED, FGR, MASSIVE, BROKEN | | 0.0 ppm DAMP-DRY |
| 11/14 1556 / 11/20 0737 | 18 | | | | | DARK | DOLOMITE, TRACES BLK CHERT, QTZ | | WATER ENTERING BOREHOLE DAMP, BROKEN |
| | | | | | | GRAY | VEINS, SHALY ARGILLACEOUS MAT'L & FE-OXIDES | | 0.0 ppm |
| | | | | | | DARK GRAY | DOLOMITE, FGR, TRACE QTZ, ARGILLACEOUS MAT'L, FE-OXIDES | | HARDER, DRIER |
| 0750 / 0754 | 33 | | | | | | AS ABOVE, MOSTLY MASSIVE | | 0.0 ppm V. SL. $H_2O$ AT ROD |
| | | | | | | | | | CONNECT 0.0 ppm 40' DRIED OUT |
| | | | | | | | | | 42'-43' POSS FRACTURE & SOME WATER |
| 0808 / 0816 | 48 | | | | | | AS ABOVE, TRACE WHITE FRACTURE FILLINGS | | 2-3 GPM EST 0.0 ppm |
| | | | | | | | | | |
| 0834 / 0839 | 63 | | | | | | AS ABOVE, SL. MORE LIGHTER | | 2-3 GPM, 0.0 ppm |
| | 70 | | | | | | SHALY, PLATY, ARGILLACEOUS MAT'L. | | — |

REMARKS 12" DIA. x 12' LONG ROLLER BIT TO 7'; 10" DIA x 6' LONG AIR HAMMER TO 18'; 12" DIA REAMER TO 18'; 10" TEMP CSG. TO 18'; 10" DIA. AIR HAMMER TO 70'.

BORING NO. HN-13D
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* See Legend on Back

AR300875

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-20-98
DRILLER J. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 70 | | | | | MED. TO DARK GRAY | DOLOMITE, FGR, MOSTLY MASSIVE, TRACE TO SOME PLATY OR ARGILLACEOUS MAT'L | | 2-3 GPM 0.0 PPM |
| 0853 / 0904 | 78 | | | | | | | | |
| | | | | | | | AS ABOVE, TR/ QTZ, FE-OXIDES, ARGILLACEOUS MAT'L | | |
| | | | | | | | (MOSTLY MASSIVE, POSS SL. BROKEN) | | |
| 0922 / 0933 | 93 | | | | | | (MOSTLY MASSIVE, SOME THIN, WHITE FRACTURE FILLINGS) | | 2-3 GPM |
| | | | | | | | | | 0.0 PPM |
| | | | | | | M-DK GRAY | DOLOMITE AS ABOVE | | POSS. SL WATER INCREASE FR/ LAST RUN; POSS MORE BROKEN |
| 0950 / 1001 | 108 | | | | | | | | 100 - 105' EST 3-5 GPM |
| | | | | | | | DOLOMITE AS ABOVE, POSS MORE ARGILLACEOUS | | 0.0 PPM |
| | | | | | | M-DK GRAY | DOLOMITE, FGR, ALT MASSIVE OR PLATY & ARGILLACEOUS | | 3-5 GPM 0.0 PPM |
| 1019 / 1028 | 123 | | | | | | | | |
| | | | | | | | AS ABOVE W/ SM WHITE FRAC. FILLINGS | | |
| 1046 / 1054 | 138 | | | | | | AS ABOVE, SM BLK CHERT & QTZ VEINS | | 3-5 GPM 0.0 PPM |

REMARKS 10" DIA. x 6' LONG AIR HAMMER FR/ 70' — 140'.

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-20-98, 11-23-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | | | | |
| | | | | 6" STEEL CSG. | | MED. GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS | | |
| | | | | | | | | | EST 3-5 GPM |
| 11/20 1110 / 11/23 1126 | 153 | | | 6" OPEN HOLE | | | DOLOMITE, AS ABOVE | | 0.0 PPM WET |
| | | | | | | | | | MOIST DAMP |
| | | | | | | | | | 0.0 PPM DRY |
| 1134 / 1143 | 167 | | | | | LT-MED GRAY | DOLOMITE, AS ABOVE | | DRY, DUSTY |
| | | | | | | | | | |
| | | | | | | | | | |
| 1151 / 1155 | 182 | | | | | | | | DRY, V DUSTY 0.0 PPM |
| | | | | | | M-DK. GRAY | DOLOMITE, AS ABOVE, POSS. MORE ARGILLACEOUS | | |
| | | | | | | | | | DRY, V. DUSTY, 0.0 PPM |
| 1204 / 1209 | 197 | | | | | | DOLOMITE, AS ABOVE, SM THIN WHITE FRACTURE FILLINGS | | |
| | | | | | | | | | |
| | 210 | | | | | | | | DRY, V DUSTY 0.0 PPM |

REMARKS 10" DIAM. X 6' LONG AIR HAMMER 140'-153'. 6" STEEL CSG 0'-149'. 6" DIAM X 5' LONG AIR HAMMER 153'-210'

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-23-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| 1218/1222 | 212 | | | | | LT-MED. GRAY | DOLOMITE, FGR, ALT. MASSIVE, OR PLATY & ARGILLACEOUS | | DRY, V. DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1232/1238 | 227 | | | | | | | | DRY, V. DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | LT. GRAY | DOLOMITE, AS ABOVE | | |
| 1246/1251 | 242 | | | | | | | | DRY, V. DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1300/1306 | 257 | | | | | LT-MED. GRAY | DOLOMITE, AS ABOVE | | DRY, V. DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1312/1314 | 272 | | | | | | | | DRY, V. DUSTY 0.0 PPM |
| | 280 | | | | | | | | — |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER, 210' – 280'.

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-23-98
DRILLER O. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | LT-MED GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS | | DRY, V DUSTY 0.0 PPM |
| 1325 / 1330 | 287 | | | | | | (AS ABOVE, POSS MORE MASSIVE) | | DRY, V DUSTY |
| | | | | | | | | | 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1340 / 1350 | 307 | | | | | MED-DK GRAY | DOLOMITE, AS ABOVE, TRACE WHITE FRACTURE FILLING | | TRACE WATER @ ROD CONNECT 0.0 PPM |
| | | | | | | | | | DRYING-OUT |
| | | | | | | | | | DRY, V DUSTY |
| | | | | | | | | | |
| 1600 / 1610 | 327 | | | | | MED-DK GRAY | DOLOMITE, AS ABOVE | | TRACE WATER @ ROD CONNECT 0.0 PPM |
| | | | | | | | | | DRYING-OUT |
| | | | | | | | | | DRY, V DUSTY |
| | | | | | | | | | |
| 1622 / 1633 | 347 | | | | | | | | TRACE WATER @ ROD CONNECT 0.0 PPM |

REMARKS 6" DIAM x 5' LONG AIR HAMMER, 280' - 350'

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-13D
DATE 11-23-98
DRILLER D. TAYLOR, HARDIN HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 350 | | | | | DK. GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS | | POSS SFT OR FRAC @ 350, TRACE WATER 0.0 PPM |
| | 360 | | | | | | | | BECOMING DUSTY 360' SFT OR FRAC. |
| | | | | | | TAN OR BUFF | CHERT, SM DK GRAY TO BLK ARGILLACEOUS MAT'L. | | 362'-364 FRACT. NO DUST WATER 10-15 GPM |
| 1443 / 1656 | 367 | | | | | | | | 0.0 PPM WATER FAIRLY CLEAN |
| | | | | | | M-DK GRAY | DOLOMITE, FGR, ALT. MASSIVE OR PLATY & ARGILLACEOUS; QTZ FRAGS; RUSTY FE-OXIDES; | | SFT / BROKEN; INCL WATER & FINES |
| 1700 | 378 | | | T.D. | | | CLAY FINES. | | EST ≥ 15 GPM 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | NOTE: DIFFICULT TO DRILL & LIFT WATER BELOW 365' DUE TO LIMITED AIR SUPPLY (500 CFM) | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS 6" DIAM x 5' LONG AIR HAMMER 350' – 378'. DEVELOP BOREHOLE W/ AIR

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-145
DATE 11-03-98
DRILLER Harbin-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1322 | 0 | | | | | light brn ↓ brn | clayey silt with roots, pebbles, + cobbles | 0.0 | dry ↓ damp |
| | 5 | | | | | orange brn | sandy clay | 0.0 | |
| 1332 / 1335 | 8 | | | | | orange brn | as above with quartz + argillaceous rock fragments | 0.0 | rods bouncing since 7.5' poss. cobbles + boulders EOR=1 |
| 1340 | 12.5 | | | | | orange brn | as above | 0.0 | rods bouncing intermittently since 10.5' poss. cobbles + boulders |
| 1343 / 1350 | 18 | | | | | orange brn | as above iron staining | 0.0 | EOR=2 |
| 1353 | 19.5 | | | | | orange brn | as above with quartzite fragments | 0.0 | rods bouncing @ 19.5' → poss. cobbles + boulders |
| 1404 | 27.5 | | | | | orange brn | as above w/o quartzite fragments | 0.0 | |
| 1406 / 1414 | 28 | | | | | | | | EOR=3 |
| 1419 | 32 | | | | | orange brn | as above with quartzite + chert fragments | 0.0 | |
| 1430 | 37.5 | | | | | orange brn | as above w/o quartzite + chert fragments | 0.0 | |
| 1431 / 1437 | 38 | | | | | | | | EOR=4 |
| 1440 | 43 | | | | | orange brn | as above | 0.0 | |
| 1443 / 1450 | 48 | | | | | orange brn | as above w/ cherty black fragments | 0.0 | EOR=5 |
| 1505 | 53 | | | | | orange brn | as above w/o chert | 0.0 | — |

REMARKS Mobile Drill B-80 Drill Rig
6" Mud Rotary drilling
1.5' Tricone Roller Bit assembly

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. MN-14S
DATE 11-03-98 / 11-04-98
DRILLER Hardin-Huber
FIELD GEOLOGIST M Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1510 | 57 | | | | | yellow gray | Sandy clay with quartz + argillaceous rock fragments, iron staining | 0.0 | |
| 1512 / 1516 | 58 | | | | | | | | EUR = 6 |
| 1526 | 63 | | | | | orange brn | as above with micaceous, reflective rock fragments → poss. phyllite | 0.0 | |
| 1537 / 1545 | 68 | | | | | orange brn | as above | 0.0 | EUR = 7 |
| 1558 | 73 | | | | | orange brn | as above | 0.0 | |
| 1604 / 1635 | 78 | | | | | orange brn | as above | 0.0 | EUR = 8 |
| 1642 | 83 | | | | | orange brn | as above | 0.0 | |
| 11-03-98 1645 / 11-04-98 1102 | 88 | | | overburden saprolite | | orange brn | as above w/o micaceous, reflective rock fragments | 0.0 | EUR = 9 |
| 1104 | 93 | | | | soft | gray | lt. gray → gray argillaceous rock → shale + vein quartz heavy iron staining | 0.0 | penetration rate slows → poss overburden / saprolite interface |
| 1109 | 95 | | | | soft | gray | as above | 0.0 | |
| 1121 / 1126 | 98 | | | | | | | | EUR = 10 |
| 1128 | 99 | | | | soft | gray | as above | 0.0 | |
| 1133 | 102 | | | | soft | gray | as above with micaceous, reflective cuttings → poss. phyllite | 0.0 | minimal return |
| | | | | TD = 102' | | | | | |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-14I
DATE 10-21-98 / 10-22-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1440 | 0 | | | | | light brn ↓ brn | clayey silt with roots, pebbles, + cobbles | | dry ↓ damp |
| 1445 | 5 | | | | | yellow brn | sandy clay with quartzite fragments | | damp |
| 1457 | 10 | | | | | light brn | as above | | |
| 1459 | 15 | | | | | yellow brn | sandy silt with clay with quartzite fragments | | |
| 1502 | 20 | | | | | orange brn | sandy clay with quartzite fragments | | |
| 1505 | 25 | | | | | orange brn | as above mottled appearance since 22' | | ↓ |
| 1506 / 1513 | 28 | | | | | yellow brn | sandy silt with clay with quartz + quartzite fragments | | ↓ EOR = 1 |
| | 33 | | | | | orange brn | as above with possible gray carbonate fragment w/o quartzite | | moist ↓ |
| | 35 | | | | | orange brn | as above | | ↓ |
| 1523 | 43 | | | | | | no return | | possible caving |
| | 48 | | | | | | no return | | possible caving EOR = 2 |
| 10-21-98 / 10-22-98 1607 | 49 | | | | | yellow brn | sandy clay | | moist ↓ |
| 1608 | 53 | | | | | yellow brn | as above with gray, soft argillaceous fragments | | ↓ |
| 1612 | 58 | | | | | yellow brn | sandy silt with clay with gray, soft argillaceous fragments | | ↓ |

**REMARKS** Ingersoll-Rand TH-60 Drill Rig
Air Rotary Drilling
10" Tri-Cone roller bit (12' bit assembly)
10-22-98 10" Tri-cone roller bit (40" bit assembly)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CRUSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-14I
DATE 10-22-98 / 10-23-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEAKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1617 | 62 | | | | | yellow brn | sandy silt with clay | 0.0 | moist |
| | 65 | | | | | yellow brn | as above with rock fragments of varying hardness | 0.0 | |
| 1621 | 69 | | | | | yellow brn | as above with gray, soft argillaceous fragments | 0.0 | |
| 1628 | 74 | | | | | orange brn | as above | 0.0 | minimal return |
| 1634 | 75 | | | | | | no sample | | minimal return → poss. caving |
| 10-22-98 23-98 0815 | 77 | | | | | | no sample | | no return |
| 0820 | 80 | | | | | yellow brn | sandy clay | 0.2 | moist EOR=4 |
| 0825 | 83 | | | | | gray | as above | 0.2 | |
| | 85 | | | overburden → saprolite | soft | yellow brn, gray | argillaceous rock → shale with sandy clay | 0.2 | moist ↓ wet |
| 0834 | 89 | | | | soft | gray | argillaceous rock → shale with vein quartz + iron staining | 0.2 | wet/muddy minimal return |
| 0941 | 96 | | | | soft | gray | lt → dk gray argillaceous rock → shale with vein quartz + iron staining | 0.2 | wet/muddy rods bouncing @ 90' minimal return since 90' |
| 0854 | 98 | | | | soft | gray | as above with micaceous, reflective cuttings → poss. phyllite | 0.2 | wet/muddy |
| 0857 | 100 | | | | soft | gray | as above | 0.2 | wet/muddy EOR=5 |
| 0900 | 104 | | | | soft | gray | as above | 0.2 | wet/muddy rods bouncing |

**REMARKS**

10-23-98 10" Tri-cone roller bit (40" bit assembly)

**BORING NO.**

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-14I
DATE 10-23-98 / 10-26-98 / 10-30-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0907 | 107 | | | | soft | gray | lt. → dk. gray siltstone rock → shale with vein quartz + micaceous, reflective material → poss phyllite + iron staining | 0.2 | wet / muddy runs boundary |
| | | 115 | | | | | | no sample | | |
| 10-23-98 / 10-26-98 | | 120 | | | | soft | gray | as @ 107' | 0.2 | wet / muddy EOR=6 |
| | 1133 | 125 | | | | soft / hard | gray | as above with sandy + clayey material | 0.0 | saturated, v. broken rock Q < 1 GPM |
| | 1136 | 130 | | | | soft / hard | gray | as above | 0.0 | |
| | 1143 | 135 | | | | soft / hard | gray | as above | 0.0 | |
| | 1147 / 1444 | 140 | | | | soft / hard | gray | as above | 0.0 | EOR=7 |
| | 1451 | 145 | | | | soft / hard | gray | as above | 0.0 | saturated Q = 20-40 GPM |
| 10-26-98 / 10-30-98 | 1457 / 1000 | 146.5 | | | | soft / hard | gray | as above v. hard seam → prob. quartz rich | 0.0 | runs boundary refusal with tricone roller bit |
| | 1007 | 149 | | | | soft / hard | gray | as above | 0.0 | saturated Q = 20-40 GPM |
| | 1009 | 152 | | | | | | no sample | | poss. Q increase @ 150' saturated Q = 20-40 GPM |
| | | | | | TD=152.4' | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | — |

**REMARKS**

10-28-98 10" Tri-cone Roll-bit (40" bit assembly)
10-30-98 6" Air Percussion bit (5' 7" bit assembly)

BORING NO.
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* See Legend on Back

AR300885

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT *Crossley Farm RI/FS*
PROJECT NO. *7625*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-14D*
DATE *11-05-96*
DRILLER *Harbin-Huber*
FIELD GEOLOGIST *M. Seth Pelepko*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0845 | 0 | | | | | light brn ↓ brn | clayey silt with roots, pebbles, + cobbles | | dry ↓ damp |
| 0850 | | | | | | orange brn | sandy clay w/ quartz + argillaceous fragments iron staining | 0.0 | rods bouncing since 3' → poss cobbles, boulders |
| 0857 | 10 | | | | | orange brn | as above with abundant quartzite fragments | 0.1 | rods bouncing vigorously @ 11' |
| 0906 | | | | | | | as above with micaceous, reflective fragments → poss. phyllite | 0.2 | -- -- |
| 0912 / 0920 | 20 | | | | | orange brn | as above with poss. black carbonate | 0.2 | rods bouncing @ 16' FOR=1 |
| 0927 | | | | | | | as above with chert fragments w/o carbonate + micaceous fragments | 0.0 | rods bouncing from 21' → 21.5' dramatically increasing, mud thickening |
| 0930 / 0934 | 30 | | | | | orange brn | as above | 0.0 | FOR=2 |
| 0945 | | | | | | | as above w/o quartzite | 0.0 | |
| 0961 / 1004 | 40 | | | | | yellow gray | as above w/ trace black sandy fragments | 0.0 | rods bouncing since 37.5' FOR=3 |
| 1013 | | | | | | orange brn | as above w/o sandy fragments | 0.0 | |
| 1018 / 1033 | 50 | | | | | yellow gray | as above | 0.0 | FOR=4 |
| 1038 | | | | | | orange brn | as above w/ trace white clay | 0.0 | rods bouncing @ 54' |
| 1064 / 1100 | 60 | | | | | orange brn | as above w/ micaceous, reflective fragments → poss. phyllite + black sandy fragments w/o white clay | 0.0 | FOR=5 |
| 1103 | | | | | | | as above w/o sandy fragments | 0.0 | — |

**REMARKS** *Mobile Drill B-80 Drill Rig*
*Mud Rotary Drilling*
*10" Tricone Roller Bit (3' bit assembly)*

**BORING NO.**
**PAGE** *1* **OF** *7*

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AR300886

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-140
DATE 11-05-96
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1107 / 1113 | 70 | | | | | yellow gray | sandy clay with quartz + argillaceous fragments + trace white clay iron staining | 0.0 | EOR=6 |
| 1120 | | | | | | orange brn | as above with trace micaceous, reflective fragments → poss. phyllite w/o white clay | 0.0 | |
| 1126 / 1132 | 80 | | | | | orange brn | as above with large chert fragment (~0.25") | 0.0 | EOR=7 |
| 1136 | 84 | | | | | | as above with trace chert | 0.0 | |
| 1155 | 89 | | | overburden saprolite | soft | gray | lt. → dk. gray argillaceous rock → shale, trace micaceous, reflective cuttings → poss. phyllite, vein quartz, trace chert + white clay iron staining | 0.0 | slow drilling → poss. overburden / saprolite interface b/w 84' → 89' |
| 1157 / 1338 | 90 | | | | | | | | EOR=8 |
| 1339 | 91.5 | | | | soft | gray | as above | 0.0 | rods bouncing since 91' |
| 1343 | 98.5 | | | | soft | gray | as above | 0.0 | |
| 1344 / 1351 | 100 | | | | | | | | rods bouncing since 99.5' EOR=9 |
| 1356 | 101.5 | | | | soft | gray | as above | 0.0 | slow drilling |
| 1420 | 105 | | | | | | as above | | |
| 1430 / 1441 | 110 | | | | soft | gray | as above | 0.0 | rods bouncing since 104' EOR=10 |
| 1452 | | | | | | | as above w/o micaceous, reflective cuttings | 0.0 | rods bouncing @ 112' |
| 1506 / 1513 | 120 | | | | soft | gray | as above w/o white clay | 0.0 | rods bouncing v. gravelly @ 117.5' (1457) → v. hard seam → prob qtz + chert EOR=11 |

REMARKS

BORING NO.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT ROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-140
DATE 11-05-98 / 11-06-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1535 | 125 | | | | soft | gray | H. → dk. gray argillaceous rock → shale, vein quartz iron staining | 0.0 | |
| 11-05-98 / 11-06-98 | 1559 / 0845 | 126 | | | | | | v. hard seam → prob. quartzite | | drilling mud lost to formation → v. broken rock |
| | 0850 | 128 | | | | soft | gray | H. → dk gray argillaceous rock → shale, vein quartz + micaceous, reddish cuttings → poss. phyllite iron staining | 0.0 | |
| | 0854 / 0902 | 130 | | | | | | | | EOR=12 |
| | 0903 | 131 | | | | soft | gray | as above | 0.0 | |
| | 0910 | 135 | | | | soft | gray | as above | 0.0 | |
| | 0926 / 0948 | 140 | | | | soft | gray | as above | 0.0 | EOR=13 |
| | 1000 | | | | | soft / hard | | as above | 0.0 | |
| | 1019 / 1044 | 150 | | | | soft / hard | gray | as above | 0.0 | EOR=14 |
| | 1100 | | | | | | | as above with some massive cuttings → poss. mudstone/claystone | 0.0 | |
| | 1116 | 160 | | | | medium hard | gray | as above w/o massive cuttings | 0.0 | |
| | | | | | | soft / hard | | as above | 0.0 | EOR=15 |
| | 1350 | 170 | | | | soft / hard | gray | as above | 0.0 | rods bouncing |
| | 1354 / 1401 | 172 | | | | | | no return | | drilling mud lost to formation → prob. v. broken rock |

REMARKS
Mud Rotary Drilling
11-06-98 10" Tricone Roller Bit (3' bit assembly)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT (RUSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-14D
DATE 11-06-98 / 11-09-98 / 11-10-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1455 | 175 | | | | | | no return | | test drilling → poss. clay rich seam or v. broken rock |
| 11-06-98 / 11-09-98 | 1500 / 1314 | 190 | | | | soft | gray | H. → dk. gray argillaceous rock → shale, micaceous, reflective cuttings → poss. phyllite, vein quartz, iron staining | 0.0 | |
| | 1332 / 1352 | 185 | | | | soft | gray | as above w/ trace white clay | 0.0 | EOR = 16 |
| | 1408 | | | | | medium hard | | as above w/o white clay | 0.0 | |
| | 1420 | 195 | | | | soft / hard | gray | as above | 0.0 | |
| | 1433 | | | | | soft | | as above w/o micaceous, reflective cuttings | 0.0 | |
| | 1449 / 1503 | 205 | | | | soft | gray | as above | 0.0 | EOR = 17 |
| | 1524 | | | | | | | as above w/ micaceous, reflective cuttings → poss. phyllite | 0.0 | |
| | 1540 | 215 | | | | soft | gray | as above | 0.0 | rods bouncing intermittently since 200' |
| | 1556 | | | | | soft / hard | gray, buff | argillaceous + sandy + massive, finely crystalline dolomite with vein quartz iron staining | 0.0 | |
| 11-09-98 / 11-10-98 | 1613 / 0837 | 225 | | | | soft / hard | gray, buff | as above with micaceous, reflective cuttings → poss. phyllite | 0.0 | EOR = 18 |
| | 0857 | | | | | soft | gray brn, brn | argillaceous dolomite with vein quartz iron staining | 0.0 | rods bouncing at 227.5' |
| | 0913 | 235 | | | | soft / hard | gray brn, brn | as above | 0.0 | |
| | 0938 | | | | | soft / hard | gray, brn | as above with micaceous, reflective cuttings → poss. phyllite w/o vein quartz | 0.0 | — |

**REMARKS**

11-09-98 / 11-10-98 Mud Rotary Drilling
10" Tricone Roller Bit (3' bit assembly)

**BORING NO.**

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-MD
DATE 11-10-98 / 11-16-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1002 | 244 | | | | med hard / soft | gray, brn | argillaceous + sandy dolomite with micaceous, reflective cuttings → poss. phyllite + vein quartz iron staining | 0.0 | |
| 1011 / 1040 | 245 | | | | | | | | EOR = 19 |
| 1056 | 247.5 | | | | | gray, brn | as above with trace white clay w/o sandy dolomite | 0.0 | |
| 1107 | 250 | | | | soft / hard | gray, buff | argillaceous + massive, finely crystalline (cherty) dolomite vein quartz + micaceous, reflective cuttings iron staining | 0.0 | |
| 1130 | 255 | | | | | | as above | 0.0 | |
| 1142 / 1338 | 257 | | | | | | | | |
| 1354 | 260 | | | | soft / hard | gray, buff, brn gray | as above | 0.0 | |
| 1419 / 1434 | 265 | | | | soft / hard | gray, buff, brn gray | as above with trace white clay | 0.0 | EOR = 20 |
| 1509 | | | | | | | as above | 0.0 | |
| 1529 | 275 | | | | soft / hard | gray, buff, brn gray | as above | 0.0 | |
| 1615 | 280 | | | 6" steel casing to 282' | | | as above | 0.0 | |
| 11-10-98 1703 / 1-16-98 1642 | 284 | | | | | | | | |
| 1644 | 287 | | | | soft / hard | gray, buff, brn gray | as above w/o white clay + micaceous, reflective cuttings | 0.0 | poss. fracture wet/muddy Q<1GPM |
| 1647 | 292 | | | | | | as above | | saturated Q = 5-7 GPM |

**REMARKS**

11-16-98 Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
6" Air Percussion Bit (5' Bit assembly)

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT (ROSSLEY FARM RI/FS

PROJECT NO. 7525

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. HN-14D

DATE 11-16-98 / 11-17-98 / 11-19-98

DRILLER

FIELD GEOLOGIST

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 11-16-98 / 11-17-98 | 1649 / 1026 | 296 | | | | | | | | Q = 5-7 GPM saturated EUR = 21 |
| | 1027 | 297 | | | | soft | gray, tan gray | argillaceous dolomite iron staining | 0.0 | saturated Q = 5-7 GPM |
| | 1029 | 301 | | | | soft / hard | gray, buff | massive, finely crystalline (chalky) argillaceous dolomite with vein quartz iron staining | 0.0 | |
| | 1036 | 306 | | | | soft / hard | gray, buff, tan gray | argillaceous to more massive, finely crystalline (chalky) dolomite with vein quartz iron staining | 0.0 | |
| | 1039 | 311 | | | | soft | gray, dk gray | argillaceous + massive, finely crystalline dolomite with vein quartz, minor iron staining | 0.0 | |
| | 1044 / 1234 | 316 | | | | soft | gray, dk gray | as above | 0.0 | EUR = 22 |
| | 1239 | 321 | | | | soft / hard | gray ↓ dk. gray, buff | as above | 0.0 | |
| | 1244 | 325 | | | | soft / hard | lt. gray ↓ dk. gray, buff | as above | 0.0 | |
| 11-17-98 / 11-19-98 | 1248 / 1046 | 328 | | | | | | | | |
| | 1047 | 330 | | | | soft | gray | lt → dk. gray argillaceous dolomite iron staining | 0.0 | |
| | 1050 | 333 | | | | soft | dk. gray | argillaceous dolomite with vein quartz iron staining | 0.0 | |
| | 1052 / 1131 | 336 | | | | | | | | EUR = 23 |
| | 1132 | 337 | | | | soft | dk. gray | as above with more iron staining | 0.0 | |
| | 1135 | 341 | | | | soft / hard | gray, dk gray, buff | as above with massive, finely crystalline dolomite | 0.0 | |

**REMARKS**

11-17-98/11-19-98 Ingersoll Rand TH-60 Drill Rig
Air Rotary Drilling
6" Air Percussion Bit (5' bit assembly)

**BORING NO.**

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RSIFS

PROJECT NO. 7525

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. HN-140

DATE 11-19-98

DRILLER HARDIN-HUBER

FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1139 | 346 | | | | soft / hard | gray, buff | argillaceous + massive, finely crystalline dolomite with sandy material + abundant vein quartz iron staining | 0.0 | saturated Q = 5-7 GPM |
| | 349 | | | | | | | | possible fracture → disturbed water thinner rotor Q = 8-10 GPM |
| 1143 | 351 | | | | soft / hard | gray, buff | as above | 0.0 | poss. fracture zone saturated Q = 8-10 GPM |
| 1145 / 1307 | 356 | | | | soft / hard | gray, buff | as above | 0.0 | EOR = 24 |
| 1304 | 360 | | | | soft | dk. gray | argillaceous dolomite with vein quartz. heavy iron staining | 0.0 | |
| 1312 | 365 | | | | soft | dk. gray | as above with v. weathered sandy material | 0.0 | |
| 1317 | 368 | | | | soft / hard | lt. gray ↓ dk. gray, buff | as above | 0.0 | more competent formational material, end fracture zone |
| 1320 | 371 | | | | soft / hard | lt. gray ↓ dk. gray, buff | argillaceous + massive, finely crystalline dolomite with vein quartz + sandy material iron staining | 0.0 | |
| 1325 | 376 | | | | soft / hard | lt. gray ↓ dk. gray, buff | as above | 0.0 | EOR = 25 |
| | | | | TD: 376.5' | | | | | |

REMARKS

BORING NO.

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**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15S
DATE 1-12-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1008 | 0 | | | | | BRN | SILT LOAM, SILTY CLAY, QTZT COBBLES & SMALL BOULDERS | | FROZEN DAMP TO MOIST |
| | | | | | | ORANGE BRN | CLAYEY SAND | | |
| 1012 | 10 | | | | | BRN, TAN, REDDISH | CLAYEY SAND THROUGH VERY WEATHERED QUARTZITE, ALT. | | MOIST 0.0 PPM |
| | | | | | | BRN, RUSTY | HARDER & SOFTER LAYERS. RUSTY STAINED | | |
| 1014 / 1022 | 17 | | | | | BRN, GRAY, | WEATHERED QUARTZITE, NUM RUSTY STAINS | | MOIST 0.0 PPM |
| | | | | | | REDDISH BRN | | | |
| | | | | | | | | | |
| 1031 / 1041 | 32 | | | | | VAR. | QUARTZITE AS ABOVE --- NUM. SOFTER MORE WEATH OR FRACTURED ZONES | | MOIST 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1045 / 1050 | 47 | | | | | VAR. | QUARTZITE AS ABOVE --- SOME SILVERY ARGILLACEOUS MAT'L ... ALT HARDER & | | MOIST 0.0 PPM TO WET SOME STEAM, THEN |
| | | | | | | | SOFTER ... VARIABLE WEATHERING. | | MUD AFTER ROD CONNECTION 0.0 PPM |
| | | | | | | | | | |
| 1054 | 62 | | | T.D. | | | LOWER 1 FT HARDER QTZT | | MOIST TO WET 0.0 PPM DEVELOP w/ AIR |
| | | | | | | | | | TO TOTAL YIELD APPX 1-2 GPM. |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER 0' TO 62'.

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AR300893

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15 I
DATE 1-7-99
DRILLER J. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0810 | 0 | | | | | BRN | SILT LOAM, SILTY CLAY, QTZT COBBLES & BOULDERS | | FROZEN DAMP TO MOIST |
| | | | | | | ORANGE BRN | SANDY CLAY | | MOIST 0.0 PPM |
| 0818 / 0820 | 8 | | | | | BRN, TAN, RED-BRN, RUSTY | CLAYEY SAND - SANDY CLAY & V. WEATH QUARTZITE | | |
| 0842 | 15 | | | | | PINK, BRN, GRAY | V. WEATH QUARTZITE, RUSTY STAINED, ALT MOD HARD TO HARD | | MOIST 0.0 PPM |
| | | | | | | BRN | CLAYEY, SILTY SAND TO EXTREMELY WEATH. QTZT, SOFT | | MOIST TO WET 0.0 PPM |
| 0855 / 1138 | 22.5 | | | | | BRN, TAN, RUSTY | WEATHERED QUARTZITE | | MOIST 0.0 PPM |
| | | | | | | BRN | SAND & V. WEATH. QTZT. | | MOIST TO WET |
| | | | | | | GRAY TO DK. GRAY | WEATH. QTZT, BROKEN, SM. RUSTY STAINS, SM BRN & CLEAR QTZ FRAGMENTS. | | |
| 1142 / 1148 | 33 | | | | | | | | |
| | | | | | | | QTZT AS ABOVE: VERY BROKEN, NUM SOFT, V. WEATH ZONES | | 0.0 PPM MOIST TO WET |
| | | | | | | | SOME INTERBEDDED CLAYEY OR ARGILLACEOUS MAT'L | | |
| 1152 / 1200 | 48 | | | | | PINK, | QUARTZITE AS ABOVE: STILL | | |
| | | | | | | RED, BRN, GRAY | WEATHERED, SOME RUSTY STAINS, OCC. BROKEN OR FRACTURED | | MOIST TO WET 0.0 PPM |
| | | | | | | | (SM CLEAR QTZ FRAGS ... POSS QTZ PEBBLE CONGLOMERATE) | | |
| 1204 / 1209 | 63 | | | | | VAR. | QTZT AS ABOVE | | WET TO SATURATED |
| | 70 | | | | | | | | TRACE WATER 0.0 PPM POSS FRAC @ 70' |

REMARKS 12" DIAM. x 12' LONG ROLLER BIT TO 22.5'. 10" STEEL TEMP. CSG. TO 14'. 10" DIAM x 6' LONG AIR HAMMER TO 70'.

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15 I
DATE 1-7-99, 1-11-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1213 | 70 | | | | | | | | |
| | | | | | | PINK, GRAY, BRN, RUSTY | WEATH. QUARTZITE, HARDER, BUT STILL BROKEN | | ≤ 1 GPM, TRACE MUD & WATER 0.0 PPM |
| 1215 / 1220 | 78 | | | | | | LOTS OF REDDISH BRN & RUSTY STAINING, TRACE CLAYS & ARGILLACEOUS MAT'L | | MUDDY AFTER ROD CONNECT, 0.0 PPM |
| | | | | 11-11-11 | | PINK, GRAY, BRN | QUARTZITE, HARDER & MORE COMPETENT / LESS WEATHERED; VITREOUS, RE-CRYSTALLIZED | | HARDER @ 80 POSS SL. $H_2O$ INJ. |
| | | | | 10" BOREHOLE | | | LIGHTER COLORED | | |
| | | | | 6" STEEL CSG. | | | (SOME CLEAR TO WHITE QUARTZ FRAGMENTS) | | EST 1 GPM, CLEAN UP TO 5 GPM 0.0 PPM |
| 1/7 1/11 1230 / 1225 | 93 | | | | | | (SOME RUSTY STAINING) | | DAMP 0.0 PPM |
| | | | | 6" BOREHOLE | | | | | SOFT WEATH. OR FRACTURED ZONE APPX 100' TO 103' |
| | | | | | | PINK, GRAY, BRN | QUARTZITE AS ABOVE --- OCCASIONAL THIN SOFT OR WEATHERED ZONES | | DAMP 0.0 PPM |
| 1230 / 1233 | 107 | | | | | | | | WET TO SAT. AFTER ROD CONNECTION |
| | | | | | | | | | 0.0 PPM |
| | | | | | | | 115'-120' OCC SMALL FRACTURES OR THIN WEATHERED LAYERS. | | MOIST - WET |
| 1239 / 1242 | 122 | | | | | PINK, GRAY, | QUARTZITE AS ABOVE | | 0.0 PPM |
| | | | | | | BRN | (FEW THIN SOFT, WEATH. LAYERS OR FRACTURES) | | |
| | | | | | | | (SOME V. LT. GRAY QUARTZITE) | | MOIST TO WET |
| 1247 / 1251 | 137 140 | | | | | | QUARTZITE AS ABOVE; SOME CLEAR QUARTZ FRAGMENTS | | 0.0 PPM |

**REMARKS** 10" DIAM. x 6' LONG AIR HAMMER 70' TO 93'. 6" STEEL CASING 0' TO 92.5'. 6" DIAM x 5' LONG AIR HAMMER 93' TO 140'.

**BORING NO.** HN-15 I
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AR300895

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15 I
DATE 1-11-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | | QUARTZITE AS BEFORE, SM CLEAR QUARTZ FRAGMENTS | | MOIST - WET 0.0 ppm |
| | | | | | | V.LT. GRAY-WHITE | QUARTZITE, VITREOUS, RE-CRYSTALLIZED | | |
| 1257 | 152 | | | TOTAL DEPTH | | M-DK. GRAY | QUARTZITE, SOME PHYLLITE | | MOIST - WET 0.0 ppm |
| | | | | | | | | | DEVELOPE W/ AIR TO TOTAL YIELD OF APPX 3 GPM. 0.0 ppm |

REMARKS 6" DIAM x 5' LONG AIR HAMMER 140' TO 152'.

BORING NO. HN-15 I
PAGE 3 OF 3

* See Legend on Back

AR300896

BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15I
DATE 1-11-99, 2-4-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 140 | | | | | | | | |
| | | | | | | | | QUARTZITE AS BEFORE, SOME CLEAR QTZ FRAGMENTS | | MOIST - WET 0.0 PPM |
| | | | | | | | V. LT. GRAY - WHITE | QUARTZITE, VITREOUS, RE-CRYSTALLIZED | | DEVELOP TO 150' |
| 1/11 2/4 | #257 1021 | 152 | | | | | M-DK. GRAY PINK, BRN, | QUARTZITE, SM PHYLLITE QUARTZITE | | YIELD ≈ 3 GPM 0.0 PPM |
| | | | | | | | GRAY LT. GRAY TO BUFF | QUARTZITE | | |
| | | | | | | | LT. GRAY, BRN, PINK | QUARTZITE | | ~162' POSS FRACT OR WEATH ZONE |
| | 1026 1030 | 167 | | | | | | | | EST 3-5 GPM 0.0 PPM |
| | | | | | | | TAN, LT. BRN SM LT. GRAY | QUARTZITE | | |
| | | | | | | | & PINK | | | |
| | 1036 1044 | 182 | | | | | VAR. | QUARTZITE AS ABOVE, NUM. RUSTY STAINS, DARKER COLORS. | | EST 3-5 GPM 0.0 PPM |
| | | | | | | | WHITE, CLEAR, | QUARTZ/PLAGIOCLASE/HORNBLEND GNEISS W/ MAFIC [illegible] | | |
| | | | | | | | GRAY TO BLACK | STAINS & SOME GRAY CLAYS | | EST 3-5 GPM |
| | 1049 1058 | 197 | | | | | | | | 0.0 PPM |
| | 1102 | 205 | | | | | DK. GRAY TO BLK LT-GR | FOLIATED HBLD GNEISS OR SCHIST; RUSTY STAINING, POSS. WEATHERED HBLD/PLAGIOCLASE GNEISS. HBLD | | 201'-203' V. WEATH & RUSTY EST 3-5 GPM |
| | | | | | T.D. | | GRAY | IS FOLIATED, | | 0.0 PPM |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER 140' - 205'. DEVELOP BOREHOLE W/ AIR APPX 15 MIN.

BORING NO. HN-15I
PAGE 3 OF 3

* See Legend on Back

AR300897

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15D
DATE 12-3-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | STRATA CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1153 | 6 | | | | | | | | |
| 1155 | 5 | | | | | BRN | SILT LOAM, SILTY CLAY, COBBLES & BOULDERS | | DAMP TO MOIST 0.0 PPM |
| 1208 / 1309 | 8 | | | | | BRN | SANDY CLAY, QUARTZITE COBBLES | | MOIST-WET |
| 1328 | 15 | | | | | ORANGE & TAN | WEATH., FE-STAINED CLAYEY SAND, SANDY CLAY, GRAY WEATH QTZT | | 0.0 PPM MOIST-WET |
| 1342 / 1511 | 18 | | | | | REDDISH BRN TO GRAY | V. WEATH QUARTZITE, ALT. HARD & SOFT | | DAMP-DRY |
| | | | | | | REDDISH BRN TO GRAY | WEATH. QUARTZITE, SOME RUSTY STAINS, HARDER | | MOIST TO WET 0.0 PPM |
| | 30 | | | | | | | | |
| 1515 / 1553 | 33 | | | | | BRN TO ORANGE BRN | SAND, V. WEATH QUARTZITE, CLAYEY SAND, MUCH SOFTER | | MOIST-WET 0.0 PPM |
| | 40 | | | | | | | | |
| | | | | | | | | | WET 0.0 PPM |
| 1556 / 1602 | 48 | | | | | PINK, BRN, GRAY | WEATH. QUARTZITE NUM. SFT, WEATH LYRS | | MOIST-WET |
| | | | | | | | | | 0.0 PPM |
| | 60 | | | | | | | | |
| 1606 / 1611 | 63 | | | | | GRAY & BRN | QUARTZITE, INTERBEDDED GRAY SHALE OR PHYLLITE | | HARDER, DRY-DAMP 0.0 PPM |
| | 70 | | | | | | | | — |

REMARKS 12" x 12' LONG ROLLER BIT TO 18'. TEMP 10" STEEL CSG TO 18'. 10" DIAM. x 6' LONG AIR HAMMER TO 70'.

BORING NO. HN-15D
PAGE 1 OF 5

* See Legend on Back

AR300898

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15 D
DATE 12-3-98, 12-4-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. Goody

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 70 | | | | | PINK, BRN, GRAY | WEATH. QUARTZITE, SOME SHINY GRAY SHALE OR PHYLLITE LYRS, NUM SOFTER & BROKEN LAYERS | | DAMP - MOIST 0.0 PPM |
| 1615 / 1619 | 78 | | | TETHER | | GRAY | QUARTZITE, LESS WEATH. | | POSS FRACTURE @ 75' DAMP |
| | | | | | | TO LT. GRAY | VITREOUS, RE-CRYSTALLIZED, HARDER. | | 0.0 PPM |
| | 90 | | | | | | | | SOME FRACTURED OR BROKEN ZONES |
| 1629 / 1634 | 93 | | | | | GRAY, PINK | QUARTZITE, SOME CALC, ~1" | | MUD @ E.O.H. 0.0 PPM MUDDY WATER |
| | 100 | | | | | BRN, OR. GRAY | BROKEN FRAGMENTS W/ RUSTY STAINED SURFACES. VITREOUS, RE-CRYSTALIZED | | 0.0 PPM 93-104' MANGA |
| | | | | | | | | | HARD & COMP 104'-108' POSS. |
| 12/3 1641 / 12/4 0738 | 108 | | | | | | | | FRACTURED/BROKEN 3-5 GPM, 0.0 PPM |
| | | | | | | | QUARTZITE AS BEFORE; OCCASIONAL BROKEN OR SOFT ZONES; TRACE CLAYS & | | |
| | 120 | | | | | | SILVERY OR RUSTY SHALE & PHYLLITE, RUST-COATED FRACTURE SURFACES. | | EST ≥ 5 GPM |
| 0745 / 0750 | 123 | | | | | | | | 0.0 PPM |
| | 130 | | | | | | | | |
| | | | | | | | | | 135'-138' POSS MORE BROKEN OR FRACTURED, LITTLE |
| 0756 / 0801 | 138 | | | | | | | | WATER INCREASE 40 PPM |

REMARKS 10" DIAM. x 6' LONG AIR HAMMER 70' TO 140'

BORING NO. HN-15 D
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AR300899

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-15D
DATE 12-4-98, 12-7-98
DRILLER D. TAYLOR, HARDIN HUBER
FIELD GEOLOGIST R. GOOD

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 140 | | | | | LT. GRAY, WHITE, PINK | QUARTZITE, VITREOUS, RE-CRYSTALLIZED, HARDER, LESS BROKEN, TRACE IRON OXIDE & CLAYS | | |
| | | 150 | | | 6" CSG | | | | | 0.0 ppm |
| 12/4 | 0812 | 153 | | | 10" | | LT. GRAY, | QUARTZITE AS BEFORE | | EST 7-8 GPM 0.0 PPM DRY - DAMP |
| 12/7 | 1231 | | | | 6" | | | | | |
| | | 160 | | | | | WHITE, PINK, TAN | | | 0.0 PPM SLIGHT WATER @ 160' 0.0 PPM |
| | | | | | | | TAN & PINK | QUARTZITE, SOME RUSTY STAINS, TRACE SHALE OR CLAY | | |
| | 1237 1241 | 167 170 | | | | | LT. GRAY | QUARTZITE AS ABOVE | | SOME WATER AFTER ROD CONNECT... ~2 GPM 0.0 PPM |
| | | | | | | | TAN, PINK | | | DRIER |
| | | 180 | | | | | | (SOME SOFT OR BROKEN ZONES) | | SOME V. SLIGHT WATER INCREASE 0.0 PPM |
| | 1247 1250 | 182 | | | | | | QUARTZITE AS ABOVE, MUCH RUSTY STAINED SURFACES. | | |
| | | 190 | | | | | GRAY | SILVERY, FOLIATED PHYLLITE OR SCHISTOSE MATERIAL, (SOME GREENISH CHLORITE?) | | SOFT |
| | | | | | | | BRN | V. WEATH, SANDY, ARGILLACEOUS MAT'L | | V SOFT |
| | 1256 1259 | 197 200 | | | | | BLK, WHITE, LT. GRAY TO | HORNBLENDE, QTZ, PLAGIOCLASE GNEISS; SOME GREEN CHLORITE & RUSTY STAINED SURFACES. | | HARDER SOME MUDDY |
| | | | | | | | CLEAR | (SM. BRN SANDY WEATH ZONES) | | WATER, THEN DRY 0.0 PPM |
| | | 210 | | | | | | | | — |

REMARKS 10" DIAM x 6' LONG AIR HAMMER 140' TO 153'. 6" STEEL CASING TO 151'. 6" DIAM. x 5' LONG AIR HAMMER TO 210'.

BORING NO. HN-15D
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AR300900

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE. TIME & CONDITIONS)

BORING NO HN-15D
DATE 12-7-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| 1308 / 1311 | 212 | | | | | BLK, DK. GRAY, WHITE, CLEAR | GNEISS: QTZ, HBLD, PLAG. RUSTY STAINED | | |
| | 220 | | | | | | AS ABOVE ... LESS QTZ | | SOME SOFT ZONES, NUM. RUSTY STAINS |
| | | | | | | DK. GRAY GREEN, BLK | GNEISS: HBLD, PLAGIOCLASE, TRACE QTZ | | 0.0 PPM |
| 1322 / 1326 | 227 | | | | | | | | |
| | 230 | | | | | | | | |
| | 240 | | | | | LT-DK GREENISH GRAY | FELSIC HORNBLENDE GNEISS, TRACE K-SPAR, FE-OXIDES | | DAMP-WET CUTTINGS SOME MUD |
| 1337 / 1341 | 242 | | | | | | AS ABOVE ... SOME QTZ, SOME RUSTY STAINS, TRACE GREEN CHLORITE | | 242-243 POSS FRACT. SL. $H_2O$ INCREASE 0.0 PPM |
| | 250 | | | | | | | | 250 POSS SFT ZONES & $H_2O$ INCREASE 0.0 PPM |
| 1353 / 1358 | 257 | | | | | | | | |
| | 260 | | | | | | FELSIC HORNBLENDE GNEISS AS ABOVE | | APPX 2-3 GPM 0.0 PPM |
| | 270 | | | | | | AS ABOVE ... DARKER, W/ MORE HORNBLENDE, NUM RUSTY | | POSS FRACTURES OR SOFT LYRS |
| 1409 / 1412 | 272 | | | | | | STAINED SURFACES, SOME SOFTER WEATHERED ZONES | | 0.0 PPM |
| | 280 | | | | | | | | — |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER 210' TO 280'

BORING NO. HN-15D
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AR300901

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HU-15D
DATE 12-7-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | LT-DK GREENISH GRAY | FELSIC HORNBLENDE GNEISS AS BEFORE | | EST 3-5 GPM |
| 1423 / 1430 | 287 – 290 | | | | | | | | 0.0 PPM |
| | | | | | | LT GREENISH GRAY TO WHITE | FELSIC GNEISS w/ SOME HORNBLEND | | |
| | 300 | | | | | | | | EST 3-5 GPM |
| 1441 | 302 | | | T.D. | | | | | 0.0 PPM |
| | | | | | | | | | DEV. 22 MIN... WATER FAIRLY CLEAR |

REMARKS 6" DIAM x 5' LONG AIR HAMMER 280' TO 302'

BORING NO. HU-15D
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AR300902

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16 S
DATE 12-04-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0758 | 0 | | | | | brn | clayey silt with roots and pebbles + cobbles of varying lithology | | dry ↓ damp |
| | | | | | | | | | |
| 0800 / 0806 | 5 | | | | | orange brn, brn | sandy clay with roots + weathered rock fragments (gneiss + sandy material + argillaceous material) + quartz | 0.0 | damp augers bouncing → poss. boulders pebbles |
| | 8 | | | | | | iron staining | | ↓ muddy returns → poss. water table |
| 0816 / 0819 | 10 | | | | | orange brn, brn | as above w/o roots w/ quartzite + chert fragments | 0.0 | wet |
| | | | | | | | | | |
| 0823 / 0826 | 15 | | | | | orange brn, brn | as above w/ red brn clay balls | 0.0 | wet |
| 0831 | 18 | | | | | orange brn, brn | as above | 0.0 | wet ↓ |
| 0833 | 20 | | | TD=20' | | | | | smooth drilling since 19' |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS Mobile Drill B-80 Drill Rig
8" Hollow Stem Augering

BORING NO.
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AR300903

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16I
DATE 12-02-96
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1002 | 0 | | | | | brn | clayey silt with roots and pebbles + cobbles at [illegible] | | dry ↓ [illegible] |
| | | | | | | | | | |
| 1005 | 5 | | | | | orange brn | sandy clay with gneiss quartz chert, quartzite + pos dolomite [illegible] + phyllite material | 0.0 | [illegible] |
| 1008 / 1015 | 8.5 | | | | | | | | EOR 1 |
| 1016 | 10 | | | | | orange brn | as above w/o quartzite fragments | 0.0 | [illegible] |
| 1020 | 13.5 | | | | | orange brn | as above with white [illegible] fragments | 0.0 | |
| | | | | | | | | | |
| 1026 / 1044 | 18.5 | | | | | orange brn | as above w/o sandy material | 0.0 | EOR 2 |
| | | | | | | | | | |
| 1051 | 23 | | | | | orange brn | as above | 0.0 | [illegible] |
| | | | | | | | | | |
| 1103 | 25 | | | | | orange brn | as above with trace [illegible] sandy material | 0.0 | |
| 1104 / 1222 | 28.5 | | | | | | | | EOR 3 |
| 1229 | 33 | | | | | orange brn | as above w/o sandy material | 0.0 | drilling mud thickening [illegible] clay [illegible] |

REMARKS Mobile Drill B-80 Drill Rig
Mud Rotary Drilling
6" Tricone Roller Bit (1.5" bit assembly)

BORING NO.
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AR300904

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16I
DATE 12-02-98
DRILLER Harmon-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1235 | 38 | | | | | orange brn | Sandy clay with argillaceous material + poss. dolomite + chert + quartz + gneiss + sandy material non staining | 0.0 | |
| 1235 / 1339 | 38.5 | | | | | | | | EOR 4 |
| 1344 | 43 | | | | | orange brn | as above w/o dolomite | 0.0 | rods bouncing from 39 → 38.5' → hard seam [illegible] |
| | | | | | | | | | |
| 1352 | 48 | | | | | orange brn | as above w/ poss. dolomite | 0.0 | |
| 1353 / 1401 | 48.5 | | | | | | | | EOR 5 |
| 1408 | 53 | | | | | orange brn | sandy clay with quartz + chert + argillaceous material | 0.0 | |
| | | | | | | | | | |
| 1419 | 58 | | | | | orange brn | as above with sandy material | 0.0 | |
| 1420 / 1426 | 58.5 | | | | | | | | EOR 6 |
| 1432 | 63 | | | | | orange brn | as above | 0.0 | |
| | | | | | | | | | |
| 1442 | 68 | | | | | orange brn | as above with poss. dolomite + quartzite fragments | 0.0 | |
| 1443 / 1445 | 68.5 | | | | | | | | EOR 7 |

REMARKS

BORING NO.

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AR300905

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HW-161
DATE 12-02-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1454 | 73 | | | colluvial material ends at 73' | | orange brn | sandy clay with argillaceous material + quartz + quartzite + chert fragments non staining | 0.0 | |
| | | | | | | | | | |
| 1459 | 78 | | | | | orange brn | as above with sandy material | 0.0 | |
| | | | | | | | | | |
| 1504 | 83 | | | | | orange brn | as above | 0.0 | |
| | 87.5 | | | | | | | | rods bouncing slightly |
| 1509 | 88 | | | | | orange brn | as above | 0.0 | |
| 1509 / 1515 | 88.5 | | | | | | | | EOR=8 |
| 1517 | 91 | | | | | orange brn | sandy clay with quartz + chert + argillaceous material | 0.0 | rods bouncing vigorously to 92' → hard seam |
| 1520 | 96 | | | | | orange brn | as above with poss. dolomite fragments | 0.0 | |
| | | | | | | | | | |
| 1527 / 1528 | 98.5 | | | | | | | | EOR-9 |
| 1529 | 100 | | | | | orange brn | as above w/o dolomite fragments | 0.0 | rods bouncing since 99.5' |
| 1532 | 103.5 | | | | | orange brn | as above with abundant, large chert fragments | 0.0 | smooth drilling again — |

REMARKS

BORING NO.

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AR300906

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16I
DATE 12-02-98
DRILLER HARDIN HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1535 | 107.5 | | | | | orange brn | sandy clay with quartz + chert + poss. datum 10 + argillaceous material iron staining | 0.0 | |
| 1540 / 1553 | 108.5 | | | | | | | | rods bouncing vigorously [illegible] FOR=10 [illegible] |
| 1554 | 110.5 | | | | | orange brn, white, gray | abundant quartz → poss. quartz seam with trace argillaceous material iron staining | 0.0 | rods bouncing vigorously |
| 1601 | 113.5 | | | | | orange brn, white, gray | as above | 0.0 | |
| | | | | | | | | | push through soft zone + poss. clay seam or broken rock |
| 1604 / 1612 | 118.5 | | | | | orange brn | sandy clay with quartz + argillaceous material + sand, material iron staining | 0.0 | FOR-10 |
| | | | | | | | | | |
| 1615 | 123 | | | | | orange brn | as above | 0.0 | Smooth drilling |
| | | | | | | | | | |
| 1620 | 128 | | | | | orange brn | as above with gray/black chert | 0.0 | |
| 1621 / 1630 | 128.5 | | | | | | | | FOR=12 |
| 1633 | 133 | | | | | orange brn | as above | 0.0 | |
| | | | | | | | | | |
| 1638 | 138 | | | | | orange brn | as above | 0.0 | |

REMARKS

BORING NO.
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AR300907

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16I
DATE 12-02-98 / 12-03-98
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Seth Pelenko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1639 / 1645 | 138.5 | | | | | | | | EUR=13 |
| 1648 | 143 | | | | | orange brn | sandy clay with quartz + chert + argillaceous material + sandy material iron staining | 0.0 | smooth drilling → poss clay seam |
| | 147.5 | | | | | | | | rods bouncing → hard seam (last drilling below hard seam) |
| 1654 | 148 | | | | | orange brn, gray, white, black | quartz + chert + sandy material iron staining | 0.0 | |
| 12-02-98 / 12-03-98 1654 / 0830 | 148.5 | | | | | | | | |
| 0833 | 153 | | | | | orange brn, gray, white, black | sandy clay + quartz + chert + sandy material + argillaceous material iron staining | 0.0 | smooth drilling → poss clay seam |
| | 156 | | | | | | | | rods bouncing vigorously |
| 0840 | 158 | | | | soft / hard | gray, buff | argillaceous + micaceous, reflective material, chert, sandy material → some sheet like, argillaceous + massive, finely crystalline dolomite, iron staining | 0.0 | |
| 0845 / 0852 | 158.5 | | | | | | | | EUR=14 |
| | | | | | | | | | poss broken rock or clay seam b/w 160.5' and 161.5' |
| 0902 | 162.5 | | | | soft / hard | gray, buff | argillaceous + massive, finely crystalline dolomite with vein quartz + sandy material iron staining | 0.0 | rods bouncing |
| 0905 | 163 | | | | | | | | smooth drilling → poss clay seam or broken rock |
| 0909 | 167 | | | | soft / hard | gray, buff | as above with chert | 0.0 | rods bouncing |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300908

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM SITE (RI/FS)
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HW-1CI
DATE 12-03 98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0923 | 171.5 | | | | soft / hard | gray, buff | argillaceous + massive, finely crystalline dolomite with vein quartz + sandy material [illegible] | 0.0 | hard [illegible] material [illegible] 170' → [illegible] |
| 0929 | 173.5 | | | TD-173.5' | | | | | |
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REMARKS

BORING NO.

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AR300909

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS* BORING NO. *HN-16D*

PROJECT NO. *7525* DATE *11-23-98*

ELEVATION DRILLER *HARDIN-HUBER*

WATER LEVEL DATA FIELD GEOLOGIST *M. SETH PELEPKO*

(DATE, TIME & CONDITIONS)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1230 | 0 | | | | | brn | clayey silt with fines and pebbles + cobbles, [illegible] | | dry ↓ damp |
| 1242 | 4 | | | | | orange brn | sandy clay trace argillaceous + gneiss + quartzite fragments [illegible] | 0.0 | rods bouncing b/w 0' and 4' → poss. cobbles/boulders |
| 1248 | 6 | | | | | | | | rods bouncing |
| 1256 | 7 | | | | | orange brn | as above | 0.0 | — |
| 1322 / 1553 | 8 | | | | | orange brn | as above w/ quartz | 0.0 | |
| | 10.5 | | | | | orange brn | sandy clay with quartz, gneiss, quartzite + poss diamite fragments [illegible] | 0.0 | rods bouncing vigorously → poss. cobbles / boulders |
| | 13 | | | | | orange brn | as above w/ argillaceous fragments | 0.0 | rods bouncing @ 12.5' |
| | 15.5 | | | | | orange brn | as above | 0.0 | rods bouncing since 13.5' ↓ |
| 1626 / 1635 | 18 | | | | | orange brn | sandy clay abundant quartz fragments some micaceous, calcitic fragments + argillaceous fragments [illegible] | 0.0 | EOR=1 |
| | | | | | | | | | |
| 1640 | 23 | | | | | orange brn | as above | 0.0 | |
| 1641 | 25 | | | | | | | 0.0 | rods bouncing → poss cobbles + boulders |
| 1644 / 1652 | 28 | | | | | orange brn | as above | 0.0 | drilling mud thickens → increased formational clay EOR=2 |
| | | | | | | | | | — |

REMARKS *Mobile Drill B-80 Drill Rig*
*Mud Rotary Drilling*
*10" Tricone Roller Bit with reamer (11" bit assembly)*

BORING NO.

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AR300910

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT *CROSSLEY FARM RI/FS*
PROJECT NO. *7525*
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. *HN-16D*
DATE *11-23-98 / 11-24-98*
DRILLER *HARDIN-HUBER*
FIELD GEOLOGIST *M. SETH PELLPRO*

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1655 | 33 | | | | | orange brn | Sandy clay with chert + quartz + trace gneiss + sandy material iron staining | 0.0 | |
| | | | | | | | | | |
| 1658 / 1705 | 38 | | | | | orange brn | as above | 0.0 | FOR=3 |
| | | | | | | | | | |
| 1709 | 43 | | | | | orange brn | Sandy clay with quartz + chert + gneiss → some pebble size, + trace argillaceous fragments + sandy material, iron staining | 0.0 | |
| | 45.5 | | | | | | | | rods bouncing vigorously since 44.5' |
| 11-23-98 / 11-24-98 1714 / 0842 | 48 | | | | | orange brn | as above | 0.0 | rods stop bouncing @ 47' FOR=4 |
| | | | | | | | | | |
| 0847 | 53 | | | | | orange brn | as above w/ smaller rock fragments | 0.0 | |
| | | | | | | | | | |
| 0858 / 0911 | 58 | | | | | orange brn | Sandy clay with quartz + chert + gneiss + sandy material, trace argillaceous material iron staining | 0.0 | FOR=5 |
| | | | | | | | | | |
| 0920 / 0952 | 63 | | | natural material ends at 63' | | orange brn | as above | 0.0 | |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300911

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16D
DATE 11-24-98
DRILLER Harden Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0956 / 1015 | 68 | | | | | orange brn | sandy clay with quartz + argillaceous material + sandy material trace staining | 0.0 | poor returns rods bouncing 65'-67' hard seam FOR=6 |
| | | | | | | | | | |
| 1016 | 73 | | | | | orange brn | as above with trace chert + micaceous, reflective fragments | 0.0 | |
| | | | | | | | | | |
| 1025 / 1124 | 78 | | | | | orange brn | as above with increased chert + sandy material w/o micaceous, reflective fragments | 0.0 | FOR=7 |
| 1127 | 81 | | | | | | | | rods bouncing → hard seam |
| 1132 | 83 | | | | | orange brn | as above w/o sandy material | 0.0 | |
| | | | | | | | | | |
| 1138 / 1147 | 88 | | | | | orange brn | as above w/ sandy material | 0.0 | FOR=4 |
| | | | | | | | | | |
| 1153 | 93 | | | | | orange brn | as above mostly quartz fragments trace argillaceous material | 0.0 | |
| | | | | | | | | | |
| 1203 / 1222 | 98 | | | | | orange brn | sandy clay with quartz | 0.0 | FOR=9 |
| | | | | | | | | | — |

REMARKS

BORING NO.

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AR300912

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS

PROJECT NO. 7525

ELEVATION

WATER LEVEL DATA

(DATE, TIME & CONDITIONS)

BORING NO. HN-16D

DATE 11-24-98

DRILLER HARDIN-HUBER

FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1228 | 103 | | | | | orange brn | sandy clay with quartz + chert + sandy material + argillaceous material (iron staining) | 0.0 | |
| 1230 / 1343 | 105 | | | | | | | | |
| 1347 / 1353 | 108 | | | | | orange brn | as above | 0.0 | EUR-10 |
| 1354 | 109 | | | | | | poss. chert seam → large chert fragments with some argillaceous material + quartz (iron staining) | | rods bouncing vigorously |
| 1358 | 112.5 | | | | | orange brn | sandy clay with quartz + chert + argillaceous material | 0.0 | |
| | | | | overburden / saprolite | | | | | |
| — / 1412 | 118 | | | | | orange brn | various weathered rock fragments | 0.0 | rods bouncing EUR-11 |
| | | | | | | | | | |
| 1414 | 123 | | | | | orange brn, white, gray, black | quartz + chert + sandy material, trace argillaceous material | 0.0 | |
| | | | | | | | | | |
| 1419 / 1429 | 128 | | | | | orange brn, white, gray, black | as above | 0.0 | EUR-12 |
| | | | | | | | | | |
| 1435 | 133 | | | | | orange brn, white, gray, black | as above | 0.0 | ↓ |
| 1439 | 136.5 | | | | | | | | poss. clay seam from 135' → 136.5' → smooth drilling |

REMARKS

BORING NO.

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AR300913

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16D
DATE 11-24-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELENKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1440 / 1447 | 138 | | | | | orange brn, white, gray, black | quartz + sandy material + trace argillaceous material | 0.0 | rods bouncing EOR=13 |
| 1453 | 142 | | | | | | poss. clay seam | | smooth drilling |
| 1458 | 144 | | | | | orange brn, white, gray, black | prob. clay + quartz + chert + sandy material + argillaceous material iron staining | 0.0 | |
| | | | | | | | | | |
| 1507 / 1514 | 148 | | | | | orange brn, white, gray, black | quartz + chert + sandy material + trace argillaceous material iron staining | 0.0 | rods bouncing since 140' EOR=14 |
| 1518 | 152 | | | | | | | | rods bouncing vigorously → v. hard seam |
| 1520 | 153 | | | | | orange brn, white, gray, black | as above | 0.0 | poor returns → losing density mud to formation permeable zone |
| | 156 | | | | | | poss. clay seam | | smooth drilling |
| 1524 / 1548 | 158 | | | | | orange brn, white, gray, black | as @ 153' | 0.0 | |
| | 159 | | | | | | | | rods bouncing |
| 1553 | 163 | | | | | orange brn, white, gray, black | as above | 0.0 | v broken rock or soft material |
| 1553 | 165.5 | | | | | | | | |
| 1606 / 1621 | 168 | | | | | orange brn, white, gray, black | as above with micaceous material + platy sandy material | 0.0 | v hard since 160' EOR=16 |
| 1622 | 169.5 | | | | | | | | rods bouncing vigorously → v. hard seam |

REMARKS

BORING NO.

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AR300914

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-60
DATE 11-24-98 / 11-30-98 / 12-01-98 / 12-07-98
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETHPELEPKO

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1629 | 173 | | | | soft / hard | lt. → dk gray | massive, finely crystalline + argillaceous dolomite with quartz vein + chert + platy, sandy material iron staining | 0.0 | v. broken v. soft material from 170 to 172' |
| | | | | | | | | | | |
| | 1641 | 178 | | | | soft / hard | lt. → dk gray | as above | 0.0 | |
| 11-24-98 / 11-30-98 | 1644 / 1450 | 179 | | | | | | | | losing drilling mud to formation (permeable zone) |
| | 1454 | 180 | | | | soft / hard | lt. → dk gray | as above | 0.0 | rock boun[illegible] grinding |
| | 1502 / 1511 | 183 | | | | | | | | |
| | 1512 | 184 | | | | soft / hard | lt. → dk gray | as above w/o chert | 0.0 | [illegible] mud to formation |
| | | | | | | | | | | |
| | 1530 | 188 | | | | soft / hard | lt. → dk gray | as above w/ trace chert | 0.0 | |
| | | | | | | | | | | |
| | 1552 | 192.5 | | | | soft / hard | lt. → dk gray | as above w/ some intact chert nodules | 0.0 | |
| | | 194 | | | | | | | | lose drilling mud to formation (permeable zone) |
| 11-30-98 / 12-01-98 | 1617 / 0754 | 195 | | | | | | no sample | | no returns |
| 12-01-98 / 12-07-98 | 1028 / 1330 | 196.5 | | | 6" steel casing to 196.5' | | | no sample | | refusal w/ tricone rock bit → v. hard seam — no returns |

REMARKS 12-07-98 IR TH-60 Drill Rig
Air Rotary Drilling
6" Air Percussion bit (5' bit assembly)

BORING NO.
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AR300915

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN 11D
DATE 12-07-98/12-08-98/12-09-98
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Setz, Peleph[illegible]

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 197 | | | | soft / hard | gray, buff | massive, finely crystalline dolomite with [illegible] vein quartz + sand, material + [illegible] [illegible] stained | 0.0 | poss. fracture Q>100 GPM |
| | 200 | | | | soft / hard | gray, buff | as above | 0.0 | poss. [illegible] [illegible] [illegible] [illegible] [illegible] |
| | | | | | | | | | |
| | 205 | | | | soft / hard | gray buff | as above | 0.0 | Q>100 GPM |
| | | | | | | | | | |
| 1343 | 210 | | | | soft / hard | gray, buff | as above | 0.0 | Q>100 GPM |
| 1352 | 213 | | | | soft / hard | gray, buff | as above w/ sandy material | 0.0 | Q>100 GPM |
| 12-07-98 / 12-08-98 1347 / 0952 | 216 | | | | soft / hard | gray, buff | as above increased [illegible] material | 0.0 | [illegible] [illegible] [illegible] GPM |
| 0955 | [illegible] | | | | soft / hard | gray, buff | finely [illegible] dolomite, massive crystal form [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] | 0.0 | [illegible] [illegible] [illegible] GPM |
| 1003 / 1040 | 221 | | | | | | [illegible] [illegible] [illegible] | | |
| 12-08-98 / 12-09-98 1041 / 0834 | 221.5 | | | | soft / hard | gray buff | as above | 0.0 | Q>15 GPM [illegible] 19 |
| | | | | | | | | | |
| 0837 | 226 | | | | medium hard | gray, buff | as above | 0.0 | poss. fracture Q>150 GPM |
| 0841 / 0851 | 228.5 | | | | | | | | — |

REMARKS

BORING NO.

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AR300916

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-16D
DATE 12-09-95
DRILLER Hardin-Auger
FIELD GEOLOGIST M. Seth Pelerin

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0854 | 231 | | | | soft / hard | gray, buff | Thinly bedded dolomite, massive crystal form, [illegible] | 0.0 | Q>150 GPM |
| 0855 | 232 | | | | | | structures [illegible] staining as above | 0.0 | poss. fracture [illegible] → bit skipping |
| 0857 | 236 | | | | soft / hard | gray, buff | as above | 0.0 | Q>150 GPM |
| | | | | | | | | | |
| 0900 | 241 | | | | soft / hard | gray, buff | as above | 0.0 | Q>150 GPM |
| 0901 / 1039 | 241.5 | | | | | | more competent formational material → bit stops skipping | | EOR=2C |
| 1041 | 246 | | | | soft / hard | gray, buff | as above | 0.0 | Q>150 GPM |
| | | | | | | | | | |
| 1050 | 250 | | | TD=250' | soft / hard | gray, buff | as above | 0.0 | Q>150 GPM |
| | | | | | | | | | |
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REMARKS

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AR300917

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17S
DATE 11-16-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST VINCE SHICKORA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1535 | 0 | | | | | | | | |
| | | | | | | | | | |
| | 5 | | | | | | | | |
| | | | | | | | | | |
| | 10 | | | | | | | | |
| | | | | | | | SEE HN-17I BORING LOG, 11/12/98, FOR LITHOLOGY | | |
| | 15 | | | | | | | | |
| | | | | | | | | | |
| | 20 | | | | | | | | |
| 1620 | 22 | | | T.D. | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS AIR ROTARY DRILLING W/ 6" DIAM. ROLLER BIT 0' TO 22'

BORING NO. HN-17S
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AR300918

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17 I
DATE 11-12-98, 11-13-98
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TENUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1346 | 0 | | | | | MED. BR, ORANGE BRN. | SILT, RK. FRAGS, BOULDERS, SAND, CLAYEY SAND. | | DAMP - MOIST 0.0 PPM |
| 1353 | 5 | | | | | | | | |
| 1402 | 9 | | | | | BRN & GRAY | GNEISS BOULDERS, CLAYEY SAND, V. WEATH GNEISS FRAGS. | | MOIST 0.0 PPM |
| 1408 | | | | | | BRN | SAND, CLAY, V. WEATH GNEISS | | WET |
| 1412 | 15 | | | | | | | | 0.0 PPM |
| 1420 | 20 | | | | | BRN & GRAY | SAND, CLAY, WEATH. GNEISS SAPROLITE | | DAMP - MOIST |
| 1429 / 1431 | 23 | | | | | | | | SOME MUDDY WATER AFTER ROD CONN. |
| 1438 | 30 | | | | | | | | 0.0 PPM WET - SATURATED |
| 11/12 1445 / 11/13 0811 | 31 | | | | | | | | 32' HARDER |
| 0812 / 0821 | 33 | | | | | GRAY & ORANGE | WEATH QTZ, K-SPAR, PLAGIOCLASE GNEISS SAPROLITE | | 2-3 GPM, 0.0 PPM |
| | 40 | | | | | | | | 37' SL. HARDER |
| | | | | | | GRAY & ORANGE | QTZ, K-SPAR, PLAGIOCLASE GNEISS BEDROCK | | 40'-42' HARDER COMP. ROCK |
| 0833 | 48 | | | | | | -AS ABOVE, W/ SL. MORE PLAGIOCLASE & HORNBLENDE. | | 45' POSS FRACTURE ~3 GPM |
| 0839 / 0847 | 50 / 51 | | | | | | | | 0.0 PPM |

REMARKS 12" DIAM. X 12' LONG ROLLER BIT TO 31'; 10" TEMP. CSG. TO 29'; 10" DIAM. X 6' LONG AIR HAMMER TO 51'; 6" STEEL CSG. GROUTED TO 51'.

BORING NO. HN-17 I
PAGE 1 OF 3

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AR300919

BORING LOG

TETRA TECH NUS, INC.

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17I
DATE 11-16-98
DRILLER Dave Taylor (Hardin-Huber)
FIELD GEOLOGIST Vince Shickora

| SAMPLE NO. Time | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 51 | | | | | | | | |
| | 55 | | | 6" CSG | | LT-DK Gray + Pink | Qtz plagioclase, K-Spar Gneiss Med-Grain - Some mafic minerals | | 0.0 ppm Dry - Dusty |
| | 60 | | | | | LT-DK Gray + Green | Same as above more hornblende | | 0.0 ppm Dry - Dusty |
| | 65 | | | | | LT-DK Gray Pink | QTz Plagioclase, K-Spar Gneiss Fine to Med-Grain | | 0.0 ppm Dry - Dusty |
| | 70 | | | | | " | " | | " |
| | 75 | | | | | Lt-Gray Pink | " | | Fracture at 74' to 76' ≈ 2-3 gpm |
| | 80 | | | | | " | Same as above More Quartz | | 0.0 ppm ≈ 2-3 gpm |
| | 85 | | | | | DK Gray + Green | Same as above More hornblende Some Phylite | | 0.0 ppm ≈ 2-3 gpm |
| | 90 | | | | | LT Gray | Qtz Plagioclase, K-Spar Gneiss Med-Grain | | 0.0 ppm ≈ 2-3 gpm |
| | 95 | | | | | DK Gray Black | Phylite - med-grain and some K-Spar | | 0.0 ppm ≈ 2-3 gpm |
| | 100 | | | | | Pink DK Gray | Qtz plag - K-Spar Gneiss | | 0.0 ppm ≈ 2-3 gpm |
| 1235 | 105 | | | | | Gray Green to Black | Fine-Med-Grain Hornblende Gneiss | | 0.0 ppm ≈ 2-3 gpm |
| | 110 | | | | | Lt Gray Pink | Qtz plag - K-Spar Gneiss Some Hornblende | | 0.0 ppm ≈ 2-3 gpm |
| | 115 | | | | | " | Same as above | | " |

REMARKS 6" Dia x 6' long Air Hammer From 51' to 151'

BORING NO. HN-17I
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AR300920

BORING LOG

TETRA TECH NUS, INC.

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN 17I
DATE 11-16-98
DRILLER Dave Taylor (Hardin-Huber)
FIELD GEOLOGIST Vince Shuckora

| SAMPLE NO.* Time | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1250 | 120 | | | | | Lt Gray Green Black | Fine-Med-grain Hornblende Gneiss and Qtz Plag Hornblende Gneiss | | 0.0ppm ≈ 2-3 gpm |
| | 125 | | | | | Lt Gray Pink | Med-Coarse Grain Qtz, K-spar, Plagioclase and Hornblende Gneiss | | 0.0ppm ≈ 2-3 gpm |
| | 130 | | | | | " | " | | " |
| 1308 | 135 | | | | | " | Same as above more Qtz / K-spar | | " |
| | 140 | | | | | Dk Gray to Black | Hornblende Gneiss with some Qtz / K-spar Gneiss | | 0.0ppm ≈ 2-3 gpm |
| | 145 | | | | | Lt Gray Pink Green | Same as above with possible chlorite | | 0.0ppm ≈ 2-3 gpm |
| | 150 | | | | | " | " | | " |
| 1325 | 151' | | | EOB | | | | | |

REMARKS

BORING NO. HN-17I
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AR300921

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17D
DATE 11-10-98, 11-11-98
DRILLER DAVE TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD.

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1135 | 0 | | | | | | | | | |
| 1140 | 3 | | | | | BRN | SILT-LOAM, ROOTS, GNEISS FRAGMENTS & BOULDERS | | DRY TO DAMP | |
| 1245 | | | | | | MED. BRN | SANDY SILT & CLAY w/ WEATHERED | | DAMP 0.0 PPM | |
| | 7 | | | | | | GNEISS FRAGS & BOULDERS | | | |
| 1253 | 9 | | | | | BRN-GRAY | V-WEATH. QTZ-FELDSPAR GNEISS w/ SANDY CLAY | | MOIST 0.0 PPM $H_2O$ AFTER RUN | |
| ~~1304~~ | | | | | | | (SAPROLITE) | | CONNECTION | |
| 1315 | 15 | | | | | LT. GRAY-BRN. | SAND, CLAY, WEATH GNEISS | | WET 0.0 PPM | |
| | | | | | | | (SAPROLITE) | | 17'-18' INCREASED WATER, FEW GPM | |
| ~~1325~~ 1556 | ~~21~~ | | | | | TAN, GRAY, PINK, | WEATH. QTZ, PLAGIOCLASE, K-SPAR, TR/HRD. WEATH. | | 0.0 PPM | 6 15 21 |
| | | | | | | BRN. | GNEISS (SAPROLITE) | | | |
| 1600 | 33 | | | | | | | | POSS FRACTURE @ 35' | 21 15 36 |
| | | | | | | U-OR GRAY & PINK | BANDED QTZ, PLAGIOCLASE, K-SPAR GNEISS, TRACE MAFIC | | HARDER COMP. RK @ 37' | |
| | | | | | | | MINERALS, MGR TO CGR. | | FEW GPM FROM SHALLOW ZONES 0.0 PPM | |
| 11/10 1624 | 48 | | | | | | | | | |
| 11/11 0744 | | | | | | " | AS ABOVE ... ABUNDANT QTZ | | | 36' 15' 51' |
| | | | | | | | & POTASSIUM FELDSPAR (K-SPAR) | | EST 5-6 GPM 0.0 PPM | |
| | | | | | | | | | | |
| 0756 | 63 | | | | | | | | | |
| 0802 | | | | | | " | AS ABOVE ... LESS K-SPAR ... | | EST 5-6 GPM | 51' 15' 66' |
| | | | | | | | MORE HORNBLENDE ... FINER GRAINED | | 0.0 PPM | |
| | 70 | | | | | | | | — | |

REMARKS 12" DIA. x 12' LONG ROLLER BIT & REAMER TO 21'. 10" STEEL TEMP. CSG. TO 21'. 8" DIA x 6' LONG AIR HAMMER TO 151'. 4" DIA. STEEL CSG. GROUTED TO 150.5'.

BORING NO. HN-17D
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AR300922

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-17D
DATE 11-11-98
DRILLER DAVE TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) 70 | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | LT-DK GRAY, SOME PINK | QTZ, PLAG., HBLD, K-SPAR GNEISS FGR-MGR | | EST 5-6 GPM 0.0 PPM | |
| 0811 / 0814 | 78 | | | | | | | | | 66 / 15 / 81 |
| | | | | | | | AS ABOVE ... MORE QTZ & K-SPAR ... MGR-CGR. | | EST 5-6 GPM 0.0 PPM | |
| | | | | | | DK. GREENISH GRAY | DULL, MOD.-SOFT, NON-CARBONACEOUS PHYLLITE, VFGR. | | -- | |
| 0831 / 0836 | 93 | | | | | | | | | |
| | | | | | | " | AS ABOVE W/ SOME WHITE FRAC. FILLINGS & FE-OXIDES | | EST 5-6 GPM 0.0 PPM | 81 / 15 / 96 |
| | | | | | | DK. GREEN TO BLK. | FGR-MGR HORNBLENDE GNEISS, TRACE SFT, LT-GREEN MAT'L (POSS CALCITE) | | | |
| 0851 / 0858 | 108 | | | | | DK. | | | | |
| | | | | | | GREENISH GRAY | DULL, VFGR, MOD-SOFT, PHYLLITE | | EST 5-6 GPM 0.0 PPM | 96 / 15 / 111 |
| | | | | | | | | | | |
| 0904 / 0917 | 123 | | | | | | | | | |
| | | | | | | GRAY, GREEN BLK | ALT FGR-MGR, HBLD GNEISS AND FGR-MGR QTZ, PLAG., HBLD GNEISS | | EST 5-6 GPM 0.0 PPM | 111 / 15 / 126 |
| | | | | | | GRAY & PINK | MGR-CGR QTZ, K-SPAR, PLAG., TR/HBLD GNEISS | | | |
| 0924 / 0937 | 138 | | | | | " | AS ABOVE W/ INCREASE QTZ & K-SPAR | | POSS INCR WATER EST 7-10 GPM 0.0 PPM | 126 / 15 / 141 |

REMARKS

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17D
DATE 11-11-98
DRILLER DAVE TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0439 | 140 | | | | | | | | |
| | | | | | | DK GRAY, LT GRAY, PINK | ALT HBLD GNEISS & QTZ, K-SPAR GNEISS | | POSS FRACTURED @ 145' W INCR |
| | | | | | | LT-DK | BANDED QTZ, K-SPAR, PLAG. | | |
| | | | | | | GRAY & PINK | HBLD GNEISS, TRACES OF LT-MED GREEN SFT MAFIC, POSS CHLORITE | | WATER, EST 10-12 GPM @ 200' |
| 0448 | 151 | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-17V
DATE 11-11-98, 2-16-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0939 | 140 | | | | | | | | |
| | | | | | | CLR, LT-DK GRAY & PINK | ALT. HBLD GNEISS & QTZ/KSPAR GNEISS | | POSS FRACTURE & WATER INCREASE @ 145' |
| | | | | | | CLR, LT-DK GRAY & PINK | BANDED QTZ/PLAG/K-SPAR/HBLD GNEISS; TRACE SOFT LT-MED GREEN MAT'L (POSS. CHLORITE) | | EST 10-12 GPM 0.0 PPM |
| 11/11/98 0948 2/16/99 0826 | 151 | | | | | | GNEISS AS ABOVE, VF VARYING COLOR & COMPOSITION | | SM. WATER & GRIT, THEN DAMP TO MOIST 0.0 PPM |
| | | | | | | | | | DAMP TO MOIST |
| | | | | | | | | | DRYING OUT DRY, DUSTY |
| 0842 0849 | 166 | | | | | | AS ABOVE, K-SPAR MORE NUMEROUS | | NO WATER @ ROD CONNECTION |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | BLK & DK-LT GREEN-GRAY | HBLD/PLAG GNEISS, FGR-MGR | | DRY - DUSTY 0.0 PPM |
| 0911 0915 | 186 | | | | | | | | |
| | | | | | | VARIABLE CLR, WHT, LT-DK GREEN-GRAY & PINK | VARYING PERCENTAGES OF QTZ/PLAG/K-SPAR/HBLD AS GNEISS, BANDED OR LAYERED, FGR-CGR. | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| 0940 0943 | 206 210 | | | | | | | | |

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BORING LOG

**TETRA TECHNUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17V
DATE 2-16-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | | | | |
| | | | | | | VAR. CLR, PINK, LT-DK GREEN GRAY | GNEISS; VAR. % QTZ/PLAG/K-SPAR/HBLD, BANDED, MGR-CGR | | DUST SUPPRESSION AT APPX 211', DAMP TO MOIST CUTTINGS, THEN DRY * |
| | | | | | | DK. GREEN-GRAY TO BLK | FGR, HBLD GNEISS | | DRY, DUSTY 0.0 PPM |
| | | | | | | VAR DK.-LT. GREEN- | QTZ/PLAG/K-SPAR/HBLD GNEISS AS DEF. FGR-MGR HBLD/PLAG GNEISS, TRACE QTZ & K-SPAR | | |
| 1013/1017 | 226 | | | | | GRAY & BLK | | | DAMP AFTER ROD CONNECTION |
| | | | | | | VARIABLE CLR, WHT, PINK, LT-DK | GNEISS; VARYING PERCENTAGES QTZ/PLAG/K-SPAR/HBLD, BANDED OR LAYERED, | | DRY, DUSTY 0.0 PPM |
| | | | | | | GREEN-GRAY | MGR-CGR | | |
| | | | | | | | | | |
| 1047/1051 | 246 | | | | | | GNEISS, AS ABOVE | | DAMP AFTER ROD CONNECTION |
| | | | | | | | | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1121/1303 | 266 | | | | | | GNEISS, AS ABOVE | | SOME WATER AFTER ROD CONNECTION, BLOWING DRY |
| | | | | | | | | | DRY, DUSTY 0.0 PPM |
| | 280 | | | | | | | | — |

REMARKS

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-17V
DATE 2-16-99, 2-19-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | | | | |
| | | | | | | VARIABLE CLR, WHT, PINK, LT-OR | GNEISS; VARYING PERCENTAGES QTZ/PLAG./K-SPAR/HRLD, BANDED OR LAYERED, | | DRY, DUSTY |
| 1335 / 1339 | 286 | | | | | GREEN-GRAY | MGR - CGR | | SL. DAMP, THEN DRY, DUSTY |
| | | | | | | | | | 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1417 / 1418 | 306 | | | | | | GNEISS AS ABOVE | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1507 / 1517 | 326 | | | | | | GNEISS, AS ABOVE | | MOIST TO WET AFTER ROD CONNECTION, THEN |
| | | | | | | | | | DRY, DUSTY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 2/16 1616 / 2/19 0846 | 346 | | | | | | GNEISS, AS ABOVE (HIGH % POTASSIUM FELDSPAR) | | SLIGHT WATER YIELD, THEN DRYING OUT 0.0 PPM |
| | 350 | | | | | | | | |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17V
DATE 2-19-99, 2-22-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 350 | | | | | VARIABLE GR, WHT, PINK, LT-DK, | GNEISS: VARYING PERCENTAGES QTZ/PLAG./K-SPAR/HBLD; BANDED OR LAYERED; | | WET CUTTINGS 0.0 PPM |
| | | | | | | GREEN-GRAY | MG-R – CG-R (HIGH % K-SPAR) | | MOIST |
| | | | | | | WHT, CLR, LT-DK GREEN- | PLAG/QTZ/HBLD GNEISS, MG-R – CG-R, TRACE K-SPAR | | DAMP |
| 0956 / 1501 | 366 | | | | | GRAY | | | SM. WATER, THEN WET CTGS ONLY 0.0 PPM |
| | | | | | | | | | 370' POSS. V. SLIGHT WATER INCREASE? |
| | | | | | | | | | WET CTGS ONLY MOIST |
| | | | | | | | (MR. HBLD.) | | APX 380'-382' SFT LAYERS DAMP TO DRY |
| 1524 / 1530 | 386 | | | | | | GNEISS, AS ABOVE | | DAMP TO DRY 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | DRY, SL. DUSTY 0.0 PPM |
| 2/19 2/22 1606 / 1134 | 406 | | | | | | GNEISS, AS ABOVE | | SOME WATER, ≤ 1 GPM, 0.0 PPM |
| | | | | | | | | | |
| | 420 | | | | | | | | WET CTGS & TRICKLE OF WATER 0.0 PPM |

REMARKS

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-17V
DATE 2-22-99
DRILLER D. TAYLOR, HARDIN HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | THO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 420 | | | | | WHT., CLR., LT-DK GREEN-GRAY | PLAG/QTZ/HBLD GNEISS; MGR-CGR; TRACE K-SPAR | | TRICKLE OF WATER, ≤ 1 GPM AND WET CTGS. 0.0 PPM |
| 1205/1213 | 426 | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1313/1317 | 446 | | | | | | GNEISS, AS ABOVE | | ≤ 1 GPM WATER & WET CUTTINGS. 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1432/1439 | 466 | | | | | | GNEISS, AS ABOVE | | ≤ 1 GPM WATER & WET CUTTINGS 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1543 | 486 | | | T.D. | | | | | |

REMARKS

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**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18S
DATE 2/1/99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1057 | 0 | | | | | | | | |
| | | | | | | BRN | SILT LOAM, SM GNEISS FRAGS. | | DAMP TO MOIST |
| | | | | | | ORANGE-BRN | SILTY CLAY w/ WEATHERED GNEISS FRAGMENTS | | MOIST 0.0 ppm |
| | | | | | | ORANGE-BRN TO GRAY | SANDY CLAY & V. WEATHERED GNEISS FRAGMENTS | | |
| | 10 | | | | | | | | |
| | | | | | | BRN & GRAY | V. WEATH GNEISS SAPROLITE & SM SANDY CLAY | | MOIST |
| | | | | T T T T | | GRAY | V. WEATH. TO WEATH. HORNBLENDE | | 0.0 ppm |
| 1105 1115 | 16 | | | | | | PLAG-QUARTZ GNEISS, BROKEN | | MOIST TO DAMP |
| | | | | T T T T | | LT. TO DK. GREEN-GRAY | WEATH HBLD/PLAG GNEISS, FGR-MGR, SL. HARDER & DRIER; SM BROKEN & WEATHERED ZONES | | DAMP TO DRY 0.0 ppm |
| | | | | | | | | | |
| 1123 1129 | 31 | | | | | LT & DK GREEN-GRAY | HBLD/PLAG GNEISS, FGR-MGR; HARD, DRY, COMP. ROCK. | | DRY, DUSTY |
| | 40 | | | | | | | | |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| 1138 | 46 | | | T.D. | | | | | |

ORIGINAL BORING LOGS FOR FILE

REMARKS 6" DIAM. x 5' LONG AIR HAMMER FR 0' TO 46'.

BORING NO. HN-18S
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AR300930

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18I
DATE 1-28-99, 1-29-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1612 | 0 | | | | | BRN | SILT LOAM, SM RK FRAGS. | | MOIST |
| | | | | | | ORANGE-BRN | SILTY & SANDY CLAY w/ V. WEATH GNEISS FRAGMENTS | | MOIST 0.0 PPM |
| | 10 | | | | | ORANGE-BRN & GRAY | SANDY CLAY w/ NUM. WEATH GNEISS FRAGS | | MOIST |
| | | | | | | BRN & GRAY | V. WEATH. GNEISS SAPROLITE w/ SM SANDY CLAY | | MOIST 0.0 PPM |
| 1616 / 1624 | 18 | | | | | LT.-DK. GREEN-GRAY | V. WEATH HBLD/PLAG GNEISS, NUM BROKEN & WEATH ZONES | | |
| | | | | | | LT-DK. GREEN-GRAY | WEATH. HBLD/PLAG GNEISS, SM BROKEN ZONES | | MOIST 0.0 PPM |
| | 30 | | | | | | | | DAMP |
| 1631 / 1642 | 33 | | | | | LT-DK. GREEN-GRAY | HBLD/PLAG. GNEISS, FGR-MGR, HARD, COMPETENT, REL. UN-WEATH. | | DRY-DUSTY 0.0 PPM |
| 1/28 / 1/29 1646 / 1109 | 36 | | | | | | | | WET THEN DAMP TO DRY 0.0 PPM |
| | | | | | | | | | DRY, DUSTY |
| 1115 / 1122 | 47 | | | | | DK. GREEN-GRAY | HORNBLEND OR HORNBLEND GNEISS, FGR-VFGR | | NO MOISTURE @ ROD CONNECTION |
| | | | | | | | | | |
| | | | | | | | | | DRY, DUSTY 0.0 PPM |
| 1134 / 1140 | 62 | | | | | | | | NO MOISTURE @ ROD CONNECTION |
| | 70 | | | | | | | | DRY, DUSTY 0.0 PPM |

REMARKS 10" DIAM. x 6' LONG AIR HAMMER FR/ 0' TO 36' (WATER TO 28' IN 10" BOREHOLE OVERNIGHT). 6" STEEL CSG. TO 36'. 6" DIAM x 5' LONG AIR HAMMER TO 152'.

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18 I
DATE 1-29-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD, TtNUS

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 70 | | | | | | | | |
| | | | | | | DK. GREENISH GRAY | HORNBLEND OR HORNBLENDE GNEISS VFGR - FGR | | DRY, DUSTY 0.0 ppm |
| 1152 / 1158 | 77 | | | | | | | | V. SL. MOISTURE @ ROD CONNECT. |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| | | | | | | | | | |
| 1210 / 1218 | 92 | | | | | WHT, LT.-DK. GREENISH GRAY | HORNBLEND / PLAGIOCLASE GNEISS, FGR - MGR | | V. SL. MOISTURE @ ROD CONNECT |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| | | | | | | | | | |
| 1230 / 1235 | 107 | | | | | | AS ABOVE | | V. SL. MOISTURE @ ROD CONNECT |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| | | | | | | | | | |
| 1246 / 1251 | 122 | | | | | | AS ABOVE | | V. SL. MOISTURE @ ROD CONNECT |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| | | | | | | | | | |
| 1302 / 1306 | 137 / 140 | | | | | | AS ABOVE W/ MORE WHT TO LT. GRAY PLAGIOCLASE, LESS HBLD. | | V. SL. MOISTURE @ ROD CONNECT |

REMARKS (6" AIR HAMMER TO 140')

BORING NO. HN-18 I
PAGE 2 OF 3

* See Legend on Back

AR300932

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18 I
DATE 1-29-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 140 | | | | | WHT. & LT.-DK. GREENISH GRAY | PLAGIOCLASE / HORNBLEND GNEISS, FGR - MGR | | DRY, DUSTY 0.0 ppm |
| 1316 | 152 | | | T.D. | | | | | NO WATER IN BOREHOLE UPON COMPLETION OF DRILLING. |

REMARKS (6" AIR HAMMER TO 152')

BORING NO. HN-18 I
PAGE 3 OF 3

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AR300933

**BORING LOG**

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HW-18V
DATE 1-28-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0914 | 0 | | | | | | | | |
| | | | | | | BRN | SILT-LOAM, SM. RK. FRAGMENTS | | DAMP - MOIST |
| | | | | | | ORANGE BRN | SILTY CLAY LOAM & SILTY-CLAY W/ WEATH. GNEISS FRAGMENTS | | 0.0 PPM MOIST |
| | 10 | | | | | ORANGE BRN & GRAY | SANDY CLAY & WEATHERED GNEISS FRAGMENTS | | |
| | | | | | | ORANGE BRN & GRAY | SANDY CLAY & V. WEATHERED HORNBLEND GNEISS | | MOIST 0.0 PPM |
| 0919 / 0927 | 17 | | | | | DK. GRAY & BRN. | WEATH. HBLD GN, FGR DK GRAY PHYLLITIC MAT'L. | | MOIST |
| | | | | | | DK. GRAY | VFGR HBLD, PHYLLITIC TEXTURE, HARD, COMPETENT ROCK. | | DAMP TO DRY |
| | | | | | | | | | DRY, DUSTY |
| | | | | | | DARK GREEN-GRAY | VFGR HBLD GNEISS | | DRY, DUSTY 0.0 PPM |
| 0938 / 0945 | 32 | | | | | | (TRACE WHT TO LT GRAY PLAGIOCLASE) | | LITTLE OR NO MOISTURE AT ROD CONNECTION |
| | | | | | | | HBLD GNEISS AS ABOVE | | DRY, DUSTY 0.0 PPM |
| 0956 / 1010 | 47 | | | | | | HBLD GNEISS AS ABOVE | | NO MOISTURE @ ROD CONNECTION |
| | | | | | | LT-DK GREEN-GRAY | FGR-MGR HBLD/PLAG GNEISS | | DRY, DUSTY 0.0 PPM |
| | | | | | | | SM LT. GREEN MAT'L LIKE CHLORITE | | |
| 1021 / 1029 | 62 | | | | | | | | NO MOISTURE @ ROD CONNECTION |
| | 70 | | | | | WHT & LT-DK GREEN-GRAY | FGR-MGR, HBLD/PLAG GNEISS | | DRY, DUSTY 0.0 PPM |

REMARKS 6" DIAM. x 5' LONG AIR HAMMER FR/ 0' TO 152'. 4" DIAM. STEEL CSG. TO 151'. 4" DIAM. x 4' LONG AIR HAMMER FR/ 152' TO 502'

BORING NO. HW-18V
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AR300934

BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18V
DATE 1-28-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 70 | | | | | WHT & LT.-DK. GREEN-GRAY | FGR-MGR, HBLD/PLAG GNEISS | | DRY, DUSTY 0.0 ppm |
| 1034 / 1045 | 77 | | | | | | | | (NO MOISTURE @ ROD CONNECTION) |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| 1056 / 1102 | 92 | | | | | | GNEISS, AS ABOVE | | (NO MOISTURE @ ROD CONNECTION) |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| 1112 / 1227 | 107 | | | | | | GNEISS, SIMILAR TO ABOVE, SLIGHTLY MORE FELSIC | | (FEW GAL WATER @ ROD CONNECTION, THEN DRY) |
| | | | | | | | | | DRY, DUSTY, 0.0 ppm |
| 1245 / 1249 | 122 | | | | | | GNEISS, AS ABOVE, FELSIC | | (NO MOISTURE @ ROD CONNECTION) |
| | | | | | | | | | DRY, DUSTY, 0.0 ppm |
| 1300 / 1305 | 137 / 140 | | | | | | | | (NO MOISTURE @ ROD CONNECTION) |

REMARKS

BORING NO. HN-18V
PAGE 2 OF 8

* See Legend on Back

AR300935

**BORING LOG** — **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS — BORING NO. HN-18V
PROJECT NO. 7525 — DATE 1-28-99, 2-10-99
ELEVATION — DRILLER D. TAYLOR, HARAN-HUBER
WATER LEVEL DATA — FIELD GEOLOGIST R. GOOD
(DATE, TIME & CONDITIONS)

| | SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 140 | | | | | | | | |
| | | | | | | | WHT. & LT-DK. GREEN-GRAY | FGR-MGR, HBLD/PLAG GNEISS | | DRY, DUSTY, 0.0 PPM |
| | | | | | | | | — AS ABOVE, DARKER, MR. HBLD — | | |
| 1/28 | 1315 | 152 | | | | | LT-DK GREEN-GRAY | ALTERNATING PLAG/HBLD GNEISS AND HBLD GNEISS | | DRY, DUSTY |
| 2/10 | 1420 | | | | | | | | | |
| | 1424 | 156 | | | | | OR DK. GRAY GRAY | | | 0.0 PPM |
| | 1429 | | | | | | | | | |
| | | | | | | | | ↓ | | |
| | 1442 | 166 | | | | | | — GNEISSES, AS ABOVE — | | DRY, DUSTY |
| | 1458 | | | | | | | | | |
| | | | | | | | | ↓ | | 0.0 PPM |
| | | | | | | | | ↓ | | |
| | | | | | | | | ↓ | | |
| | 1529 | 186 | | | | | | ↓ | | DRY, DUSTY |
| | 1534 | | | | | | | | | |
| | | | | | - - - - | | WHT & LT. GREEN, SOM DK GREEN-GRAY | PLAG/HBLD GNEISS | | 0.0 PPM |
| | | | | | | | | | | |
| | | | | | - - - - | | WHT. - LT GRAY | PLAGIOCLASE GNEISS | | |
| | | | | | - - - - | | LT-DK. GREEN-GRAY | HBLD/PLAG GNEISS | | |
| | 1608 | 206 | | | | | | | | DRY, DUSTY |
| | 1617 | | | | | | | | | 0.0 PPM |
| | | 210 | | | | | | | | |

REMARKS

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* See Legend on Back

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-18V
DATE 2-10-99, 2-11-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 210 | | | | | WHT. & LT-DK GREEN-GRAY | PLAG/HBLD. GNEISS, FGR-MGR | | DRY, DUSTY 0.0 ppm |
| | | | | | | | | | |
| | | | | | | | | | |
| 1650 / 1659 | 236 | | | | | | | | |
| | | | | | | | | | DRY, DUSTY 0.0 ppm |
| | | | | | | LT-DK GREEN-GRAY | PLAG/HBLD GNEISS AS ABOVE --- GREATER HBLD CONTENT. | | |
| | | | | | | DK.-LT. GREEN-GRAY | HBLD/PLAG. GNEISS | | |
| 2/10 1732 / 2/11 0736 | 246 | | | | | DARK. GREEN-GRAY TO BLK | FGR, HBLD & HBLD GNEISS | | TRACE WATER (FEW GAL) OVERNIGHT DRY, DUSTY, THEN @ 5 GPM AT APPX 250' * |
| | | | | | | WHT. & LT-DK GREEN-GRAY | ALTERNATING PLAG./HBLD. GNEISS AND HBLD. GNEISS FGR-MGR | | |
| 0806 / 0817 | 266 | | | | | | | | EST 5-7 GPM WATER FAIRLY CLEAR 0.0 ppm |
| | | | | | | | | | |
| | 280 | | | | | CLR, WHT, LT-DK. GREEN. | PLAG/QTZ/HBLD GNEISS, FGR-CGR. | | |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18V
DATE 2-11-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 280 | | | | | | | | |
| | | | | | | DK. GREEN-GRAY | FGR. HBLD. GNEISS | | EST 5-7 GPM |
| 0848 / 0905 | 286 | | | | | WHT. & LT-DK. | ALTERNATING HBLD/PLAG. GNEISS AND HBLD GNEISS | | 0.0 PPM |
| | | | | | | GREEN-GRAY | | | |
| | | | | | | | | | |
| | | | | | | | (AS ABOVE, SL. MORE FELSIC) | | |
| 0941 / 0946 | 306 | | | | | | | | EST. 5-7 GPM 0.0 PPM |
| | | | | | | WHT, CLR, SM LT-DK GREEN, TR/PINK | PLAG/QTZ/HBLD GNEISS, MGR-CGR, TRACE POTASSIUM FELDSPAR (K-SPAR) ? | | |
| | | | | | | | | | |
| | | | | | | WHT. & LT-DK GREEN-GRAY | PLAG/HBLD GNEISS, FGR-MGR | | |
| 1022 / 1028 | 326 | | | | | | | | EST. 5-7 GPM 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | (AS ABOVE, DARKER, MORE HORNBLEND) | | |
| | | | | | | | | | |
| 1112 / 1117 | 346 / 350 | | | | | DK & SM LT GREEN GRAY | HBLD GNEISS, SM PLAG/HBLD GNEISS | | EST 5-7 GPM 0.0 PPM |

REMARKS

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18V
DATE 2-11-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 350 | | | | | DK. & SM. LT GREEN GRAY | HBLD GNEISS, SM PLAG/HBLD GNEISS | | EST. 5-7 GPM 0.0 PPM |
| | | | | | | WHT & SM LT-DK GREEN GRAY | PLAG/QTZ/HBLD GNEISS, MGR, POSS TRACE BIOTITE. | | |
| | | | | | | | | | POSS. V SL. WATER INCREASE ? |
| 1156 / 1203 | 366 | | | | | WHT & LT-DK. GREEN-GRAY | PLAG/QTZ/HBLD GNEISS, FGR-MGR | | EST 5-7 GPM 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| 1242 / 1349 | 384 | | | | | WHT, CLR, SM LT-DK GREEN-GRAY, | PLAG/QTZ GNEISS, SM. HBLD, TRACE PYRITE, POSS TRACE POTASSIUM FELDSPAR (K-SPAR) | | EST ~7 GPM 0.0 PPM |
| 1352 / 1358 | 386 | | | | | TR/PINK | | | |
| | | | | | | WHT & LT-DK | ALTERNATING HBLD GNEISS & | | |
| | | | | | | GREEN-GRAY | HBLD/PLAG GNEISS, FGR-MGR | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1437 / 1454 | 406 | | | | | WHT, SM LT-DK GREEN-GRAY | PLAG/QTZ/HBLD GNEISS, MGR-CGR | | EST. ~7 GPM 0.0 PPM |
| | | | | | | TR/PINK | | | |
| | | | | | | WHT & LT-DK GREEN-GRAY | HBLD GNEISS & PLAG/HBLD GNEISS | | |
| | 420 | | | | | | | | — |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-18V
DATE 2-11-99, 2-12-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 420 | | | | | WHT & SM LT-DK GREEN-GRAY | PLAG/QTZ/HBLD GNEISS (FELSIC GNEISS), FGR-MGR, SM DK GREENISH-GRAY | | EST ~7 GPM |
| 1535 / 1542 | 426 | | | | | | HBLD LYRS | | 0.0 PPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | LT-DK GREEN-GRAY | ALTERNATING HBLD GNEISS & PLAG/HBLD GNEISS | | |
| 1617 / 1622 | 446 | | | | | | | | EST ~7 GPM 0.0 PPM |
| | | | | | | | | | |
| | | | | | | WHT. & SM LT-DK GREEN-GRAY | FELSIC HBLD GNEISS AS BEFORE | | |
| | | | | | | LT-DK. GREEN-GRAY | HBLD AND PLAG/HBLD GNEISS AS BEFORE | | |
| 2/11 2/12 1708 / 0726 | 466 | | | | | | | | EST ~7 GPM 0.0 PPM |
| | | | | | | | | | |
| | | | | | | WHT & LT-DK | PLAG/QTZ/HBLD GNEISS, FGR-MGR SOME CGR | | |
| | | | | | | GREEN-GRAY, SM PINK & CLR | MOSTLY PLAGIOCLASE, TRACE K-SPAR | | |
| 0757 / 0803 | 486 / 490 | | | | | | 488'-489' PINK, K-SPAR RICH LAYER. | | EST ~7 GPM 0.0 PPM |

REMARKS

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-18V
DATE 2-12-99
DRILLER D. TAYLOR, HARDIN-HUBER
FIELD GEOLOGIST R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | USCS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 440 | | | | | | | | |
| | | | | | | DK-LT GREEN-GRAY, WHT, SM CLR | HBLD/PLAG/QTZ GNEISS ≥ 50% HBLD, TRACE K-SPAR | | EST ~7 GPM 0.0 PPM |
| | | | | ---- | | & PINK | ≥ 70% HBLD | | |
| 0851 | 502 | | | | | DK. GREEN-GRAY | HBLD GNEISS, SM. PLAG, TRACE QTZ & K-SPAR | | |
| | | | | T.D. | | | | | EST ~7 GPM 0.0 PPM |

REMARKS

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-19I
DATE 03-23-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1231 | 0 | | | | | dk. brn | clayey silt w/ gneiss cobbles and pebbles + roots, cornstalks | 0.0 | damp/moist |
| | 2 | | | | | brn, orange brn | sandy clay, mottled appearance | 0.0 | damp |
| | | | | | | | | | |
| 1233 | 7 | | | | | brn | clayey silt w/ abundant gneiss fragments | 0.0 | damp |
| | | | | | | | | | |
| | | | | | | | | | |
| 1236 | 15.5 | | | | | brn | sandy silt w/ trace clay + gneiss fragments | 0.0 | damp |
| 1238 / 1243 | 17 | | | | | yellow brn | sandy silt w/ some clay + gneiss fragments | 0.0 | damp FOR=1 |
| | | | | | | | | | |
| 1244 | 21 | | | | | orange | clayey sand w/ gneiss fragments | — | damp |
| | | | | | | | | | |
| 1245 | 27 | | | | | orange | m → c. sand + gneiss frags. quartz-rich | — | damp |
| | | | | | | | | | |
| 1246 / 1251 | 32 | | | | | yellow brn | clayey sand, abundant quartz grains | 17' to 32' - 4.0 | damp/moist FOR=2 |

**REMARKS** SCHRAMM DRILL RIG
6" Air Percussion bit (5' bit assembly)
MS. Pelepko conducted geological logging (03-23, 03-24)
R Good conducted air monitoring activities (03-23)

BORING NO. HN-19I
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* See Legend on Back PID readings indicate maximums / rod interval @ discharge

AR300942

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-19I
DATE 03-23-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1252 | 33 | | | | | yellow brn | Sandy clay (gneiss saprolite) | — | damp/moist |
| | | | | | | | | | |
| | 38 | | | | | | no sample | | |
| | | | | | | | | | |
| 1253 | 43 | | | | | yellow brn | sandy clay/clayey sand w/ abundant gneiss fragments (qtz., plagioclase-rich, trace ferromagnesians) | — | damp |
| 125 / 1258 | 47 | | | | | | | 32' to 47' = (4.0) | FOR = 3 |
| 1259 | 49 | | | | | yellow brn | Sandy clay w/ Fe-stained gneiss fragments | — | damp |
| 1300 | 53 | | | | | | as above | — | damp |
| 1300 | 57 | | | | | | no sample slightly harder material begins, penetration rate slows | — | no return → air circulation, possible water zone |
| | | | | | | | | | |
| 1302 / 1621 | 62 | | | | | | no sample | 47' to 62' = (7.5) | no returns FOR = 4 |
| | 64 | | | | | yellow brn | sandy clay w/ gneiss fragments | — | moist/wet |
| | | | | | | | | | |
| 1622 | 70 | | | | medium hard | pinks, grays, white | weathered gneiss (mica, qtz., plag., trace ferromagnesians) Fe-staining | — | damp |

REMARKS 1302 - pull drill tools*, ream borehole to 43.5' with 1.5' long 8" tricone roller bit. Install 6" temporary casing to 61.5' BGS.

* last 30' of rods covered with muddy water

BORING NO. HN-19I
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* See Legend on Back

qtz. = quartz
plag. = plagioclase feldspar
mic. = microcline

AR300943

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-19I
DATE 03-23-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1624 | 75 | | | | medium hard | pink, gray, white, yel brn | weathered gneiss (micro, qtz, plag) w/ clay seams Fe-staining | — | damp |
| 1626 / 1629 | 77 | | | | | | | 62' to 77' = 0.0 | EOR=5 |
| 1629 | 79 | | | | medium hard | | as above | — | damp/moist |
| | | | | | | | | | |
| 1631 | 86 | | | | Soft | pink, gray, white, black, yel. brn | silt-sized material (prob. pulverized gneiss) + weathered gneiss as above w/ increased | — | damp |
| | | | | | | | ferromagnesians Fe-staining | | occasionally dusty |
| 1632 | 91 | | | | soft | | as above | — | damp |
| 1632 / 1638 | 92 | | | | | | | 77' to 92' = 0.0 | EOR=6 1638 → blw out v. muddy water → |
| | | | | | | | | | poss. fracture blw 77' → 92' |
| | 94 | | | | medium hard | gray, white, pink, green, black | weathered gneiss | — | wet/muddy |
| 1641 | 97 | | | TOR=99' | medium hard | black, white, gray | as above, equal percentage of ferromagnesians and qtz/plag. Fe-staining | — | wet/muddy |
| 1643 | 99 | | | | | | | | poss. fracture 97'-99' Q=8-10 GPM |
| 1646 | 102 | | | | hard | gray, green, black, pink | gneiss, as above w/ micro. | — | saturated Q=10-15 GPM |
| | | | | | | | | | — |

REMARKS

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-19I
DATE 03-23-99/03-24-99
DRILLER HARDIN-TUBER
FIELD GEOLOGIST M SETH PELEPKO, ROBERT GOOD (03-23)
M. SETH PELEPKO, DON WHALEN (03-24)

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1648 | 107 | | | | hard | black, white | gneiss hornblende-rich trace Fe-staining | — | Saturated Q=10-15 GPM |
| 1650 | 110 | | | | hard | gray, white | gneiss qtz/plag.-rich Fe-staining | — | poss. fracture @ 109'-110' slight Q↑? |
| 1651 / 1710 | 112 | | | | | | | 92' to 112' 0.0 | EOR=7 |
| 1711 | 113 | | | | | | as above | — | Saturated Q=10-15 GPM |
| | 117 | | | | hard | black, white, gray | gneiss, equal percentages of qtz/plag. and ferromagnesians Fe-staining | — | |
| 1714 | 121 | | | | hard | lt. green gray, pink, black | gneiss qtz./plag./micro-rich Fe-staining | — | |
| 1717 | 123 | | | | hard | black, white, gray | gneiss, as at 117' | — | |
| 1718 | 127 | | | | hard | lt. green-gray, gray, black | as above | — | |
| 1720 | 130 | | | | hard | green-gray, gray, pink, black | gneiss qtz/plag./micro-rich Fe staining | — | |
| 03-23-99 1721 / 3-24-99 0922 | 132 | | | | | | | 112' to 132' 0.0 | EOR=8 develop borehole, water quality improving |
| 0824 | 133 | | | | hard | pink, black, gray | gneiss micro/plag./qtz-rich Fe-staining | — | $Q_{total}$ = 15-20 GPM sat. Q = 15-20 GPM |
| 0825 | 137 | | | | hard | as above | as above w/ increased ferromagnesians Fe-staining | — | |
| 0828 | 140 | | | | hard | green-gray, gray, black | gneiss qtz./plag.-rich | — | |
| 0830 | 143 | | | | hard | as above + pink | as above w/ microcline | — | |

REMARKS D. Whalen conducted air monitoring activities (03-24)

BORING NO. HN-19I
PAGE 4 OF 5

* See Legend on Back

AR300945

**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-19I
DATE 03-24-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, DON WHALEN

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0831 | 146 | | | | hard | dk green-gray, black, gray | gneiss mainly ferromagnesians trace pink micro. trace Fe-staining | — | Sat. Q=15-20 GPM |
| 0834 | 149.5 | | | | hard | green-gray, pink, gray, black | gneiss qtz./plag./micro-rich | — | |
| 0835 / 0913 | 152 | | | | | | | 137 to 152' = (15) | Fold = 9 develop borehole until 0840 |
| 0914 | 153 | | | | hard | dk green-gray, black | gneiss mainly ferromagnesians trace plag./pink min. Fe-staining | — | Sat. Q=15-20 GPM |
| 0916 | 155.5 | | | | hard | green-gray black | as above | — | Sat Q=15-20 GPM |
| 0919 | 158.5 | | | | medium hard | black, pink, gray, green-gray | gneiss, equal percentages of ferromagnesians and qtz./plag./micro., v. Fe-stained | — | poss. fracture → 157'-158' slight Q? |
| 0920 | 162 | | | | hard | dk green-gray, black | gneiss mainly ferromagnesians trace Fe staining | 152' to 162' = (3.7) | Sat. Q=15-20 GPM |
| 0923 | 165 | | | | hard | as above + gray, pink, green | gneiss, w/ increased qtz./plag./micro. trace Fe staining | — | |
| 0925 | 168 | | | | hard | pink, v. lt. gray | gneiss trace Fe staining qtz./plag./micro.-rich trace black ferromagnesians | — | |
| 0926 | 171 | | | | hard | as above + green-gray, black | gneiss mainly hornblende + other ferromagnesians trace Fe staining | — | |
| 0927 | 172 | | | T.D.=172' | | | | 162' to 172' = (14) | develop borehole briefly, water quality improving |
| | | | | | | | | | Q total=15-20 GPM |
| | | | | | | | | | |
| | | | | | | | | | — |

REMARKS

BORING NO. HN-19I
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AR300946

BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLET FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-20 I,S
DATE 03-29-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1126 | 0 | | | | | dk brn | clayey silt + gneiss pebbles and cobbles, roots | – | damp |
| 1127 | 2 | | | | | orange brn | sandy clay w/ gneiss fragments/pebbles | – | damp/moist |
| 1129 / 1132 | 5 | | | | | orange brn | sandy silt w/ clay + clayey sand w/ gneiss fragments | – | damp/dry |
| 1133 | 8 | | | | | orange brn | as above | – | damp/dry |
| | | | | | | | | | |
| 1134 | 12 | | | | | brn, yellow brn | as above w/ increased gneiss fragments | – | damp/dry dusty |
| | | | | | | | | | |
| 1135 | 17 | | | | | yellow brn, orange brn | sandy clay w/ gneiss fragments | – | damp/dry dusty |
| 1135 / 1143 | 20 | | | | | | | 0 to 20 = 7.0 | EOR=1 |
| 1143 | 21 | | | | | orange brn | as above | – | damp/dry |
| | | | | | | | | | |
| 1144 | 28 | | | | | yellow brn | as above w/ micas | – | damp/moist |
| | | | | | | | | | |
| 1144 | 34 | | | | | yellow brn | sandy clay/clayey sand w/ gneiss fragments, micas | – | damp/moist |

REMARKS SCHRAMM DRILL RIG
8" Air percussion bit (8" bit assembly)
M.S. Pelepko conducted geological logging (03-29, 03-30)
R. Good conducted air monitoring activities (03-29, 03-30)

BORING NO. HN-20 I,S
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* See Legend on Back

qtz = quartz
plag. = plagioclase
mi[illegible]

PID readings indicate maximums / cal interval @ discharge

AR300947

BORING LOG

TETRA TECH [illegible]S, INC.

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-20 I,S
DATE 03-29-99
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Seth Pelepko

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1146 | 38 | | | | | yellow brn, orange brn | sandy silt w/ clay (quartz, plagioclase, hornblende) sands & gneiss frags. | — | harder material since 37.5' damp |
| 1146 / 1152 | 40 | | | | | | | 20' to 40' = 7.0 | EOR = 2 |
| 1153 | 42 | | | | | yellow brn, gray, white | sandy clay + weathered gneiss (quartz, microcline, plagioclase) | — | wet, poss. water from above v. fast drilling → |
| | | | | | | | | | soft or broken zone |
| | 47 | | | | | | no sample | — | |
| | | | | | | | | | |
| 1154 | 52 | | | T.O.W.R. = 53' | | yellow brn, gray, white | as at 42' | — | |
| 1155 | 55 | | | | soft / med. hard | yellow brn | silt-sized, prob. pulverized gneiss + gneiss fragments | — | harder material since 53' dry/damp dusty |
| 1157 | 57.5 | | | | soft / med hard | yel. brn, black, green-gray, pink, gray, white | weathered gneiss + sandy clays (quartz, ferromagnesians, microcline, plagioclase) Fe staining | — | damp |
| 1158 / 1407 | 60 | | | | | | | 40 to 50' = 12 | EOR = 3 [illegible] - blow out muddy water |
| 1408 | 62 | | | | soft / med. hard | as above | weathered gneiss Fe staining | — | wet/muddy |
| | 65 | | | | | | | — | wet/muddy poss. fracture → bit drops |
| 1411 | 67 | | | | soft | yellow brn | sandy clay + weathered gneiss | — | moist/wet |
| | | | | | | | | | — |

REMARKS 1158 - Pull tools to install 6" temporary casing to 60'. Rods wet/muddy up to ~13' BGS
Attach 6" air percussion bit (5' bit assembly)

BORING NO. HN-20 I,S
PAGE 2 OF 6

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-20 I,S
DATE 03-29-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1412 | 72 | | | | soft / hard | yel. brn, white, gray, pink | weathered gneiss (mainly quartz, plagioclase, trace microcline) + sandy clay Fe staining | — | blow out some muddy water |
| | | | | | | | | | |
| 1414 / 1419 | 77 | | | | | | | 60' to 77' = 17 | EOR = 4 |
| 1420 | 80 | | | | soft / hard | yel. brn, white, gray, pink, black | as above w/ trace ferromagnesians | — | wet/sat. muddy |
| | | | | | | | | | |
| | | | | | | | | | |
| 1421 | 87 | | | | soft / hard | as above | as above w/ silt-sized material → prob. pulverized gneiss | — | damp |
| | | | | | | | | | |
| 1423 | 92 | | | | soft / hard | black, gray, green, white | weathered gneiss w/ silt-sized material → prob. pulverized gneiss equal percentages of qtz/plag. and ferromagnesians | — | damp/dry dusty |
| | | | | | | | | | |
| 1424 / 1429 | 97 | | | | soft / hard | black, gray, white | weathered gneiss, mainly quartz/plagioclase | 77' to 97' = 13 | fractured or soft material b/w 93' → 97' |
| 1429 | 98 | | | | ↓ | ↓ | as above | — | wet/muddy |
| 1431 | 102 | | | | ↓ | ↓ | as above w/ silt-sized material → prob. pulverized gneiss (yellow brn) | — | damp/dry dusty |
| | | | | | | | | | — |

REMARKS

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-20I, S
DATE 03-29-94
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1432 | 108 | | | | soft / med. hard | black, gray, white | weathered gneiss, mainly ferromagnesians + silt-sized material → prob. pulverized gneiss | — | damp/dry dusty |
| 1433 | 112 | | | | soft / med. hard | black, gray | as above quartz/plagioclase rich, some hornblende Fe staining | — | damp/dry dusty |
| | | | | | | | | | |
| 1435 / 1438 | 117 | | | | | | | 97' to 117' = (17) | EOR-5 blow out some water at rod connection |
| 1439 | 118 | | | | soft / med hard | black, gray, white | weathered gneiss + some phyllitic material + sandy clay, quartz-rich | — | |
| 1441 | 122 | | | TOR #26' | | | no sample, poor returns | — | blowing some water out |
| 1443 | 126 | | | | hard | black, gray | gneiss, mainly ferromagnesians + some qtz./plagioclase trace Fe staining | — | damp |
| 1445 | 129.5 | | | | hard | black, gray, dk. gneiss-gray | as above | — | damp |
| 1446 / 1447 | 132 | | | | | | | 117 to 132' = (22) | poss. fracture at 130', blow out some water EOR-6 |
| 1451 | 135 | | | | hard | | no sample, no returns → transfer hoses blocked | — | saturated → water blowing outside bonnet |
| | | | | | | | | | poss. [illegible] GPM |
| 1454 | 139 | | | | hard | | | — | |
| | | | | | | | | | |
| 1459 / 1502 | 143 | | | | hard | | | — | poss. fracture → large water surge |

REMARKS

BORING NO. HN-20 I, S

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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-20 I, S
DATE 03-29-99 / 03-30-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH POLEPKO, ROBERT GOLD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1505 / 1653 | 147 | | | | | white | | 132 / 147 = 0.0 | FOR = 8 1694 → [illegible] Q=5-10 GPM [illegible] |
| 1654 | 148 | | | | hard | light-gray, v. light gray, black | gneiss quartz/plagioclase rich Fe staining | — | saturated Q=8-10 GPM |
| 1656 | 151 | | | | hard | white black olive | gneiss about percentage of qtz/plag and ferromagnesian w. Fe staining | — | |
| | | | | | | | | | poss fracture → 154' → 158' |
| 1659 | 156 | | | | hard | black, gray, white | gneiss, mainly ferromagnesian | — | |
| 1701 | 159 | | | | hard | green-gray, v. light gray, black | gneiss, mainly qtz. /plag. | — | |
| 1703 / 1712 | 162 | | | | | | | 147 → 162 = 5.0 | FOR = 9 |
| 1713 | 163 | | | | hard | green-gray, light gray | gneiss, as above trace black ferromagnesian, Fe staining | — | poss fracture, Q?, 10-15 GPM sat. |
| 1715 | 165.5 | | | | hard | v. light-gray, gray, pink | gneiss, mainly qtz./plag. w/ trace black ferromagnesian | — | |
| 1720 | 169 | | | | hard | black, olive, light gray, white | gneiss, appears weathered mainly qtz. /plag. | — | poss. fracture, no apparent Q↑ |
| 03-29-99 1721 / 03-30-99 1721 | 170 | | | | | | | 162 → 170 = 17 | Q total = 10-15 GPM |
| 1222 | 171 | | | | hard | black, gray, green, pink | gneiss, qtz/plag rich green chlorite? trace Fe staining | — | sat. Q=10-15 GPM |
| 1226 | 175 | | | | hard | white, gray, black, gray | gneiss, mainly qtz. /plag. trace Fe staining | — | |
| 1229 | 178 | | | | hard | pink black olive gray | as above w/ trace phyllite | — | slight water sump → poss fracture? |

REMARKS 1505 - Stop drilling to unblock transfer hoses
1721 - develop borehole for 10 minutes, water quality improving

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AR300951

BORING LOG

TETRA TECH US, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-20 I, S
DATE 03-30-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M SETTPELEPRO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1232 | 192.5 | | | | hard | dk green-gray, gray, black | gneiss, mainly ferromagnesians | — | Sat. Q=10-15 GPM |
| 1234 | 195.5 | | | | hard | pink, gray, green | gneiss, qtz/plag/mica rich trace ferromagnesians + phyllite | — | 193'-195' poss. fracture, no apparent Q↑ |
| 1237 | 188 | | | | hard | olive, pink, gray | gneiss, as above appears weathered Fe staining | — | Sat. Q=10-15 GPM poss. fracture |
| 1239 | 191.5 | | | | hard | pink, gray, green, black | gneiss, equal percentages of ferromagnesians and qtz/plag. minerals | — | Sat. Q=10-15 GPM |
| 1240 / 1246 | 192 | | | | | | | 170' to 192' = 10 | EOR = 10 |
| 1247 | 193 | | | | hard | green-gray, gray, black | gneiss, qtz/plag-rich trace Fe staining, pink microcline | — | Sat. Q=10-15 GPM |
| 1249 | 195 | | | TD=195' | | | | 192' to 195' = 14.1 | $Q_{Total}$ = 10-15 GPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS 1249 - Develop borehole for 7 minutes, water table clear

BORING NO. HN-20 I, S

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BORING LOG

TETRA TECH [illegible]JS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-21I (abandoned)
DATE 03-30-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1447 | 0 | | | | | dk. brn | clayey silt + gneiss pebbles and cobbles, roots | — | damp |
| 1448 | 2.5 | | | | | brn | sandy clay with gneiss fragments | — | damp |
| 1449 | 4.5 | | | | | orange, brn | as above, mottled appearance | — | damp |
| 1449 / 1454 | 5 | | | | | | | 0' to 5' = 0.0 | |
| 1455 | 7.5 | | | | | orange, gray, brn | sandy clay w/ gneiss fragments | — | damp/moist |
| | | | | | | | | | |
| 1456 | 12.5 | | | | | orange, gray, brn | as above | — | damp/moist |
| 1456 | 16 | | | | | orange, gray, brn | as above | — | damp/moist |
| | | | | | | | | | |
| 1457 | 21 | | | | | buff | m. to c. sand w/ some clay + gneiss fragments (qtz. / plag. / micro.) | — | damp/moist |
| 1458 / 1505 | 25 | | | | | | | 5' to 25' = 7.0 | EOR = 1 |
| 1506 | 26 | | | | | buff | as above w/o clay | — | wet |
| | | | | | | | | | |
| | 32 | | | | | yellow brn. orange | sandy clay w/ gneiss fragments | — | wet/moist — |

REMARKS SCHRAMM DRILL RIG
8" Air Percussion bit (8' bit assembly)
M. S. Pelepko conducted geological logging (03-30, 03-31)
R. Good conducted air monitoring activities (03-30)
qtz = quartz
plag. = plagioclase
micro. = microcline

BORING NO. HN-21I
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PID Readings indicate maximums/rod interval @ discharge

* See Legend on Back

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-21 I (abandoned)
DATE 03-30-94
DRILLER Harbin-Huber
FIELD GEOLOGIST M. Seth Pelepko, Robert Good

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1507 | 35 | | | | | yellow orn, orange, white | sandy clay with gneiss fragments | — | moist |
| | | | | | | | | | |
| 1508 | 40 | | | | | yl. orn, orange, white | sandy clay/clayey sand w/ abundant gneiss frags. (qtz./phy.) | — | moist |
| 1508 | 41 | | | | | as above | as above mottled appearance Fe staining | — | harder to retrieve material bagging |
| 1509 / 1522 | 45 | | | | | | no sample, no circulation | 25' to 45' = (9.0) | no return → lost circulation, poss. water zn. FOR = 2 |
| | | | | | | | | | |
| 1525 | 50 | | | | | | | — | |
| 1526 / 1529 | 52 | | | | | | soft or broken from 51' → 52' | — | 1526 → attempt to establish circulation |
| | | | | | | | | | |
| 1529 | 58 | | | | | | soft or broken from 53.5' → 58' | — | |
| | | | | | | | | | |
| 1535 / 1537 | 63 | | | | | | | — | |
| 1538 / 1541 | 64 | | | | | | | — | |
| 1541 / 1604 | 65 | | | | | | | 45' to 65' = (0.0) | FOR = 3 |

REMARKS 1541 - Drillers pull tools to install 6" temporary casing
1705 - 6" temporary casing installed to 62' BGS
Attach 6" Air Percussion bit (5' of assembly) at 65' BGS

BORING NO. HN-21I
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BORING LOG

TETRA TECH[illegible]US, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-21 I (abandoned)
DATE 03-30-99/03-31-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELEPKO, ROBERT GOOD, VINCE SHICKORA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1806 | 67 | | | | soft / hard | yellow brn white, gray | weathered gneiss + sandy clays Fe staining | – | damp/moist |
| 1808 | 71.5 | | | | soft / hard | | as above | – | |
| | | | | | | | | | |
| 1812 | 76.5 | | | | soft / hard | | as above | – | |
| 1813 | 79 | | | | soft / hard | yellow brn | silt-sized material (poss. pulverized gneiss) + weathered gneiss fragments. | – | damp/dusty |
| 3-30-99 1815 / 3-31-99 0807 | 82 | | | | | | | 65' to 82' = (9.0) | [illegible] muddy water + [illegible] trays. TOR=4 |
| 0808 | 85 | | | | soft / hard | gray, brn | gneiss fragments + shales + clays (v coarse grained [illegible]) | – | muddy/wet |
| 0811 | 87 | | | | soft / hard | yellow brn, lt green, gray, black | as above + silvery phyllite [illegible] + poss. [illegible] (mottled [illegible] black [illegible] soft) | – | muddy/wet |
| | | | | | | | | | |
| 0916 / 0918 | 92 | | | | | | no sample, lose circulation | 82' to 92' = (0.0) | [illegible] blocked, drilling halted |
| 0920 | 94 | | | | soft / hard | yellow brn gray white | weathered gneiss (qtz/phyll/mica) + clays + shales or hard foliated clays Fe staining | – | v muddy/wet |
| | | | | | | lt green gray | | | |
| 0921 | 98 | | | | soft / hard | | as above | – | |
| | | | | | | | | | – |

intermit. circulat.

REMARKS v Shickora conducted air monitoring activities (03-31)

BORING NO. HN-21 I
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BORING LOG

TETRA TECH NUS, INC.

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-21I (abandoned)
DATE 03-31-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PEREPEL, VINCE SHIKORA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0923 / 0928 | 102 | | | | soft / hard | yel. brn, gray, tan, H green-gray | weathered gneiss + clays + shales Fe staining | 92.1 / 92.2 (3.5) | v muddy / wet FOR-5 |
| 0930 | 103.5 | | | | soft / hard | as above + black | as above w/ some silica phyllite | — | v muddy / wet intermittent [illegible] |
| 0933 | 107 | | | | soft / hard | yel. brn, gray, black | weathered gneiss + clays + shales Fe staining | — | v muddy / wet |
| | | | | | | | | | — |
| 0937 | 112 | | | | soft / hard | as above + green-gray | as above | — | v muddy / wet |
| 0940 / 0947 | 114 | | | | | | | — | blow out borehole |
| 0949 | 115 | | | | soft / hard | as above | as above, w/o shaly fragments | — | damp / moist |
| 0952 / 1003 | 117 | | | | soft / hard | black, dk gray, dk green-gray | weathered gneiss (hornblende-rich) + sandy clay + some shale Fe staining | [illegible] / 17.[illegible] (2.8) | damp / moist FOR-6 |
| 1008 | 120 | | | | soft / hard | green-gray, gray, black | weathered gneiss, equal percentages of ferromagnesians & qtz / plag. + sandy clay Fe staining | — | damp / moist |
| | | | | TOR=125' | | | | | |
| 1012 | 125 | | | | hard | green-gray, pink, black | gneiss (qtz. / plag. / micro / ferromagnesians Fe staining | — | poss. fracture b/w '03' → 125' intermittent Q |
| 1014 | 126 | | | | | | | — | Q-5-7 GPM |
| 1016 | 128 | | | | hard | as above + gray | gneiss, equal percentages of qtz. / plag. / micro + ferromagnesians Fe staining | — | set., v muddy Q-5-7 GPM |
| 1019 | 131 | | | | hard | H. green-gray, gray, black | gneiss, qtz. / plag. rich heavy Fe staining | — | ↓ |

REMARKS

BORING NO. HN-21I
PAGE 4 OF 6

* See Legend on Back

AR300956

BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS.
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-21I (abandoned)
DATE 03-31-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST M. SETH PELERKO, VINCE SHIKURA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1020 / 1033 | 132 | | | | | H. green | | 117 in 13 = 5.6 | blow out bottom EOR=7 |
| 1035 | 133.5 | | | | hard | green-gray, pink, black, white | gneiss, qtz./plag./micro. rich heavy Fe staining | — | sat./v muddy Q=5-7 GPM |
| 1039 | 137 | | | | hard | | as above | — | |
| | | | | | | H. green | | | |
| 1043 | 142 | | | | hard | green-gray, black, gray | gneiss, slightly more ferromagnesians than qtz/plag. heavy Fe staining | — | |
| 1048 | 145 | | | | hard | as above + pink | gneiss heavy Fe staining | — | poss. fracture b/w 142 & 145'. approx. Q? GPM |
| 1049 | 147 | | | | | | | 3 in 147 = 5.9 | EOR=8 |
| 1129 | 150 | | | | hard | | as above | — | sat/v muddy Q=6-8 GPM |
| 1131 | 152 | | | | hard | green-gray, gray, black | gneiss, qtz./pky rich heavy Fe staining | — | sat. Q=6-8 GPM |
| 1134 | 156 | | | | hard | gray, black, H. green | as above | — | |
| 1137 | 159 | | | | hard | as above + white, pink | as above + micro | — | |
| 1140 / 1143 | 162 | | | | | | | 147 in 15 = 1.9 | EOR=4 |
| 1145 | 164 | | | | hard | gray-gray, black, pink, white. | gneiss heavy Fe staining | — | poss. Q?, fract.? sat. Q=8-10 GPM |
| 1148 | 165 | | | | hard | gray | gneiss, qtz/plag/micro rich | — | sat Q=8-10 GPM |

REMARKS

BORING NO. HN-21I
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AR300957

**BORING LOG**

**TETRA TECH [illegible]US, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-21 I (abandoned)
DATE 03-31-99
DRILLER Hardin-Huber
FIELD GEOLOGIST M. Seth Pelfaro, Vince Shickora

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1152 | 170 | | | | hard | green-gray, black, pink, white | gneiss, qtz./plag./micro. rich heavy Fe staining | — | sat. Q=8-10 GPM |
| 1157 | 174 | | | | hard | gray as above + lt green | as above | — | sat Q=8-10 GPM |
| 1159 / 1203 | 177 | | | | | green-gray | | 182 to 177'= (6.4) | poss Q ↑ b/w 175'→177' Q=10-12 GPM Eq=10 |
| 1204 | 179 | | | | hard | black, pink, white, gray | as above | — | sat Q=10-12 GPM |
| 1209 | 182.5 | | | | hard | as above + lt green | gneiss heavy Fe staining | — | |
| | | | | | | | | | |
| 1211 | 187 | | | | hard | | as above | — | |
| 1214 | 190 | | | | hard | green-gray, lt green, gray, black, pink | gneiss, qtz./plag./micro. rich heavy Fe staining | — | |
| 1215 / 1227 | 192 | | | | | | | 177 to 192'= (6.2) | poss. fracture b/w 190'→192' EGP-11 |
| 1230 | 194 | | | | hard | gray, lt green, black, pink | gneiss | — | sat Q=10-12 GPM |
| 1230 | 195 | | | TD=195' | | | | 192 to 195'= (15.1) | develop borehole Q total=10-12 GPM |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | — |

**REMARKS** 1245 stop developing borehole. Water still muddy, brown.
note: after pulling tools, borehole bridged at 69' BGS two consecutive times. Borehole over reamed using 8" ODEX drilling to 80' BGS on 04-02-99.

**BORING NO.** HN-21 I
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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO HN-22 I, S
DATE 04-06-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST ROBERT GOOD, VINCE SHICKORA, SETH PELEPKO

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | P/D | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0800 | 0 | | | | | brn | silt loam w/ roots | | damp t. moist |
| | | | | | | lt brn | silty clay + sandy clay | — | |
| | 10 | | | | | | v. weathered gneiss saprolite | — | |
| | | | | | | | | | |
| 0809 | 20 | | | | | | | — | |
| 0816 | | | | | | lt→m brn | sandy clay + clay v. weathered gneiss saprolite | 0' to 25' = (0.0) | moist to wet EOR=1 |
| | 30 | | | | | | | | wet |
| | | | | | | lt→m. brn, dk gray, pink | as above, slightly harder, drier numerous quartz frags, | — | moist to wet |
| 0820 | 40 | | | | | | sm plagioclase frags (t.g.) Fe staining | | EOR=2 |
| 0827 | | | | | | | transition to harder, weathered gneiss | 25' to 45' = (0.0) | |
| | 50 | | | TOR=50' | | gray, black, pink | qtz, plag, kspar, hbld gneiss (mgr - cgr) weathered | — | |
| | | | | | | as above | as above, ↑ plag., sm dk gray v.t.g. mat'l, num. Fe stains | — | |
| 0838 | 60 | | | | | as above + dk green gray, pistachio green | fg hbld gneiss w/ qtz-plag→kspar gneiss + qtz-kspar-hbld gneiss | 45' to 60' = (0.0) | 55'→57', sat poss. fracture Q=2-3 GPM |
| 0849 | | | | | | | | | EOR=3 |
| | | | | | | | 0840→pull tools, install | | |
| | | | | | | | 6" temp. casing to ~60' | | — |

REMARKS SCHRAMM DRILL RIG
8" AIR PERCUSSION BIT (8' bit assembly) to 60'
6" AIR PERCUSSION BIT (5' bit assembly) below 60'
R. GOOD conducted geological logging from 0'→60'; S. Pelepko conducted geological logging below 60'
V. Shickora conducted air monitoring activities

BORING NO. HN-22I, S
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AR300959

BORING LOG

TETRA TECH NUS, INC.

PROJECT Crosslet Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-22I, S
DATE 04-06-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST S. Pelepko, V Shickora

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1251 | 62 | | | | hard | gray, dk gray, black, pink | gneiss qtz/plag/micro. rich | — | dry/dusty |
| 1252 | 66 | | | | hard | gray, black, pink | as above trace Fe staining | — | poss fracture b/w 65' → 68' Sat. Q=3-5 GPM |
| 1255 | 70 | | | | hard | gray, white, black | gneiss equal percentages of qtz/plag. + ferromagnesians | — | Sat Q=3-5 GPM heavy Fe staining |
| 1256 | 72 | | | | hard | gray, black, tr. pink | gneiss, as above + trace micro | — | Sat. Q=3-5 GPM |
| 1258 | 75 | | | | hard | lt gray, pink, tr. dk. gray | gneiss qtz/plag/micro. rich | — | |
| 1300 1304 | 77 | | | | | | | 60' to 77' = (0.0) | EOR=4 |
| 1305 | 78 | | | | hard | gray, pink, tr. black | as above + trace ferromagnesians | — | Sat, Q ↑ to 8-10 GPM |
| 1308 | 81 | | | | hard | gray, pink, sm black | as above, ↑ ferromagnesians | — | Sat Q=8-10 GPM |
| | | | | | | | | | |
| 1309 | 86 | | | | hard | gray, black, pink | gneiss, more qtz/plag./micro. than ferromagnesians Fe staining | — | poss fracture b/w 83' → 85' Q=10-12 GPM |
| 1312 | 87 | | | | hard | as above | gneiss, more ferromags. than qtz/plag./micro. | — | Sat Q=10-15 GPM |
| 1313 | 90 | | | | hard | lt gray, pink | gneiss qtz/plag/micro. rich heavy Fe staining | — | poss small fracture, no Q ↑ |
| 1314 | 92 | | | | hard | gray, pink, sm. black | gneiss, as above w/ sm. ferromags. | — | poss. fracture, bit drops Q=15-20 GPM |
| 1317 | 96 | | | | hard | | as above | — | poss. fract. at 94' sat. Q=15-20 GPM |

REMARKS qtz. = quartz
plag. = plagioclase
micro. = microcline
ferromags = ferromagnesian minerals

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PID Readings indicate maximums / rod interval @ discharge

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-22 I, S
DATE 04-06-99
DRILLER HARDING-HUBER
FIELD GEOLOGIST S. PELEPKO, V. SHIKURA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION: SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1317 / 1321 | 97 | | | | | H green | | 97.0 97.0 (0.0) | FOR-5 |
| 1322 | 99 | | | | hard | gray, gray, pink | gneiss qtz/plag/mica rich trace tourmaline | — | Sat. Q=15-20 gpm |
| | | | | | | Tr. black | | | |
| 1326 | 102 | | | | hard | | as above | — | |
| 1329 | 106 | | | | hard | | as above | — | |
| 1331 | 108.5 | | | | hard | H gray black | gneiss, hornblende + tourmaline-rich sm qtz/plag | — | |
| 1334 | 112 | | | | hard | H green-gray, gray, pink | gneiss qtz/plag/mica rich sm. black tourmaline | — | |
| 1336 | 115 | | | | hard | as above | as above tr. tourmaline Fe staining | — | poss. sm fract., pit dry digging |
| 1337 / 1342 | 117 | | | | | | | 97.0 117.5 (0.0) | FOR-6 |
| 1343 | 118 | | | | hard | pink, black, gray | gneiss tourmaline-rich sm qtz/plag/mica | — | Sat Q=15-20 gpm |
| 1345 | 121 | | | | hard | pink, black, gray, H green | gneiss more tourmaline than qtz/plag/mica | — | |
| 1347 | 124 | | | | hard | H gray, gray, pink | gneiss qtz/plag/mica rich trace black tourmaline | — | poss. fract. bring Fe staining |
| 1349 | 128 | | | | hard | H green, gray, gray, pink | as above | — | poss. sulfur discharge at 127' |
| 1353 | 130.5 | | | | hard | as above | as above | — | Sat Q=15-20 gpm |

REMARKS

BORING NO. HN-22 I, S
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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-22 I, S
DATE 04-06-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST S. PELEPKO, V. SHEKURA

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1354 / 1358 | 132 | | | | | | | 117.4 132 = (0.0) | FOR = 7 |
| 1359 | 133 | | | | hard | pink, gray, green | gneiss qtz/plag/microcline, above biotite, ferromags sm. pistachio-green epidote | — | Sat. Q=15-20 GPM |
| 1403 | 136 | | | | hard | gray, tr. pink, black | as above ↑ ferromags trace Fe staining | — | Sat. Q=15-20 GPM |
| 1405 | 139 | | | | hard | | as above | — | poss. small fract. at 138' |
| 1408 | 142 | | | | hard | gray, pink, black | as above ↑ micro. | — | Sat. Q=15-20 GPM |
| 1411 | 145 | | | | hard | green-gray, gray, pink, black | gneiss qtz/plag/microcline sm. ferromags | — | ↓ |
| 1413 / 1419 | 147 | | | | | tr. green-gray | | 120.4 147 = (0.0) | FOR = 8 |
| 1420 | 149 | | | | hard | pink, tr. gray, pist. green | gneiss entirely qtz/plag/micro | — | Sat. Q=15-20 GPM |
| 1421 | 149 | | | | hard | tr. green-gray, tr. gray, pink, sm. black | gneiss qtz/plag/microcline sm. ferromags | — | poss. fracture Sat, Q=15-20 GPM |
| 1422 / 1425 | 150 | | | | | gray | | 147.4 152 = (0.0) | |
| 1427 | 152 | | | TD 152' | hard | tr. green, pink, tr. black | as above trace ferromags | — | Sat. Q=15-20 GPM |
| | | | | | | | | | Drilling down, with water for 8 minutes |
| | | | | | | | | | Q=15-20 GPM |
| | | | | | | | | | — |

REMARKS

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-23I
DATE 04-14-97
DRILLER HARDIN-HUBER
FIELD GEOLOGIST SETH PELEPKO ROBERT GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0806 | 0 | | | | | dk brn | clayey silt + gneiss cobbles and pebbles + roots | — | damp |
| 0808 | 3 | | | | | dk brn orange brn | silty clay w/ rock frags + micas (mottled) | — | damp/moist |
| 0811 | 5 | | | | | yel-brn | sandy clay | — | damp |
| | | | | | | | | | |
| 0812 | 10 | | | | | yel-brn orange | sandy clay/clayey sand | — | damp/moist |
| 0814 | 13 | | | | | yel-brn gray, orange | sandy clay w/ rock frags (hard clays) | — | damp/moist |
| 0816 | 16 | | | | | as above | sandy clay | — | damp/moist [illegible] |
| 0817 / 0823 | 20 | | | | | | | 0' to 20' = 5.0 | EOR-1 |
| | | | | | | | | | |
| 0824 | 25 | | | | | yel-brn gray | as above w/ gray, foliated hard clays Fe stain | — | blow out muddy water wet/muddy |
| 0825 | 29 | | | | | yel-brn, gray | as above | — | wet/muddy |
| | | | | | | | | | |
| 0827 | 34 | | | | | yel-brn, gray | as above abundant gray, foliated hard clays + trace micas/plag | — | wet/muddy |
| 0827 / 0836 | 35 | | | | | | | 20' to 35' = 6.0 | EOR-2 |

REMARKS Sarrum Drill Rig
8" Air Percussion Bit (8" Bit Assembly)
M.S. Pelepko conducted geological logging
R. Good conducted air monitoring activities
micro. = microcline
plag. = plagioclase
qtz. = quartz
PID Readings indicate maximums/rod interval @ discharge

BORING NO. HN-23I
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BORING LOG

TETRA TECH NUS, INC.

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-23 I
DATE 04-14-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST S. PELEPKO, R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0837 | 38 | | | | | gray, yel.-brn | hard foliated clayt + sandy clay trace qtz/plag. Fe staining | — | wet/muddy |
| | | | | | | | | | |
| 0838 | 43 | | | | | | as above | — | poor returns wet/muddy |
| 0840 | 47 | | | | | | as above | — | poor returns wet/muddy (permeable?) |
| 0841 / 0848 | 50 | | | | | yel.-brn gray | | 35' to 50' = 8.0 | EOR 3 |
| 0849 | 52 | | | | | pink, clear, white, lt. green | hard foliated clayt + sandy clayt + with gneiss (qtz/plag/micro) frags | — | wet/muddy |
| | | | | | | | | | |
| 0851 | 58 | | | | | as above | as above some silvery, phyllitic frags | — | wet/muddy |
| 0853 | 62 | | | | | | as above | — | poor returns → permeable? wet/muddy |
| 0854 | 65 | | | | | gray | | 50 to 65' = 8.0 | EOR 4 |
| 0903 | 69 | | | | | yel-brn clear, white, pink | sandy clay + gneiss fragments (qtz/plag/micro) + hard foliated clayt | — | picked up more water over rod 4 wet/muddy |
| 0905 | 72 | | | | | | Fe staining as above + poss. phyllite | — | wet/muddy |
| 0907 / 1411 | 74 | | | | | | formational material getting harder | 65' to 74' = 8.0 | water surge at 73' |
| | | | | T.O.W.R. | soft / m. hard | lt. green, gray, black, gray | with gneiss (ferromags. + plag.) + yellow brn sandy clay + qtz | | moist/wet — |

REMARKS 0907 - pull tools to install 6" temp. casing to 74'
@ 74':
6" air percussion bit (5' bit assembly)
ferromags = dk. ferromagnesian minerals

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**BORING LOG** **TETRA TECH NUS, INC.**

PROJECT Crossley Farm RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-23I
DATE 04-14-99
DRILLER HARDIN-HUBER
FIELD GEOLOGIST S. Pelepko, R. Good

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1413 / 1417 | 77 | | | | | white | | 74' to 77' = 5.0 | EOR = 5 |
| 1418 | 79 | | | | m hard | green-gray black, pink | weathered gneiss Fe-staining | — | damp/dry |
| 1419 | 82 | | | | m. hard | H. green-gray, sm black | wth gneiss (mostly plag.) + sm. ferromags. + silt-sized pulverized gneiss | — | damp/dry dust |
| 1421 | 86 | | | | m. hard | H. green-gray, gray, tr pink, | wth. gneiss, equal percentages of ferromags and qtz/plag/micro | — | damp |
| | | | | | | black | | | poss. fracture b/w 86 → 88'; blows dry |
| 1424 / 1429 | 92 | | | | m. hard | H. green-gray, black | wth gneiss plag.-rich | 77' to 92' = 4.0 | EOR = 6 |
| 1430 | 94 | | | | m. hard | gray, white, H. H. green- | wth. gneiss qtz/plag./micro rich | — | poss. fracture sat./v. muddy Q=3-5 GPM |
| | | | | | | gray, pink, + black | heavy Fe staining | | |
| 1431 | 98 | | | | hard | gray | V. C. quartz-(gneiss) rich returns trace plag. Fe-staining | — | sat./muddy Q=3-5 GPM |
| 1433 | 102 | | | | m hard | H. green-gray, gray, black, | wth. gneiss, qtz/plag/ferromag.-rich trace pink micro | 92' to 102' = 6.0 | sat./muddy Q=3-5 GPM |
| | | | | | | white | heavy Fe staining | | |
| 1434 | 107 | | | | hard | pink gray, white | gneiss qtz/plag/micro-rich | — | poss. fract. b/w 105'-107' Q=8-13 GPM |
| 1436 | 111 | | | | hard | as above + pistachio green | as above | — | sat./cleaner Q=8-10 GPM poss tx 110'-113' |
| 1436 / 1451 | 112 | | | | | | | 102' to 112' = >25.0 | EOR = 7 |

REMARKS

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BORING LOG

**TETRA TECH NUS, INC.**

PROJECT CROSSLEY FARM RI/FS
PROJECT NO. 7525
ELEVATION
WATER LEVEL DATA
(DATE, TIME & CONDITIONS)

BORING NO. HN-23I
DATE 04-14-99
DRILLER HARDIN - HUBER
FIELD GEOLOGIST S. PELEPKO, R. GOOD

| SAMPLE NO | DEPTH (FT.) | BLOWS 6" | SAMPLE REC. LENGTH | LITHO. CHANGE | MATERIAL DESCRIPTION* SOIL DENSITY HARDNESS | COLOR | MATERIAL CLASSIFICATION | PID | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1452 | 114 | | | | hard | gray, pink, white | gneiss qtz/plag/micro rich Fe staining | — | Sat. Q=8-10 GPM fract 113'-114' |
| 1453 | 117 | | | | hard | as above + lt green-gray | as above with black ferromags. | — | sat. Q-8-10 GPM |
| | | | | | | | | | poss fract b/w 119'-122' |
| 1455 | 122 | | | | hard | gray, pink, white | gneiss qtz/plag/micro rich (v.c.g. qtz) Fe staining | — | Sat Q=10-12 GPM |
| 1456 | 126 | | | | hard | dk green-gray, black, gray, white, pink | gneiss ferromag.-rich (v.c.g. quartz) Fe staining | — | Sat. Q=10-12 GPM |
| | | | | T.O.P.=129' | | | | | |
| 1458 | 129 | | | | hard | dk green-gray, black | gneiss ferromag.-rich trace gray white qtz/plag | — | poss. fract b/w 125'-129' Sat. Q=10-12 GPM |
| 1459 | 132 | | | TD=132' | | | Fe staining | 112' to 132'= 50.0 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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REMARKS

BORING NO. HN-23I
PAGE 4 OF 4

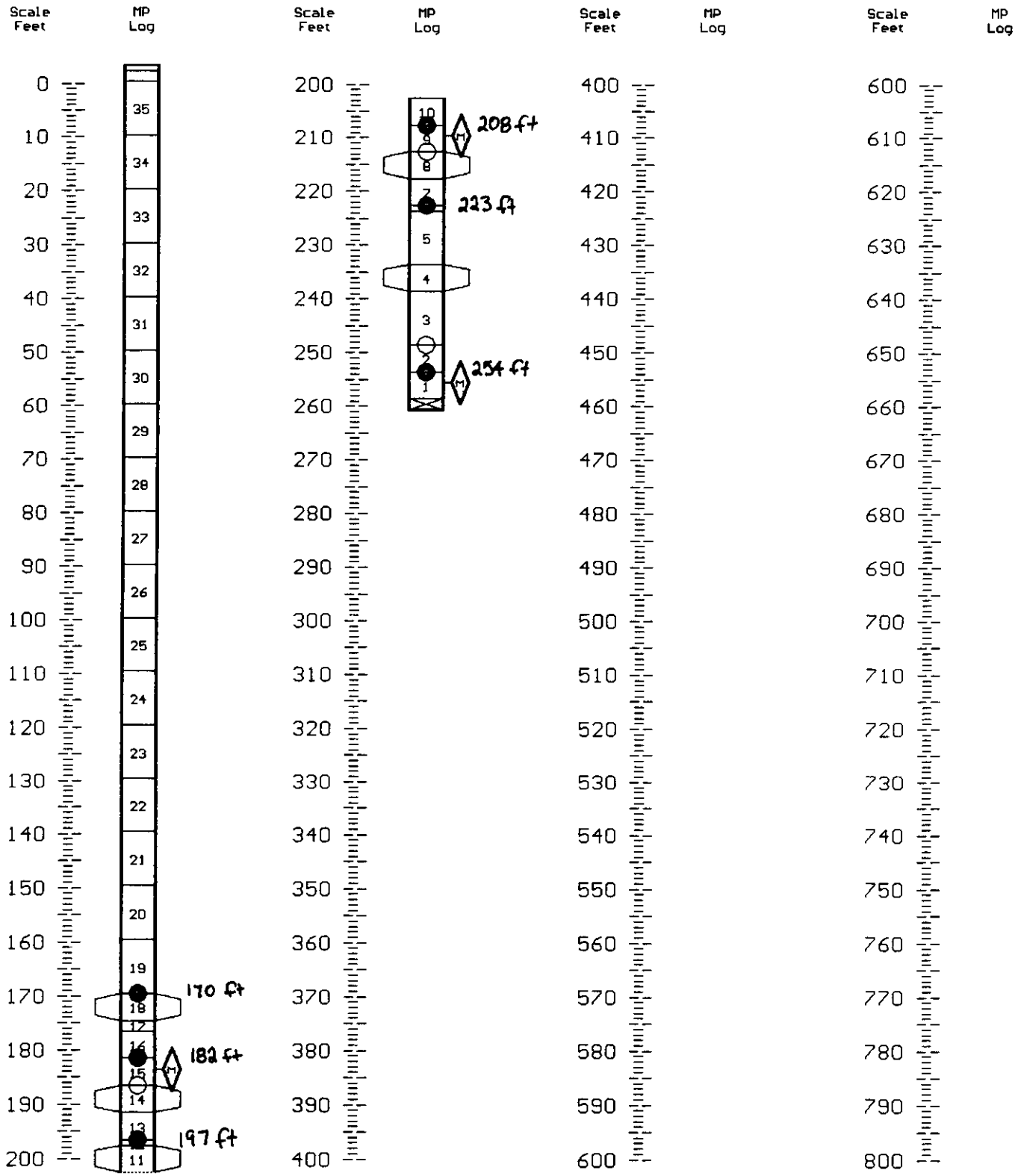
* See Legend on Back

AR300966

B

CLUSTER HN-1
WESTBAY WELL

Summary MP Casing Log  Date: Wed May 05 01:11:23 1999  Page: 1
Job No. WB780  Tetra Tech NUS  Well No. HN-1D




AR300968

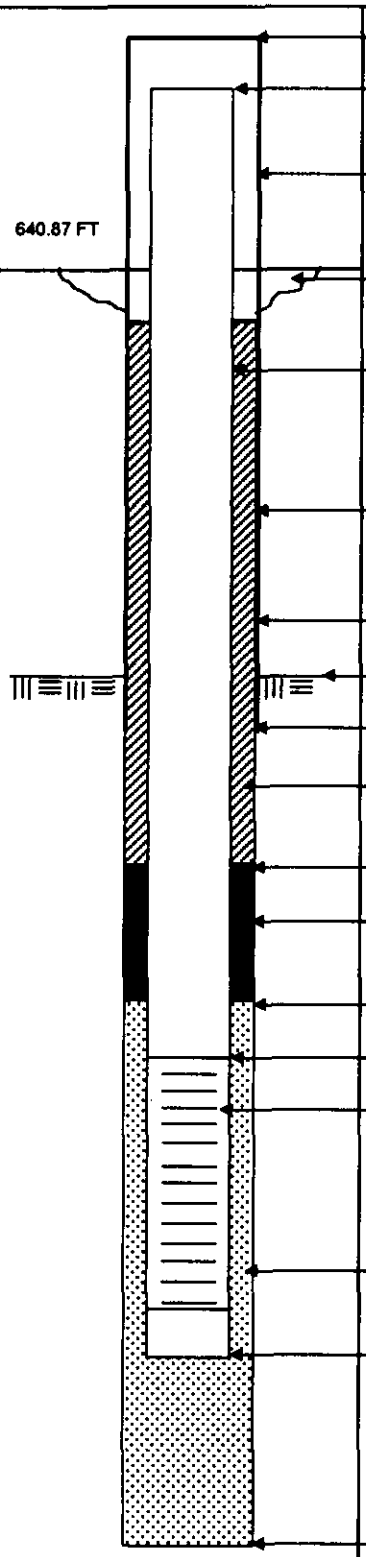
Tetra Tech NUS, Inc.

WELL No.: HN-06D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-06D |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor, M. Stawas | DATE COMPLETED: | 03/23/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | ODEX/Air-Rotary | NORTHING: | 406704.92 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2594429.48 |

Ground Elevation = 640.87 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 644.82 FT |
| Elevation / Height of Top of Riser: | | 644.66 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 4 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 8" to 145', 6" to 155.5', 4" to 189' | |
| Elevation / Depth Top of Rock: | | 138.5 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 155 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 148 FT |
| Type of Seal: with DSI 3/8" Shur-Plug Bentonite Pellets atop baskets | Grout Baskets at 150' and 148' | |
| Elevation / Depth of Top of Filter Pack: | | -N.A.- |
| Elevation / Depth of Top of Screen: | | 155 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | -N.A.- | |
| Elevation / Depth of Bottom of Screen: | | 185 FT |
| Elevation / Depth of Bottom of Filter Pack: | | -N.A.- |
| Type of Backfill Below Well: Material | 185-189 FT=Caved Formational | |
| Elevation / Total Depth of Borehole: | | 189 FT |

AR300969

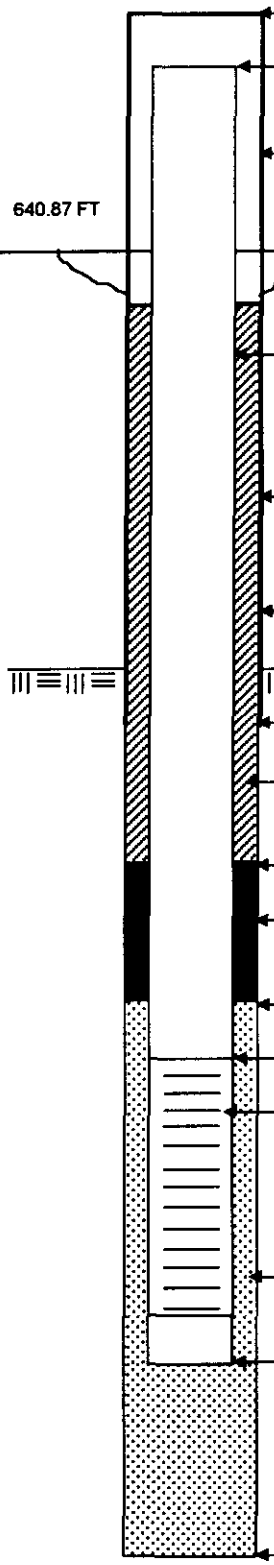
Tetra Tech NUS, Inc.

WELL No.: HN-07D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-07D |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 12/29/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 406477.84 |
| GEOLOGIST: | Joseph Gray | DEV. METHOD: | Sub. Pump | EASTING: | 2593229.15 |

Ground Elevation = 640.87 FT
Datum: MSL



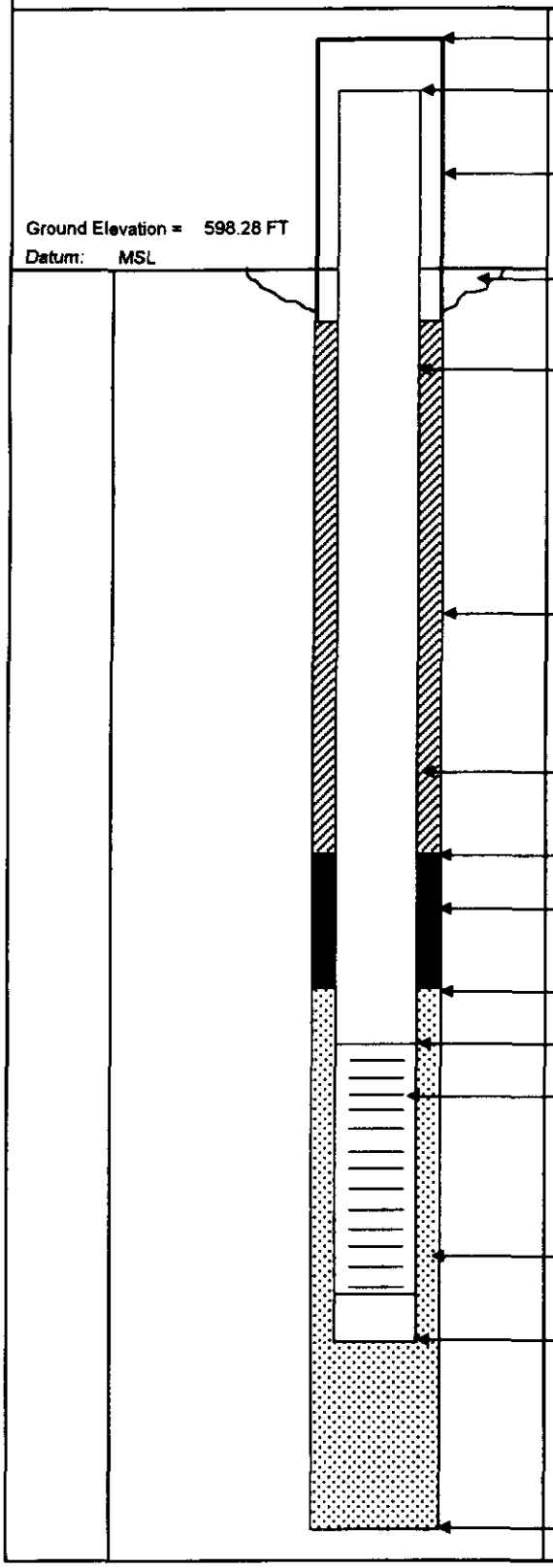
| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 643.84 FT |
| Elevation / Height of Top of Riser: | 643.60 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: | 2 Inch x 10 FT Schedule 40 PVC |
| I.D. of Perm. Casing: | 6 Inch |
| Type of Perm. Casing: | Steel |
| Borehole Diameter: | 10" from 0-152', 6" to 302' |
| Elevation / Depth Top of Rock: | 41 FT |
| Elevation / Depth Bottom of Perm. Casing: | 149.5 FT |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 206 FT |
| Type of Seal: | DSI 3/8" Shur-Plug Bentonite Pellets |
| Elevation / Depth of Top of Filter Pack: | 225 FT |
| Elevation / Depth of Top of Screen: | 230 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand |
| Elevation / Depth of Bottom of Screen: | 240 FT |
| Elevation / Depth of Bottom of Filter Pack: | 252 FT |
| Type of Backfill Below Well: | 252-275 FT=DSI 3/8" Shur-Plug Bentonite Pellets, 275-302 FT=Cement/Bentonite Grout |
| Elevation / Total Depth of Borehole: | 302 FT |

Tetra Tech NUS, Inc.

WELL No.: HN-08S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-08S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 11/18/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 404948.56 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2593933.84 |




| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 600.91 FT |
| Elevation / Height of Top of Riser: | | 600.62 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 13 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 16.5 FT |
| Elevation / Depth of Top of Screen: | | 20 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 30 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 31 FT |
| Type of Backfill Below Well: Formational Material | 31-32 FT = Caved | |
| Elevation / Total Depth of Borehole: | | 32 FT |

AR300971

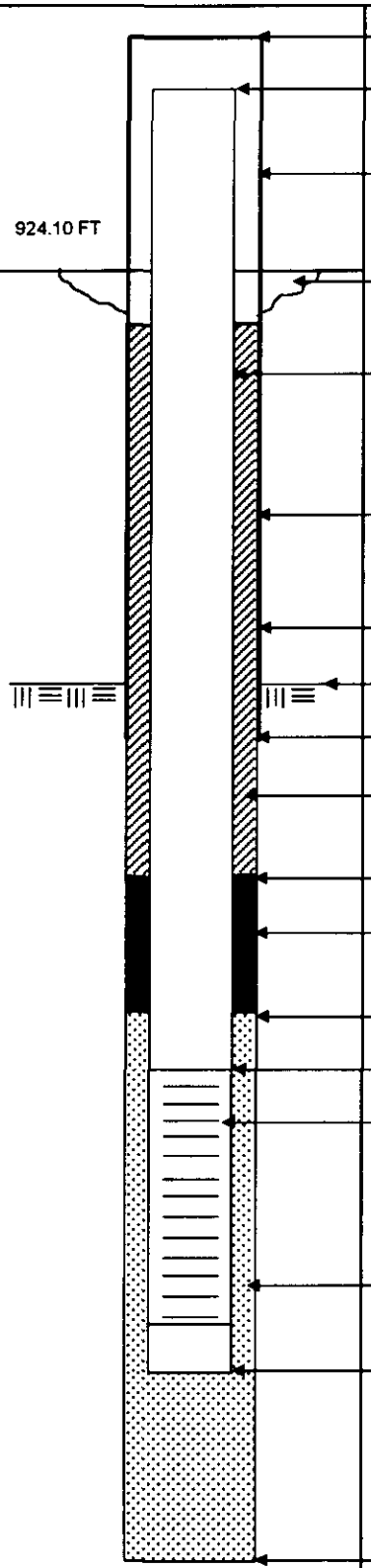
Tetra Tech NUS, Inc.

WELL No.: HN-09S

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-09S |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 01/21/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 410354.44 |
| GEOLOGIST: | Joseph Gray | DEV. METHOD: | Sub. Pump | EASTING: | 2594092.75 |

Ground Elevation = 924.10 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 927.54 FT |
| Elevation / Height of Top of Riser: | | 927.23 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-35', 6" to 102' | |
| Elevation / Depth Top of Rock: | | 33 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 35 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 31 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 42 FT |
| Elevation / Depth of Top of Screen: | | 45 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 60 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 64 FT |
| Type of Backfill Below Well: Bentonite Pellets, 86-102 FT=Cement/Bentonite Grout | 64-86 FT=DSI 3/8" Shur-Plug | |
| Elevation / Total Depth of Borehole: | | 102 FT |

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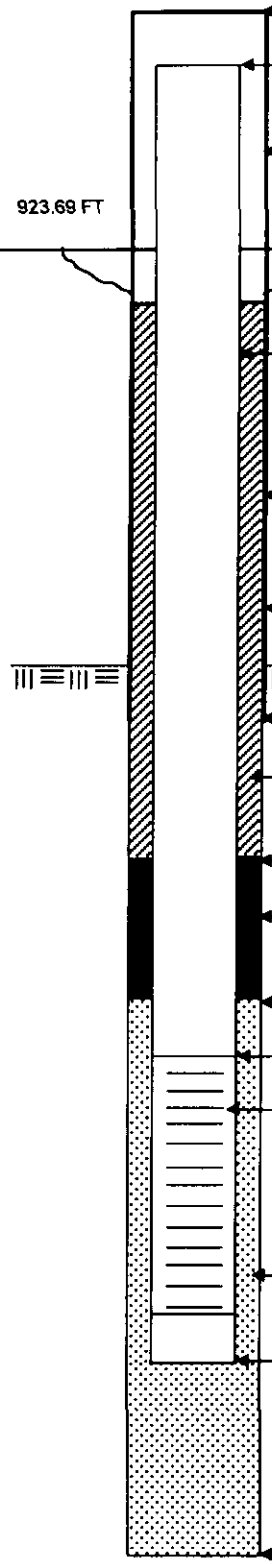
Tetra Tech NUS, Inc.

WELL No.: HN-09I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-09I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 01/21/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 410352.14 |
| GEOLOGIST: | Joseph Gray | DEV. METHOD: | Sub. Pump | EASTING: | 2594079.86 |

Ground Elevation = 923.69 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 927.18 FT |
| Elevation / Height of Top of Riser: | | 926.91 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-43', 6" to 150' | |
| Elevation / Depth Top of Rock: | | 35 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 43 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 67 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 72 FT |
| Elevation / Depth of Top of Screen: | | 75 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 85 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 91 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 100-150 FT=Cement/Bentonite Grout | 91-100 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 150 FT |

AR300973

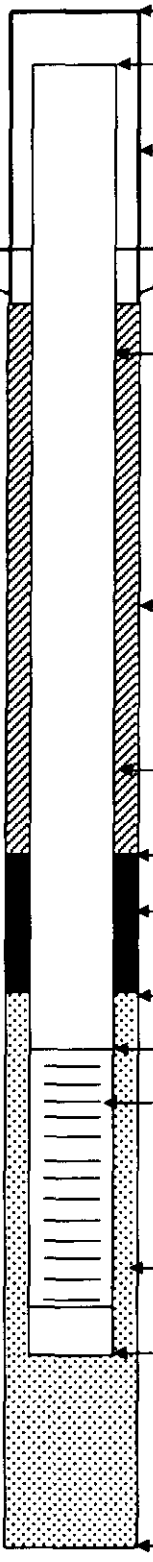
Tetra Tech NUS, Inc.

WELL No.: HN-10S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-10S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 03/17/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 409290.64 |
| GEOLOGIST: | Vince Shickora | DEV. METHOD: | Sub. Pump | EASTING: | 2592960.29 |

Ground Elevation = 823.09 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 829.50 FT |
| Elevation / Height of Top of Riser: | | 825.63 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 40 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 44.5 FT |
| Elevation / Depth of Top of Screen: | | 47 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 57 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 57.5 FT |
| Type of Backfill Below Well: Formational Material | 31-32 FT = Caved | |
| Elevation / Total Depth of Borehole: | | 61 FT |

AR300974

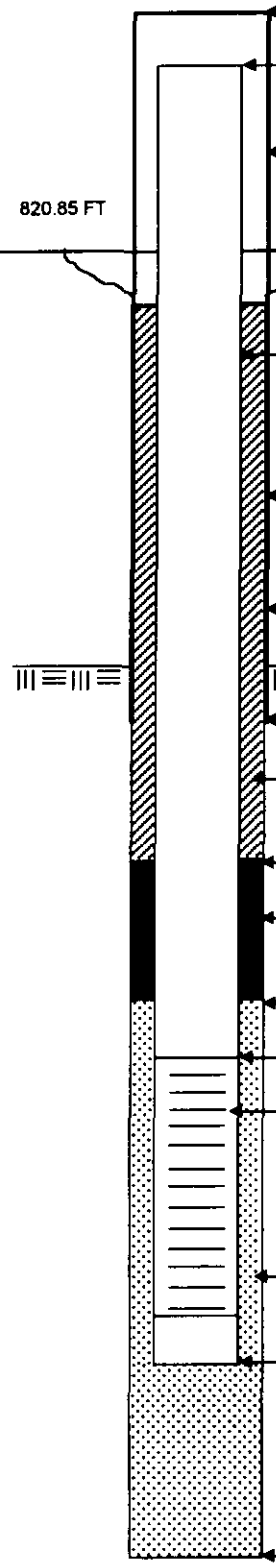
Tetra Tech NUS, Inc.

WELL No.: HN-10I1

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-10I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 03/24/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | ODEX/Air-Rotary | NORTHING: | 409284.97 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592944.55 |

Ground Elevation = 820.85 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 823.57 |
| Elevation / Height of Top of Riser: | | 823.25 |
| I.D. of Surface Casing: | 6 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" to 53', 8" to 70', 6" to 150' | |
| Elevation / Depth Top of Rock: | | 63 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 70 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 50 FT |
| Type of Seal: | Bentonite Slurry | |
| Elevation / Depth of Top of Filter Pack: | | 65 FT |
| Elevation / Depth of Top of Screen: | | 71 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: and Silica Quartz #1 Filter Sand | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 81 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 86 FT |
| Type of Backfill Below Well: | HN-10I2 Construction Backfill | |
| Elevation / Total Depth of Borehole: | | 150 FT |

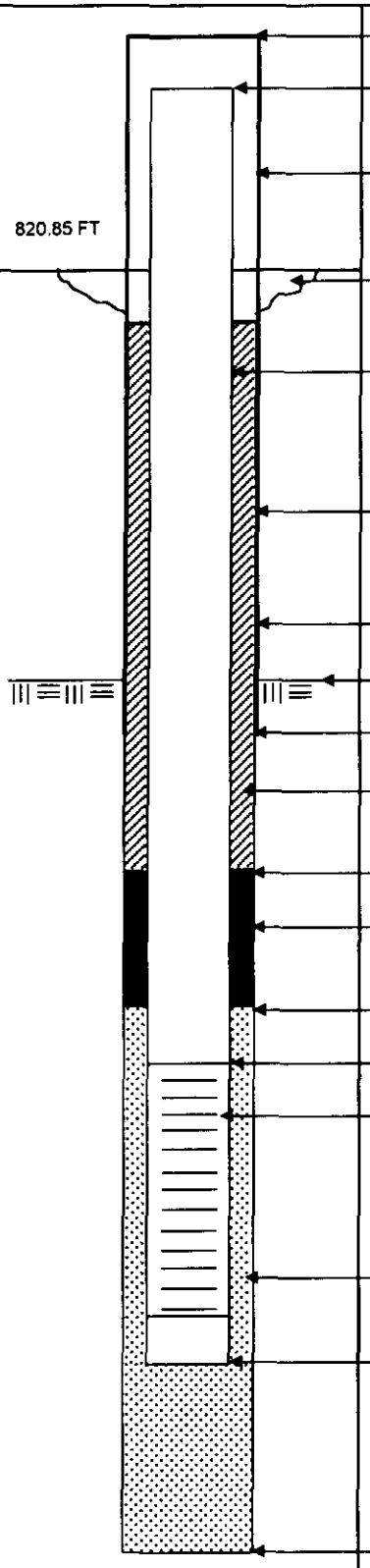
Tetra Tech NUS, Inc.

WELL No.: HN-10I2

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-10I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 03/24/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | ODEX/Air-Rotary | NORTHING: | 409284.97 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592944.55 |

Ground Elevation = 820.85 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 823.57 |
| Elevation / Height of Top of Riser: | | 823.28 |
| I.D. of Surface Casing: | 6 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" to 53', 8" to 70', 6" to 150' | |
| Elevation / Depth Top of Rock: | | 63 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 70 FT |
| Type of Backfill: | HN-10I1 Construction Backfill | |
| Elevation / Depth of Seal: | | 86 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 105 FT |
| Elevation / Depth of Top of Screen: | | 112 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: and Silica Quartz #1 Filter Sand | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 122 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 132 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets | 132-150 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 150 FT |

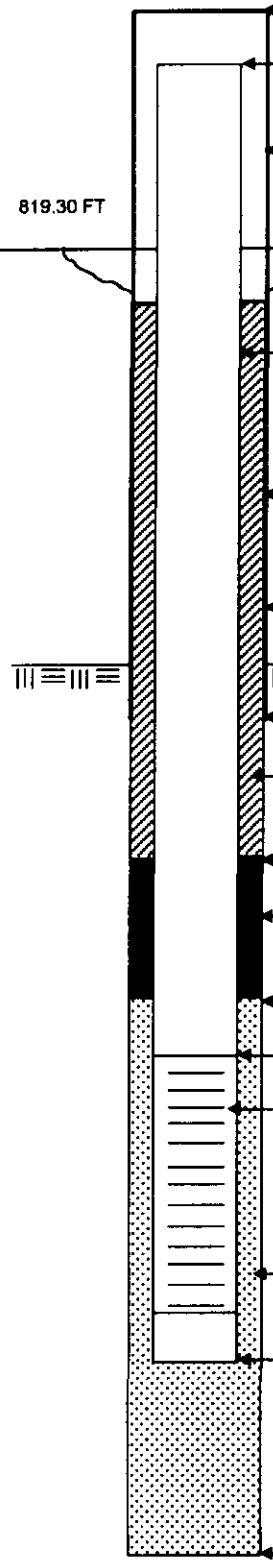
Tetra Tech NUS, Inc.

WELL No.: HN-10D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-10D |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 03/02/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 409277.48 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592920.99 |

Ground Elevation = 819.30 FT
Datum: MSL



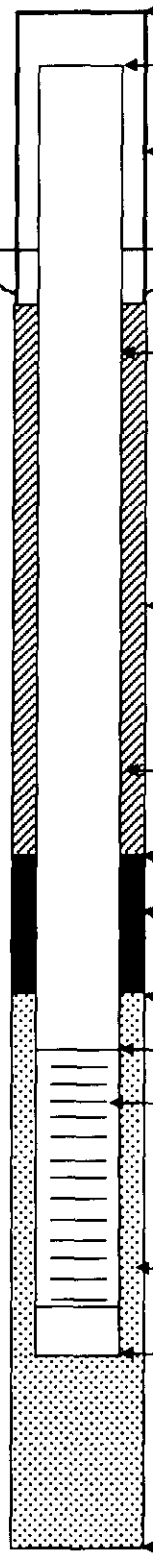
| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 822.32 FT |
| Elevation / Height of Top of Riser: | 822.07 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT |
| I.D. of Perm. Casing: | 6 Inch |
| Type of Perm. Casing: | Steel |
| Borehole Diameter: | 10" from 0-154', 6" to 302' |
| Elevation / Depth Top of Rock: | 55 FT |
| Elevation / Depth Bottom of Perm. Casing: | 152 FT |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 202 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite |
| Elevation / Depth of Top of Filter Pack: | 235 FT |
| Elevation / Depth of Top of Screen: | 247 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | Silica Quartz #1 Filter Sand |
| Elevation / Depth of Bottom of Screen: | 257 FT |
| Elevation / Depth of Bottom of Filter Pack: | 262 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 265-302 FT=Cement/Bentonite Grout | 262-265 FT=DSI 3/8" Shur- |
| Elevation / Total Depth of Borehole: | 302 FT |

Tetra Tech NUS, Inc.

WELL No.: HN-11S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-11S |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 01/25/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408502.34 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592570.09 |



Ground Elevation = 755.67 FT
Datum: MSL

| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 758.65 FT |
| Elevation / Height of Top of Riser: | | 758.25 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 38 FT |
| Type of Seal: *Bentonite Pellets* | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 42 FT |
| Elevation / Depth of Top of Screen: | | 45 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: *Sand* | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 55 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 57 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 59-61 FT=Caved Formational Material | 57-59 FT=DSI 3/8 Inch Shur | |
| Elevation / Total Depth of Borehole: | | 61 FT |

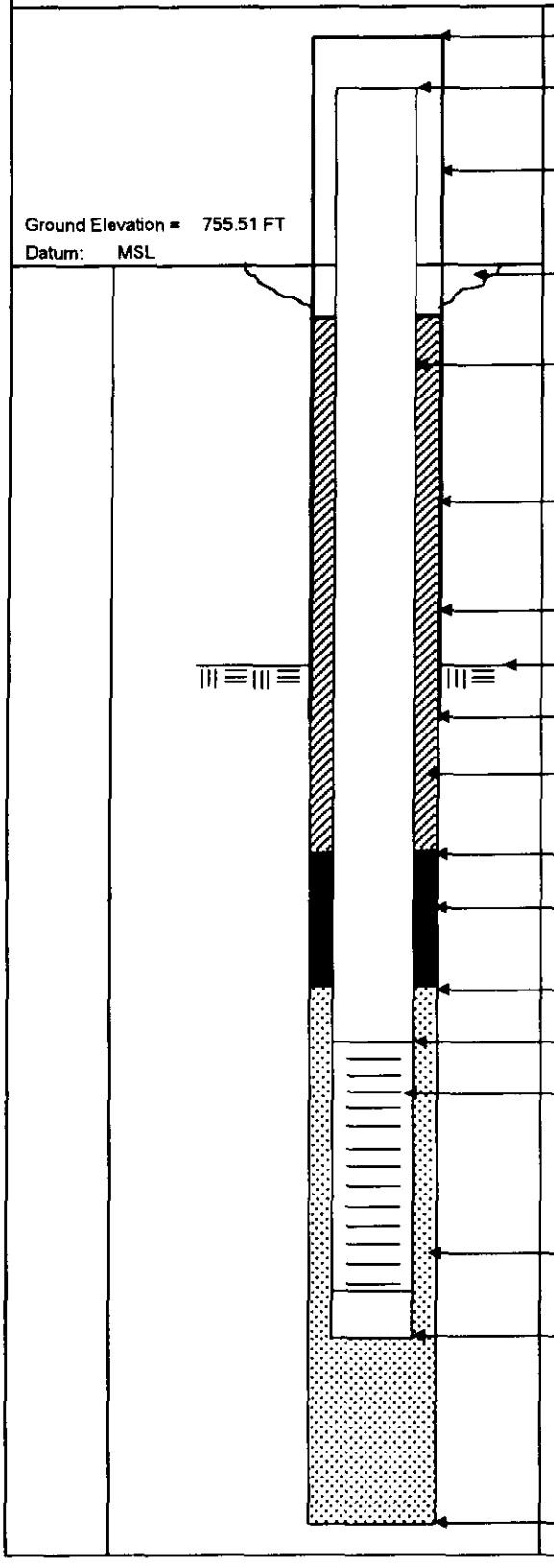
AR300978

Tetra Tech NUS, Inc.

WELL No.: HN-11I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-11I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 02/17/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408486.70 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592564.40 |

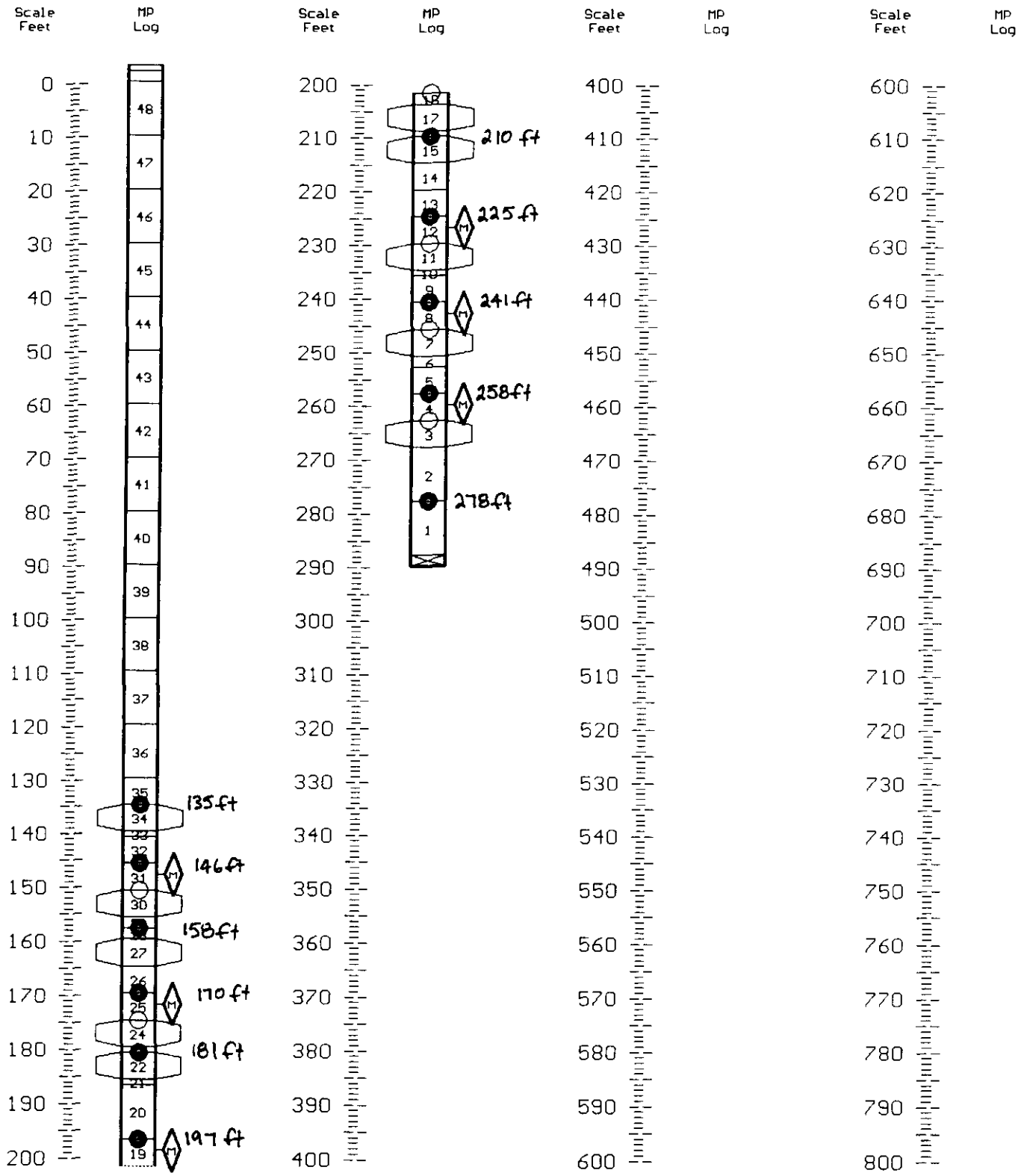



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 758.66 FT |
| Elevation / Height of Top of Riser: | | 758.28 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-83', 6" to 150' | |
| Elevation / Depth Top of Rock: | | 71 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 83 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 80 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 109 FT |
| Elevation / Depth of Top of Screen: | | 114 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 5 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: and Silica Quartz #1 Filter Sand | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 119 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 123.5 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets | 123.5-150 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 150 FT |

AR300979

CLUSTER HN-11
WESTBAY WELL

Summary MP Casing Log  Date: Wed May 05 01:16:25 1999  Page: 1
Job No. WB780  Tetra Tech NUS  Well No. HN-11D




AR300980

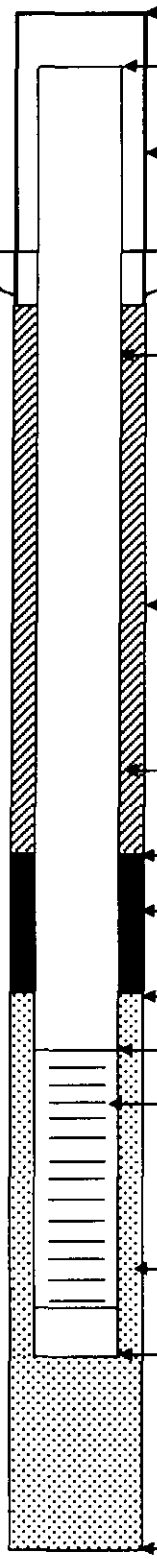
Tetra Tech NUS, Inc.

WELL No.: HN-12S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-12S |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 01/07/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408535.41 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593307.67 |

Ground Elevation = 882.69 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 885.70 FT |
| Elevation / Height of Top of Riser: | | 884.55 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 38.5 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 42 FT |
| Elevation / Depth of Top of Screen: | | 45 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 65 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 69 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets | 69-81 FT=DSI 3/8 Inch Shur | |
| Elevation / Total Depth of Borehole: | | 81 FT |

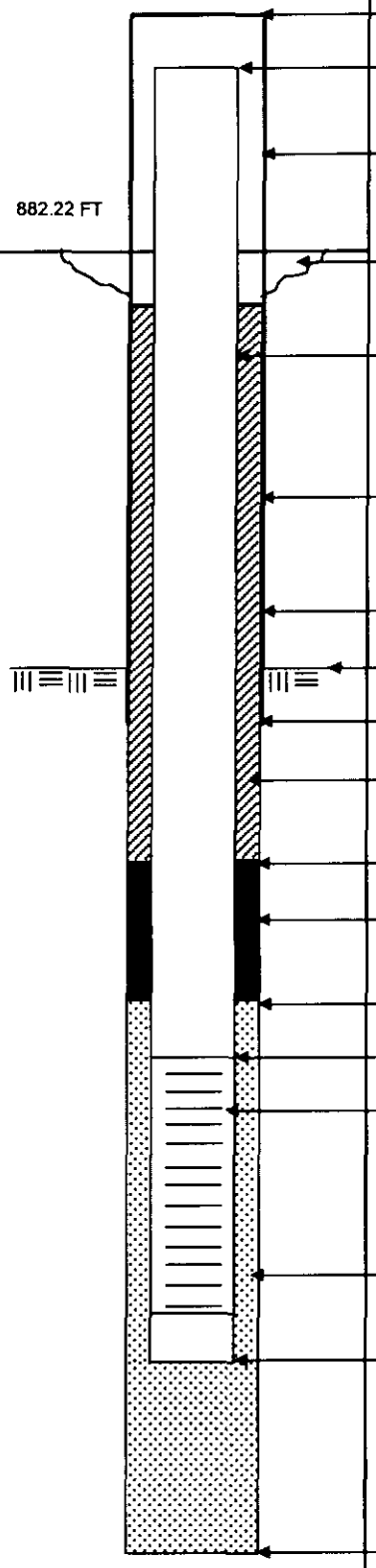
Tetra Tech NUS, Inc.

WELL No.: HN-12I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-12I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 02/08/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408535.63 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593292.21 |

Ground Elevation = 882.22 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 885.04 FT |
| Elevation / Height of Top of Riser: | | 884.48 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-80', 6" to 150' | |
| Elevation / Depth Top of Rock: | | 68 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 79.5 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 94 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 110 FT |
| Elevation / Depth of Top of Screen: | | 118 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 5 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand (110-112.5'), DSI Millersville #1 Filter Sand (to 145') | Filter Sil Silica Quartz #0 Filter | |
| Elevation / Depth of Bottom of Screen: | | 138 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 145 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 149-150 FT=Caved Formational Material | 145-149 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 150 FT |

AR300982

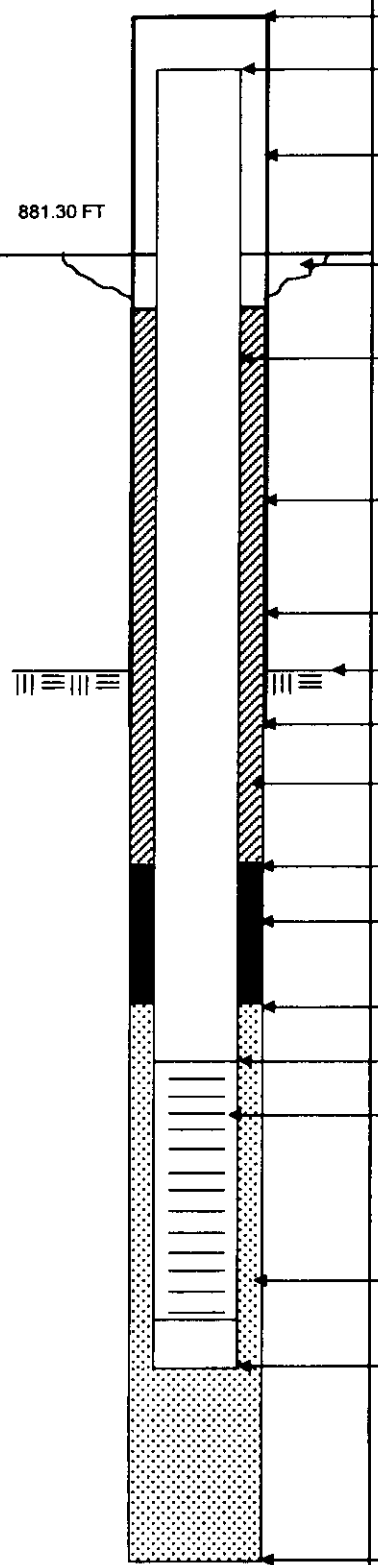
Tetra Tech NUS, Inc.

WELL No.: HN-12D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-12D |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 02/11/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408532.32 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593277.23 |

Ground Elevation = 881.30 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 884.64 FT |
| Elevation / Height of Top of Riser: | | 884.11 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-152', 6" to 305' | |
| Elevation / Depth Top of Rock: | | 49 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 152 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 240.5 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 260.5 FT |
| Elevation / Depth of Top of Screen: | | 275 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 5 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | Silica Quartz #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 305 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 305 FT |
| Type of Backfill Below Well: | -N.A.- | |
| Elevation / Total Depth of Borehole: | | 305 FT |

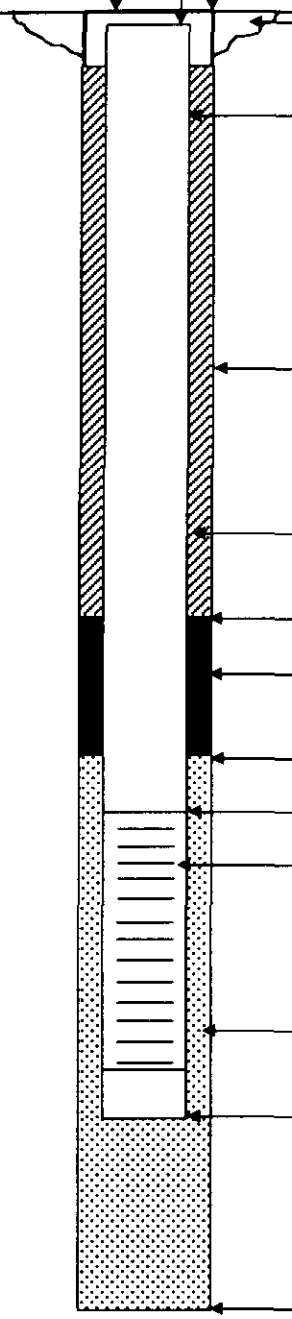
Tetra Tech NUS, Inc.

WELL No.: HN-13S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-13S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 11/30/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 406126.46 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2591683.50 |

Ground Elevation = 613.46 FT
Datum: MSL



| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 613.48 FT |
| Elevation / Height of Top of Riser: | 613.20 FT |
| I.D. of Surface Casing: | 8 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: | 2 Inch x 10 FT Schedule 40 PVC |
| Borehole Diameter: | 10 Inch |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 10 FT |
| Type of Seal: | DSI 3/8 Inch Shur-Plug Bentonite Pellets |
| Elevation / Depth of Top of Filter Pack: | 12 FT |
| Elevation / Depth of Top of Screen: | 15 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand |
| Elevation / Depth of Bottom of Screen: | 25 FT |
| Elevation / Depth of Bottom of Filter Pack: | 25 FT |
| Type of Backfill Below Well: | 25-27 FT= Caved Formational Material |
| Elevation / Total Depth of Borehole: | 27 FT |

AR300984

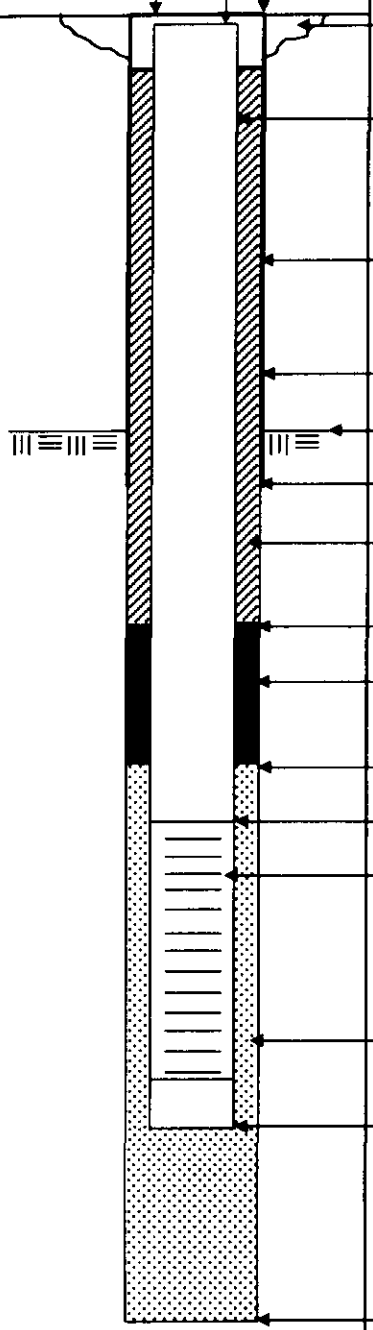
Tetra Tech NUS, Inc.

WELL No.: HN-13I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-13I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 12/29/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 406118.37 |
| GEOLOGIST: | Joseph Gray | DEV. METHOD: | Sub. Pump | EASTING: | 2591695.57 |

Ground Elevation = 612.93 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 612.98 FT |
| Elevation / Height of Top of Riser: | | 612.60 FT |
| I.D. of Surface Casing: | 8 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-31', 6" to 202' | |
| Elevation / Depth Top of Rock: | | 25 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 30 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 25 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 33 FT |
| Elevation / Depth of Top of Screen: | | 35 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 45 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 55.5 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 64-202 FT=Cement/Bentonite Grout | 55.5-64 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 202 FT |

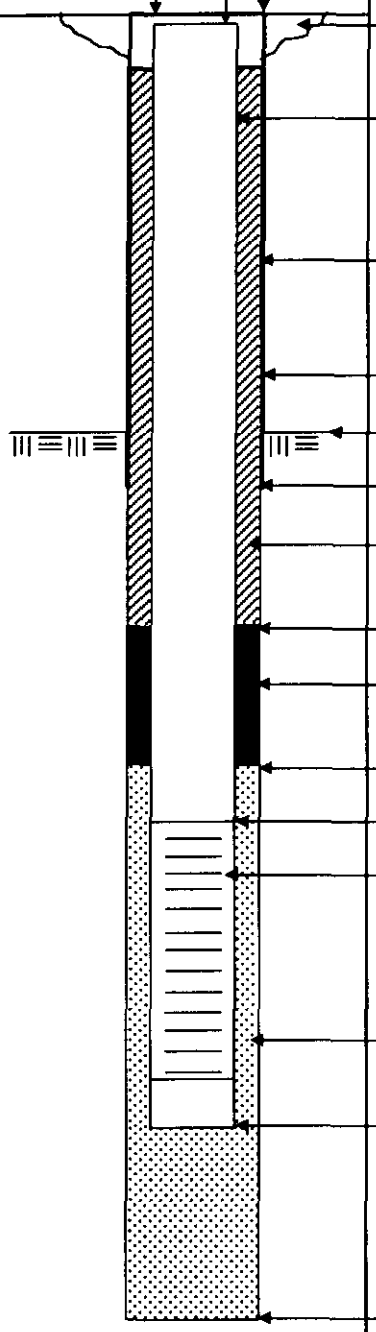
Tetra Tech NUS, Inc.

WELL No.: HN-13D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-13D |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 02/05/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 406109.96 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2591706.69 |

Ground Elevation = 612.17 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 612.22 FT |
| Elevation / Height of Top of Riser: | | 612.02 FT |
| I.D. of Surface Casing: | 8 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-153', 6" to 378' | |
| Elevation / Depth Top of Rock: | | 27 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 149 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 308 FT |
| Type of Seal: | Bentonite Slurry | |
| Elevation / Depth of Top of Filter Pack: | | 338 FT |
| Elevation / Depth of Top of Screen: | | 360 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Filter Sand(338-345'),DSI Millersville #1 Filter Sand(to 375.5') | Filter Sil Industrial Quartz #0 | |
| Elevation / Depth of Bottom of Screen: | | 370 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 375.5 FT |
| Type of Backfill Below Well: Formational Material | 375.5-378 FT=Caved | |
| Elevation / Total Depth of Borehole: | | 378 FT |

AR300986

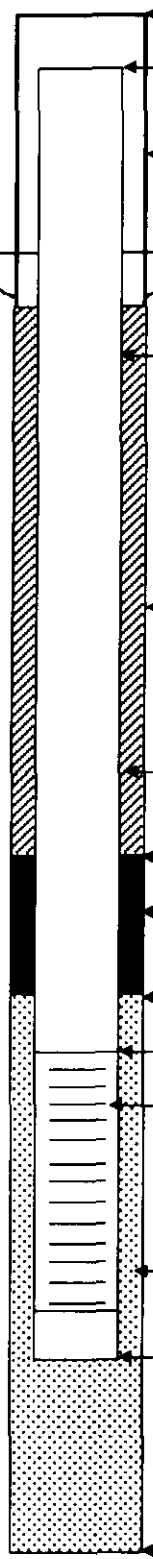
Tetra Tech NUS, Inc.

WELL No.: HN-14S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-14S |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 11/04/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Mud-Rotary | NORTHING: | 403870.00 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592719.88 |

Ground Elevation = 657.45 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 660.25 FT |
| Elevation / Height of Top of Riser: | | 660.12 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 62 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 77 FT |
| Elevation / Depth of Top of Screen: | | 80 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 100 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 100.5 FT |
| Type of Backfill Below Well: Formational Material | 100.5-102 FT= Caved | |
| Elevation / Total Depth of Borehole: | | 102 FT |

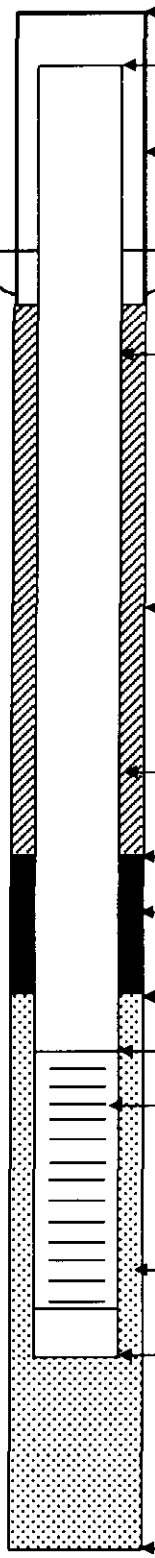
Tetra Tech NUS, Inc.

WELL No.: HN-14I

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-14I |
| PROJECT No.: | 7525 | DRILLER: | C. Ellison | DATE COMPLETED: | 10/30/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 403880.18 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2592729.34 |

Ground Elevation = 657.23 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 659.94 FT |
| Elevation / Height of Top of Riser: | | 659.88 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 10" from 0-148.5', 6" to 152.5' | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 127 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 134 FT |
| Elevation / Depth of Top of Screen: | | 137 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | Silica Quartz #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 152 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 152.5 FT |
| Type of Backfill Below Well: | -N.A.- | |
| Elevation / Total Depth of Borehole: | | 152.5 FT |

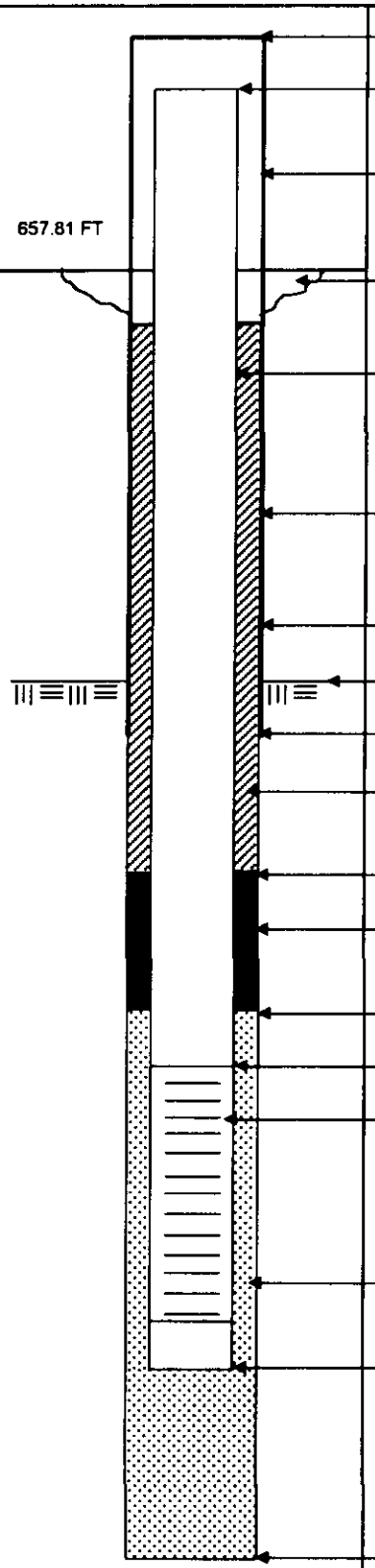
Tetra Tech NUS, Inc.

WELL No.: HN-14D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-14D |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 12/02/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Mud-Rotary/Air-Rotary | NORTHING: | 403859.67 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2592713.19 |

Ground Elevation = 657.81 FT
Datum: MSL



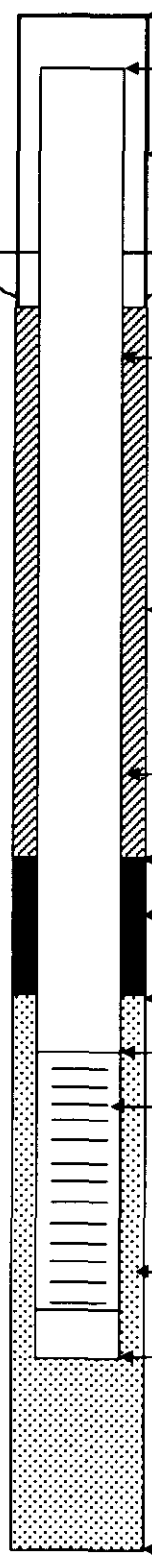
| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 660.49 FT |
| Elevation / Height of Top of Riser: | 660.35 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT |
| I.D. of Perm. Casing: | 6 Inch |
| Type of Perm. Casing: | Steel |
| Borehole Diameter: | 10" from 0-284', 6" to 376.5' |
| Elevation / Depth Top of Rock: | 284 FT |
| Elevation / Depth Bottom of Perm. Casing: | 282 FT |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 302 FT |
| Type of Seal: | Bentonite Slurry |
| Elevation / Depth of Top of Filter Pack: | 334 FT |
| Elevation / Depth of Top of Screen: | 343 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter |
| Elevation / Depth of Bottom of Screen: | 373 FT |
| Elevation / Depth of Bottom of Filter Pack: | 376.5 FT |
| Type of Backfill Below Well: | -N.A.- |
| Elevation / Total Depth of Borehole: | 376.5 FT |

Tetra Tech NUS, Inc.

WELL No.: HN-15S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-15S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 01/12/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408244.39 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2594314.68 |



Ground Elevation = 842.16 FT
Datum: MSL

| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 845.16 FT |
| Elevation / Height of Top of Riser: | | 844.87 FT |
| *I.D. of Surface Casing:* | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 40 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 44 FT |
| Elevation / Depth of Top of Screen: | | 47 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| *I.D. of Screen:* | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 57 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 62 FT |
| Type of Backfill Below Well: | -N.A.- | |
| Elevation / Total Depth of Borehole: | | 62 FT |

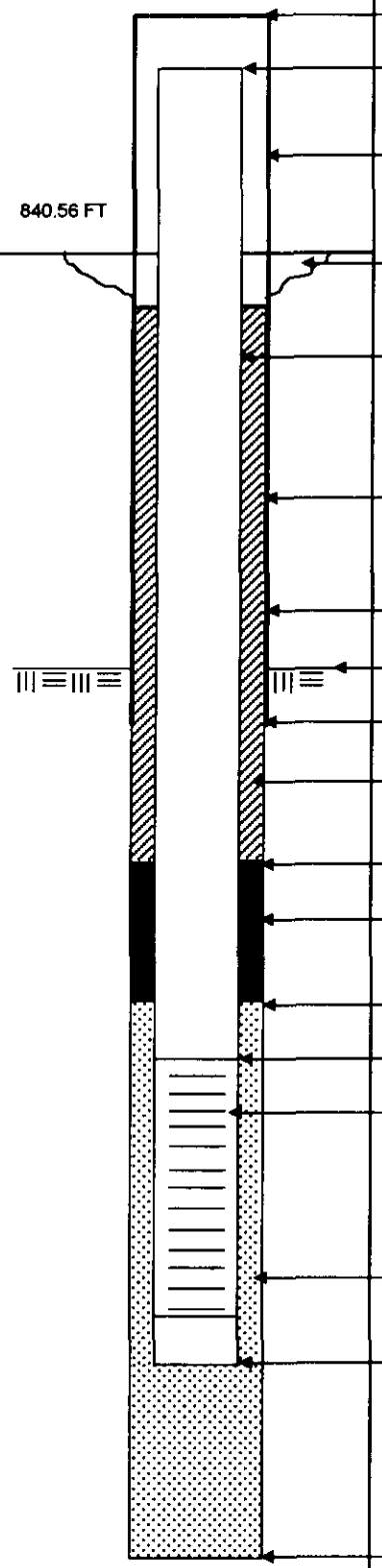
Tetra Tech NUS, Inc.

WELL No.: HN-15I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-15I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 02/18/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408230.07 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2594312.13 |

Ground Elevation = 840.56 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 843.40 FT |
| Elevation / Height of Top of Riser: | | 843.04 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-93', 6" to 205' | |
| Elevation / Depth Top of Rock: | | 80 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 92.5 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 154.5 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 174.5 FT |
| Elevation / Depth of Top of Screen: | | 185 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 205 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 205 FT |
| Type of Backfill Below Well: | -N.A.- | |
| Elevation / Total Depth of Borehole: | | 205 FT |

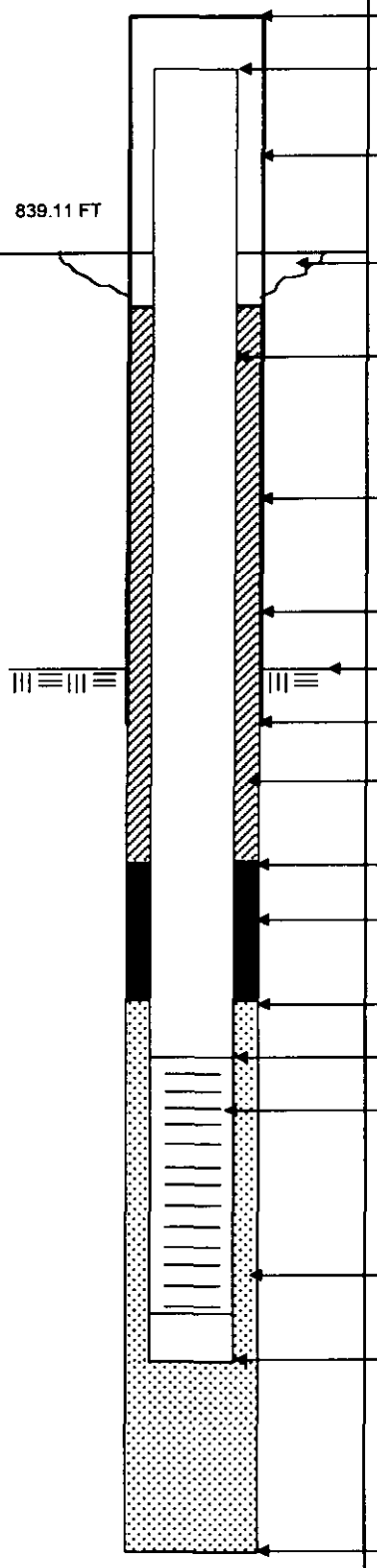
Tetra Tech NUS, Inc.

WELL No.: HN-15D

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-15D |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 02/18/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408220.91 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2594301.15 |

Ground Elevation = 839.11 FT
Datum: MSL



| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 841.91 FT |
| Elevation / Height of Top of Riser: | 841.67 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: | 2 Inch x 10 FT Schedule 40 PVC |
| I.D. of Perm. Casing: | 6 Inch |
| Type of Perm. Casing: | Steel |
| Borehole Diameter: | 10" from 0-153', 6" to 302' |
| Elevation / Depth Top of Rock: | 78 FT |
| Elevation / Depth Bottom of Perm. Casing: | 151 FT |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 158 FT |
| Type of Seal: | DSI 3/8" Shur-Plug Bentonite Pellets |
| Elevation / Depth of Top of Filter Pack: | 244 FT |
| Elevation / Depth of Top of Screen: | 259 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | #0 Quartz Filter Sand (244-245'), DSI Millersville #1 Filter Sand(to 281') |
| Elevation / Depth of Bottom of Screen: | 269 FT |
| Elevation / Depth of Bottom of Filter Pack: | 281 FT |
| Type of Backfill Below Well: | DSI 3/8" Shur-Plug Bentonite Pellets |
| Elevation / Total Depth of Borehole: | 302 FT |

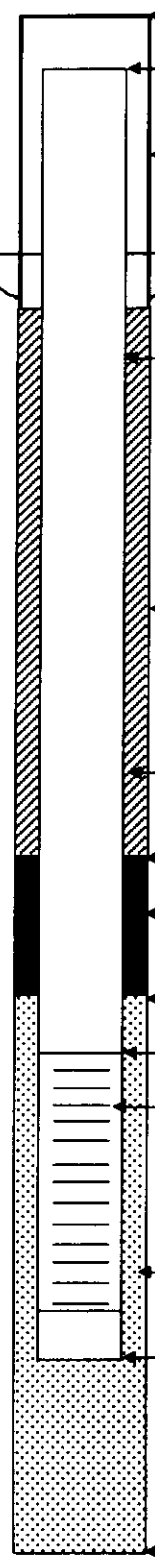
Tetra Tech NUS, Inc.

WELL No.: HN-16S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-16S |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 12/04/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Hollow Stem Auger | NORTHING: | 402006.76 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593411.62 |

Ground Elevation = 568.99 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 571.58 FT |
| Elevation / Height of Top of Riser: | | 571.38 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 8 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 3 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 4.5 FT |
| Elevation / Depth of Top of Screen: | | 6 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 16 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 19 FT |
| Type of Backfill Below Well: Material | 19-20 FT=Auger Center | |
| Elevation / Total Depth of Borehole: | | 20 FT |

AR300993

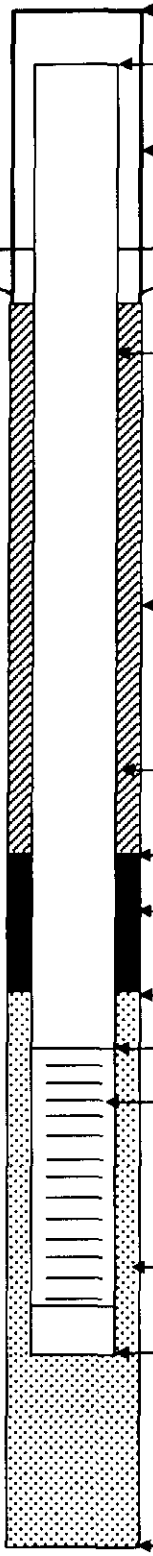
Tetra Tech NUS, Inc.

WELL No.: HN-16I

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-16I |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 12/03/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Mud-Rotary | NORTHING: | 402013.96 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593402.55 |

Ground Elevation = 569.24 FT
Datum: MSL



| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 571.72 FT |
| Elevation / Height of Top of Riser: | 571.61 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: | 2 Inch x 10 FT Schedule 40 PVC |
| Borehole Diameter: | 6 Inch |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 129.5 FT |
| Type of Seal: | Bentonite Slurry |
| Elevation / Depth of Top of Filter Pack: | 144.5 FT |
| Elevation / Depth of Top of Screen: | 150 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand |
| Elevation / Depth of Bottom of Screen: | 170 FT |
| Elevation / Depth of Bottom of Filter Pack: | 170.5 FT |
| Type of Backfill Below Well: | 170.5-173.5 FT=Caved Formational Material |
| Elevation / Total Depth of Borehole: | 173.5 FT |

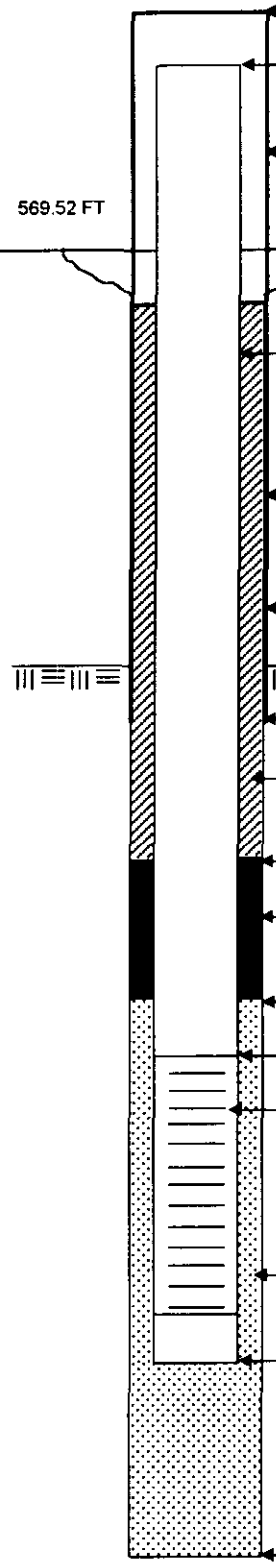
Tetra Tech NUS, Inc.

WELL No.: HN-16D

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-16D |
| PROJECT No.: | 7525 | DRILLER: | M. Stawas | DATE COMPLETED: | 02/11/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Mud-Rotary/Air-Rotary | NORTHING: | 402020.16 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593394.88 |

Ground Elevation = 569.52 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 572.51 FT |
| Elevation / Height of Top of Riser: | | 572.34 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-196.5', 6" to 250' | |
| Elevation / Depth Top of Rock: | | 241.5 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 196.5 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 155 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 176 FT |
| Elevation / Depth of Top of Screen: | | 196 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 5 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Filter Sand | DSI Millersville #1 and #3 | |
| Elevation / Depth of Bottom of Screen: | | 206 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 206 FT |
| Type of Backfill Below Well: Formational Material | 206-250 FT=Caved | |
| Elevation / Total Depth of Borehole: | | 250 FT |

AR300995

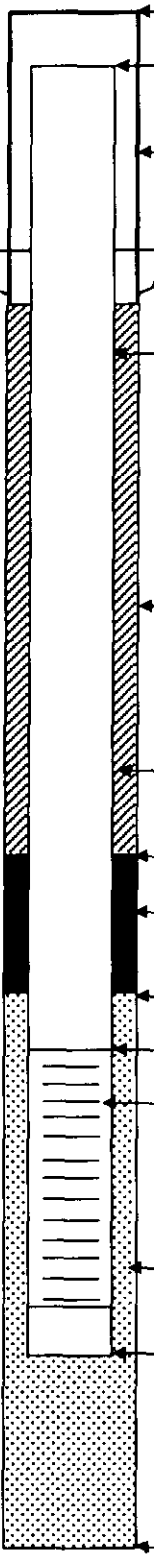
Tetra Tech NUS, Inc.

WELL No.: HN-17S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-17S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 11/16/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 397599.23 |
| GEOLOGIST: | Vince Shickora | DEV. METHOD: | Sub. Pump | EASTING: | 2595050.96 |

Ground Elevation = 503.92 FT
Datum: MSL



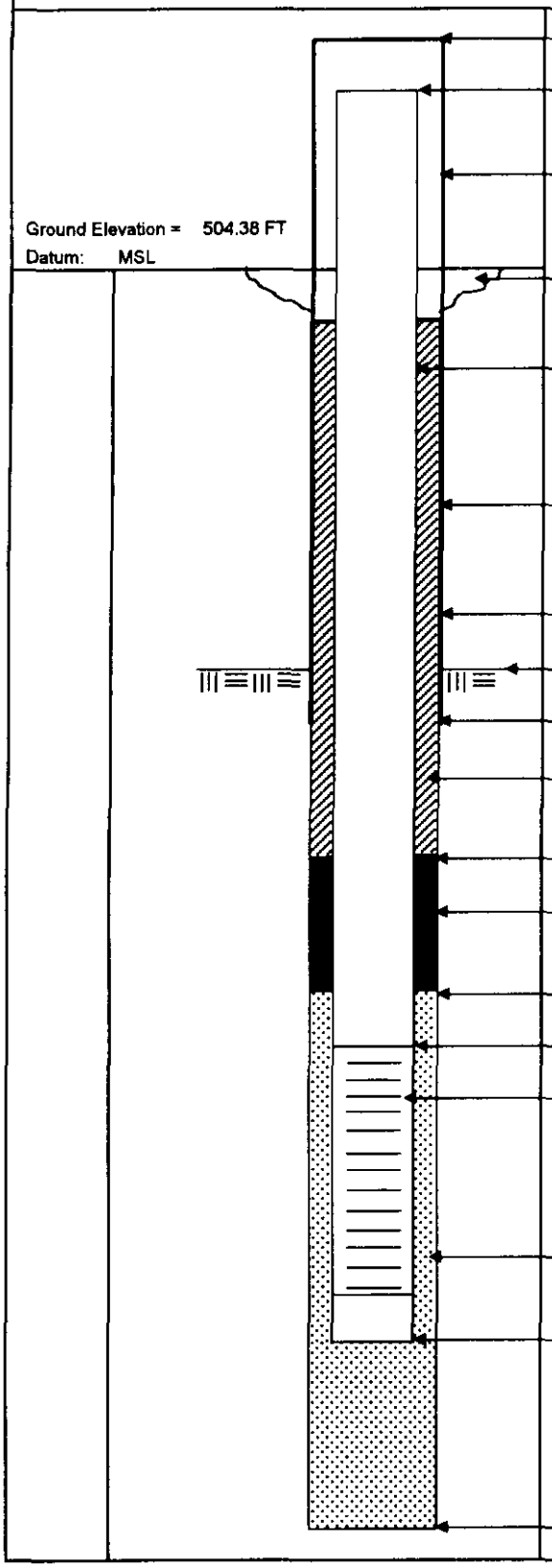
| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 507.42 FT |
| Elevation / Height of Top of Riser: | | 507.07 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 2.5 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 6 FT |
| Elevation / Depth of Top of Screen: | | 9 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 19 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 19 FT |
| Type of Backfill Below Well: Material | 19-22 FT=Caved Formational | |
| Elevation / Total Depth of Borehole: | | 22 FT |

Tetra Tech NUS, Inc.

WELL No.: HN-17I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-17I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 12/28/98 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 397598.83 |
| GEOLOGIST: | Vince Shickora | DEV. METHOD: | Sub. Pump | EASTING: | 2595063.00 |

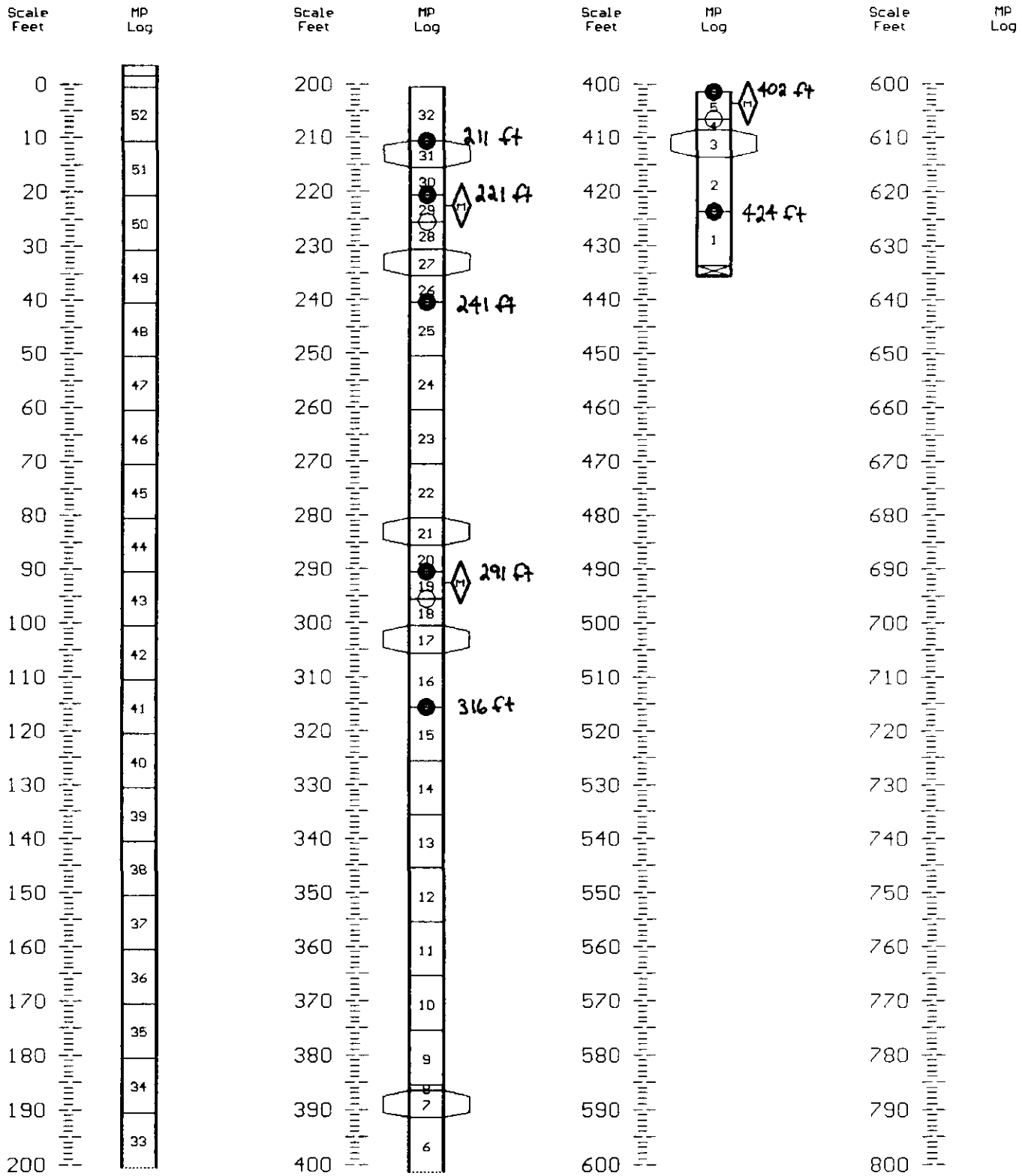



| | | |
|---|---|---|
| *Elevation / Height of Top of Surface Casing:* | | *507.53 FT* |
| Elevation / Height of Top of Riser: | | 506.98 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | 6 Inch | |
| Type of Perm. Casing: | Steel | |
| Borehole Diameter: | 10" from 0-51', 6" to 151' | |
| Elevation / Depth Top of Rock: | | 40 FT |
| Elevation / Depth Bottom of Perm. Casing: | | 51 FT |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 45 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 65 FT |
| Elevation / Depth of Top of Screen: | | 68 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 78 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 85 FT |
| Type of Backfill Below Well: Bentonite Pellets, 96-151 FT=Cement/Bentonite Grout | 85-96 FT=DSI 3/8" Shur-Plug | |
| Elevation / Total Depth of Borehole: | | 151 FT |

CLUSTER HN-17
WEST BAY WELL

Summary MP Casing Log  Date: Wed May 05 00:57:33 1999  Page: 1

Job No. WB780  Tetra Tech NUS  Well No. HN-17D




AR300998

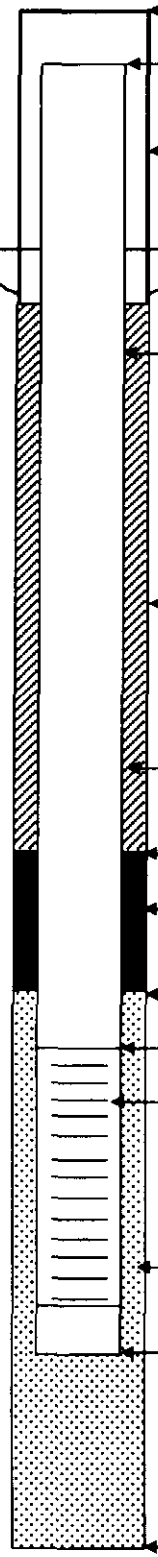
Tetra Tech NUS, Inc.

WELL No.: HN-18S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-18S |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 02/01/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 409505.33 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2593177.72 |

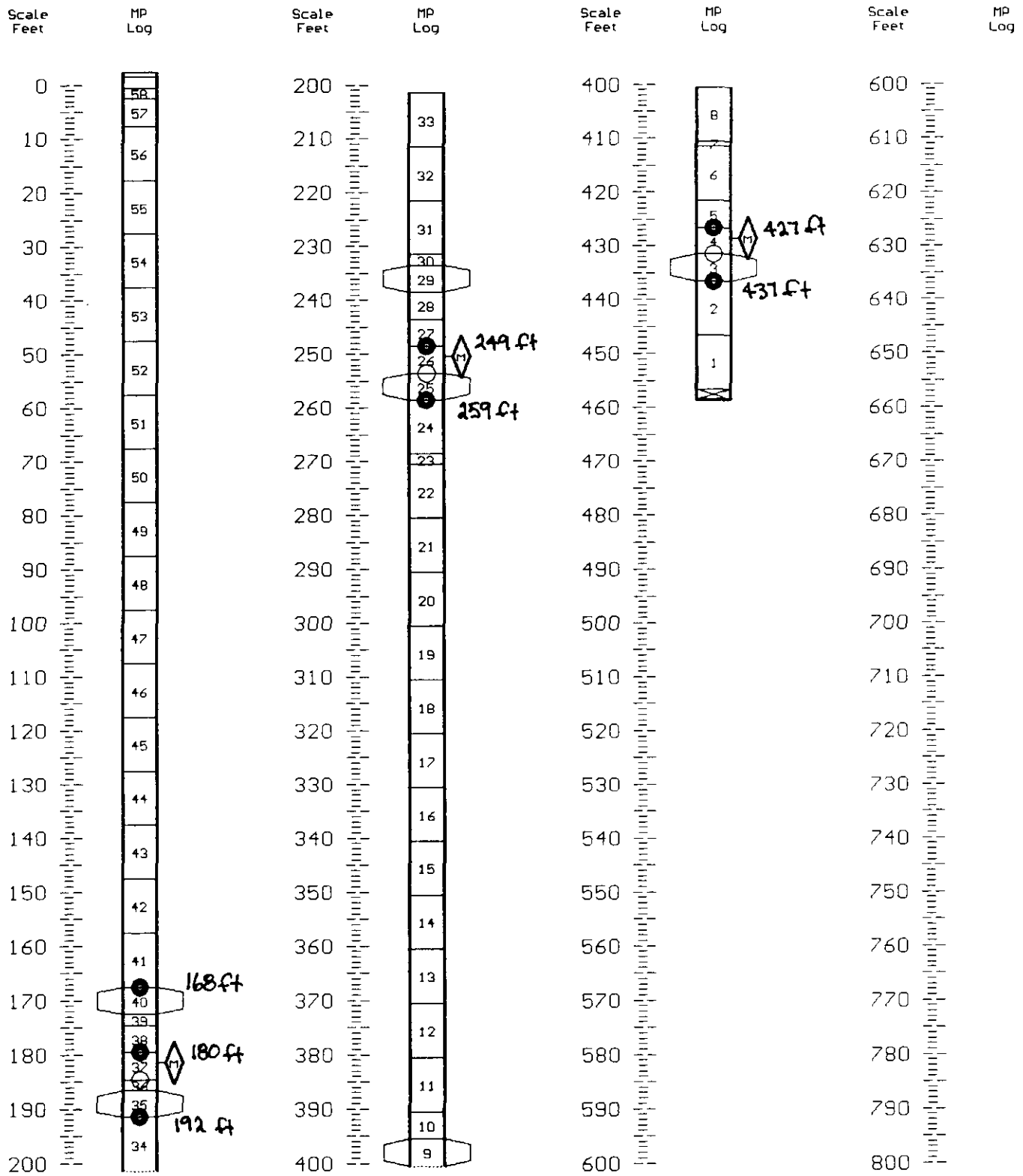
Ground Elevation = 846.62 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 849.30 FT |
| Elevation / Height of Top of Riser: | | 849.14 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 19 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 22 FT |
| Elevation / Depth of Top of Screen: | | 25 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 45 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 46 FT |
| Type of Backfill Below Well: | -N.A.- | |
| Elevation / Total Depth of Borehole: | | 46 FT |

CLUSTER HN-18
WESTBAY WELL

Summary MP Casing Log  Date: Wed May 05 01:05:26 1999  Page: 1
Job No. WB780  Tetra Tech NUS  Well No. HN-18D




AR301000

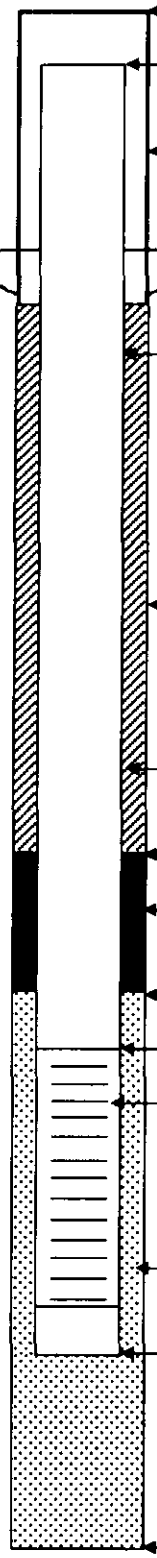
Tetra Tech NUS, Inc.

WELL No.: HN-19I

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-19I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 03/26/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408623.37 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2593724.85 |

Ground Elevation = 873.98 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 876.69 FT |
| Elevation / Height of Top of Riser: | | 876.59 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 8" from 0-43.5', 6 " to 172' | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 78 FT |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 84 FT |
| Elevation / Depth of Top of Screen: | | 90 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 100 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 105 FT |
| Type of Backfill Below Well: Plug Bentonite Pellets, 125-172 FT=Cement/Bentonite Grout | 105-125 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 172 FT |

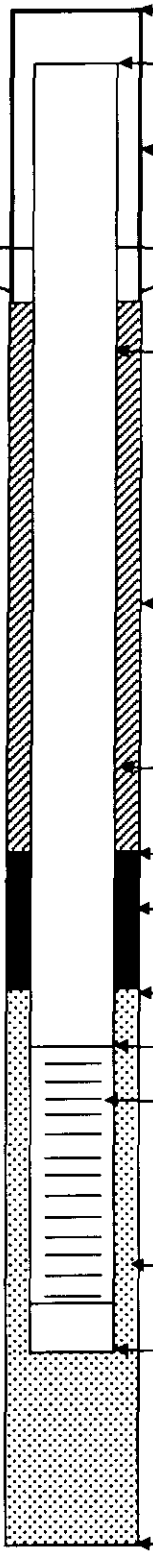
Tetra Tech NUS, Inc.

WELL No.: HN-20S

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-20I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 04/07/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408564.24 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593675.86 |

Ground Elevation = 872.46 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 875.60 FT |
| Elevation / Height of Top of Riser: | | 875.36 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 8" from 0-60', 6 " to 195' | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 48 FT |
| Type of Seal: | Bentonite Slurry | |
| Elevation / Depth of Top of Filter Pack: | | 60 FT |
| Elevation / Depth of Top of Screen: | | 63.5 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand and Silica Quartz #1 Filter Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 73.5 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 75 FT |
| Type of Backfill Below Well: Bentonite, 83-100 FT=C/B Grout, HN-20I Construction Backfill | 75-83 FT=DSI 3/8" Shur-Plug | |
| Elevation / Total Depth of Borehole: | | 195 FT |

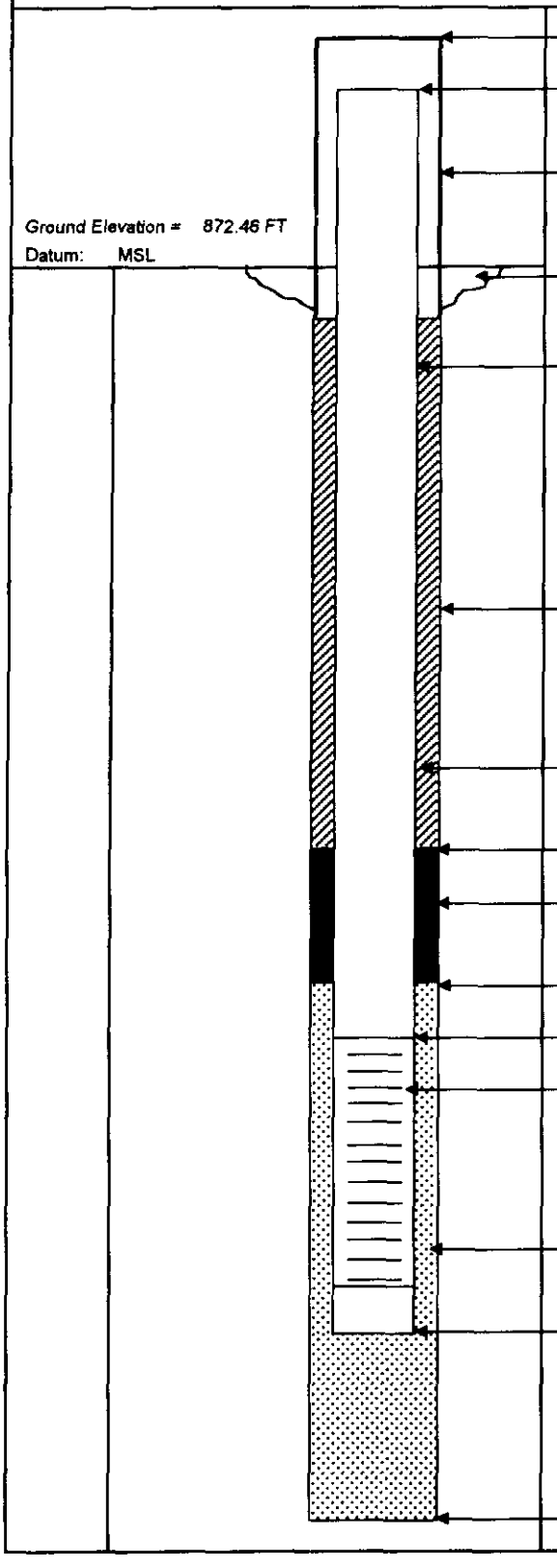
AR301002

Tetra Tech NUS, Inc.

WELL No.: HN-20I

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-20I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 04/06/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408564.24 |
| GEOLOGIST: | Robert Good | DEV. METHOD: | Sub. Pump | EASTING: | 2593675.86 |



Ground Elevation = 872.46 FT
Datum: MSL

| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 875.60 FT |
| Elevation / Height of Top of Riser: | | 875.35 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| *Type of Surface Casing:* | *Steel* | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 8" from 0-60', 6 " to 195' | |
| Type of Backfill: HN-20S Construction Backfill | Cement/Bentonite Grout and | |
| *Elevation / Depth of Seal:* | | *100 FT* |
| Type of Seal: Pellets | DSI 3/8" Shur-Plug Bentonite | |
| Elevation / Depth of Top of Filter Pack: | | 107 FT |
| Elevation / Depth of Top of Screen: | | 110 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 120 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 126.5 FT |
| Type of Backfill Below Well: *Plug Bentonite Pellets, 137-195 FT=Cement/Bentonite Grout* | 126.5-137 FT=DSI 3/8" Shur- | |
| Elevation / Total Depth of Borehole: | | 195 FT |

AR301003

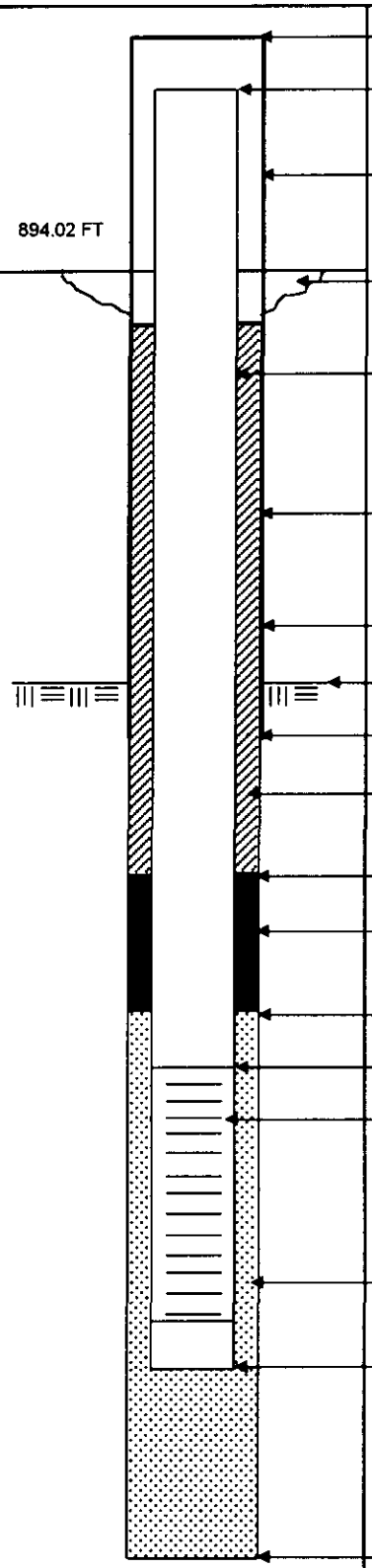
Tetra Tech NUS, Inc.

WELL No.: HN-22S

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-22I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 04/12/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 409184.94 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593714.61 |

Ground Elevation = 894.02 FT
Datum: MSL



| | |
|---|---|
| Elevation / Height of Top of Surface Casing: | 897.05 FT |
| Elevation / Height of Top of Riser: | 896.83 FT |
| I.D. of Surface Casing: | 5.75 Inch |
| Type of Surface Casing: | Steel |
| Type of Surface Seal: | Concrete |
| I.D. of Riser: | 2 Inch |
| Type of Riser: | 2 Inch x 10 FT Schedule 40 PVC |
| I.D. of Perm. Casing: | -N.A.- |
| Type of Perm. Casing: | -N.A.- |
| Borehole Diameter: | 8" from 0-60', 6" to 152' |
| Elevation / Depth Top of Rock: | 50 FT |
| Elevation / Depth Bottom of Perm. Casing: | -N.A.- |
| Type of Backfill: | Cement/Bentonite Grout |
| Elevation / Depth of Seal: | 54.5 FT |
| Type of Seal: | DSI 3/8 Inch Shur-Plug Bentonite Pellets |
| Elevation / Depth of Top of Filter Pack: | 64.5 FT |
| Elevation / Depth of Top of Screen: | 68 FT |
| Type of Screen: | Schedule 40 PVC |
| Slot Size x Length: | 0.010 Inch x 10 FT |
| I.D. of Screen: | 2 Inch |
| Type of Filter Pack: | Silica Quartz #1 Filter Sand (64.5-78.5'), Filter Sil #0 Industrial Quartz Filter Sand (to 92') |
| Elevation / Depth of Bottom of Screen: | 78 FT |
| Elevation / Depth of Bottom of Filter Pack: | 92 FT |
| Type of Backfill Below Well: | HN-22I Construction Backfill |
| Elevation / Total Depth of Borehole: | 152 FT |

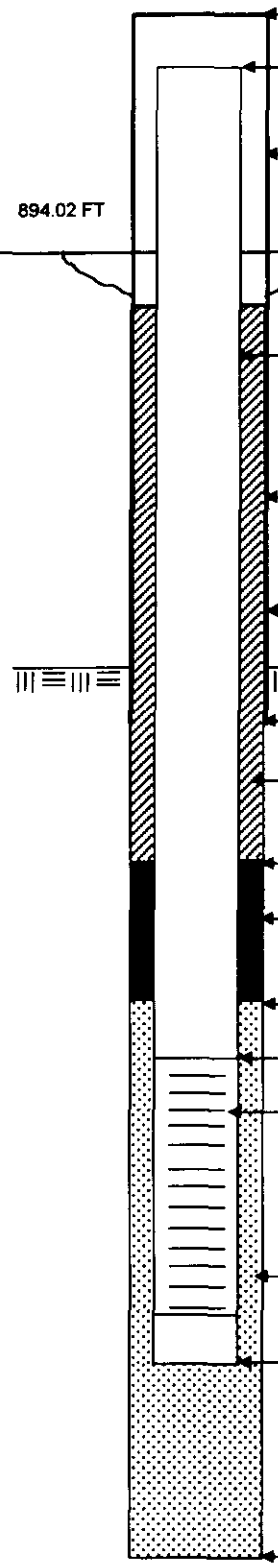
Tetra Tech NUS, Inc.

WELL No.: HN-22I

# BEDROCK MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-22I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 04/09/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 409184.94 |
| GEOLOGIST: | Vince Shickora | DEV. METHOD: | Sub. Pump | EASTING: | 2593714.61 |

Ground Elevation = 894.02 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 897.05 FT |
| Elevation / Height of Top of Riser: | | 896.78 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| I.D. of Perm. Casing: | -N.A.- | |
| Type of Perm. Casing: | -N.A.- | |
| Borehole Diameter: | 8" from 0-60', 6" to 195' | |
| Elevation / Depth Top of Rock: | | 50 FT |
| Elevation / Depth Bottom of Perm. Casing: | | -N.A.- |
| Type of Backfill: and HN-22S Construction Backfill | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 122 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 127 FT |
| Elevation / Depth of Top of Screen: | | 132 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: Sand | DSI Millersville #1 Filter | |
| Elevation / Depth of Bottom of Screen: | | 142 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 146 FT |
| Type of Backfill Below Well: Shur-Plug Bentonite, 151-152 FT=Caved Formational Material | 146-151 FT=DSI 3/8 Inch | |
| Elevation / Total Depth of Borehole: | | 152 FT |

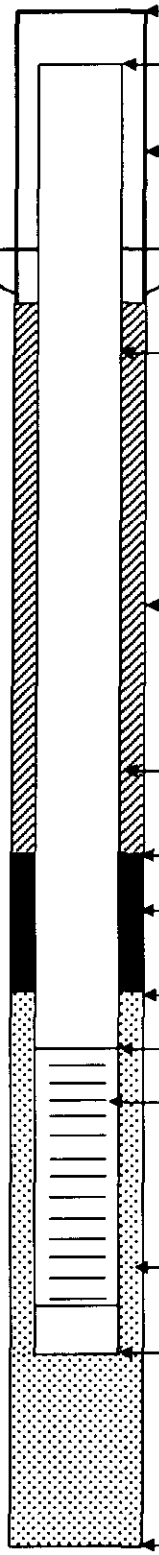
Tetra Tech NUS, Inc.

WELL No.: HN-23I

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT: | Crossley Farm RI/FS | DRILLING Co.: | Hardin-Huber | BORING No.: | HN-23I |
| PROJECT No.: | 7525 | DRILLER: | D. Taylor | DATE COMPLETED: | 04/27/99 |
| SITE: | Crossley Farm | DRILLING METHOD: | Air-Rotary | NORTHING: | 408709.59 |
| GEOLOGIST: | Seth Pelepko | DEV. METHOD: | Sub. Pump | EASTING: | 2593793.58 |

Ground Elevation = 873.16 FT
Datum: MSL



| | | |
|---|---|---|
| Elevation / Height of Top of Surface Casing: | | 876.01 FT |
| Elevation / Height of Top of Riser: | | 875.84 FT |
| I.D. of Surface Casing: | 5.75 Inch | |
| Type of Surface Casing: | Steel | |
| Type of Surface Seal: | Concrete | |
| I.D. of Riser: | 2 Inch | |
| Type of Riser: Schedule 40 PVC | 2 Inch x 10 FT | |
| Borehole Diameter: | 6 Inch | |
| Type of Backfill: | Cement/Bentonite Grout | |
| Elevation / Depth of Seal: | | 85 FT |
| Type of Seal: Bentonite Pellets | DSI 3/8 Inch Shur-Plug | |
| Elevation / Depth of Top of Filter Pack: | | 95 FT |
| Elevation / Depth of Top of Screen: | | 100 FT |
| Type of Screen: | Schedule 40 PVC | |
| Slot Size x Length: | 0.010 Inch x 5, 10 FT | |
| I.D. of Screen: | 2 Inch | |
| Type of Filter Pack: and Silica Quartz #1 Filter Sand | DSI Millersville #1 Filter Sand | |
| Elevation / Depth of Bottom of Screen: | | 125 FT |
| Elevation / Depth of Bottom of Filter Pack: | | 132 FT |
| Type of Backfill Below Well: Sump | 125-130 FT=5' PVC Riser | |
| Elevation / Total Depth of Borehole: | | 132 FT |

C

U.S. Department of the Interior
U.S. Geological Survey

# EVALUATION OF GEOPHYSICAL LOGS, PHASE I, FOR CROSSLEY FARMS SUPERFUND SITE, BERKS COUNTY, PENNSYLVANIA

*by Randall W. Conger*

Open-File Report 98-62

*prepared in cooperation with the*
U.S. ENVIRONMENTAL PROTECTION AGENCY

Lemoyne, Pennsylvania
1998

AR301008

**U.S. DEPARTMENT OF THE INTERIOR**

**BRUCE BABBITT, Secretary**

**U.S. GEOLOGICAL SURVEY**

**Thomas J. Casadevall, Acting Director**

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Box 25286, Building 810
Denver, Colorado 80225-0286



AR301009

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8. BE-1584 (92-17) . . . . . 24



AR301011

## CONVERSION FACTORS, ABBREVIATED WATER-QUALITY UNITS, AND VERTICAL DATUM

| | Length | |
|---|---|---|
| inch (in.) | 25.40 | millimeter |
| foot (ft) | 0.3048 | meter |
| mile (mi) | 1.609 | kilometer |
| | **Volume** | |
| gallon per minute (gal/min) | 0.00006309 | cubic meter per second |

Abbreviated water-quality unit used in report:

μg/L, micrograms per liter

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.



AR301012

# Evaluation of Geophysical Logs, Phase I, for Crossley Farms Superfund Site, Berks County, Pennsylvania

*by Randall W. Conger*

## ABSTRACT

Twenty-one wells were drilled at Crossley Farms Superfund Site between December 15, 1987, and May 1, 1988, to define and monitor the horizontal and vertical distribution of ground-water contamination emanating from a suspected contaminant source area (Blackhead Hill). Eight well clusters were drilled on or near the Crossley Site and three well clusters were drilled at locations hydrologically down gradient from the site. Depths of wells range from 21 to 299 feet below land surface. These wells were installed in saprolite in shallow, intermediate, and deep water-producing zones of the fractured bedrock aquifer.

Borehole-geophysical and video logging were conducted between April 24, 1997, and May 8, 1997, to determine the water-producing zones, water-receiving zones, zones of vertical flow, borehole depth, and casing integrity in each well. This data and interpretation will be used to determine the location of the well intake for the existing open-hole wells, which will be retrofitted to isolate and monitor water-producing zones and prevent further cross-contamination within each open borehole, and identify wells that may need rehabilitation or replacement.

Caliper and video logs were used to locate fractures, inflections on fluid-temperature and fluid-resistivity logs indicated possible fluid-bearing fractures, and flowmeter measurements verified these locations. Single-point-resistance and natural-gamma logs provided information on stratigraphy. After interpretation of geophysical logs, video logs, and driller's notes, all wells will be constructed so that water-level fluctuations can be monitored and discrete water samples collected from shallow, intermediate, and deep water-bearing zones in each well.

Geophysical logs were run on seven bedrock and two deep bedrock wells. Gamma logs were run on 10 bedrock wells. Twenty-two wells were inspected visually with the borehole video camera for casing integrity.



AR301013

# INTRODUCTION

The Crossley Farms Superfund Site is about 20 mi northeast of Reading, in the community of Huffs Church in Hereford Township, Berks County, Pa. (fig. 1). The Crossley Site boundaries are not delineated but are assumed to be the extent of the ground-water contamination plume previously documented near Blackhead Hill (Halliburton NUS, 1995).

At the Crossley Farms Superfund Site, illegal wastes were reported to be disposed of at the abandoned quartzite quarry and nearby areas on the top of Blackhead Hill during the mid-1960's to the mid-1970's (Halliburton NUS, 1995). In the early 1980's, nearby residents complained about the quality of their well water. In 1983, ground-water samples collected by the Pennsylvania Department of Environmental Resources and Roy F. Weston, Inc. indicated some residential wells were contaminated with trichloroethylene (TCE) and lesser concentrations of tetrachloroethene (PCE). Additional sampling identified TCE as the principal contaminant at concentrations as great as 22,857 μg/L in residential well water. Nearby affected residential wells are currently (1996) equipped with carbon filters at the point of use.

In 1987-88, a hydrogeologic assessment was conducted at the Crossley Farms Superfund Site by Roy F. Weston, Inc. and IT Corporation (Roy F. Weston/IT, 1988). They conducted soil gas surveys, drilled 21 monitor wells in proximity to the site, and concluded the source of the TCE was from the top of Blackhead Hill, probably near the abandoned quarry and borrow-pit area (Halliburton NUS, 1995). To delineate the extent of ground-water contamination, a Focused Feasibility Study (FFS) and Remedial Investigation/Feasibility Study (RI/FS) currently are being conducted by Brown and Root Environmental (B&R), formerly Halliburton NUS Inc., to better characterize the nature and extent of hazardous contamination and evaluate remedial options for the contaminated residential wells.

This report evaluates borehole-geophysical and video logs run by the U.S. Geological Survey (USGS) in 21 boreholes at Crossley Farms Superfund Site, 1 private well adjacent to the site, and 1 well in downtown Bally (table 1, fig. 1). This report identifies one or more fluid-bearing zones in each borehole and describes problems with the integrity of the casing on the basis of geophysical and video-log data. Borehole video logs were run in all boreholes. Caliper, natural-gamma, single-point-resistance, fluid-resistivity, fluid-temperature, and borehole-flow (heat-pulse-flowmeter) logs were run in seven boreholes. Caliper, borehole video, natural-gamma, single-point-resistance, fluid-resistivity, and fluid-temperature logs were run in one borehole. A natural-gamma log was run in three boreholes. A cross reference between USGS borehole-identification numbers and B&R borehole-identification numbers and a list of logs run in each borehole are shown in table 1.



AR301014

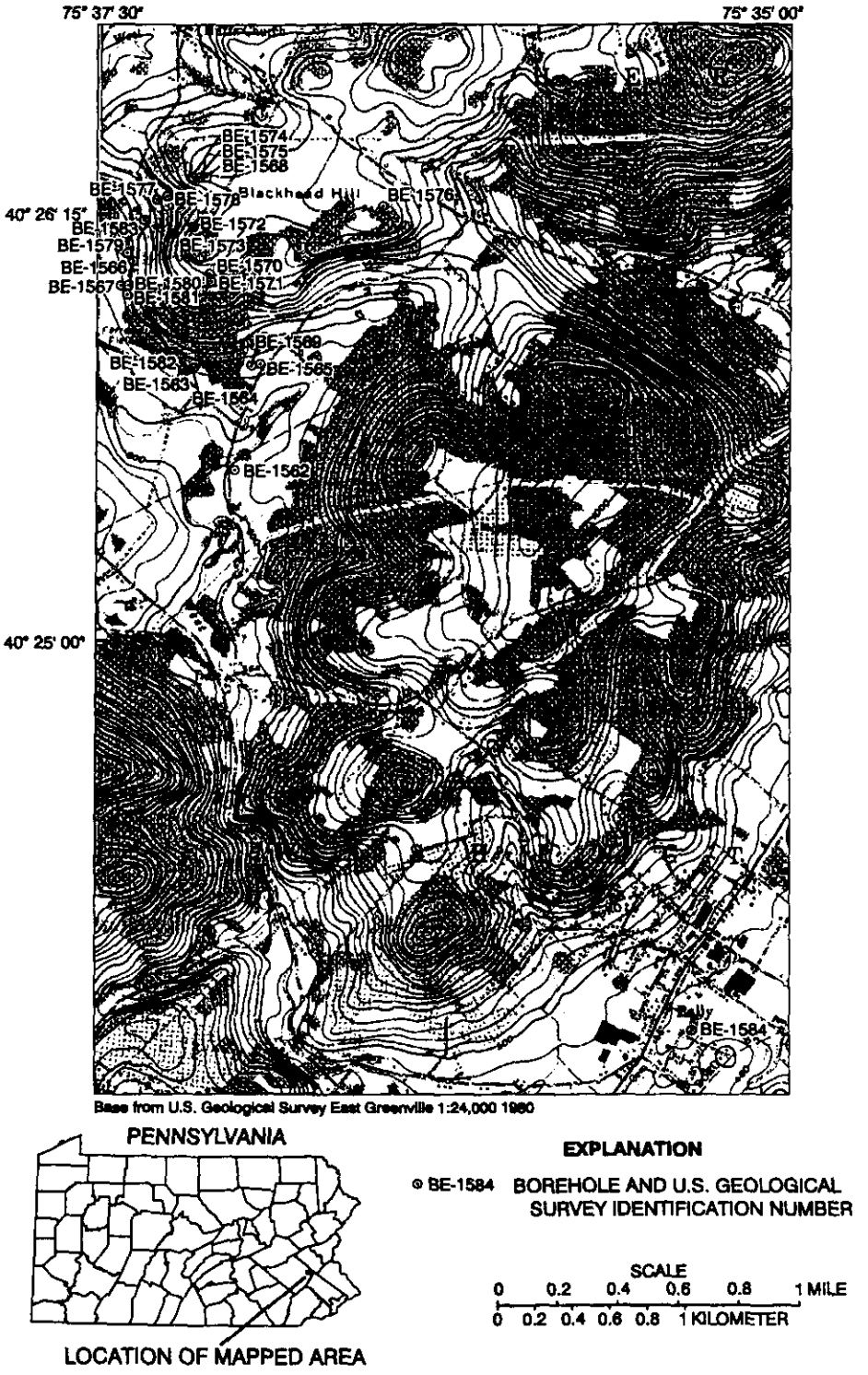



**Figure 1.** Locations of boreholes logged at the Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301015

*Table 1. Boreholes logged at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[B, borehole-video log; C, caliper log; G, natural-gamma log; R, single-point-resistance log; F, fluid-resistivity log; T, fluid-temperature log; V, borehole-flow measurement]

| U.S. Geological Survey borehole-identification number | Brown and Root Environmental identification number | Depth logged (feet) | Geophysical logs run |
|---|---|---|---|
| BE-1562 | MW-8-R | 121 | B, C, G, R, F, T, V |
| BE-1563 | MW-7-R | 94 | B, C, G, R, F, T, V |
| BE-1564 | MW-7-DR | 122 | B, C, G, R, F, T |
| BE-1565 | MW-6-R | 94 | B, G |
| BE-1566 | MW-4-R | 233 | B, G |
| BE-1567 | MW-5-R | 299 | B, C, G, R, F, T, V |
| BE-1568 | MW-2-DR | 302 | B, C, G, R, F, T, V |
| BE-1569 | MW-6-OB | 37 | B |
| BE-1570 | MW-1-OB | 56 | B |
| BE-1571 | MW-1-R | 162 | B, G |
| BE-1572 | MW-1.1-OB | 41 | B |
| BE-1573 | MW-1.2-OB | 44 | B |
| BE-1574 | MW-2-OB | 26 | B |
| BE-1575 | MW-2-R | 50 | B |
| BE-1576 | MW-2.1-OB | 60 | B |
| BE-1577 | MW-3-OB | 23 | B |
| BE-1578 | MW-3-DOB | 69 | B |
| BE-1579 | MW-4-OB | 21 | B |
| BE-1580 | MW-5-OB | 33 | B |
| BE-1581 | MW-5-DOB | 100 | B |
| BE-1582 | MW-7-OB | 58 | B |
| BE-1583 | Wetzel | 278 | B, C, G, R, F, T, V |
| BE-1584 | 92-17 | 435 | B, C, G, R, F, T, V |



AR301016

## Location and Physiography of Site

The Crossley Farms Superfund Site is located in the Reading Prong Section of the New England Physiographic Province. The upland area of Blackhead Hill is underlain by Precambrian gneiss and Cambrian quartzite of the Hardystown Formation. The adjacent valley to the south and west is underlain mainly by Cambro-Ordovician dolomite of the Leithsville Formation. Bedrock is overlain by 30 to 120 ft of unconsolidated regolith (Roy F. Weston/IT, 1988).

Ground water moves through the pore spaces of the regolith and fractures in the bedrock. Within the Leithsville Formation, the fractures have been enlarged because of dissolution and weathering of the dolomite. Maps of the water table in the regolith indicate shallow ground water probably moves radially to the south and west from the summit of Blackhead Hill. Maps of the water table in the bedrock indicate a potential for ground-water movement from the quarry area to the south and west (Roy F. Weston/IT 1988). Within the Leithsville Formation, hydraulic gradients are much less steep than in the crystalline bedrock. Ground water apparently moves from Blackhead Hill toward the valley; however, specific flow paths of ground water are difficult to characterize because they can be affected greatly by the anisotropy of the fractured bedrock and heterogeneity of water-bearing zones.

## Borehole-Geophysical Logs

Geophysical logs provide information on location of fractures and water-bearing and water-receiving zones (caliper and video log), intervals of vertical borehole flow (fluid-resistivity and fluid-temperature logs), quantification of borehole flow (heat-pulse flowmeter logs), lithologic correlation (gamma and electric logs), and data on well construction (caliper and electric logs) where unknown.

Caliper logs provide a continuous record of average borehole diameter, which is related to fractures, lithology, and drilling technique. Caliper logs are used to identify fractures and possible water-producing openings and to correct other geophysical logs for changes in borehole diameter. Correlation of caliper logs with fluid-resistivity and fluid-temperature logs is used to identify fractures, water-producing zones, and water-receiving zones and to measure water velocity.

The natural-gamma or gamma log measures the natural-gamma radiation (photons) emitted from all rocks. The most common sources of gamma radiation are uranium-238, thorium-232, their daughter elements, and potassium-40. These radioactive elements are concentrated in clays by adsorption, precipitation, and ion exchange. Fine-grained sediments such as shale or siltstone usually emit more gamma radiation than sandstone, limestone, or dolomite. The gamma log can be run in or out of water or casing. However, casing does reduce the gamma response. The gamma log is used to correlate geologic units between wells (Keys, 1988).

The single-point-resistance log measures the electrical resistance of a formation between the probe in a water-filled borehole below casing and an electrical ground at land surface. Generally, electrical resistance increases with formation grain size and decreases with increasing borehole diameter, water-bearing fractures, and increasing dissolved-solids concentration of borehole fluid. The single-point-resistance log is used to correlate geology between wells and may help identify formation water-bearing zones. (Keys and MacCary, 1971).

Fluid resistivity is the inverse of fluid conductivity. The fluid-resistivity log measures the electrical resistivity of the water column in the well. The fluid-resistivity probe measures the resistivity of borehole water between electrodes in the probe. Fluid-resistivity logs reflect changes in the dissolved-solids concentration of the well water. Fluid-resistivity logs are used to identify water-producing and water-receiving zones and to determine intervals of vertical borehole flow. Water-producing and water-receiving zones are usually identified by distinct changes in resistivity. Intervals of vertical borehole flow are usually identified by a low-resistivity gradient between a water-producing and a water-receiving zone. Also, zones of salt-water intrusion and some types of contaminant plumes can be identified.



AR301017

Fluid-temperature logs provide a continuous record of the vertical variation in temperature of the water in a borehole. Temperature logs are used to identify water-producing and water-receiving zones and to determine zones of vertical borehole flow. Intervals of vertical borehole flow are characterized by little or no temperature gradient (Williams and Conger, 1990).

The direction and rate of any movement of water in the borehole was determined by the use of a heat-pulse flowmeter. The heat-pulse flowmeter operates by heating a small sheet of water between two sensitive thermistors (heat sensors). A measurement of direction and rate is computed when a peak temperature is recorded by one of the thermistors. The range of flow measurement is about 0.01-1.5 gal/min in a 2- to 10-in.-diameter borehole (Conger, 1996).

All flow measurements were conducted under ambient conditions. The flowmeter can measure flow only if pressure head differences exist between water-producing zones in the borehole.

Some heat-pulse-flowmeter measurements may be influenced by (1) an incomplete seal between the borehole and heat-pulse flowmeter and (2) contributions of water from storage within the borehole. If the seal between the borehole and flowmeter is not complete, some water can bypass the flowmeter, resulting in flow measurements that are less than the actual rate. When flowmeter measurements are conducted under pumping conditions, some measurements of flow rate may be affected if the water level in the borehole has not stabilized. When drawdown has not completely stabilized, a portion of the discharge water is contributed from storage within the borehole rather than from the aquifer. Although the heat-pulse flowmeter is a calibrated probe, the data are used primarily as a relative indicator to identify water-producing and water-receiving zones.

Borehole television logging was conducted by lowering a waterproof video camera down the borehole and recording the image on video tape. The depth indicated on the video log may not correspond exactly to the geophysical logs because of some minor slippage of the television cable.



AR301018

## EVALUATION OF BOREHOLE-GEOPHYSICAL LOGS

The locations of boreholes logged are shown on figure 1. The reference measuring point for all geophysical and video logs is land surface. Depth of wells, casing lengths, and water levels at the time of logging are given in feet below land surface (table 2).

*Table 2. Well depth, casing length, and depth to water for boreholes logged by the U.S. Geological Survey at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft, feet]

| U.S. Geological Survey borehole-identification number | Depth of well below land surface (ft) | Length of casing and screen below land surface (ft) | Open (O) or screened (S) interval below land surface (ft) | Depth to water below land surface (ft) | Date water level measured |
|---|---|---|---|---|---|
| BE-1562 | 121 | 76 | 76-121 (O) | 13.07 | 4/24/97 |
| BE-1563 | 94 | 58 | 58-94 (O) | 47.50 | 4/25/97 |
| BE-1564 | 122 | 108 | 108-122 (O) | 47.76 | 4/25/97 |
| BE-1565 | 94 | 94 | collapsed | 49.33 | 4/25/97 |
| BE-1566 | 232 | 228 | 228-233 (O) | 57.05 | 4/25/97 |
| BE-1567 | 299 | 196 | 196-299 (O) | 33.91 | 4/25/97 |
| BE-1568 | 302 | 56 | 56-302 (O) | 24.07 | 5/2/97 |
| BE-1569 | 37 | 37 | 29-37 (S) | 20.8 | 5/2/97 |
| BE-1570 | 56 | 56 | 46-56 (S) | 20.0 | 5/8/97 |
| BE-1571 | 162 | undetermined[1] | | 27.15 | 5/7/97 |
| BE-1572 | 41 | 41 | 31-41 (S) | 31.9 | 5/8/97 |
| BE-1573 | 44 | 44 | 34-44 (S) | 39.3 | 5/8/97 |
| BE-1574 | 26 | 26 | 16-26 (S) | dry | 5/6/97 |
| BE-1575 | 50 | undetermined[1] | | 26.5 | 5/6/97 |
| BE-1576 | 60 | 60 | 50-60 (S) | 40.3 | 5/8/97 |
| BE-1577 | 23 | 23 | 13-23 (S) | .5 | 5/6/97 |
| BE-1578 | 69 | 69 | 49-69 (S) | 30.2 | 5/6/97 |
| BE-1579 | 21 | 21 | 11-21 (S) | 1.7 | 5/6/97 |
| BE-1580 | 33 | 33 | 23-33 (S) | 24.1 | 5/8/97 |
| BE-1581 | 100 | 100 | 82-100 (S) | 55.1 | 5/8/97 |
| BE-1582 | 58 | 58 | 38-58 (S) | 49.2 | 5/6/97 |
| BE-1583 | 278 | [2]56 | 56-278 (O) | 31.98 | 5/6/97 |
| BE-1584 | 435 | 54 | 54-435 (O) | 3.64 | 5/8/97 |

[1] Unable to determine visually; water cloudy.
[2] Apparent casing depth.



AR301019

## BE-1562 (MW-8-R)

The caliper log shows the total depth of the borehole is 121 ft and it is cased with 6-in.-diameter casing (fig. 2). The static water level was 13.07 ft bls (below land surface). The single-point-resistance log shows steel casing to 76 ft bls. The caliper log shows major fractures at 98-102 and 118-121 ft bls and several minor fractures throughout the open-hole interval. The fluid-resistivity log shows a change in slope at approximately 76 ft bls that correlates to a minor fracture shown on the caliper log. The video log shows the borehole water becomes slightly cloudy below casing, more cloudy at 91 ft bls, then visibility declines to zero near the bottom of the borehole. Under ambient conditions, the heat-pulse flowmeter measured upward borehole flow at 86, 96, and 108.5 ft bls (table 3). The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the large fracture at 118-121 ft bls, moves upward, and exits the borehole through a small fracture near the bottom of casing at 76 ft bls. If the water produced at the fracture at 118-121 ft bls is contaminated, leaving this well as an open borehole may cross-contaminate the water-receiving zone. A screen and sand placed at 111-121 ft bls would include the water-producing fractures at 118-121 ft bls.

***Table 3.*** *Summary of heat-pulse-flowmeter measurements for borehole BE-1562 (MW-8-R) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 70 | no flow | |
| 86 | 0.20 | up |
| 96 | .24 | up |
| 108.5 | .27 | up |



AR301020

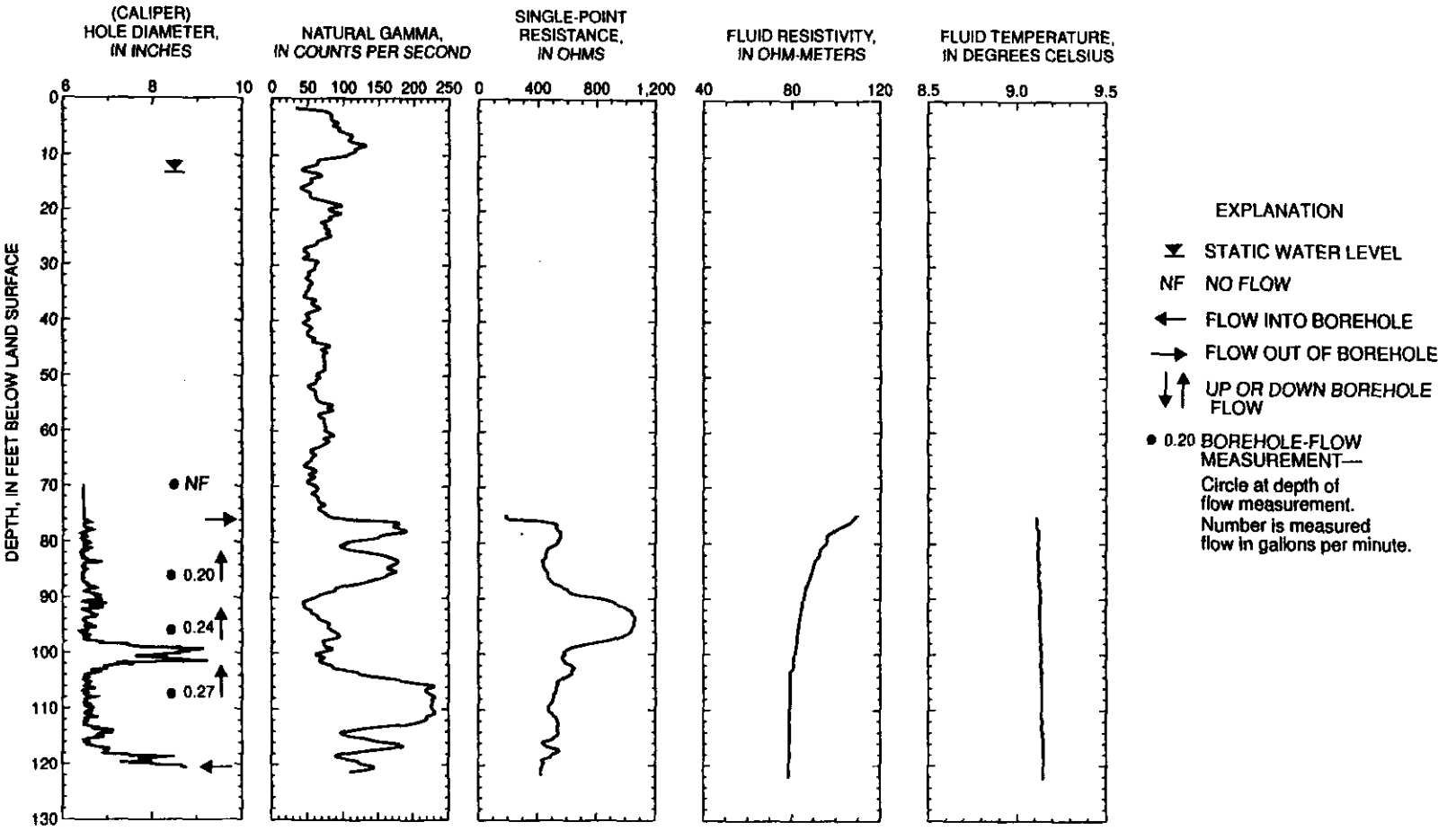



**Figure 2.** Borehole-geophysical logs for borehole BE-1562 (MW-8-R), collected on April 24, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301021

## BE-1563 (MW-7-R)

The caliper log shows the total depth of the borehole is 94 ft and it is cased with 6.25-in.-diameter casing (fig. 3). The static water level was 47.50 ft bls. The single-point-resistance log shows steel casing to 58 ft bls. The caliper log shows a fracture at 93 ft bls and only minor fractures throughout the open-hole interval. The fluid-resistivity log shows a change in slope at 58-60 ft bls that correlates to minor fractures on the caliper log. The video log shows the borehole water becomes slightly cloudy near the bottom of casing. Under ambient conditions, the heat-pulse-flowmeter data indicated upward borehole flow at 50, 56, 66, 74, and 84 ft bls (table 4). The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the fracture at 93 ft bls, moves upward, and exits the borehole through a break in casing above 50 ft bls. If the water produced by the fracture at 93 ft bls is contaminated, leaving this well as an unrepaired open borehole may cross-contaminate the shallow water-producing zones. Screen and sand placed at 84-94 ft bls would include the water-producing zone at 93 ft bls.

***Table 4.*** *Summary of heat-pulse-flowmeter measurements for borehole BE-1563 (MW-7-R) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 50 | 0.15 | up |
| 56 | .13 | up |
| 66 | .13 | up |
| 74 | .09 | up |
| 84 | .11 | up |



AR301022

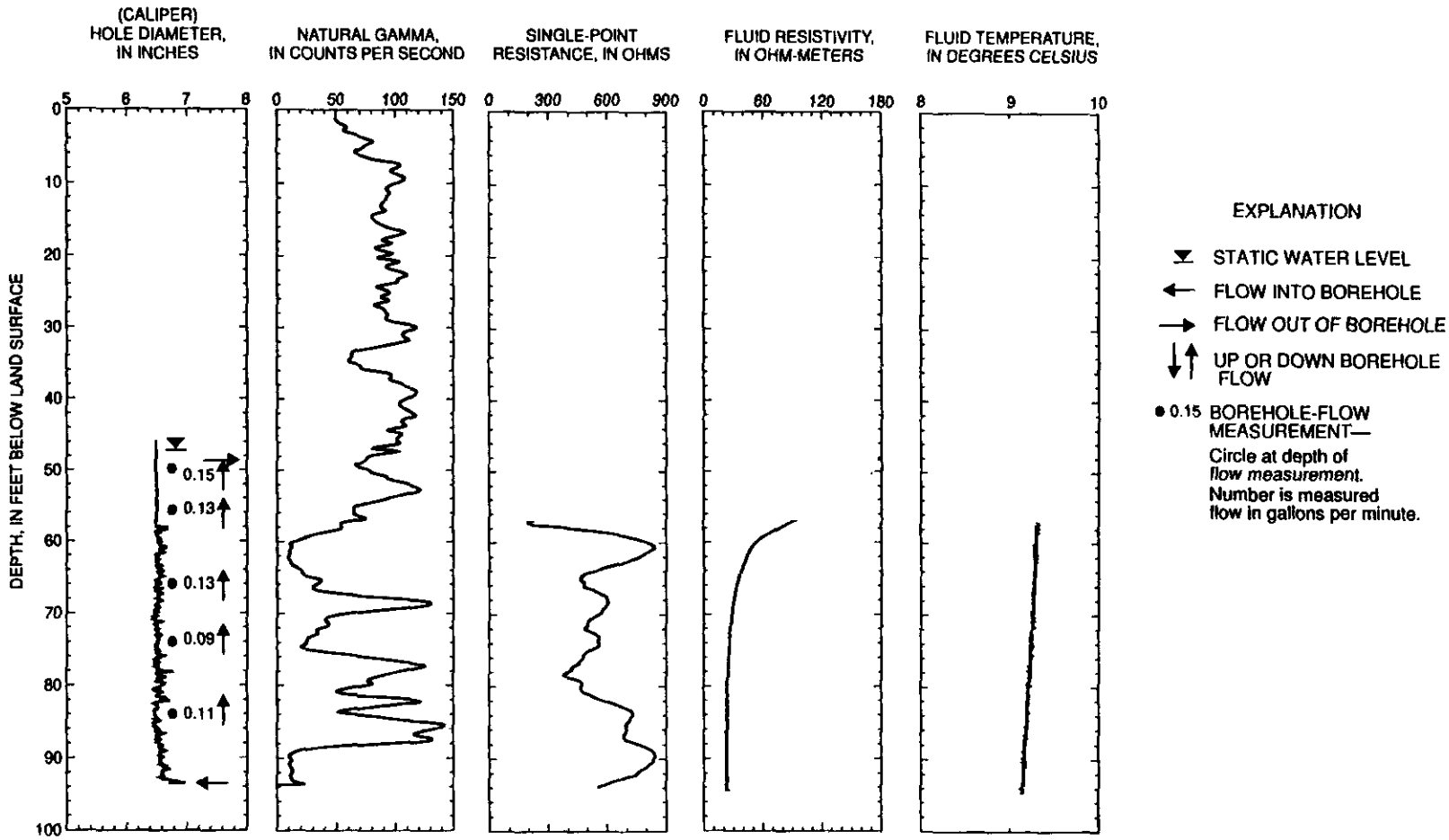



**Figure 3.** Borehole-geophysical logs for borehole BE-1563 (MW-7-R), *collected on* April 25, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301023

## BE-1564 (MW-7-DR)

The caliper log shows the total depth of the borehole is 122 ft and it is cased with 6.25-in.-diameter casing (fig. 4). The static water level was 47.76 ft bls. The single-point-resistance log shows steel casing extends to 108 ft bls. The caliper log shows a major fracture at 115 ft bls. The single-point-resistance log shows a spike at 115 ft bls that correlates to a fracture shown on the caliper log, which indicates a water-producing zone. The video log shows the borehole water becoming slightly cloudy in the open hole and a large horizontal fracture at 115 ft bls. A screen placed at 110-120 ft bls would include the apparent water-producing zone at 115 ft bls.

## BE-1565 (MW-6-R)

Only the gamma and video logs were run in this borehole. The static water level was 49.33 ft bls. The gamma log shows the total depth of the borehole is 94 ft bls (fig. 5). The borehole video log shows the casing is in good condition and extends to at least 94 ft bls. The borehole has completely collapsed below the casing; no open hole exists.

## BE-1566 (MW-4-R)

The gamma and video logs were run in this borehole. The static water level was 57.05 ft bls. The gamma log shows the total depth of the borehole is 232 ft bls and it is cased with steel to 228 ft bls (fig. 6). The borehole-video log shows the casing is broken or cracked above a joint at 46 ft bls. The video log identified fractures at 228-230 ft bls and a large vertical fracture at 232 ft bls. If water is produced by fractures near the break in casing at 46 ft bls and is contaminated, leaving this well unrepaired may cross-contaminate water-receiving zones. A screen placed at 228-232 ft bls would include the current open-hole interval and restrict any vertical flow caused as a result of damaged casing.



AR301024

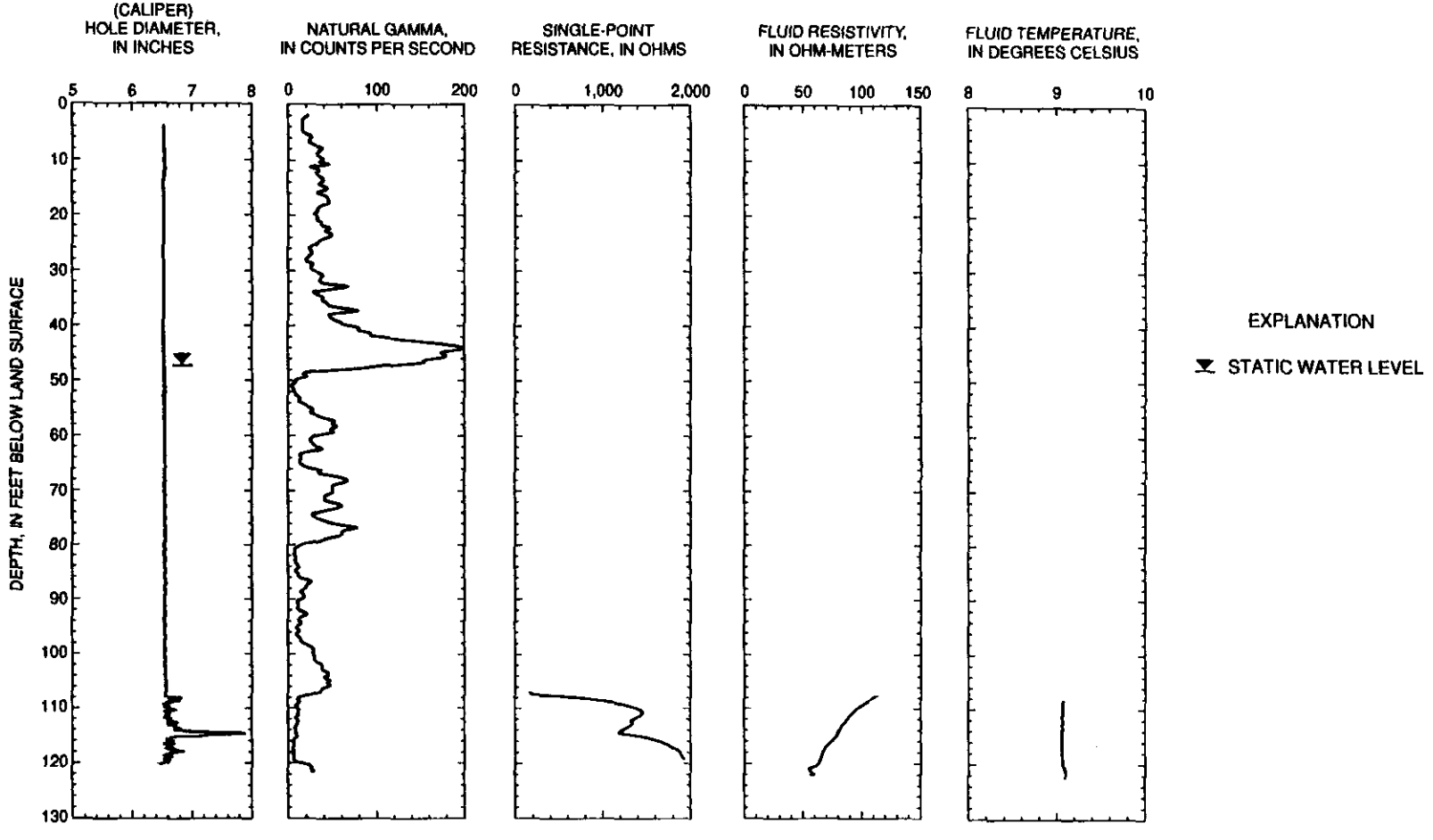
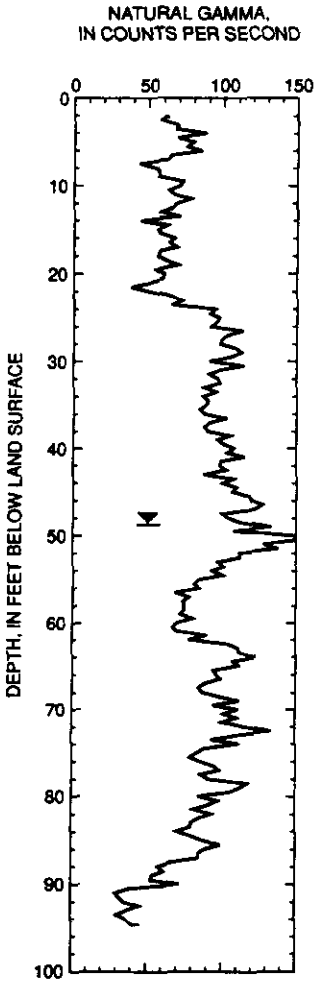



***Figure 4.*** *Borehole-geophysical logs for borehole* BE-1564 (MW-7-DR), collected on April 25, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301025




EXPLANATION

STATIC WATER LEVEL

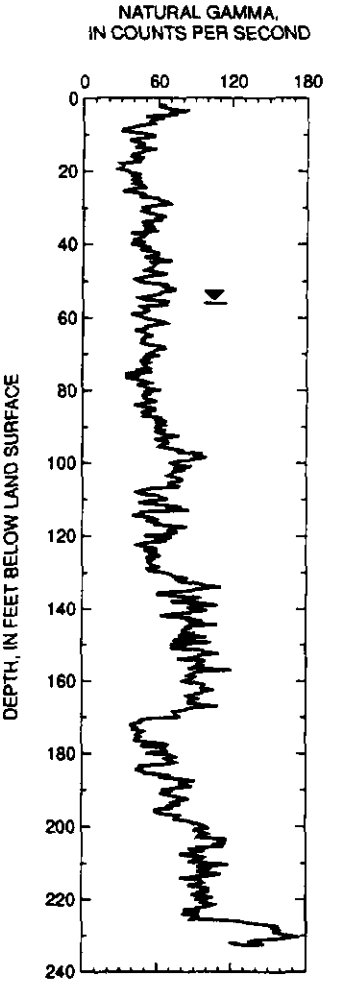



**Figure 5.** Borehole-geophysical log for borehole BE-1565 (MW-6-R), collected on April 25, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.

**Figure 6.** Borehole-geophysical log for borehole BE-1566 (MW-4-R), collected on April 25, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301026

## BE-1567 (MW-5-R)

The caliper log shows the total depth of the borehole is 299 ft and it is cased with 6-in.-diameter casing (fig. 7). The static water level was 33.91 ft bls. The single-point-resistance log shows steel casing to 196 ft bls. The caliper log shows fractures at 206 ft bls and only minor fractures throughout the open-hole interval. The caliper log shows the bottom 9 ft of the borehole is filled with soft sediment. The fluid-resistivity and fluid-temperature logs show a change in slope at 269 ft bls that correlates to a minor fracture on the caliper log and may indicate a water-producing zone. The video log shows the visibility of the borehole water becomes zero below 52 ft bls. Under ambient conditions, the heat-pulse-flowmeter measurements indicated upward borehole flow at 199 and 220 ft bls and no flow at 241 and 258 ft bls (table 5). The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the fractures between 222 and 238 ft bls moves upward and exits the borehole through fractures at approximately 196 ft bls. If the water produced by the fractures at 222-238 ft bls is contaminated, leaving this well as an open borehole may create cross-contamination of the deeper water-producing zones. A screen placed at 200-210 or 221-241 ft bls would include the water-receiving and water-producing zone at 204 or 222-238 ft bls, respectively.

***Table 5.*** *Summary of heat-pulse-flowmeter measurements for borehole BE-1567 (MW-5-R) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 190 | no flow | |
| 199 | 0.10 | up |
| 220 | .20 | up |
| 241 | no flow | |
| 258 | no flow | |



AR301027

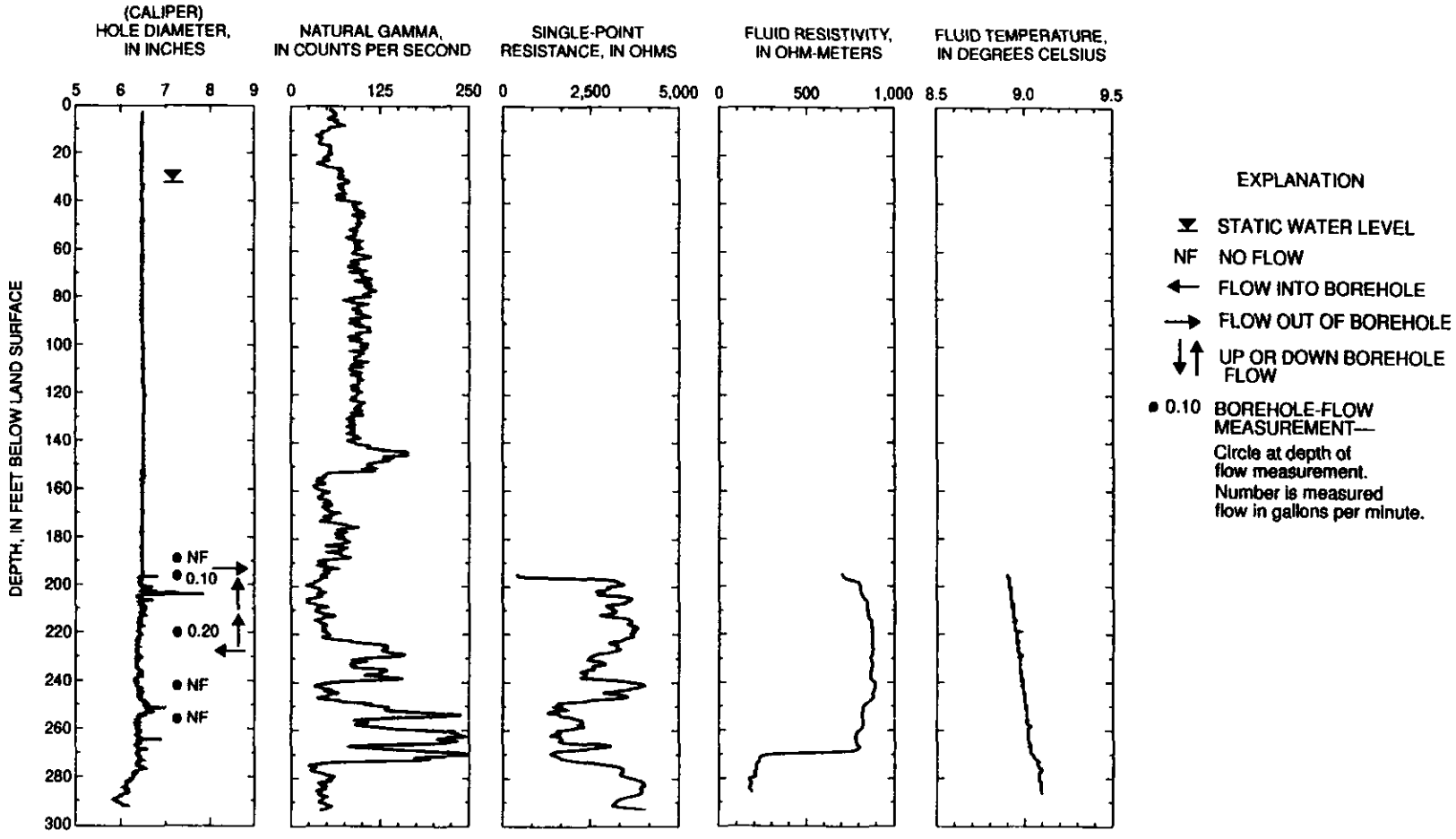



**Figure 7.** Borehole-geophysical logs for borehole BE-1567 (MW-5-R), collected on April 25, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301028

## BE-1568 (MW-2-DR)

The caliper log shows the total depth of the borehole is 302 ft and it is cased with 6-in.-diameter casing (fig. 8). The static water level was 24.07 ft bls. The single-point-resistance log shows steel casing to 56 ft bls. The caliper log shows numerous minor fractures throughout the open-hole interval. The fluid-resistivity log shows a sudden change in slope at about 70 ft bls that correlates to a minor fracture on the caliper log and may be indicative of lateral borehole flow. Under ambient conditions, the heat-pulse-flowmeter measurements indicate minor upward borehole flow at 250, 264, 282, and 294 ft bls and no flow at 80, 128, and 216 ft bls (table 6). The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the fractures at 286 and 300 ft bls, moves upward, and exits the borehole through fractures between 220 and 245 ft bls. If the water produced by the fractures at 286 and 300 ft bls is contaminated, leaving this well as an open borehole may create cross-contamination of the deeper water-producing zones. A screen placed at 220-245 ft bls or 250-300 ft bls would include the minor water-receiving and water-producing fractures, respectively, at these intervals.

***Table 6.*** *Summary of heat-pulse-flowmeter measurements for borehole BE-1568 (MW-2-DR) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 80 | no flow | |
| 128 | no flow | |
| 216 | no flow | |
| 250 | 0.06 | up |
| 264 | .05 | up |
| 282 | .08 | up |
| 294 | .05 | up |

## BE-1569 (MW-6-OB)

Only the borehole-video log was run in this well. The log shows the total depth of the borehole is 37 ft bls and it is screened from 29 to at least 37 ft bls. The static water level was 20.8 ft bls. The PVC casing is broken and misaligned at 3 ft bls and leaking below a joint at 19.5 ft bls. The video log shows silt on the bottom of the well.

## BE-1570 (MW-1-OB)

Only the borehole-video log was run in this well. The log shows the total depth of the borehole is 56 ft bls and it is screened with PVC from about 47 to 56 ft bls. The static water level was 20.0 ft bls. The video log shows dirty joints at 7.4, 17.4, and 36.7-46.7 ft bls, indicating locations of possible seepage into the well. The video log shows an apparent high water-level mark (stain) at 13.7 ft bls, staining possibly from iron or bacteria at 48 ft bls, and silt on the bottom at 56 ft bls.



AR301029

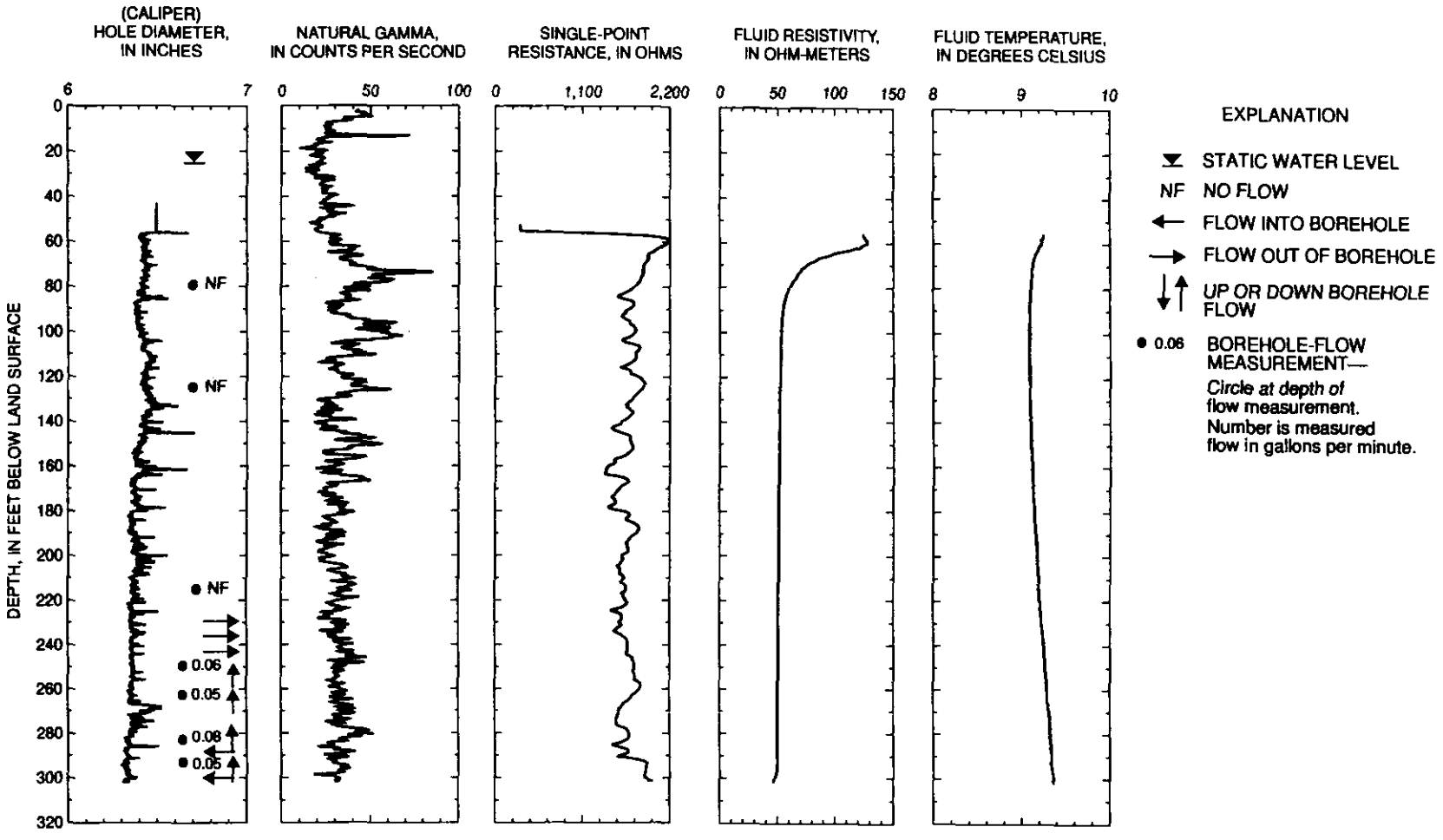



**Figure 8.** Borehole-geophysical logs for borehole BE-1568 (MW-2-DR), collected on May 2, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301030

## BE-1571(MW-1-R)

The gamma and borehole-video logs were run in this borehole. The gamma log shows the total depth of the borehole is 162 ft bls (fig. 9). The static water level was 27.15 ft bls. The video log could not define depth of casing because of poor visibility. The video log shows the water becomes cloudy below 60 ft bls, the borehole becomes visually out of plumb at 135 ft bls, and visibility becomes very low at 150 ft bls to bottom. This borehole is the most contaminated with volatile organic compounds (Halliburton, NUS, written commun., 1996).

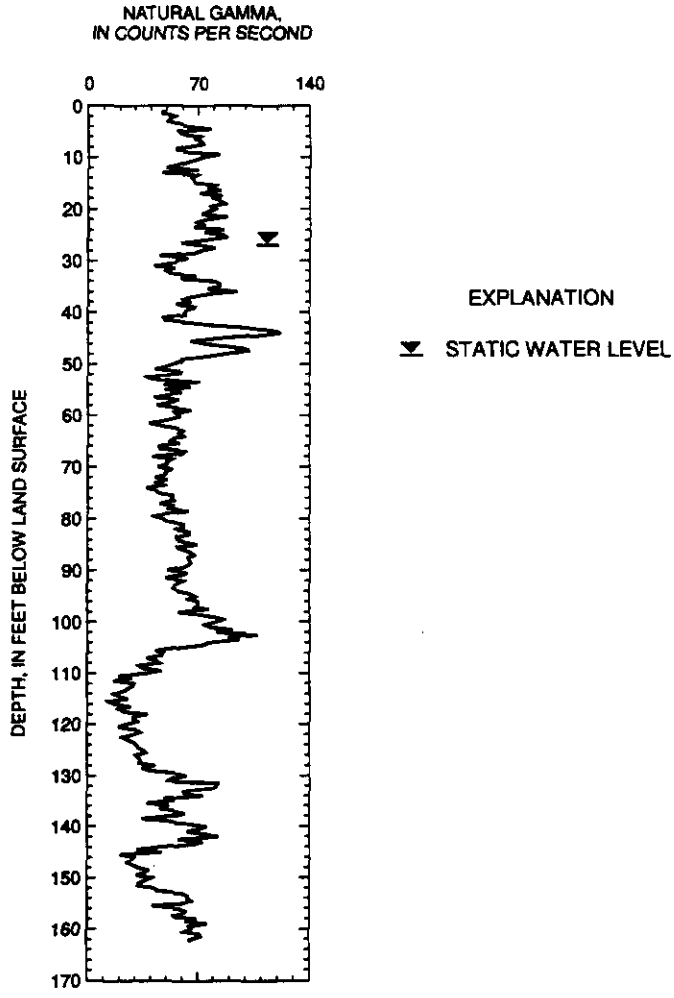



**Figure 9.** Borehole-geophysical log for borehole BE-1571 (MW-1-R), collected on May 7, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301031

## BE-1572 (MW-1.1-OB)

Only the borehole-video log was run in this well. The log shows the total depth of the well is 41 ft bls and it is screened with PVC from 31 to 41 ft bls. The static water level was 31.9 ft bls. The video log shows light-colored staining at 11.7 and 25-27 ft bls, indicating possible seepage into the well. PVC casing threads are visible at the top of the PVC screen at 30.8 ft bls, indicating incomplete tightening of the casing joint.

## BE-1573 (MW-1.2-OB)

Only the borehole-video log was run in this well. The log shows the total depth of the well is 44 ft bls and it is screened from 34 to 44 ft bls. The static water level was 39.3 ft bls. The video log shows an apparent high water mark at 22.6 ft bls and light-colored staining at 32.7 and 36 ft bls, indicating locations of possible seepage into the well. Some type of debris and staining are located just below water level at 39.3 ft bls. PVC casing threads are visible at the top of the screen at 34 ft bls, indicating incomplete tightening of the casing joint.

## BE-1574 (MW-2-OB)

Only the borehole-video log was run in this borehole. The log shows the total depth of the well is 26 ft bls and it is screened with PVC from 15.8 to 25.8 ft bls. The borehole-video log shows the well has dry, brown stains at 13.5, 19.8, and 24.5 ft bls (may indicate previous water levels), an undefined semicircle on the PVC screen at 20.5 ft bls, and debris on well bottom.

## BE-1575 (MW-2-R)

Only the borehole-video log was run in this well. The log shows the total depth of the borehole is 50 ft bls. The static water level was 26.5 ft bls. The video log could not define the depth of steel casing because of poor visibility. The borehole-video log shows large openings and horizontal fractures at 35 and 42 ft bls. The borehole is partially constricted at 42 ft bls because of shifting of loose formation material.

## BE-1576 (MW-2.1-OB)

Only the borehole-video log was run in this well. The log shows the total depth is 60 ft bls and it is screened with PVC casing from approximately 50 to 60 ft bls. The static water level was 40.3 ft bls. The video log shows stains at 33.4, 39.2, and 45 ft bls that may indicate different static water levels. The screen is slightly stained and dirty.

## BE-1577 (MW-3-OB)

Only the borehole-video log was run in this well. The log shows the total depth is 23 ft bls and it is screened with PVC casing from 13 to 23 ft bls. The static water level was 0.5 ft bls. An orange paint-can cap had to be removed from the well before logging. The video log shows a very dirty casing, debris at 15.5 ft bls, and sand and silt on the bottom of well.



AR301032

## BE-1578 (MW-3-DOB)

Only the borehole-video log was run in this well. The log shows the total depth is 69 ft bls and it is screened with PVC casing from 49.5 ft bls to the visible bottom. The static water level was 30.2 ft bls. The borehole video log shows debris at 26 ft bls, possibly indicating a high water level. The casing is chipped at 29.7 ft bls, debris is seen at 67.1 ft bls, and sand and silt on the bottom appear to contain PVC shreds.

## BE-1579 (MW-4-OB)

Only the borehole-video log was run in this well. The log shows the total depth is 21 ft bls and it is screened with PVC casing from 11 to 21 ft bls. The static water level was 1.7 ft bls. The borehole-video log shows the well is clean with little debris or dirt and only slight sediment on the bottom.

## BE-1580 (MW-5-OB)

Only the borehole-video log was run in this well. The log shows the total depth is 33 ft bls and it is screened with PVC casing from 23 to 33 ft bls. The static water level was 24.1 ft bls. The borehole-video log shows organic material growing on joint threads at 4.9 ft bls, moisture and possible bacterial growth at the joint at 13 ft bls, and stain marks at 16.6, 19.8, and 20.9 ft bls that may indicate different static water levels. The PVC screen is stained and coated beginning at 26.2 ft bls to bottom.

## BE-1581 (MW-5-DOB)

Only the borehole-video log was run in this well. The log shows the total depth is 100 ft bls and it is screened with PVC casing from approximately 80 to at least 100 ft bls. The static water level was 55.1 ft bls. The borehole video log shows white material that may be the bentonite used to seal the annulus between the borehole and the PVC casing coming from the joint at 52.5 ft bls. The video shows possible bacteria staining below 59 ft bls that increases with depth. The PVC screen is stained and partly coated or clogged for its entire length.

## BE-1582 (MW-7-OB)

Only the borehole-video log was run in this well. The log shows the total depth is 58 ft bls and it is screened with PVC casing from 38 to 58 ft bls. The static water level was 49.2 ft bls. The borehole-video log indicates possible seepage from the joint at 28 ft bls. Joint threads are visible at the top of the screen at 38 ft bls, indicating incomplete tightening. The video shows the casing is dirty and stained the entire length, especially below 28 ft bls. The screen is dirty and shows unknown deposits at 41.5 and 44 ft bls; some silt or sand is on the well bottom.



AR301033

## BE-1583 (Wetzel)

The caliper log shows the total depth of the borehole is 278 ft and it is cased with 6-in.-diameter casing (fig. 10). The single-point-resistance log shows steel casing to 56 ft bls. The static water level was 31.98 ft bls. The caliper log shows only minor fractures throughout the open-hole interval and a minor constriction at 269 ft bls. The caliper log shows the bottom 7 ft of the borehole is filled with soft sediment. Under ambient conditions, the heat-pulse-flowmeter measurements indicated upward borehole flow at 60, 80, 100, 150, 200, 250, and 260 ft bls (table 7). The borehole video shows near zero visibility from water level to 82 ft bls, partial clearing near 82 ft bls, and poor visibility below 150 ft bls. The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the fractures below 260 ft bls, moves upward, and exits the borehole through fractures at 84 and 57 ft bls. If the water produced by the fractures below 260 ft bls is contaminated, leaving this well as an open borehole may create cross-contamination of the shallow aquifer. A screen placed at 250-270 ft bls would include the water-producing fractures below 260 ft bls.

***Table 7.*** *Summary of heat-pulse-flowmeter measurements for borehole BE-1583 (Wetzel) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 50 | no flow | |
| 60 | 0.06 | up |
| 80 | .09 | up |
| 100 | .26 | up |
| 150 | .43 | up |
| 200 | .32 | up |
| 250 | .32 | up |
| 260 | .33 | up |



AR301034

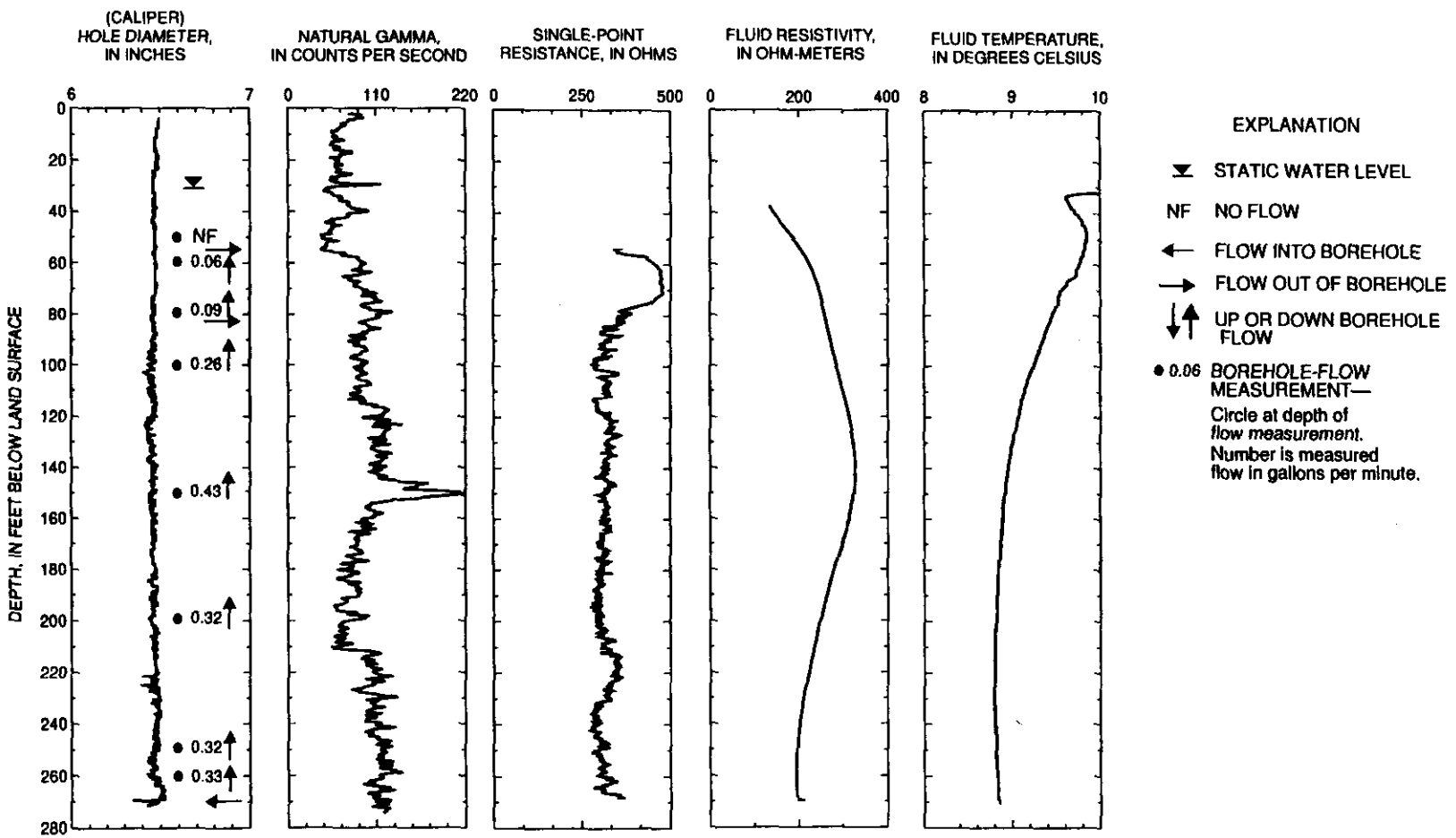



**Figure 10.** Borehole-geophysical logs for borehole BE-1583 (Wetzel), collected on May 6, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301035

## BE-1584 (92-17)

The caliper log shows the total depth of the borehole is 435 ft and it is cased with 6-in.-diameter casing to approximately 54 ft bls (fig. 11). The static water level was 3.64 ft bls. The caliper log shows major fractures at 54.5-59, 162, and 276-278 ft bls and numerous minor fractures throughout the open-hole interval. The fluid-resistivity and fluid-temperature logs show changes in slope at approximately 60, 110, and 320 ft bls. Under ambient conditions, the heat-pulse-flowmeter measurements indicated upward borehole flow at 64, 70, 80, 124, 150, 200, 264, 302, 350, and 401 ft bls; downward flow at 88 and 100 ft bls, and no flow at 420 ft bls (table 8). The borehole video shows the water column is very cloudy with many suspended particles. Partial clearing does occur at 66-68 ft bls. The geophysical logs and the heat-pulse-flowmeter data indicate water enters the borehole through the fractures below 400 ft bls, at 320, 276-278, and about 130 ft bls, moves upward, and exits the borehole through fractures at 102-117 ft bls. Also, water enters the borehole through fractures at 83 ft bls, moves upward and downward, and exits the borehole through fractures at 59 and 102-117 ft bls, respectively. If the water produced by the fractures below 400 ft bls, at 320, at 276-278, and approximately 130 ft bls is contaminated, leaving this well as an open borehole may create cross-contamination of the intermediate or shallow aquifer.

*Table 8. Summary of heat-pulse-flowmeter measurements for borehole BE-1584 (92-17) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute]

| Depth (ft bls) | Flow rate under ambient conditions (gal/min) | Flow direction under ambient conditions |
|---|---|---|
| 64 | 0.23 | up |
| 70 | .07 | up |
| 80 | .07 | up |
| 88 | .28 | down |
| 100 | .68 | down |
| 124 | .80 | up |
| 150 | .43 | up |
| 200 | .38 | up |
| 264 | .49 | up |
| 302 | .42 | up |
| 350 | .06 | up |
| 401 | .06 | up |
| 420 | no flow | |



AR301036

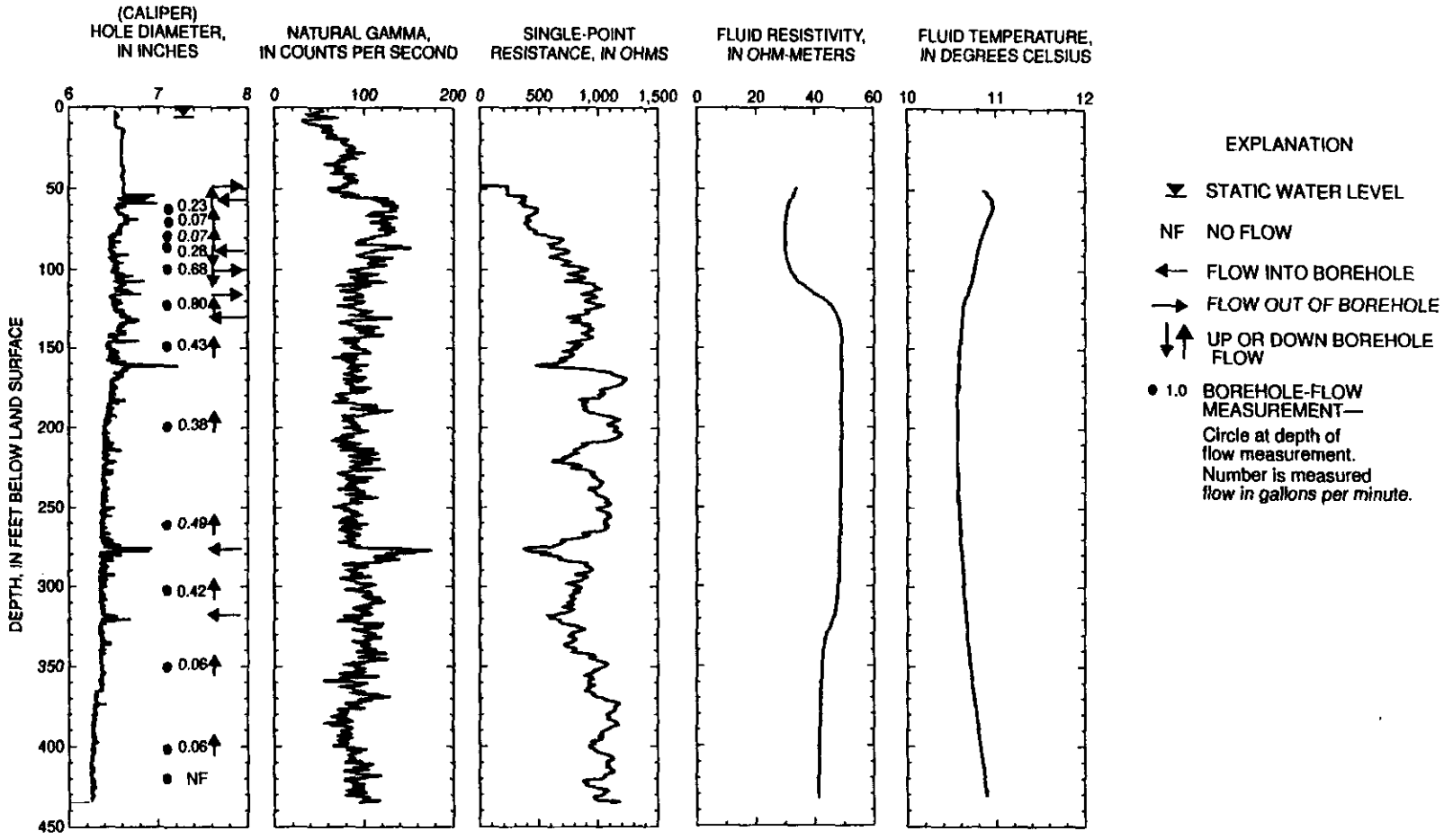



**Figure 11.** Borehole-geophysical logs for borehole BE-1584 (92-17), collected on May 8, 1997, Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301037

## CONCLUSIONS

This report identifies water-producing zones, water-receiving zones, and intervals of vertical borehole flow and determines the condition of existing well construction by the use of geophysical logs, heat-pulse-flowmeter data, and video logs. These data will help evaluate horizontal and vertical distribution of any contaminated ground water migrating from known contaminant sources and the integrity of existing wells.

Boreholes located off the Crossley Farms Superfund Site, BE-1562 (MW-8R), BE-1563 (MW-7R), BE-1567 (MW-5R), and BE-1583 (Wetzel), are located down gradient from the Crossley Farms Superfund Site near the base of Blackhead Ridge and show upward ambient borehole flow. In these boreholes, water is produced through fractures between 90-270 ft bls, moves upward, and exits the borehole through fractures between 55-200 ft bls, indicating that these boreholes are located in areas of ground-water discharge.

Borehole BE-1568 (MW-2DR) is deep and shows only minor upward flow near the bottom. BE-1571 (MW-1R), located on-site down gradient from the contaminant source, penetrates a fracture zone, is high yielding, and is the most contaminated borehole.

Flowmetered boreholes BE-1562, BE-1563, BE-1564, BE-1567, BE-1568, and BE-1583 all show minor vertical flow within the borehole. Generally, water is produced near the bottom of the borehole, regardless of depth, moves upward, and exits the borehole through fractures near the bottom of casing. The upper fluid-receiving fractures apparently depend on the depth of casing in each borehole. Heat-pulse-flowmeter data indicate all boreholes penetrate one to three water-bearing zones depending on well depth. Well yield apparently depends on chance interception of interconnected water-producing fractures.

The video logs were useful for casing inspection, especially for PVC-screened wells. Screen intervals were verified and potential construction problems were identified in several wells. The video logs show that most wells were cloudy with poor visibility that may be partially a result of logging activities. Visibility was so poor in wells BE-1571 and BE-1575 that depth of casing could not be determined. The video log shows that BE-1566 (MW4-R) has broken casing at 46 ft bls.

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AR301038

U.S. Department of the Interior
U.S. Geological Survey

# EVALUATION OF GEOPHYSICAL LOGS, PHASE II, NOVEMBER 1998 TO MAY 1999, AT CROSSLEY FARMS SUPERFUND SITE, BERKS COUNTY, PENNSYLVANIA

*by Randall W. Conger*

**Open-File Report 00-383**

*prepared in cooperation with the*
U.S. ENVIRONMENTAL PROTECTION AGENCY

Lemoyne, Pennsylvania
2000

AR301039

**U.S. DEPARTMENT OF THE INTERIOR**

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## CONVERSION FACTORS AND VERTICAL DATUM

| Multiply | By | To obtain |
|---|---|---|
| inch (in) | 25.4 | millimeter |
| foot (ft) | 0.3048 | meter |
| mile | 1.609 | kilometer |
| gallon per minute (gal/min) | 0.00006309 | cubic meter per second |

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

Abbreviated water-quality units used in report:

μg/L, micrograms per liter



AR301044

# Evaluation of Geophysical Logs, Phase II, November 1998 to May 1999, at Crossley Farms Superfund Site, Berks County, Pennsylvania

*by Randall W. Conger*

## ABSTRACT

Between November 1998 and May 1999, geophysical logging was conducted in 29 boreholes at the Crossley Farms Superfund Site, Hereford Township, Berks County, Pa., to determine the fluid-producing zones, fluid-receiving zones, zones of vertical borehole flow, and casing depth. The wells range in depth from 96 to 500 feet below land surface. Gamma logs only were collected in three bedrock wells. The geophysical logging determined the placement of well screens and packers, which allow monitoring and sampling of water-bearing zones in the fractured bedrock so that the horizontal and vertical distribution of contaminated ground water migrating from known sources could be determined. Geophysical logging included collection of caliper, video, fluid-temperature, fluid-resistivity, single-point-resistance, natural-gamma, fluid-flow, and acoustic-televiewer logs. Caliper and video logs were used to locate fractures, joints, and weathered zones. Inflections on fluid-temperature and fluid-resistivity logs indicated possible water-bearing fractures, and flowmeter measurements verified these locations. Single-point-resistance and natural-gamma logs provided information on stratigraphy. After interpretation of geophysical, video logs, and drillers notes, 24 of the wells were reconstructed such that water levels can be monitored and water samples collected from discrete water-bearing fractures in each well.

## INTRODUCTION

Commercial hazardous wastes were reportedly disposed of during the mid-1960's to the mid-1970's at the abandoned quartzite quarry and nearby areas on Blackhead Hill at the Crossley Farms Superfund Site[1] (Halliburton NUS, 1995). The site is about 20 mi northeast of Reading, Pa., in the community of Huffs Church in Hereford Township, Berks County (fig. 1).

In the early 1980's, homeowners near the Crossley Farms Superfund Site complained about the quality of their well water. In 1983, ground-water samples collected by the Pennsylvania Department of Environmental Resources and Roy F. Weston, Inc. indicated some residential wells were contaminated with trichloroethylene (TCE) and tetrachloroethene (PCE). Additional sampling identified TCE as the principal contaminant at concentrations as great as 22,800 µg/L in residential well water. Currently, about 50 residential wells that have been affected are equipped with carbon filters at the point of use (Roy Schrock, U.S. Environmental Protection Agency, oral commun., 2000).

In 1987-88, a hydrogeologic assessment was conducted at the Crossley Farms Superfund Site by Roy F. Weston, Inc., and IT Corporation (Roy F. Weston/IT, 1988). Weston conducted soil-gas surveys and drilled 21 monitor wells in proximity to the site and concluded that the source of the TCE was from the top of Blackhead Hill, probably near the abandoned quarry and borrow-pit area. To delineate the extent of ground-water contamination, a Focused Feasibility Study (FFS) and Remedial Investigation/Feasibility Study (RI/FS) currently are being conducted by Tetra Tech NUS Inc. (TTNUS), to better characterize the nature and extent of hazardous contamination and evaluate remedial options for the contaminated residential wells. The USGS used borehole geophysics to identify water-producing zones, water-receiving zones, and intervals of vertical flow in each well. This effort helped to characterize local geology and hydrology and aided well reconstruction so that water samples may be collected from discrete intervals.

[1] The boundaries of the Crossley Farms Superfund Site are not delineated but are assumed to be coincident with the extent of the plume of contaminated ground water near Blackhead Hill described in Halliburton NUS (1995).



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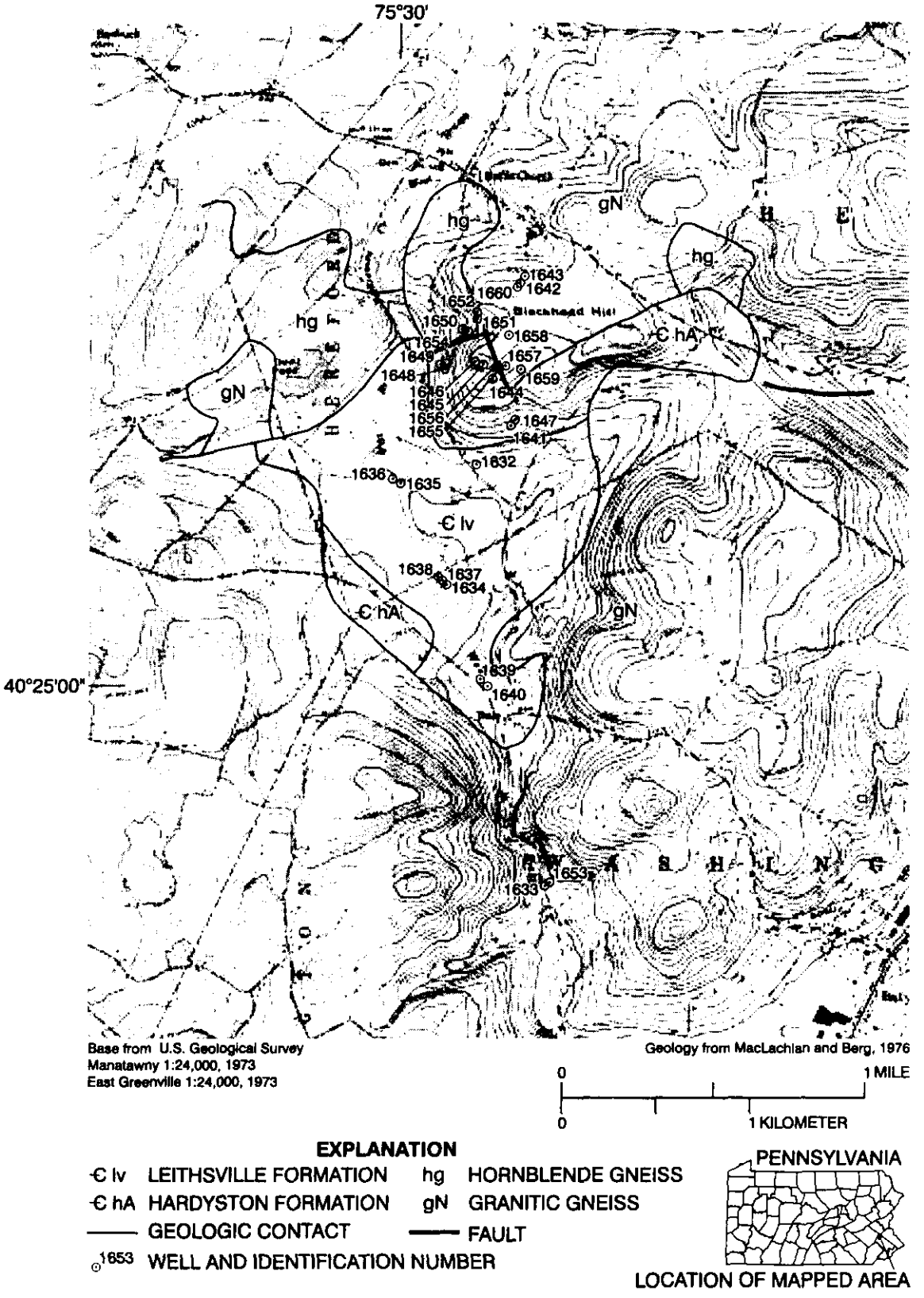


**Figure 1.** Location of boreholes logged at Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301046

## Purpose and Scope

This report evaluates borehole geophysical and video logs collected by the USGS in 29 wells at and near Crossley Farms Superfund Site (table 1 and fig. 1). This report identifies one or more water-producing and water-receiving zones in each well on the basis of geophysical and video-log data. The purpose of the logging was to determine the placement of a well screen, so that discrete intervals can be sampled. Borehole-video logs were collected in 15 of the 29 wells. Caliper, natural-gamma, single-point-resistance, fluid-resistivity, fluid-temperature, and borehole-flow (heatpulse flowmeter) logs were collected in 27 of the 29 wells. A natural-gamma log only was collected in three wells and caliper and natural-gamma logs were collected in one well.

***Table 1.*** *Boreholes logged at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ Ꞓlv, Leithsville Formation, gN, granitic gneiss; Ꞓ̄hA, Hardyston Formation; hg, hornblende gneiss; A, acoustic televiewer; B, borehole video; C, caliper log; G, natural-gamma log; R, single-point-resistance log; F, fluid-resistivity log; T, fluid-temperature log; V, borehole-flow measurement; gal/min, gallons per minute]

| U.S. Geological Survey borehole-identification number | Tetra Tech NUS identification number | Depth logged (feet) | Open (O) or screened (S) interval below land surface (feet) | Depth to water below land surface (feet) | Date water level measured | Geologic unit | Geophysical logs collected |
|---|---|---|---|---|---|---|---|
| BE-1632 | HN-07-D | 300 | 230-240 (S) | 51.62 | 11/10/98 | Ꞓlv | B,C,G,R,F,T,V |
| BE-1633 | HN-17-I | 149 | 68-78 (S) | 5.80 | 11/19/98 | gN | B,C,G,R,F,T,V |
| BE-1634 | HN-14-D | 374 | 344-354 (S) | 78.11 | 11/20/98 | Ꞓlv | B,C,G,R,F,T,V |
| BE-1635 | HN-13-D | 373 | 360-370 (S) | 12.95 | 12/3/98 | Ꞓlv | C,G,R,F,T,V |
| BE-1636 | HN-13-I | 200 | 35-45 (S) | 12.59 | 12/4/98 | Ꞓlv | C,G,R,F,T,V |
| BE-1637 | HN-14-S | 96 | 80-100 (S) | 73.82 | 12/4/98 | Ꞓlv | G |
| BE-1638 | HN-14-I | 151 | 137-150 (S) | 74.80 | 12/4/98 | Ꞓlv | G |
| BE-1639 | HN-16-D | 203 | 196-206 | 16.51 | 12/14/98 | Ꞓlv | C,G |
| BE-1640 | HN-16-I | 149 | 150-170 | 17.00 | 12/14/98 | Ꞓlv | G |
| BE-1641 | HN-15-D | 299 | 259-269 (S) | 51.87 | 12/14/98 | Ꞓ̄hA | B,C,G,R,F,T,V |
| BE-1642 | HN-9-I | 148 | 75-85 (S) | 39.96 | 1/5/99 | gN | C,G,R,F,T,V |
| BE-1643 | HN-9-S | 100 | 45-60 (S) | 40.37 | 1/5/99 | gN | C,G,R,F,T,V |
| BE-1644 | HN-01-D | 262 | West Bay[1] | 33.35 | 1/6/99 | Ꞓ̄hA | B,C,G,R,F,T,V |
| BE-1645 | HN-12-I | 148 | 118-138 (S) | 47.70 | 1/26/99 | Ꞓ̄hA | C,G,R,F,T,V |
| BE-1646 | HN-12-D | 304 | 275-304 (S) | 101.20 | 1/27/99 | Ꞓ̄hA | B,C,G,R,F,T,V |
| BE-1647 | HN-15-I | 204 | 184-204 (S) | 41.88 | 2/10/99 | Ꞓ̄hA | B,C,G,R,F,T,V |
| BE-1648 | HN-11-I | 150.5 | 114-119 (S) | 46.21 | 1/29/99 | Ꞓ̄hA | B,C,G,R,F,T,V |
| BE-1649 | HN-11-D | 299 | West Bay[1] | 45.82 | 1/29/99 | Ꞓ̄hA | A,B,C,G,R,F,T,V |
| BE-1650 | HN-10-D | 300 | 247-257 (S) | 7.08 | 2/5/99 | hg | B,C,G,R,F,T,V |
| BE-1651 | HN-18-D | 500 | West Bay[1] | 87.91 | 2/17/99 | gN | A,B,C,G,R,F,T,V |
| BE-1652 | HN-18-I | 150 | 35-150 (O) | 84.35 | 2/19/99 | gN | A,B,C,G,R,F,T,V |
| BE-1653 | HN-17-V | 463 | West Bay[1] | Flowing (0.22 gal/min) | 3/3/99 | gN | B,C,G,R,F,T,V |
| BE-1654 | HN-10-I | 145 | 71-81 (S)<br>112-122 (S) | 15.36 | 3/22/99 | hg | C,G,R,F,T,V |
| BE-1655 | HN-19-I | 168 | 90-100 (S) | 20.63 | 3/25/99 | gN | C,G,R,F,T,V |
| BE-1656 | HN-20-I | 194 | 110-120 (S) | 26.50 | 4/1/99 | Ꞓ̄hA | C,G,R,F,T,V |
| BE-1657 | HN-21-I | 193 | 110-120 (S) | 23 | 4/12/99 | gN | B,C,G,R,F,T,V |
| BE-1658 | HN-22-I | 151 | 68-78 (S)<br>132-142 (S) | 26.07 | 4/7/99 | gN | C,G,R,F,T,V |
| BE-1659 | HN-23-I | 130 | 100-125 (S) | 6.11 | 4/15/99 | gN | C,G,R,F,T,V |
| BE-1660 | HN-9-D | 360 | 150-360 (O) | 59.30 | 6/4/99 | gN | A,B |

[1] West Bay, a brand name multi-port permanent packer system installed so that numerous intervals could be sampled in a single borehole indefinitely, is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.



AR301047

## Hydrogeologic Setting

The Crossley Farms Site is located in the Reading Prong Section of the New England Physiographic Province (Fenneman, 1938). The upland area of Blackhead Hill is underlain by Precambrian gneiss and Cambrian quartzite of the Hardystown Formation (MacLachlan and Berg, 1981). The adjacent valley to the south and west is underlain mainly by Cambro-Ordovician dolomite of the Leithsville Formation. Bedrock is overlain by 30 to 120 ft of unconsolidated regolith (Weston/IT, 1988).

Ground water occurs and moves through secondary openings in the regolith, fractures, joints, and cleavage planes in the bedrock. The water table in the shallow part of the regolith is saturated at many locations. Maps of the water table in the regolith indicate shallow ground water probably moves radially from the summit of Blackhead Hill to the south and west. Potentiometric-surface maps of the water table in the bedrock indicate a potential for ground-water movement from the quarry area to the south and east (Weston/IT 1988). Within the Leithsville Formation, secondary openings have been enlarged by dissolution and weathering of the dolomite. Hydraulic gradients are less steep in the Leithsville Formation than in the crystalline bedrock. In the fractured bedrock, ground water moves from Blackhead Hill radially toward the valley. Specific flow paths, however, are difficult to characterize because they can be affected by the anisotropy of the regolith and fractured bedrock and heterogeneity of water-producing and water-receiving zones.

## Borehole Geophysical Logs

Geophysical logs provide information on location of fractures (caliper and video logs) and water-producing and water-receiving zones, intervals of vertical borehole flow (fluid-resistivity and fluid-temperature logs), quantification of borehole flow (heatpulse-flowmeter measurements), lithologic correlation (gamma and single-point-resistance logs), and data on well construction (caliper and single-point-resistance logs) where unknown.

Caliper logs provide a continuous record of average borehole diameter, which is related to fractures, lithology, and drilling technique. Caliper logs are used to identify fractures and possible water-producing and water-receiving zones and correct other geophysical logs for changes in borehole diameter. Correlation of caliper logs with fluid-resistivity and fluid-temperature logs is used to identify fractures, water-producing zones, water-receiving zones, and zones of vertical borehole flow.

The natural-gamma or gamma log measures the natural-gamma radiation (photons) emitted from all rocks. The most common emitters of gamma radiation are uranium-238, thorium-232, their daughter elements, and potassium-40. These radioactive elements are concentrated in clays by adsorption, precipitation, and ion exchange. Fine-grained sediments such as shale or siltstone usually emit more gamma radiation than sandstone, limestone, or dolomite. Gamma log data can be collected in or out of water or casing. However, casing does reduce the gamma response. The gamma log is used to correlate geologic units between wells (Keys, 1990).

The single-point-resistance log records the electrical resistance of a formation between the probe in a water filled borehole below casing and an electrical ground at land surface. Generally, electrical resistance increases with formation grain size and decreases with borehole diameter, water-bearing fractures, and increasing dissolved-solids concentration of borehole water fluid. The single-point-resistance log is used to correlate geology between wells and may help identify formation water-bearing zones. (Keys 1990).

Fluid resistivity is the inverse of fluid conductivity. The fluid-resistivity log measures the electrical resistivity of the water column in the well. The fluid-resistivity probe measures the resistivity of borehole water between electrodes in the probe. Fluid-resistivity logs reflect changes in the dissolved-solids concentration of the well water. Fluid-resistivity logs are used to identify water-producing and water-receiving zones and to determine intervals of vertical borehole flow. Water-producing and water-receiving zones are usually identified by distinct changes in resistivity.



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Intervals of vertical borehole flow are usually identified by a low-resistivity gradient between a water-producing and a water-receiving zone. Also, some types of contaminant plumes can be identified.

Fluid-temperature logs provide a continuous record of the temperature of vertical variation in the water in a borehole. Temperature logs are used to identify water-producing and water-receiving zones and to determine zones of vertical borehole flow. Intervals of vertical borehole flow are characterized by little or no temperature gradient. (Williams and Conger, 1990).

The direction and rate of borehole-water movement was determined by the use of a heatpulse flowmeter. The heatpulse flowmeter operates by heating a small volume of water between two sensitive thermistors (heat sensors). A measurement of direction and rate is computed when a peak temperature is recorded by one of the thermistors. The range of flow measurement is about 0.01-1.2 gal/min in a 2- to 10-in.-diameter borehole (Conger, 1996).

Some heatpulse-flowmeter measurements may be influenced by (1) poor seal integrity between the borehole and heatpulse flowmeter and (2) contributions of water from storage within the borehole. If the seal between the borehole and flowmeter is not complete, some water can bypass the flowmeter, resulting in measurements of flow that are less than the actual rate. Although the heatpulse flowmeter is a calibrated probe, the data are primarily used as a relative indicator to identify water-producing zones.

The borehole acoustic televiewer log is a magnetically oriented, 360-degree photograph-like image of the acoustic reflection of the borehole wall. The acoustic televiewer is an ultrasonic imaging tool operating at a frequency of about 1 megahertz that scans the borehole wall with an acoustic beam generated by a pulsed piezoelectric source rotating at about 3 revolutions per second as the tool is moved up the borehole at 5 ft per minute. Digital images of a 3- to 9-in.-diameter, water-filled uncased borehole are recorded by a computer collecting the data. The log is represented in two dimensions by splitting the image vertically along the north axis and lain flat. A smooth and hard borehole wall produces a uniform reflection pattern. The intersection of a fracture, bedding, joints, and cleavage planes with the borehole wall scatters the acoustic waves, producing dark, linear features. Because the image is magnetically oriented, the dip and strike of the fracture can be determined.

Borehole deviation logs, also called dipmeter logs, record the deviation of a borehole from true vertical. Deviation of boreholes from the vertical is common, and deviation logs are used to calculate true vertical depth of features of interest and to correct the strike and dip of fractures or bedding obtained from acoustic televiewer logs.

Borehole television logging or video logging was conducted by lowering a waterproof camera down the borehole and recording the image on video tape. The depth indicated on the video log is typically within plus or minus 1.0 ft of the geophysical logs because of some minor slippage of the television cable and is corrected by comparison with other geophysical logs.



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## EVALUATION OF BOREHOLE GEOPHYSICAL LOGS

The locations of boreholes logged are shown on figure 1. The reference measuring point for all geophysical and video logs is land surface. Depth of wells, casing lengths, and water levels at the time of logging are given in feet below land surface (bls). A cross-reference between USGS borehole-identification numbers and TTNUS borehole-identification numbers are shown in table 1.

### BE-1632 (HN-07-D)

Well BE-1632 was drilled in the Leithsville Formation. The caliper log shows the total depth of the borehole is 300 ft, and it is cased with 6.5-in.-diameter casing to 149.5 ft bls (fig. 2). The static water level at the time of logging was 51.62 ft bls. The caliper log indicates the borehole was reamed for casing to 154 ft bls. The caliper log shows minor fractures at 154.5, 192, and 234-237 ft bls. The gamma log indicates a lithologic contact between the Leithsville Formation and the underlying Hardyston Formation at 89 ft bls; a probable fault zone from 170 to 220 and 270 to 300 ft bls, that correlates with high and low resistance, respectively, is shown on the single-point-resistance log. Under nonpumping conditions, the heatpulse flowmeter measured upward borehole flow at 140, 158, 176, 210, and 230 ft bls and no flow at 240, 250, and 276 ft bls (table 2). The video log shows what appears to be iron bacteria in the borehole water below 52 ft bls that decreases in abundance with depth and is not seen below 154 ft bls. The video log generally shows that high angle fractures (greater than 45°) dip to the northwest and shallow angle fractures dip to the southeast. The video log also shows that the water-receiving zone at 154 ft bls strikes northeast-southwest and dips southeast. The water-producing zone at 234-237 ft bls strikes northeast-southwest but dips to the northwest. The caliper and fluid-temperature logs and the heatpulse-flowmeter measurements indicate water enters the borehole through the fractures at 234-237 ft bls, moves upward, and exits the borehole through the fracture at 154.5 ft bls and at a break in casing above 140 ft bls. The borehole was backfilled from 300 ft bls to 252 ft bls. A screen was placed at 230 to 240 ft bls with the sand pack placed at 225-252 ft bls, to include the water-producing fractures at 234-237 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

***Table 2.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1632 (HN-07-D) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallons per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 140 | 0.5 | up |
| 158 | 1.0 | up |
| 176 | 1.0 | up |
| 210 | .95 | up |
| 230 | .90 | up |
| 240 | no flow | -- |
| 250 | no flow | -- |
| 276 | no flow | -- |



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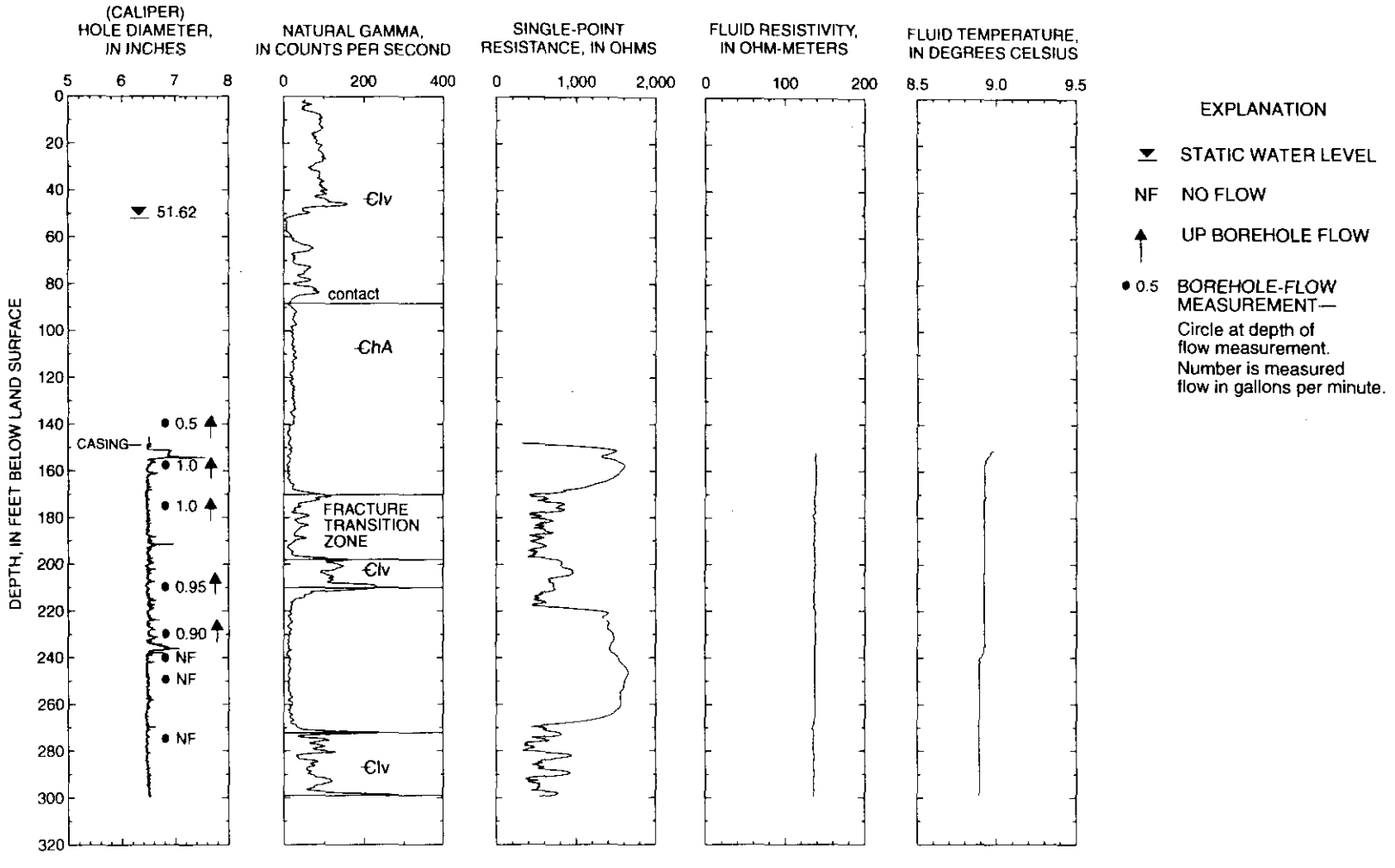


**Figure 2.** Borehole geophysical logs for borehole BE-1632 (HN-07-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1633 (HN-17-I)

Well BE-1633 was drilled in the Precambrian granitic gneiss. The caliper log shows the total depth of the borehole is 149 ft, and it is cased with 6.5-in.-diameter casing to approximately 50 ft bls (fig. 3). The static water level at the time of logging was 5.80 ft bls. The caliper log shows minor fractures throughout the open-hole interval. The gamma log shows high gamma spikes below 88 ft bls that are probably due to higher concentrations of potassium feldspar within the granite-gneiss. The fluid-resistivity and fluid-temperature logs show changes in slope at approximately 74 and 77 ft bls, respectively, that approximately correlate to a fracture zone shown on the caliper log at 70-74 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 67, 78, 100, and 124 ft bls. The single-point-resistance log shows a low resistance peak at 59 ft bls that suggests an additional water-producing zone. The borehole video log shows iron bacteria in the borehole water and very poor visibility that decreases with depth. The geophysical logs and the drilling data indicate water may be produced through fractures at 70-74 and possibly 59 ft bls. A screen was placed at 68-78 ft bls with a sand pack placed at 65-85 ft bls to include the probable water-producing fractures at 70-74 ft bls. (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1634 (HN-14-D)

Well BE-1634 was drilled in the Leithsville Formation. The caliper log shows the total depth of the borehole is 374 ft, and it is cased with 6.5-in.-diameter casing to 282 ft bls (fig. 4). The static water level at the time of logging was 78.11 ft bls. The caliper log shows major fractures at 283, 300, 347, 353-357, 360-364, 366, and 369 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 319, 330, and 342 ft bls and no flow at 292, 306, and 350 ft bls (table 3). The borehole video shows considerable iron bacteria in the borehole water and on the sides of the casing. The open borehole is rough, very fractured, and appears to be out of plumb. Bedding is high angle (greater than 45°) and dips to the southwest. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through the fractures at 312 ft bls, moves downward, and exits the borehole through the fracture at 347 ft bls. A screen was placed at 344-354 ft bls with a sand pack placed at 334-374 ft bls to include the water-receiving fracture at 347 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

***Table 3.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1634 (HN-14-D) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 292 | no flow | -- |
| 306 | no flow | -- |
| 319 | 0.04 | down |
| 330 | .03 | down |
| 342 | .03 | down |
| 350 | no flow | -- |



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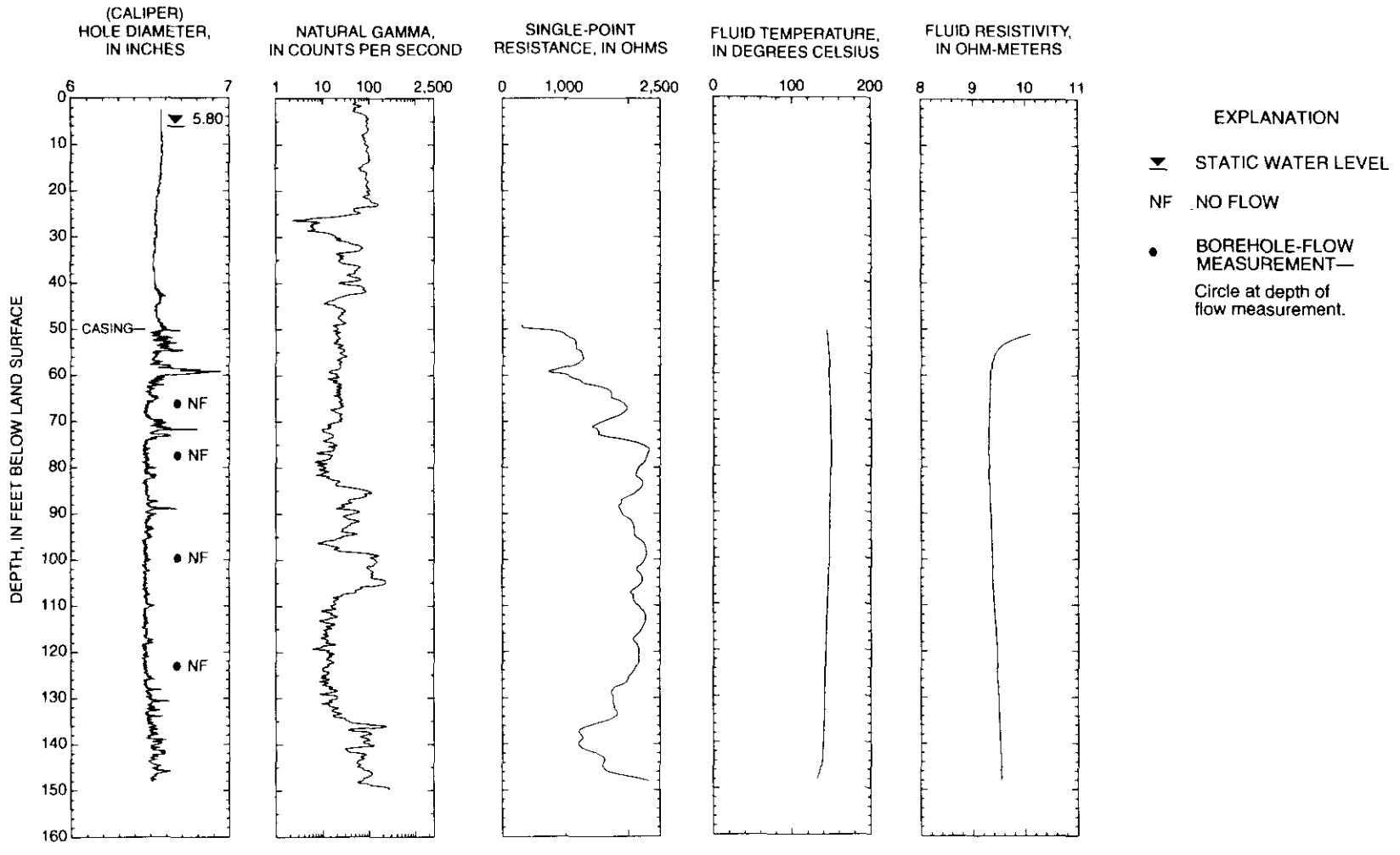


**Figure 3.** Borehole geophysical logs for borehole BE-1633 (HN-17-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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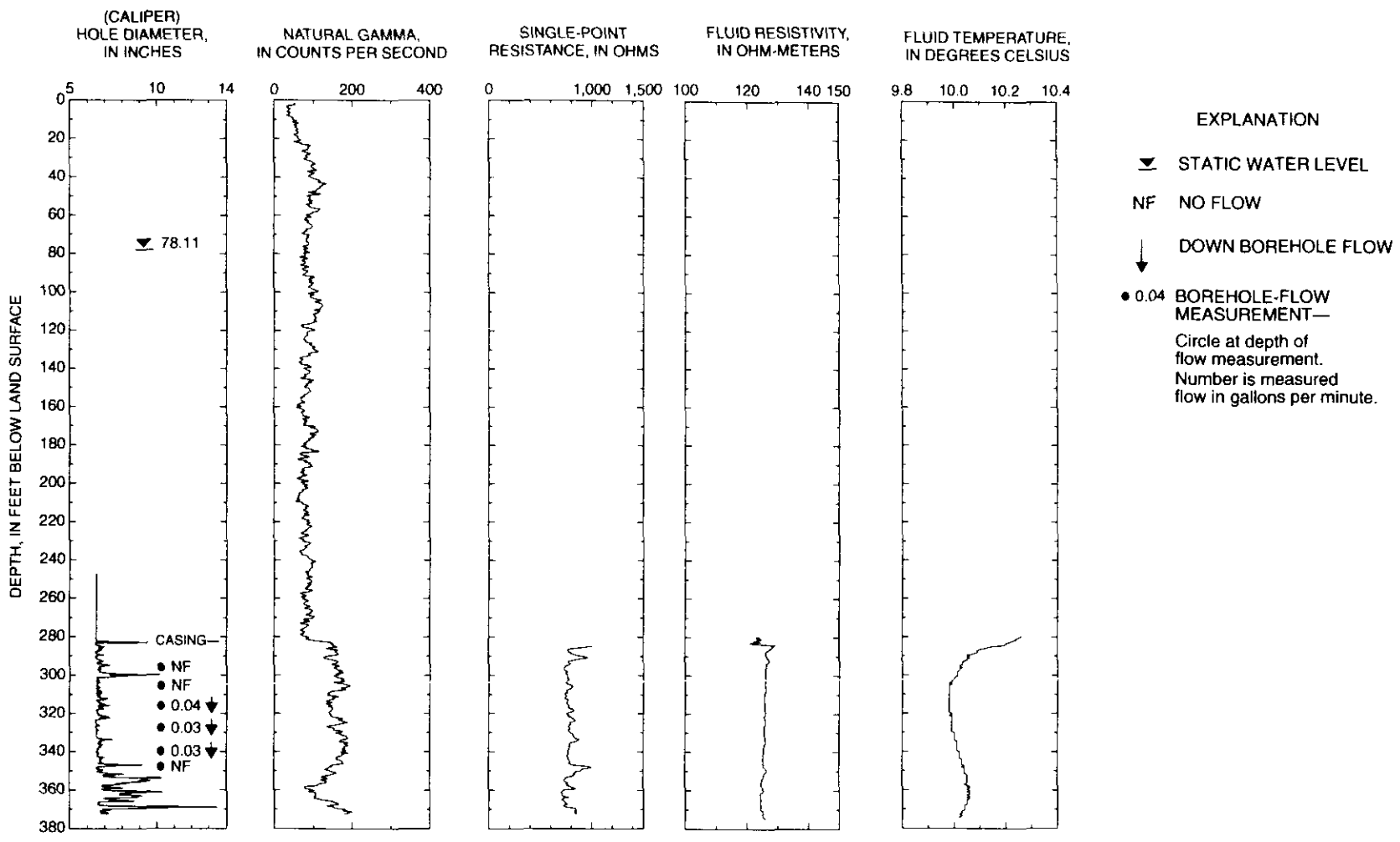


**Figure 4.** Borehole geophysical logs for borehole BE-1634 (HN-14-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1635 (HN-13-D)

Well BE-1635 was drilled in the Leithsville Formation. The caliper log shows the total depth of the borehole is 373 ft, and it is cased with 6.5-in.-diameter casing to 151 ft bls (fig. 5). The static water level at the time of logging was 12.95 ft bls. The caliper log shows the borehole has 4 ft of sediment on the bottom. The caliper log shows fractures at 361-368 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 174, 224, 280, and 352 ft. The driller's log reports the total yield of the borehole is approximately 15 gal/min and this water was produced near the bottom of the borehole (Robert Good, Tetra Tech NUS, Inc., written commun., 1999). A screen was placed at 360-370 ft bls and a sand pack was placed at 338-373 ft bls, to include the water-producing fractures at 360-368 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1636 (HN-13-I)

Well BE-1636 was drilled in the Leithsville Formation. The caliper log shows the total depth of the borehole is 200 ft, and it is cased with 6.5-in.-diameter casing to 30 ft bls (fig. 6). The static water level at the time of logging was 12.59 ft bls. The caliper log shows fractures at 30.5, 32-34, and 36 ft bls. The fluid-temperature log shows a sudden change in temperature at 34 ft bls indicating the only potential water-producing zone in the borehole. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 50, 100, and 154 ft bls. A screen was placed at 35-45 ft bls with the sand pack placed at 33-55.5 ft bls to include the potential water-producing zone at 32-34 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).



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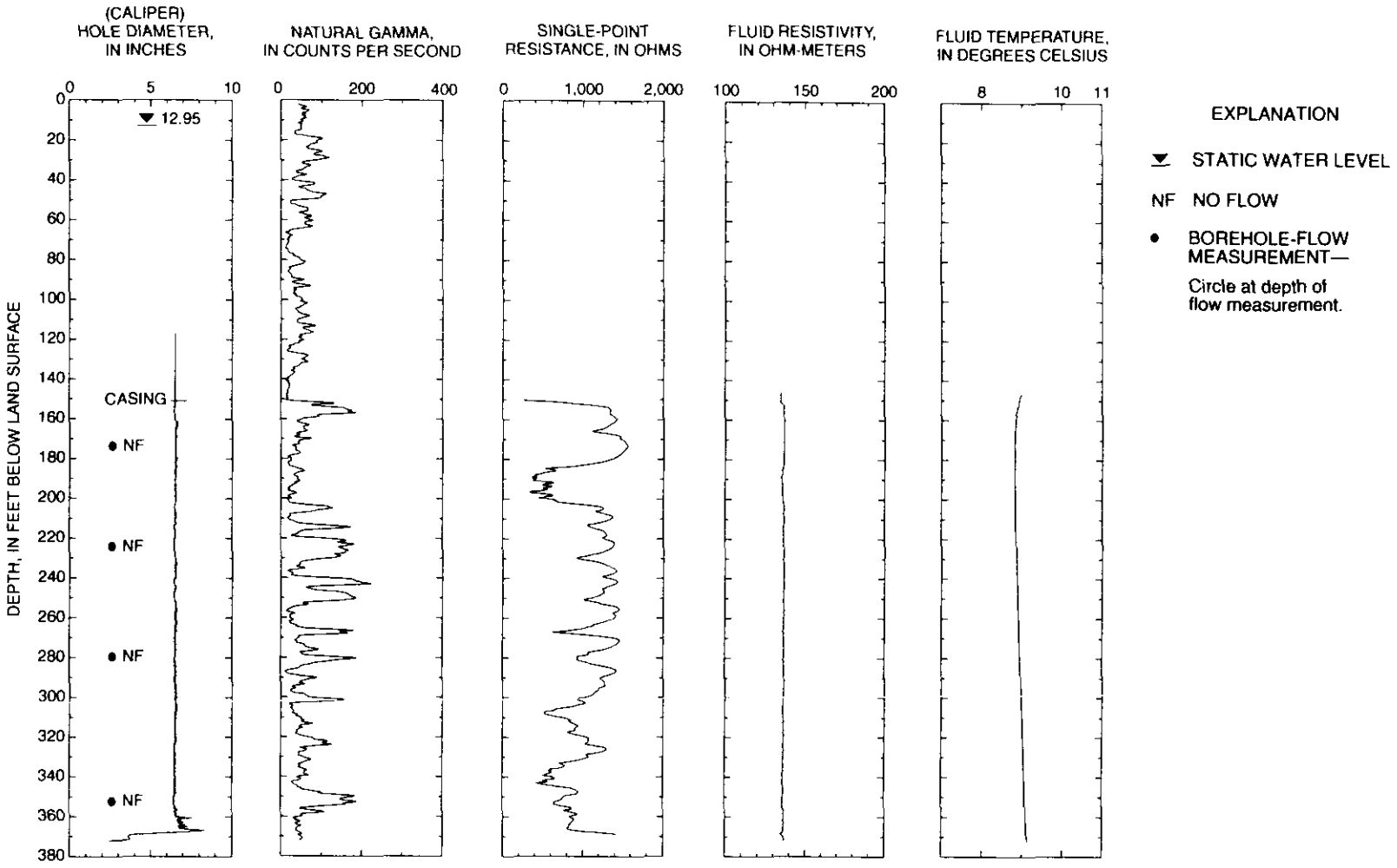


**Figure 5.** Borehole geophysical logs for borehole BE-1635 (HN-13-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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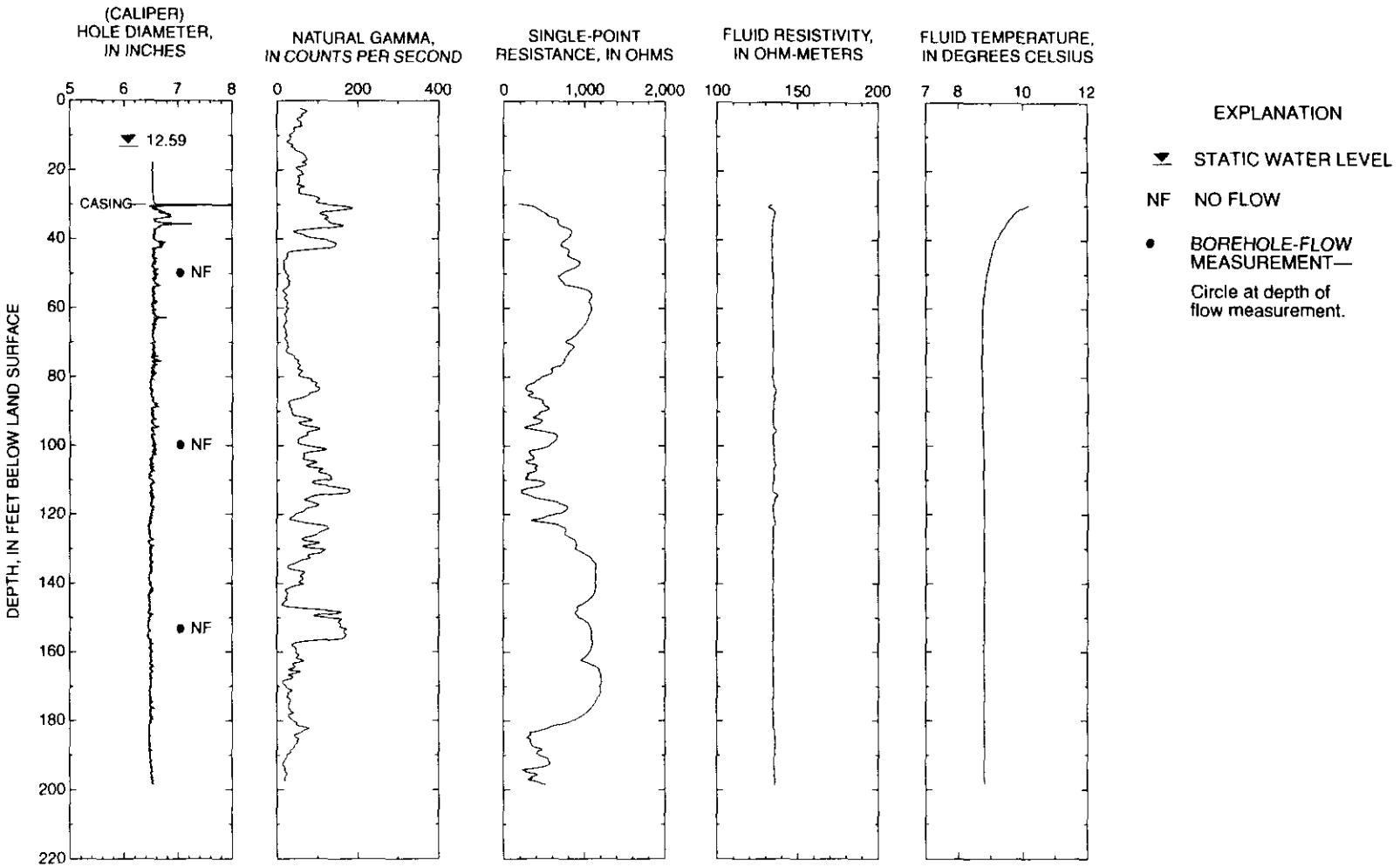


**Figure 6.** Borehole geophysical logs for borehole BE-1636 (HN-13-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1637 (HN-14-S)

Well BE-1637 was drilled in the Leithsville Formation. The natural-gamma log only was collected on this well for lithologic evaluation and possible correlation with nearby boreholes (fig. 7). The borehole was already screened at the time of logging. The gamma log shows the total depth of the borehole is 96 ft. The static water level at the time of logging was 73.82 ft bls. A 2-in.-diameter PVC screen was installed at 80-100 ft bls and a sand pack was extended from 77 to 100.5 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

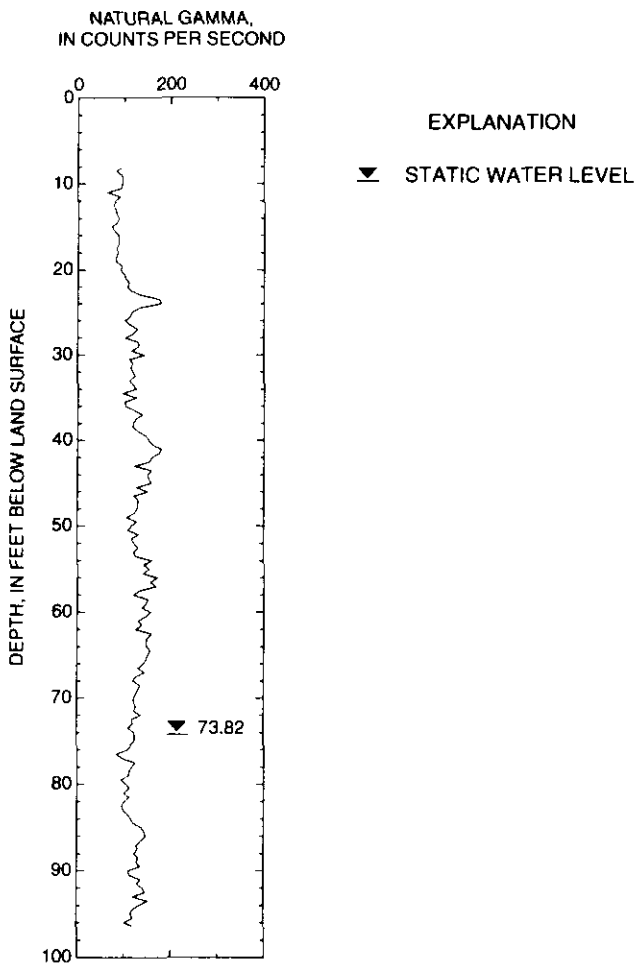


**Figure 7.** Natural-gamma log for borehole BE-1637 (HN-14-S) Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1638 (HN-14-I)

Well BE-1638 was drilled in the Leithsville Formation. The natural-gamma log only was collected on this well for lithologic evaluation and possible correlation with nearby boreholes (fig. 8). The borehole was already screened at the time of logging. The gamma log shows the total depth of the borehole is 151 ft. The static water level at the time of logging was 74.80 ft bls. The driller's log reports a yield of approximately 20-40 gal/min at 145 ft bls. A screen was installed at 137-152 ft bls and a sand pack was extended from 134-152.5 ft bls to include the water-producing zone at 145 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

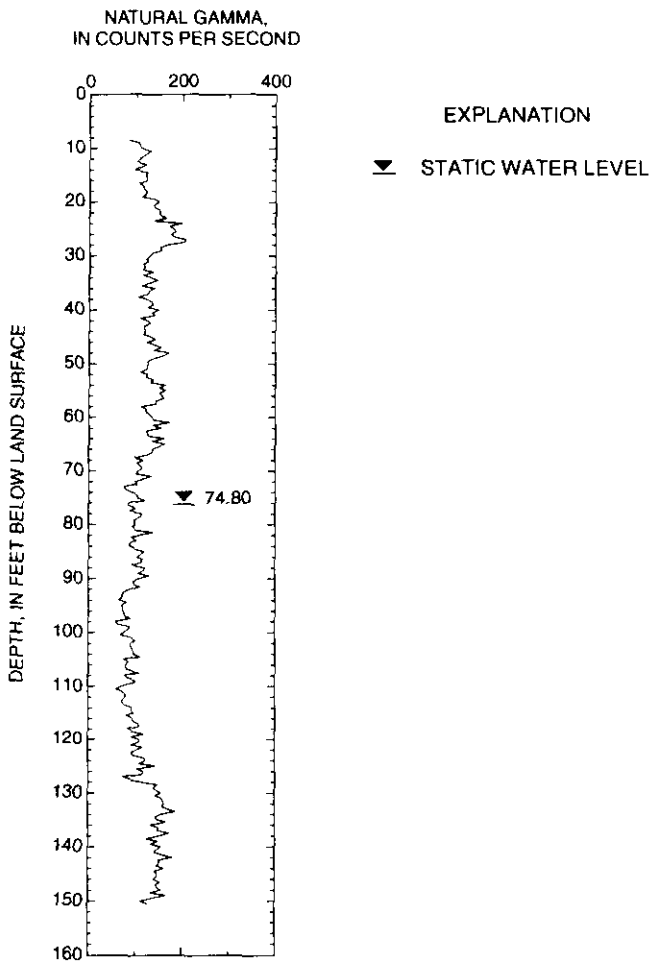


**Figure 8.** Natural-gamma log for borehole BE-1638 (HN-14-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1639 (HN-16-D)

Well BE-1639 was drilled in the Leithsville Formation. The caliper log shows the total depth of the borehole is 203 ft and it is cased with 6.5-in.-diameter casing to 198.5 ft bls (fig. 9). The static water level at the time of logging was 16.51 ft bls. The caliper log shows large fractures at 197 and 200-202 ft bls. The driller's log reports 100 gal/min of water enters the borehole through the fractures at 197-202 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999). A screen was placed at 193-203 ft bls and a sand pack was placed at 176-203 ft bls to include the water-producing fractures at 197-202 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

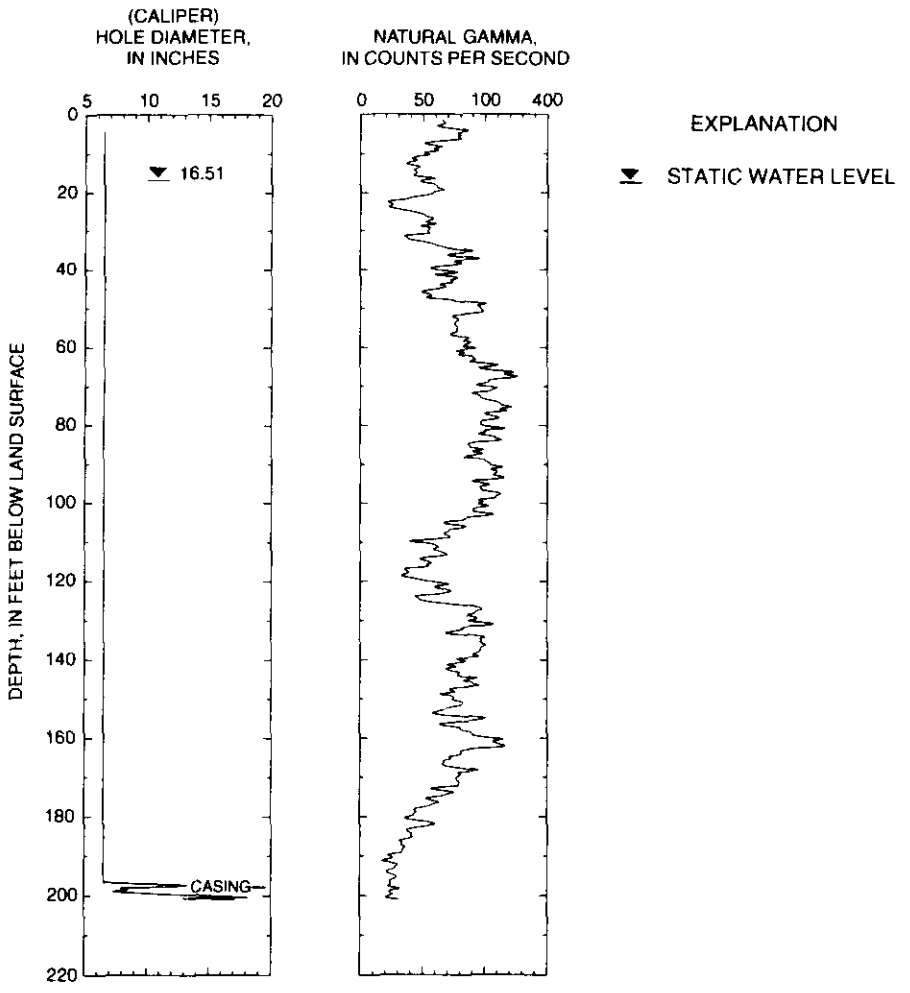


**Figure 9.** Borehole geophysical logs for borehole BE-1639 (HN-16-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1640 (HN-16-I)

Well BE-1640 was drilled in the Leithsville Formation. The gamma log only was collected on this borehole for lithologic evaluation and possible correlation with nearby boreholes (fig. 10). The gamma log shows the total depth of the borehole is 149 ft. The static water level at the time of logging was 17.00 ft bls. A screen was placed at 150-170 ft bls with a sand pack placed at 144.5-170 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

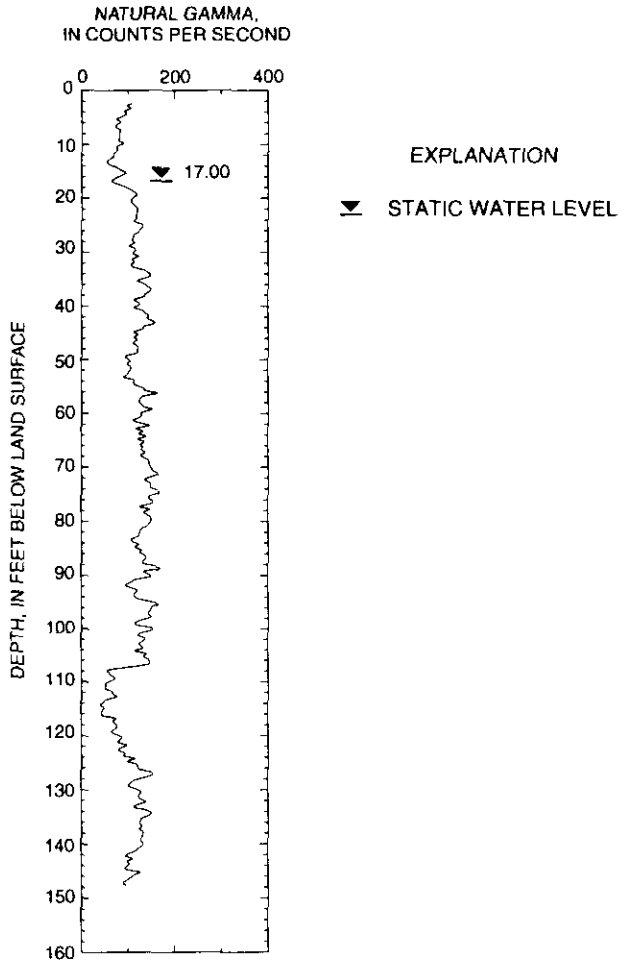


**Figure 10.** Natural-gamma logs for borehole BE-1640 (HN-16-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1641 (HN-15-D)

Well BE-1641 was drilled in the Cambrian Hardyston Formation. The caliper log shows the total depth of the borehole is 299 ft, and it is cased with 6.5-in.-diameter casing to 150.5 ft bls (fig. 11). The static water level at the time of logging was 51.87 ft bls. The caliper log shows minor fractures throughout the open-hole interval. The driller's log reports 2-3 gal/min of water is produced above 260 ft bls and an additional 1-2 gal/min at 280 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999). These water-producing zones correspond to fracture zones shown on the caliper log at 232-240 and 264 ft bls, respectively. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 140, 170, 190, 216, 250, 270, and 280 ft bls. The borehole video shows a vertical fracture at 173 ft bls. A thrust fault contact between the overlying Hardyston Formation and the basal Precambrian granite gneiss is evident at 208 ft bls. Because of an increase in sediment, there was no visibility below 271 ft bls. The approximate contact of the thrust fault is confirmed by the driller's log and is described as a transition from a quartzite to a hornblende gneiss from 190 to 210 ft bls (Robert Good, Tetra Tech NUS, Inc., written commun., 1999). A screen was placed at 259-269 ft bls with a sand pack at 244-281 ft bls to include the water-producing fracture at 264 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1642 (HN-9-I)

Well BE-1642 was drilled in the Precambrian granite gneiss. The caliper log shows the total depth of the borehole is 148 ft and it is cased with 6.5-in.-diameter casing to approximately 42 ft bls (fig. 12). The static water level at the time of logging was 39.96 ft bls. The caliper log shows minor fractures throughout the open-hole interval. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 63, 88, and 122 ft bls. The single-point-resistance log shows a low resistance at 46, 56, 81, and 125-135 ft bls that correlate to minor diameter changes (possible fractures) shown on the caliper log and may indicate water-producing zones. The driller reported that water was produced at 81 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999). A screen was placed at 75-85 ft bls to include the water-producing fractures at 75-85 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).



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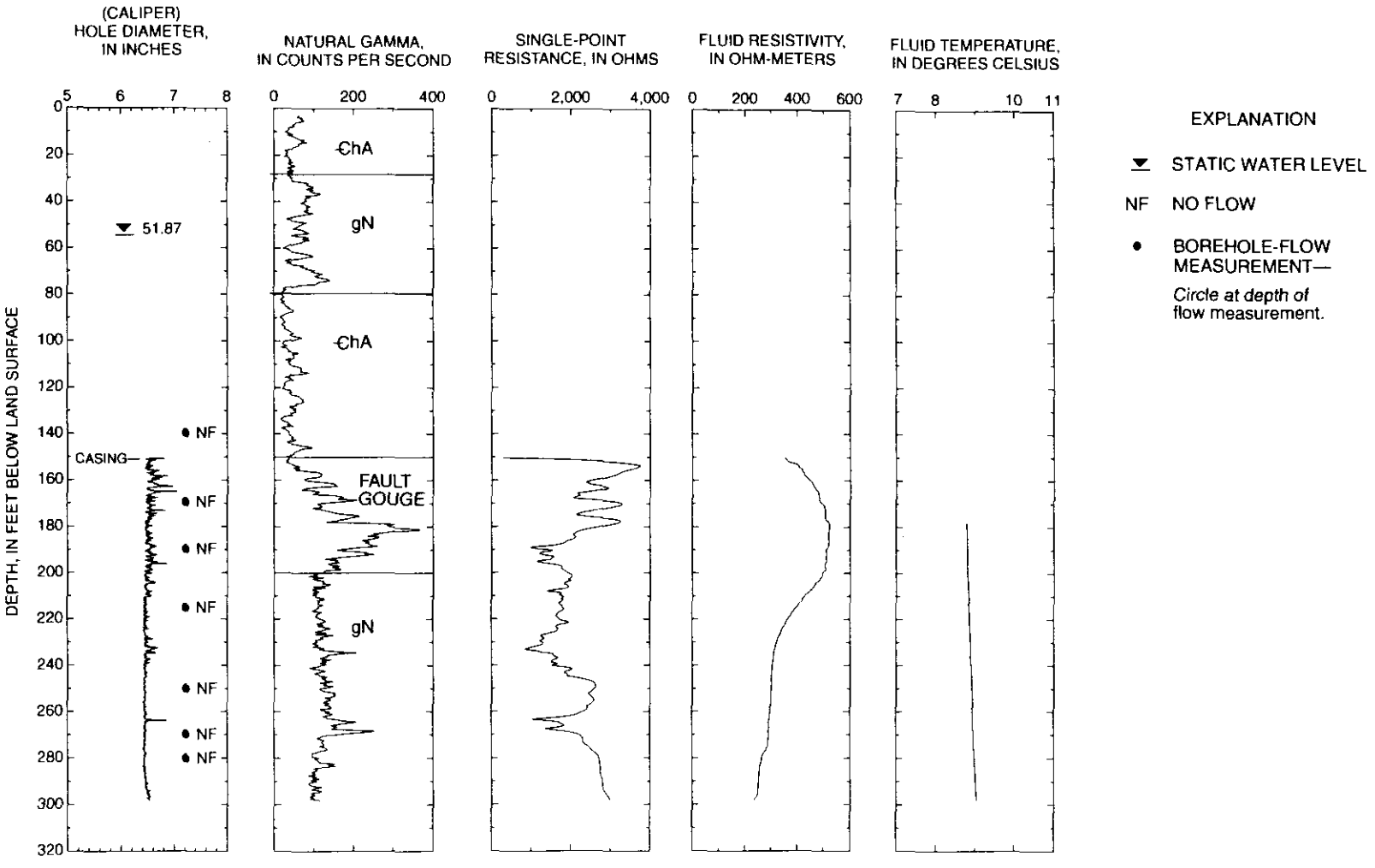


**Figure 11.** Borehole geophysical logs for borehole BE-1641 (HN-15-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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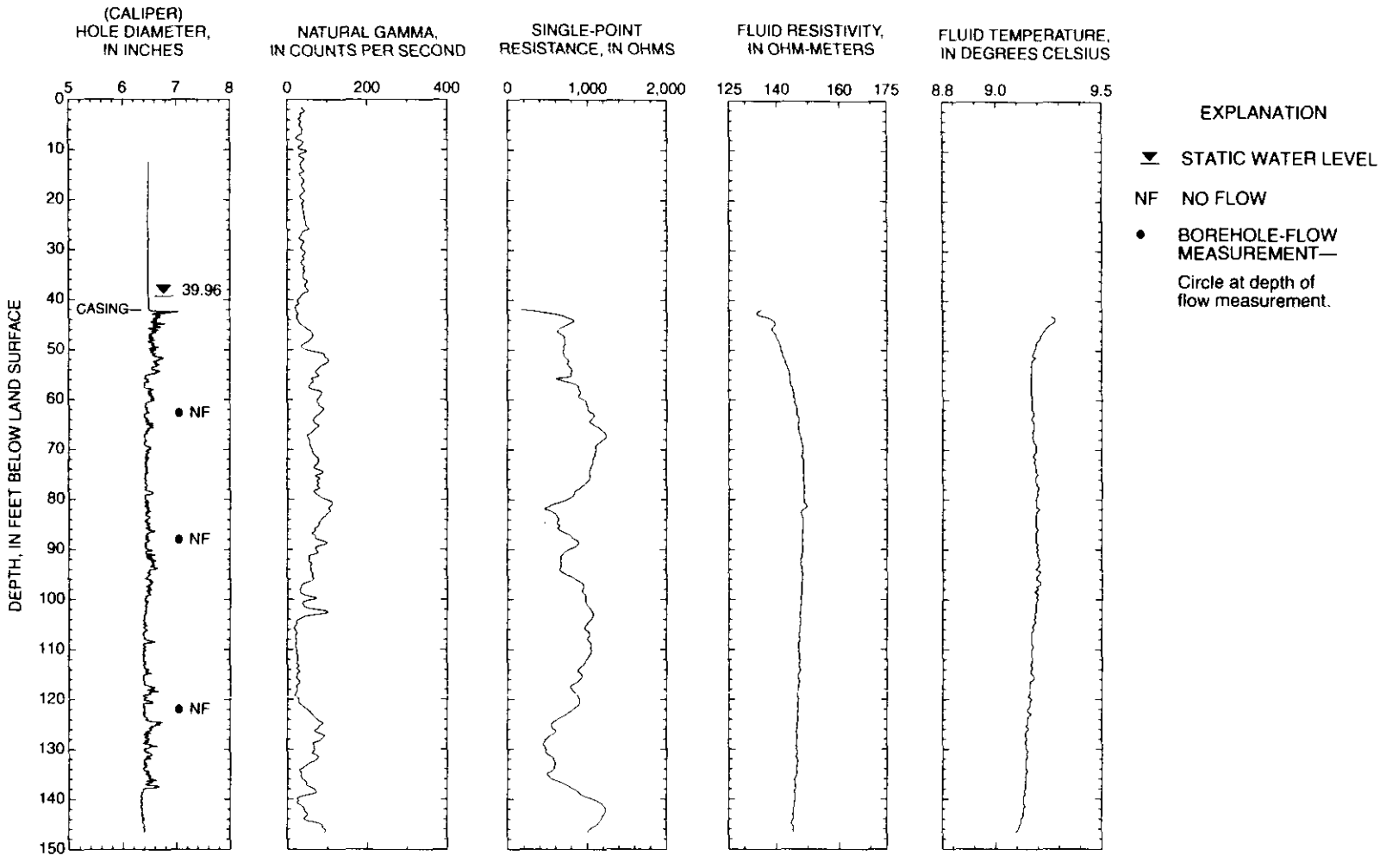


**Figure 12.** Borehole geophysical logs for borehole BE-1642 (HN-9-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1643 (HN-9-S)

Well BE-1643 was drilled in the Precambrian granite gneiss. The caliper log shows the total depth of the borehole is 100 ft and it is cased with 6.5-in.-diameter casing to approximately 34 ft bls (fig. 13). The static water level at the time of logging was 40.37 ft bls. The caliper log shows major fractures at 34 and 37 ft bls and minor fractures throughout the open-hole interval. The fluid-temperature log shows a minor change in slope at 57 ft bls that correlates to a fracture zone shown on the caliper log. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 44, 64, and 92 ft bls. The single-point-resistance log shows a low resistance zone at 40-60 ft bls that correlates to fractures shown on the caliper log and may indicate water-producing zones. The driller reported drill cuttings were damp at 62-63.5 ft bls, which is probably produced from just above 60 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999). A screen was placed at 45-60 ft bls with a sand pack at 42-64 ft bls to include the probable water-producing fractures at 62-63.5 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1644 (HN-01-D)

Well BE-1644 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 262 ft, and it is cased with 6.5-in.-diameter casing to approximately 163.5 ft bls (fig. 14). The static water level at the time of logging was 33.35 ft bls. The caliper log shows minor fractures throughout the open-hole interval. The fluid-temperature log shows almost no temperature gradient below 180 ft bls, which indicates vertical borehole flow. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 190, 200, and 215 ft bls and no flow at 160 and 170 ft bls (table 4). The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through the fractures at 180 ft bls, moves downward, and exits the borehole through fractures at 208, 222, and 240 ft bls. A submersible pump was placed at 50 ft bls, and the borehole was pumped at less than 0.5 gal/min. The water level in the borehole declined 6.12 ft after 81 minutes. Under pumping conditions, the geophysical logs and the heatpulse-flowmeter measurements indicate the largest quantity of water enters the borehole through fractures at about 182 ft bls. A multi-port packer system was placed in the borehole open to 174-187, 202-214, and 239-265 ft bls to isolate the water-producing fracture at 180 and 195 ft bls and the water-receiving fractures at 208 and 252-254 ft bls (Seth Pelepko, Tetra Tech NUS, Inc., written commun., 1999).

***Table 4.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1644 (HN-01-D) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions | Flow rate under pumping conditions (gal/min) | Flow direction under pumping conditions |
|---|---|---|---|---|
| 160 | no flow | | 0.5 | up |
| 170 | no flow | | .5 | up |
| 190 | 0.02 | down | no flow | |
| 200 | .05 | down | .02 | down |
| 215 | .02 | down | .01 | down |
| 230 | not consistent | not determined | not consistent | not determined |
| 250 | not consistant | not determined | not consistent | not determined |



AR301065

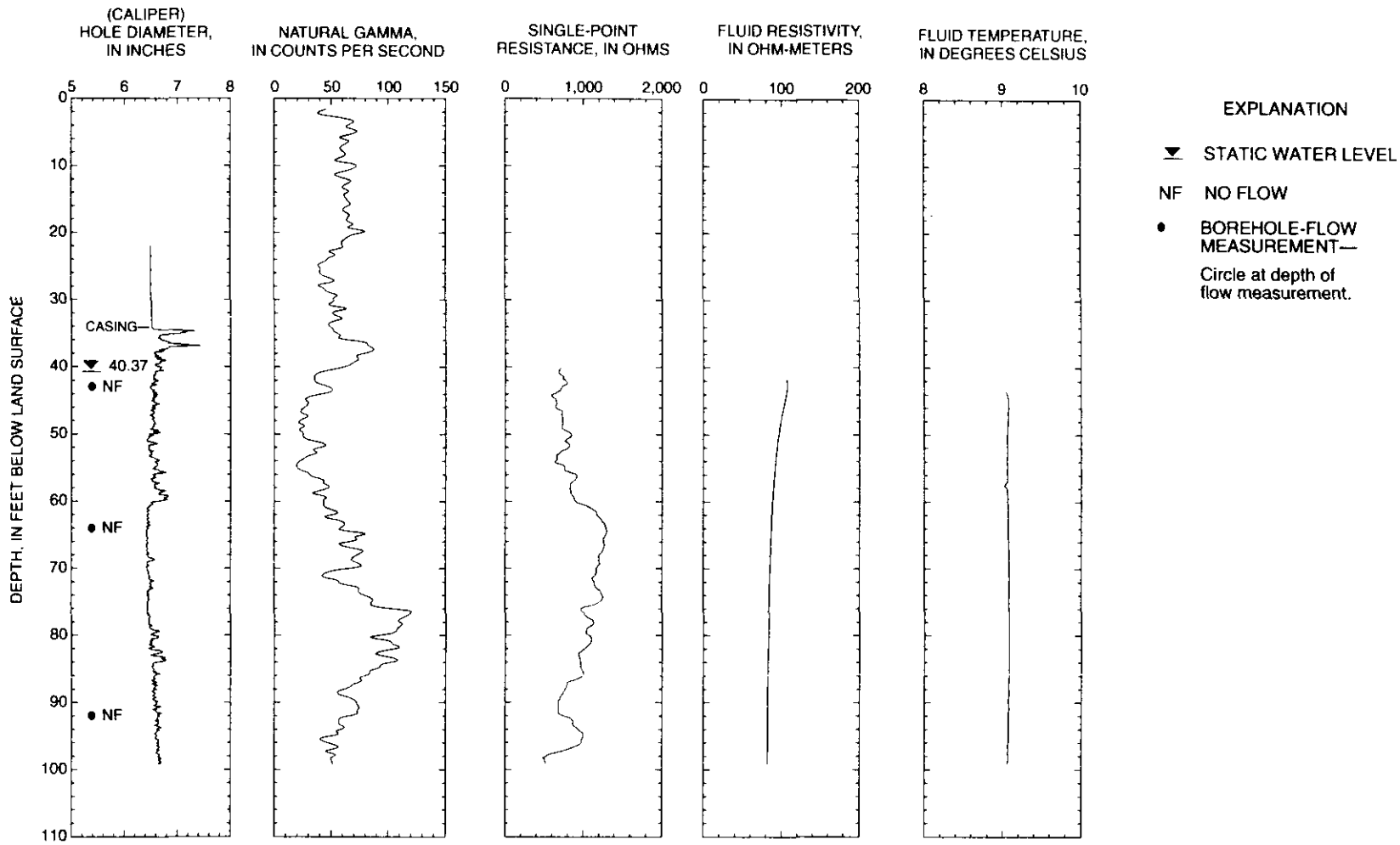


**Figure 13.** Borehole geophysical logs for borehole BE-1643 (HN-9-S), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301066

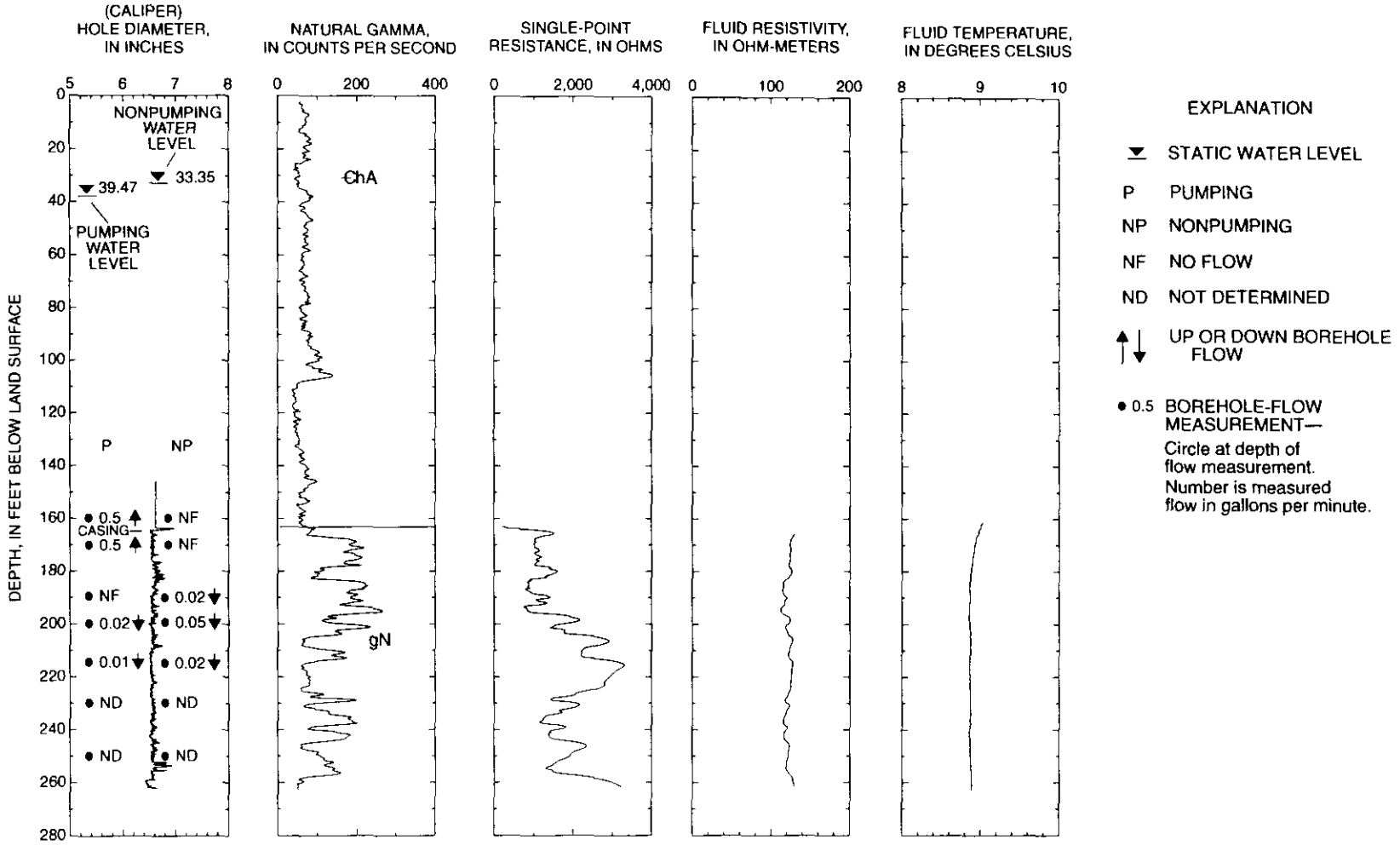


**Figure 14.** Borehole geophysical logs for borehole BE-1644 (HN-01-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



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## BE-1645 (HN-12-I)

Well BE-1645 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 148 ft, and it is cased with 6.5-in.-diameter casing to 78 ft bls (fig. 15). The static water level at the time of logging was 47.70 ft bls. The caliper log shows a major fracture at 104-105 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 90, 112, 128, and 140 ft bls. The fluid-resistivity log show changes in slope at 105, 119-123, and 132-135 ft bls that correlate to fractures shown on the caliper log and low resistance on the single-point-resistance log, which suggests water-producing zones. A screen was placed at 118-138 ft bls to include the fractures at 119-123 and 132-135 ft bls. The sand pack was placed 110-145 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1646 (HN-12-D)

Well BE-1646 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 304 ft, and it is cased with 6.5-in.-diameter casing to 151 ft bls (fig. 16). The static water level at the time of logging was 101.20 ft bls. The caliper log shows prominent fractures at 151.5, 156-158, 278-279, and 294-296 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 170, 202, 230, 260, and 292 and no flow at 140, 154, and 298 ft bls (table 5). The borehole video shows numerous thin vertical fractures throughout the open borehole. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 156-158 ft bls, moves downward, and exits the borehole through fractures at 278-279 and 294-296 ft bls. A screen was placed at 275-304 ft bls to include the water-receiving fractures at 278-279 and 294-296 ft bls. The sand pack was placed from 260.5 to 304 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 5.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1646 (HN-12-D) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 140 | no flow | -- |
| 154 | no flow | -- |
| 170 | 0.02 | down |
| 202 | .02 | down |
| 230 | .02 | down |
| 260 | .02 | down |
| 292 | .01 | down |
| 298 | no flow | -- |



AR301068

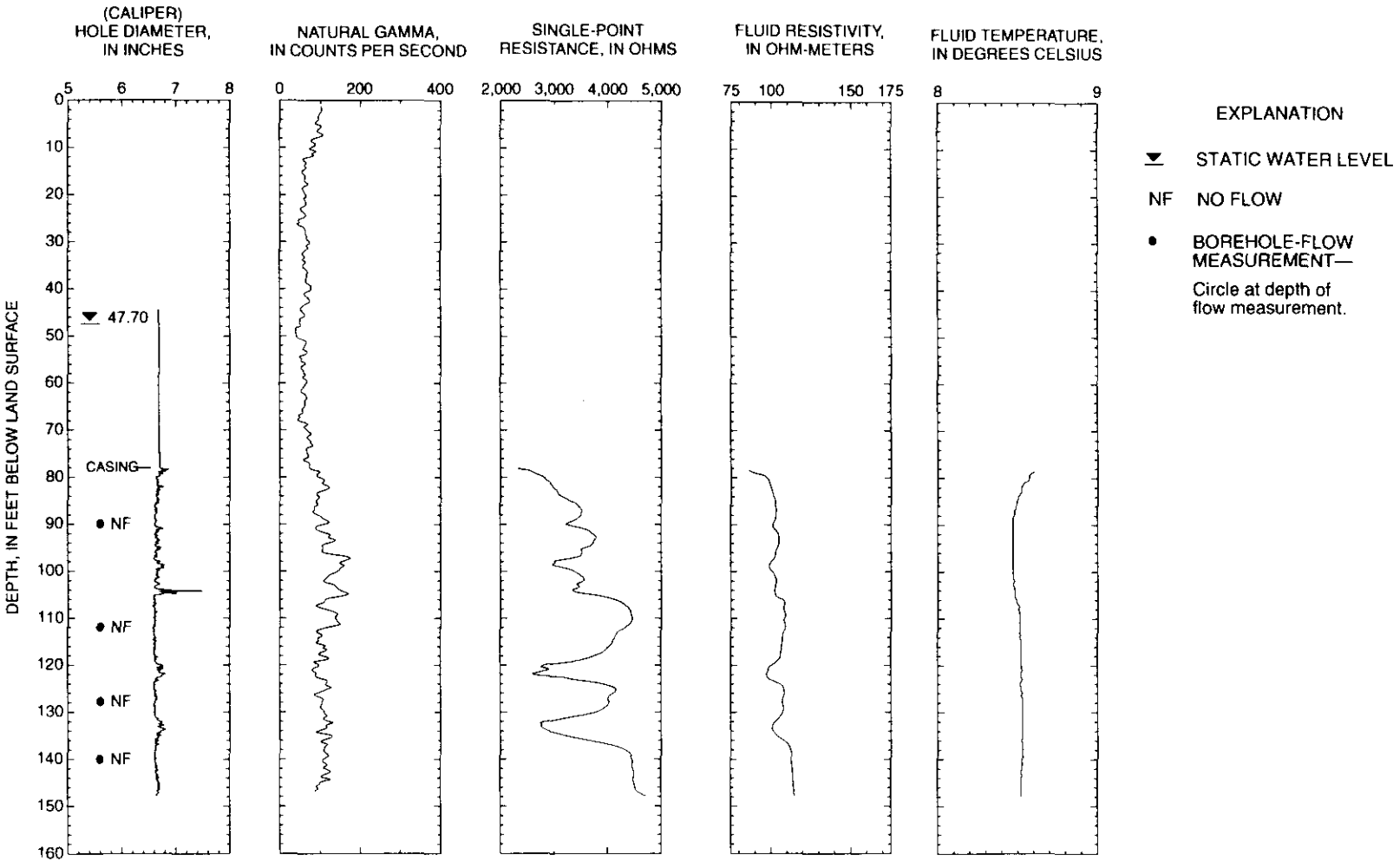


**Figure 15.** Borehole geophysical logs for borehole BE-1645 (HN-12-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301069

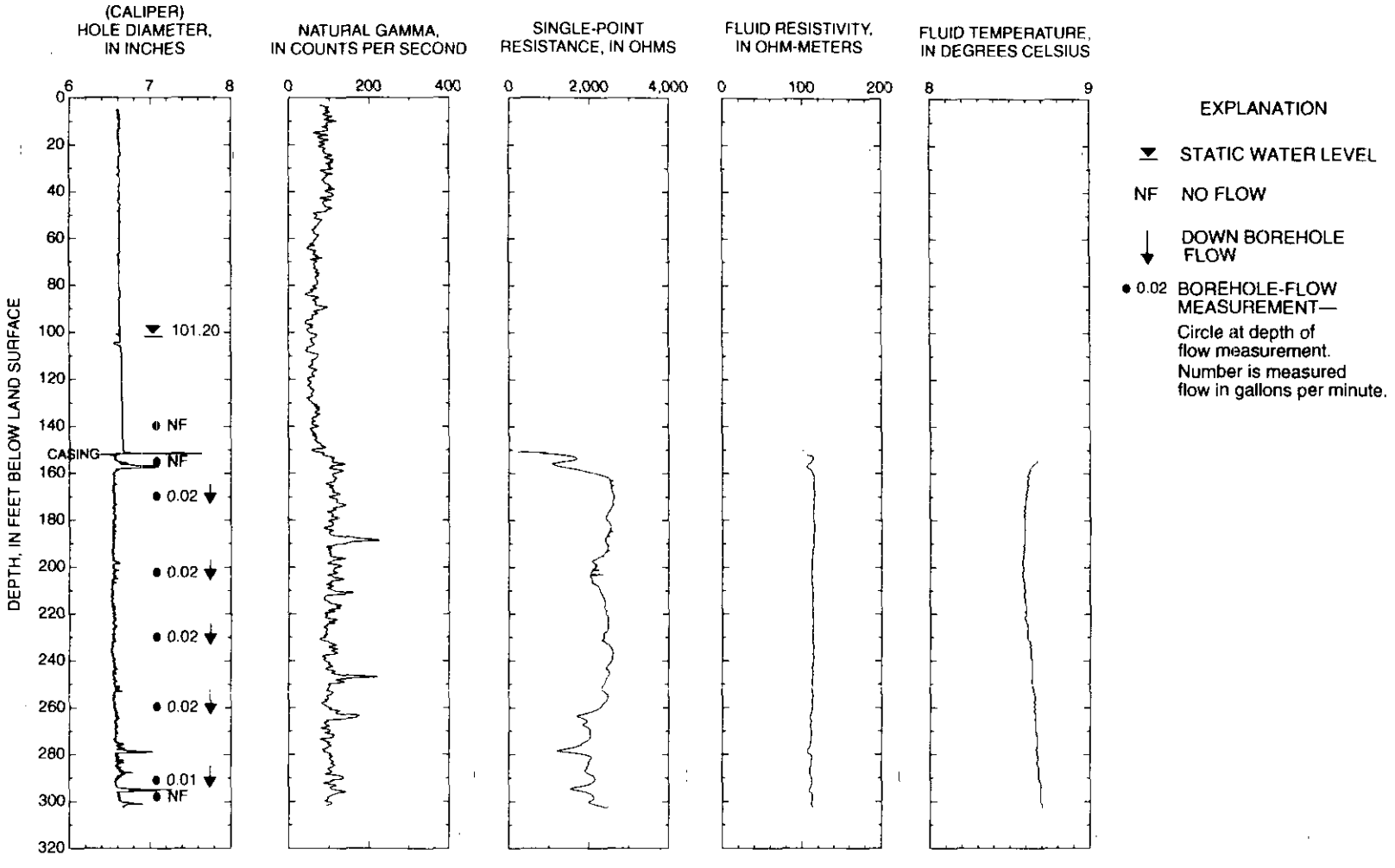


**Figure 16.** Borehole geophysical logs for borehole BE-1646 (HN-12-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301070

## BE-1647 (HN-15-I)

Well BE-1647 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 204 ft, and it is cased with 6.5-in.-diameter casing to 92 ft bls (fig. 17). The static water level at the time of logging was 41.88 ft bls. The caliper log shows numerous fractures throughout the open-hole interval. The gamma log suggests a thrust fault contact between the overlying Hardyston Formation and the basal Precambrian granite gneiss is at 193 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 105, 125, and 148 ft bls and no flow at 162 and 182 ft bls (table 6). The borehole video shows numerous vertical fractures throughout the borehole. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 98-102 ft bls, moves downward, and exits the borehole through fractures at 110-119, 128-132, and 161 ft bls. On the basis of the driller's log, a screen was placed at 184-204 ft bls to include the fractures at 192-201 ft bls. The sand pack extended from 174.5 to 204 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 6.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1647 (HN-15-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 105 | 0.3 | down |
| 125 | .2 | down |
| 148 | .1 | down |
| 162 | no flow | -- |
| 182 | no flow | -- |



AR301071

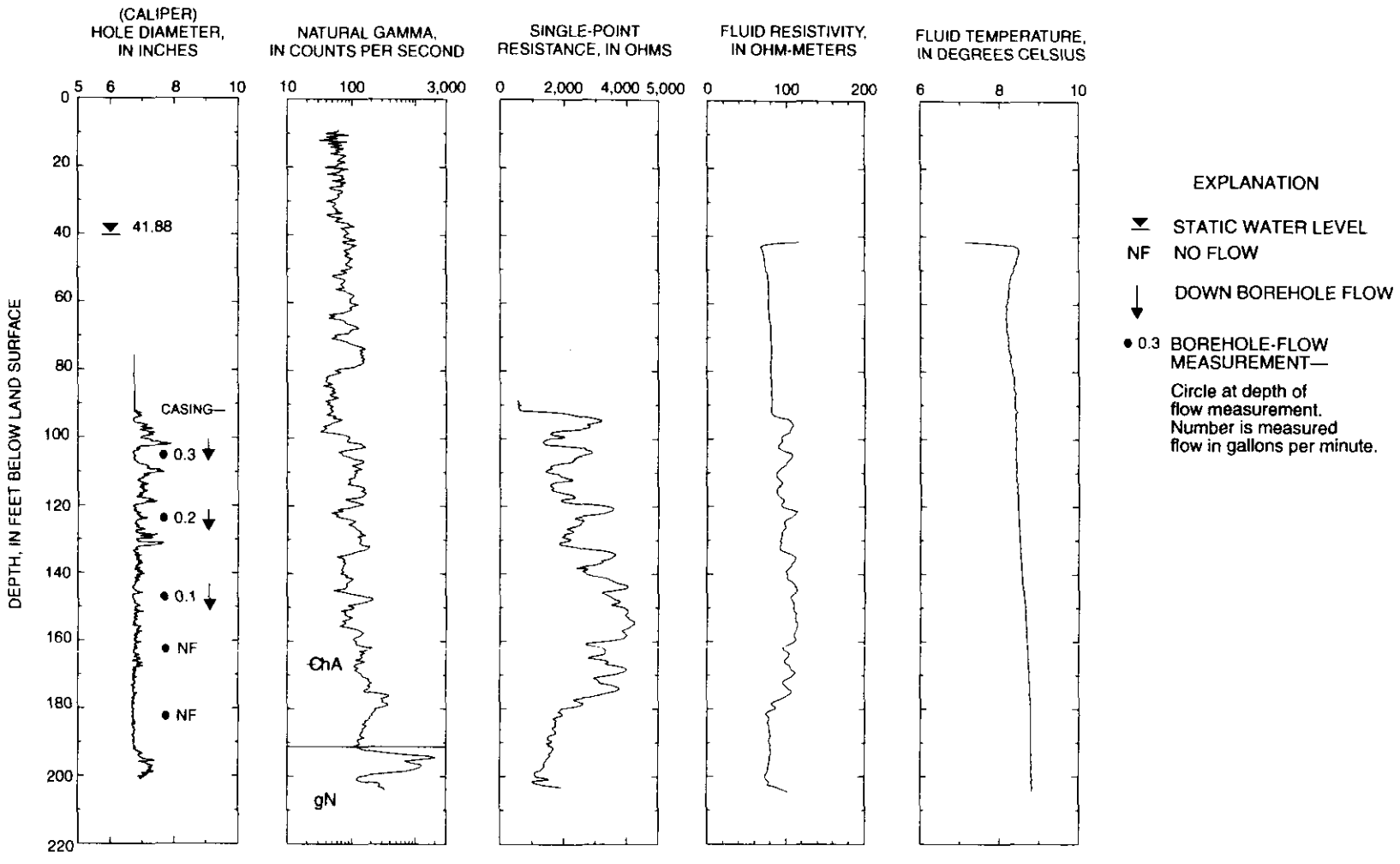


**Figure 17.** Borehole geophysical logs for borehole BE-1647 (HN-15-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301072

## BE-1648 (HN-11-I)

Well BE-1648 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 150.5 ft, and it is cased with 6.5-in.-diameter casing to 84 ft bls (fig. 18). The static water level at the time of logging was 46.21 ft bls. The caliper log shows numerous fractures throughout the open-hole interval. Under nonpumping conditions, the heatpulse flowmeter measured upward borehole flow at 107 and 112 ft bls (table 7). The borehole video shows the borehole is very rough and out of plumb; there is poor visibility below 140 ft bls because of suspended sediment. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 115-117 ft bls, moves upward, and exits the borehole through fractures at 108-110 and 103-105 ft bls. A screen was placed at 114-119 ft bls to include the water-producing fractures at 115-117 ft bls. The sand-pack interval extends from 109-123.5 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 7.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1648 (HN-11-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 90 | no flow | -- |
| 100 | no flow | -- |
| 107 | 0.06 | up |
| 112 | .10 | up |
| 120 | no flow | -- |
| 130 | no flow | -- |
| 136 | no flow | -- |
| 145 | no flow | -- |



AR301073

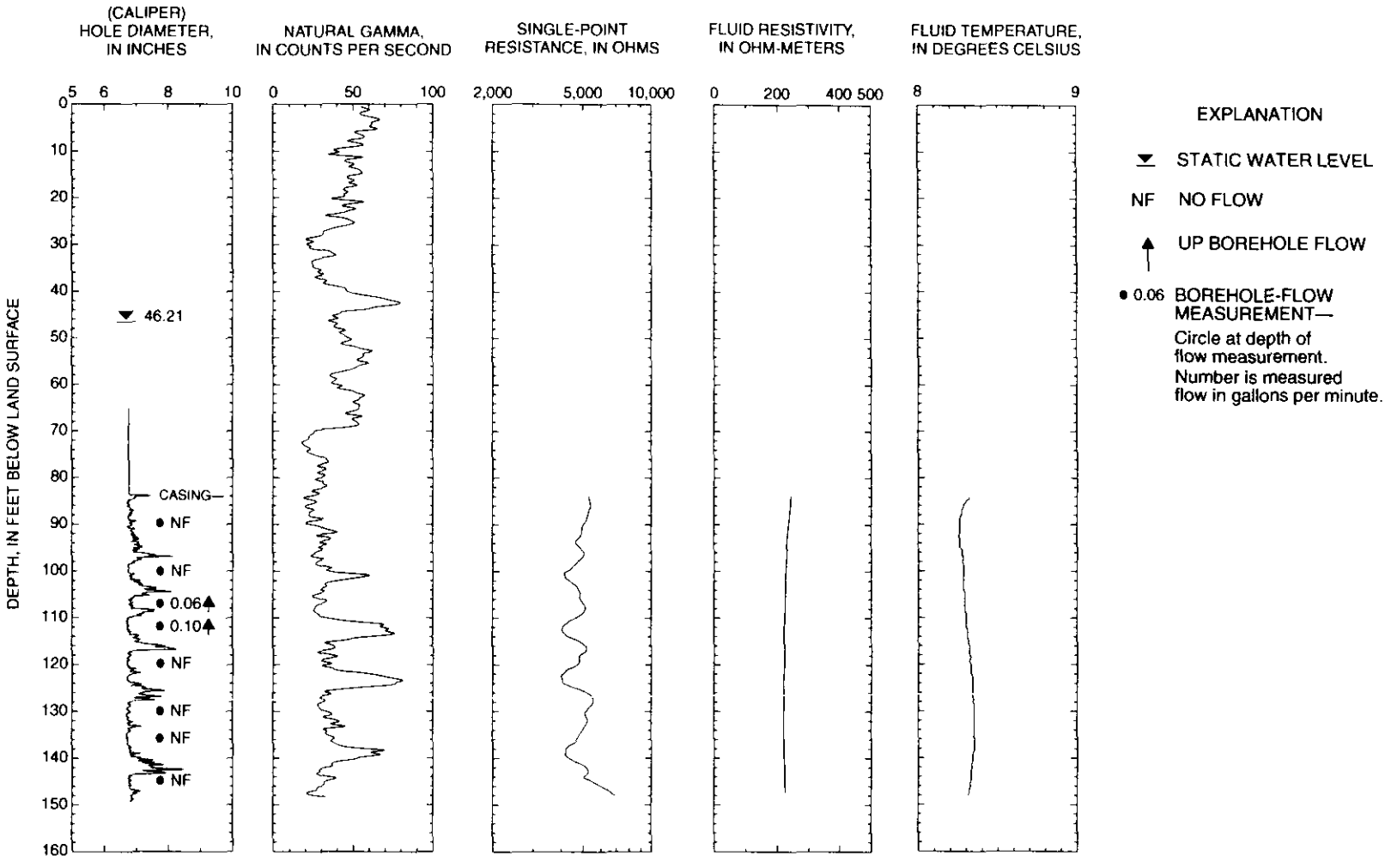


**Figure 18.** Borehole geophysical logs for borehole BE-1648 (HN-11-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301074

## BE-1649 (HN-11-D)

Well BE-1649 was drilled in the Hardyston Formation. The caliper log shows the total depth of the borehole is 299 ft, and it is cased with 6.5-in.-diameter casing to 140 ft bls (fig. 19). The static water level at the time of logging was 45.82 ft bls. The caliper log shows major fractures at 142, 170, 180, 200, and 260 ft bls. The caliper log shows the borehole was reamed for casing to 150 ft bls. The deviation log shows the borehole deviates from vertical approximately 25 ft to the northwest from 140 to 299 ft bls (fig. 20). An equal-area stereonet produced from acoustic televiewer data, with poles plotted at right angles to the fracture planes, shows that most fracture planes trend northeast-southwest (fig. 21). The greatest concentration of poles of fracture planes are in the right side of figure 21, indicating high angle fracture planes that dip to the northwest. The average orientation of all fracture planes is N. 15° E., dipping 62° NW. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 154, 175, 193, 218, 234, 248, and 270 ft bls. The fluid-resistivity and fluid-temperature logs show a sudden change at 258 ft bls that correlates to a fracture shown on the caliper log indicating a water-producing zone. The fluid-resistivity log shows sudden and unusual changes at 222-225, 240-242, 255-257 ft bls that indicates the borehole water is very low in dissolved solids. A multi-port packer system open to 139-152, 164-176, 185-205, 214-231, 234-247, and 250-264 ft bls was installed to isolate individual fractures and fluid-resistivity anomalies that are probably water-producing zones as indicated by the driller's log (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).



AR301075

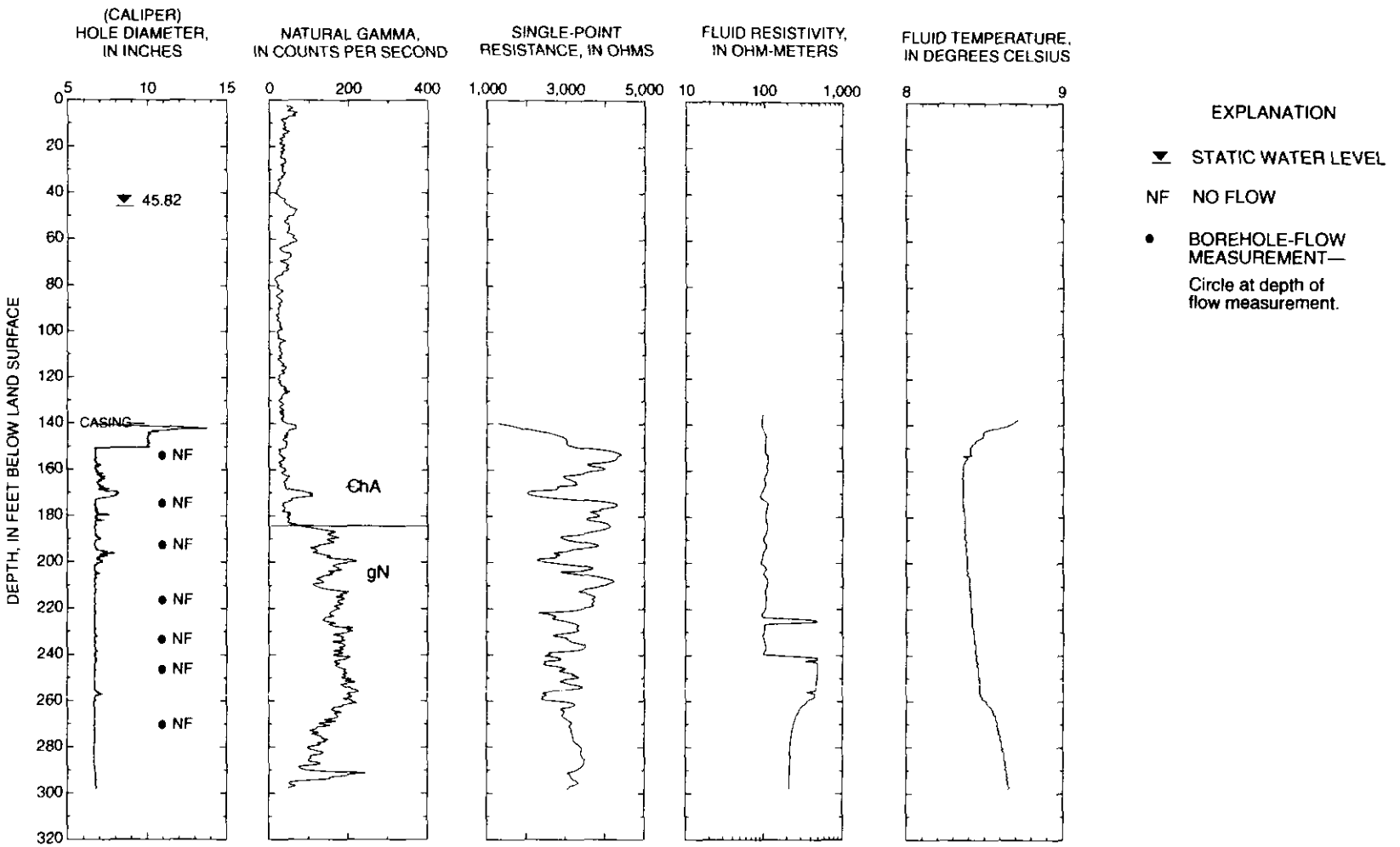


**Figure 19.** Borehole geophysical logs for borehole BE-1649 (HN-11-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301076

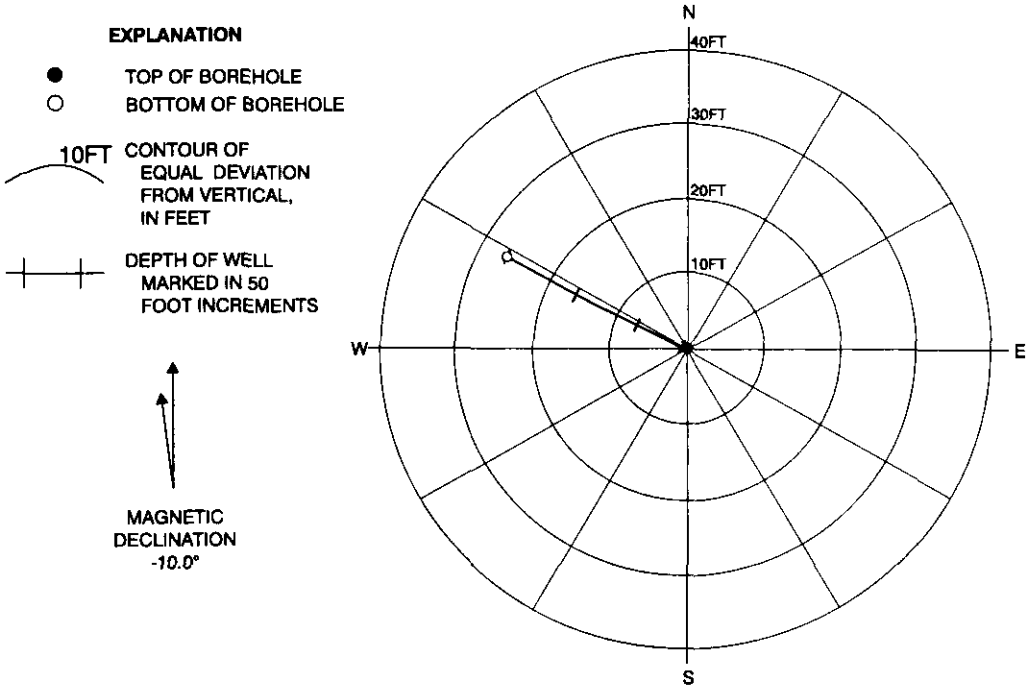


**Figure 20.** Magnitude and direction of deviation from vertical of borehole BE-1649 (HN-11-D).

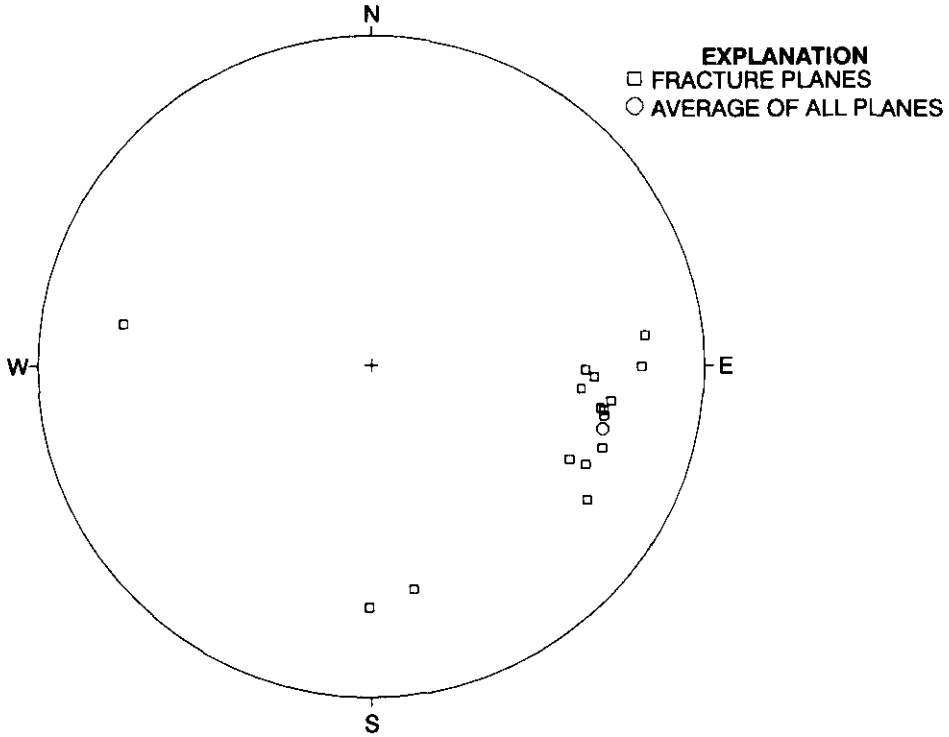


**Figure 21.** Equal-area lower-hemisphere, stereographic projection of poles perpendicular to fracture planes in borehole BE-1649 (HN-11-D).



AR301077

## BE-1650 (HN-10-D)

Well BE-1650 was drilled in the Precambrian hornblende gneiss. The caliper log shows the total depth of the borehole is 300 ft, and it is cased with 6.5-in.-diameter casing to 152 ft bls (fig. 22). The static water level at the time of logging was 7.08 ft bls. The caliper log shows a major fracture at 153 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 153, 174, 190, 218, 244, 265, and 279 ft bls. The fluid-resistivity log shows changes in slope at 170 and 253 ft bls that indicate water-producing fractures. Screens were placed at 247-257 ft bls to isolate the water-producing zones about 253 ft bls. A sand pack was placed from 235-262 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1651 (HN-18-D)

Well BE-1651 was drilled in the granitic gneiss. The caliper log shows the total depth of the borehole is 500 ft, and it is cased with 4.5-in.-diameter casing to 151 ft bls (fig. 23). The static water level at the time of logging was 87.91 ft bls. The caliper log shows only minor fractures throughout the open-hole interval and a constriction at 491-493 ft bls. The natural-gamma log shows a zone at 324-329 ft bls with elevated gamma counts that probably are due to higher concentrations of potassium feldspar. The single-point-resistance log shows lower resistance peaks at 180, 250, 278, and 345 ft bls that correlate to fractures identified on the caliper log. The single-point-resistance log shows a lower resistance peak at 427 ft bls that correlates to a change in fluid resistivity. These deflections suggest water-producing zones. The deviation log shows the borehole deviates from vertical approximately 0.5 ft to the northwest from 151 to 279 ft bls (fig. 24); the total borehole could not be logged because of equipment problems. An equal-area stereonet, with poles plotted at right angles to the fracture planes, shows most fracture planes trend almost east-west (fig. 25). The average orientation of all fracture planes is N. 87° W., dipping 67° S. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 166, 212, 264, 314, 410, and 454 ft bls. Multi-port packers open to 172-188, 238-255, and 400-433 ft bls were placed in the borehole to include water-producing zones indicated by the geophysical logs (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).



AR301078

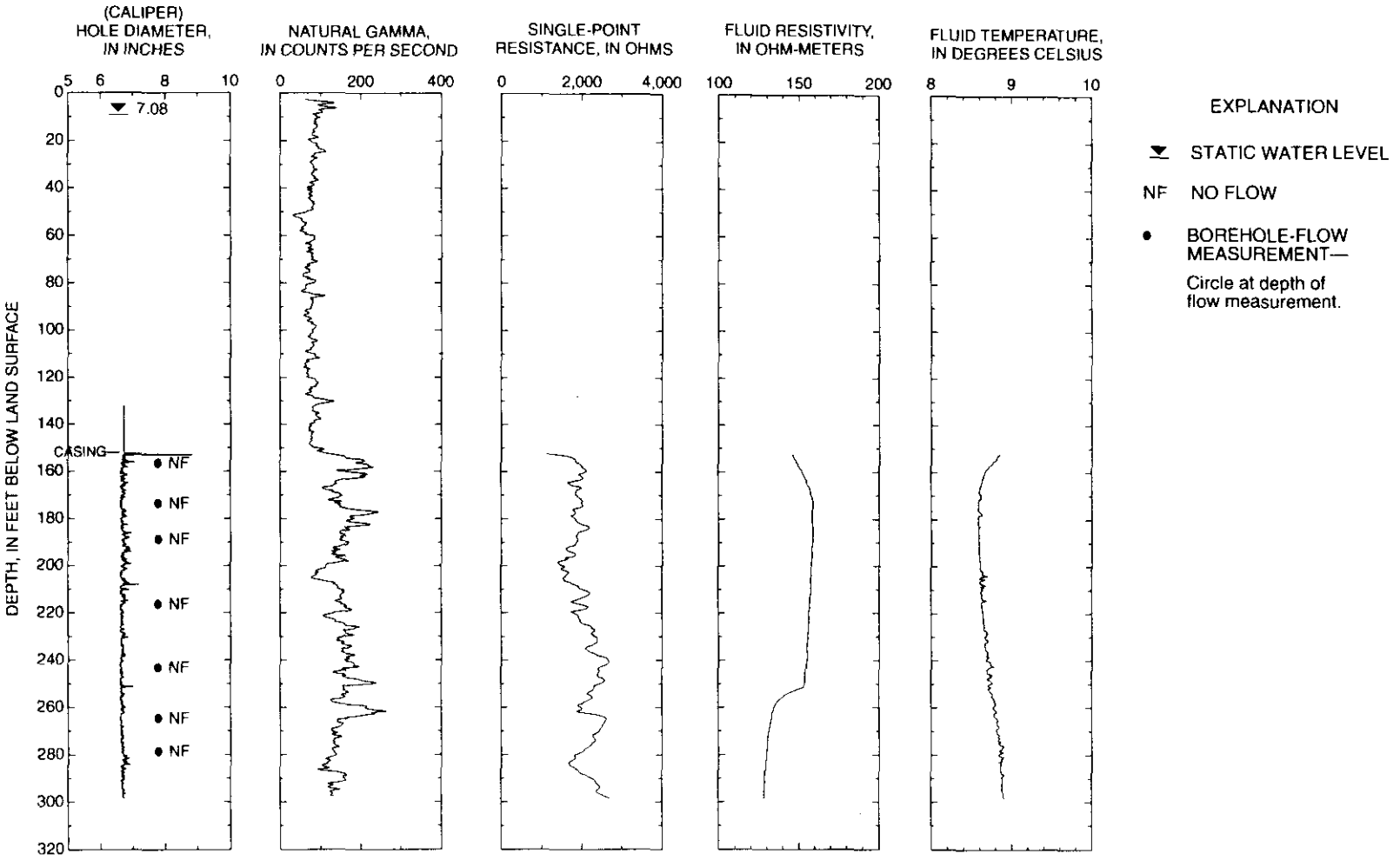


**Figure 22.** Borehole geophysical logs for borehole BE-1650 (HN-10-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301079

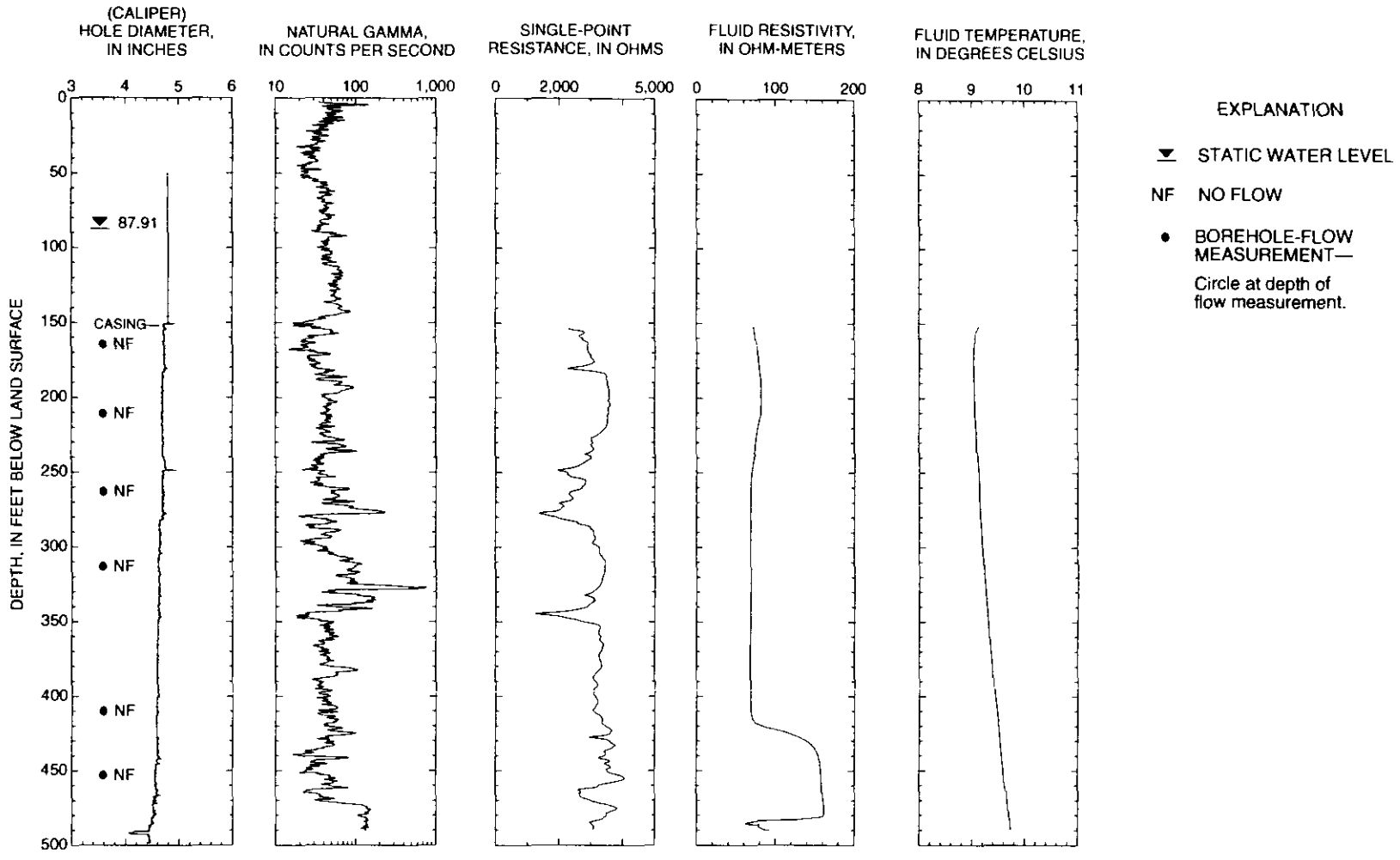


**Figure 23.** Borehole geophysical logs for borehole BE-1651 (HN-18-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301080

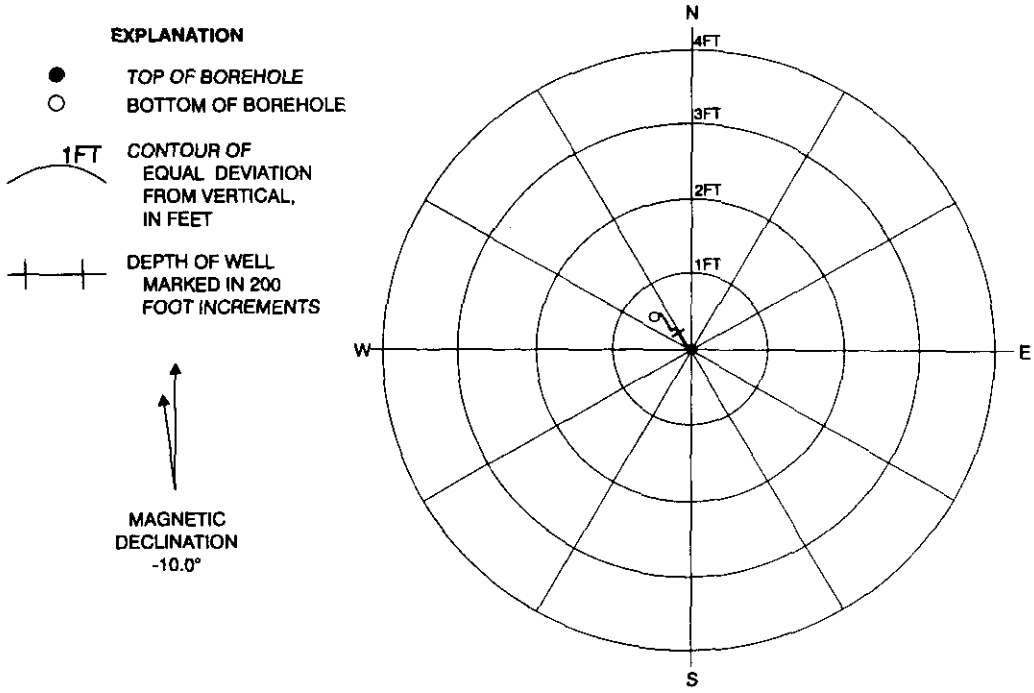


**Figure 24.** Magnitude and direction of deviation from vertical of borehole BE-1651 (HN-18-D).

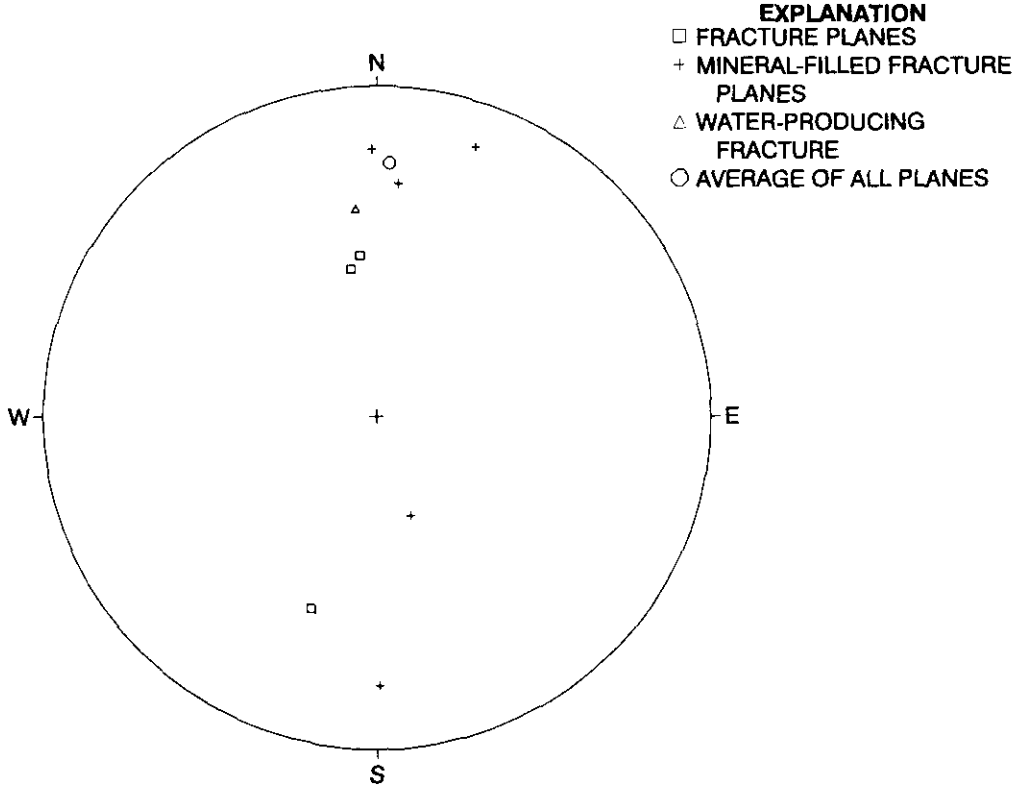


**Figure 25.** Equal-area lower-hemisphere, stereographic projection of poles perpendicular to fracture planes in borehole BE-1651 (HN-18-D).



AR301081

## BE-1652 (HN-18-I)

Well BE-1652 was drilled in the Precambrian granitic gneiss. The caliper log shows the total depth of the borehole is 150 ft, and it is cased with 6.5-in.-diameter casing to 35 ft bls (fig. 26). The static water level at the time of logging was 84.35 ft bls. The caliper log shows a major fracture at 35.5 ft bls and minor fractures at 46-48, 59-61, and 119 ft bls. The single-point-resistance log shows a lower resistance peak at 118 ft bls that correlates to minor fractures shown on the caliper log. These minor fractures suggest a water-producing zone. The borehole video confirms the borehole is out of plumb to the south-southwest. The deviation log shows the borehole deviates from vertical approximately 3.2 ft to the south-southwest (fig. 27). An equal-area stereonet, with poles plotted at right angles to the fracture planes, shows most fracture planes trend northwest-southeast (fig. 28). The average orientation of all fracture planes is N. 51° W., dipping 67° SW. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 105 and 130 ft bls. The driller's log reports no water discharge from the borehole upon completion of drilling; therefore, the borehole remains an open-hole monitor well (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).



AR301082

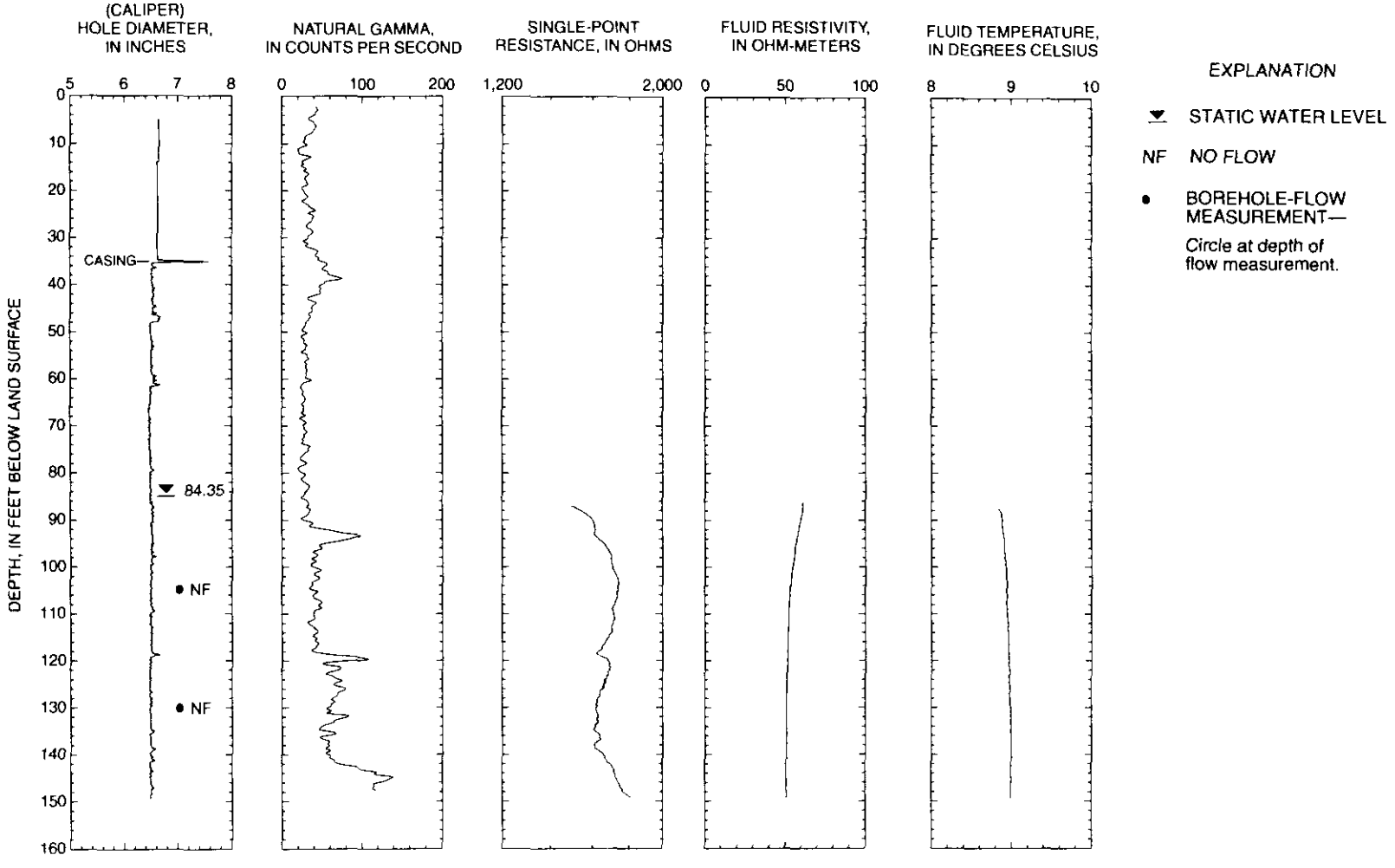


**Figure 26.** Borehole geophysical logs for borehole BE-1652 (HN-18-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301083

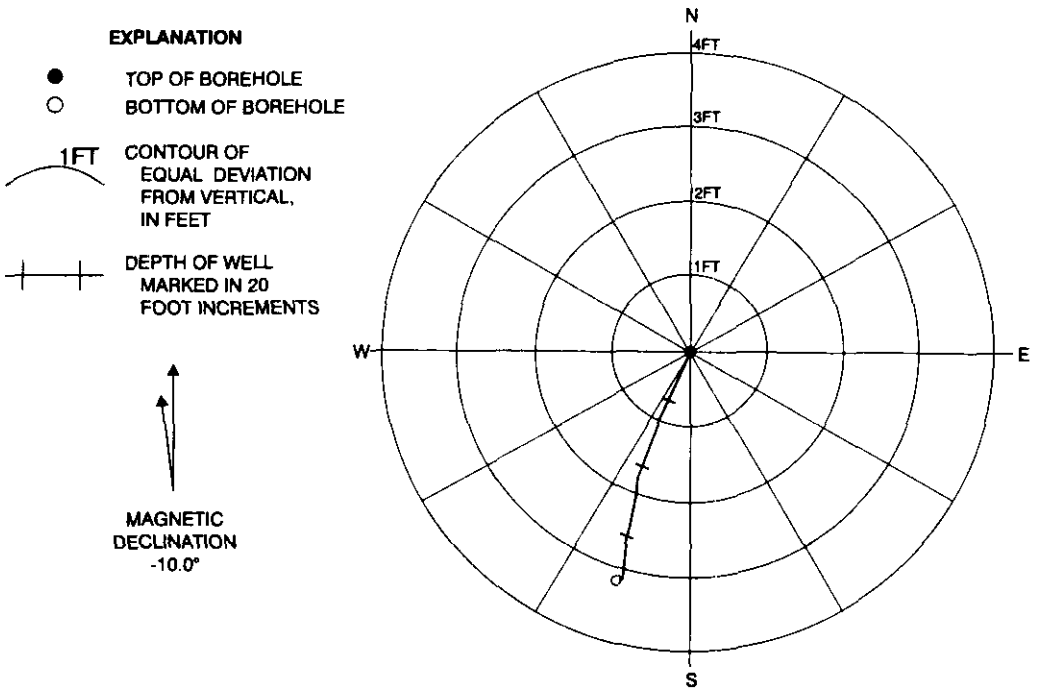


**Figure 27.** Magnitude and direction of deviation from vertical of borehole BE-1652 (HN-18-I).

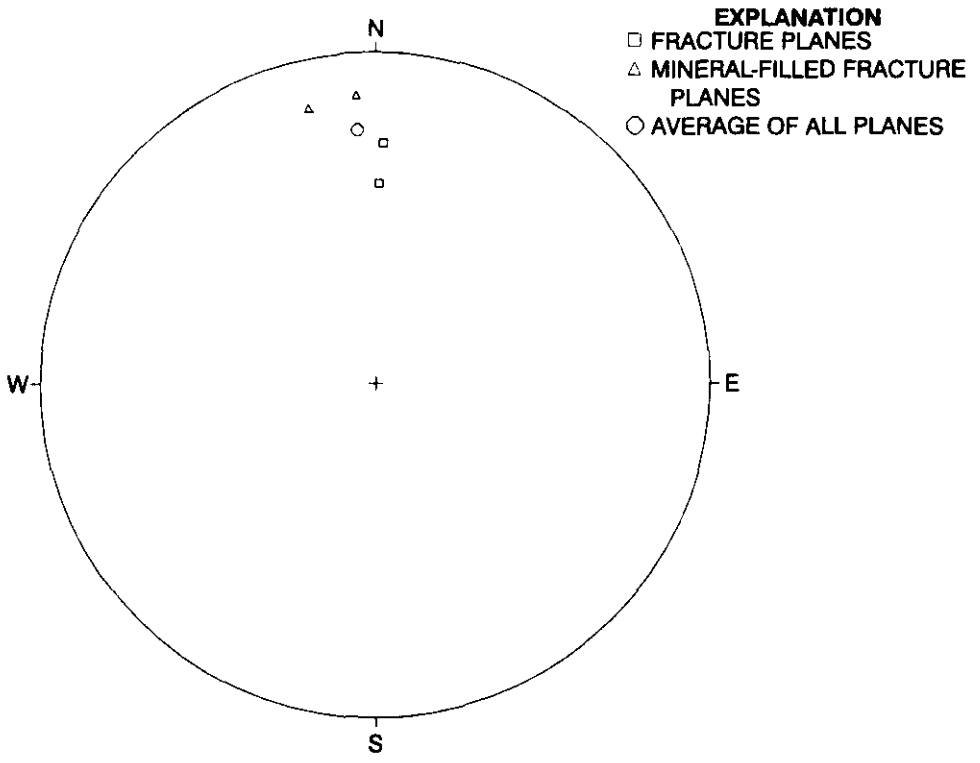


**Figure 28.** Equal-area lower-hemisphere, stereographic projection of poles perpendicular to fracture planes in borehole BE-1652 (HN-18-I).



AR301084

## BE-1653 (HN-17-D)

Well BE-1653 was drilled in the Precambrian granitic gneiss. The caliper log shows the total depth of the borehole is 463 ft, and it is cased with 4.5-in.-diameter casing to 150 ft bls (fig. 29). At the time of logging, water was flowing from the wellhead at 0.22 gal/min. The caliper log shows only minor fractures throughout the open-hole interval. The natural-gamma log shows elevated gamma counts at numerous locations and the formation probably recorded higher concentrations of potassium feldspar within the granite gneiss. The single-point-resistance log shows low resistance peaks at 180, 220, 265, 280, 290, 300, 380, and 400 ft bls that correlates to minor deflections on the fluid-resistivity log, which are probably water-producing zones. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 139, 216, 270, 394, and 430 ft bls and minor but inconsistent upward flow at 320 and 360 ft bls (table 8). The borehole video shows poor visibility throughout the open-hole section. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 380 ft bls, moves upward, and exits the borehole through fractures at 286-290 ft bls. Water also enter through a break in casing above 139 ft bls and flows upward. Multi-port packers open to 215-232, 285-302, and 391-410 ft bls were placed in the borehole (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 8.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1653 (HN-17-D) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow direction under nonpumping conditions | Flow rate under nonpumping conditions (gal/min) |
|---|---|---|
| -0.90 | 0.22 | up |
| 139 | -- | no flow |
| 216 | -- | no flow |
| 270 | -- | no flow |
| 320 | .09 | up |
| 360 | .07 | up |
| 394 | -- | no flow |
| 430 | -- | no flow |



AR301085

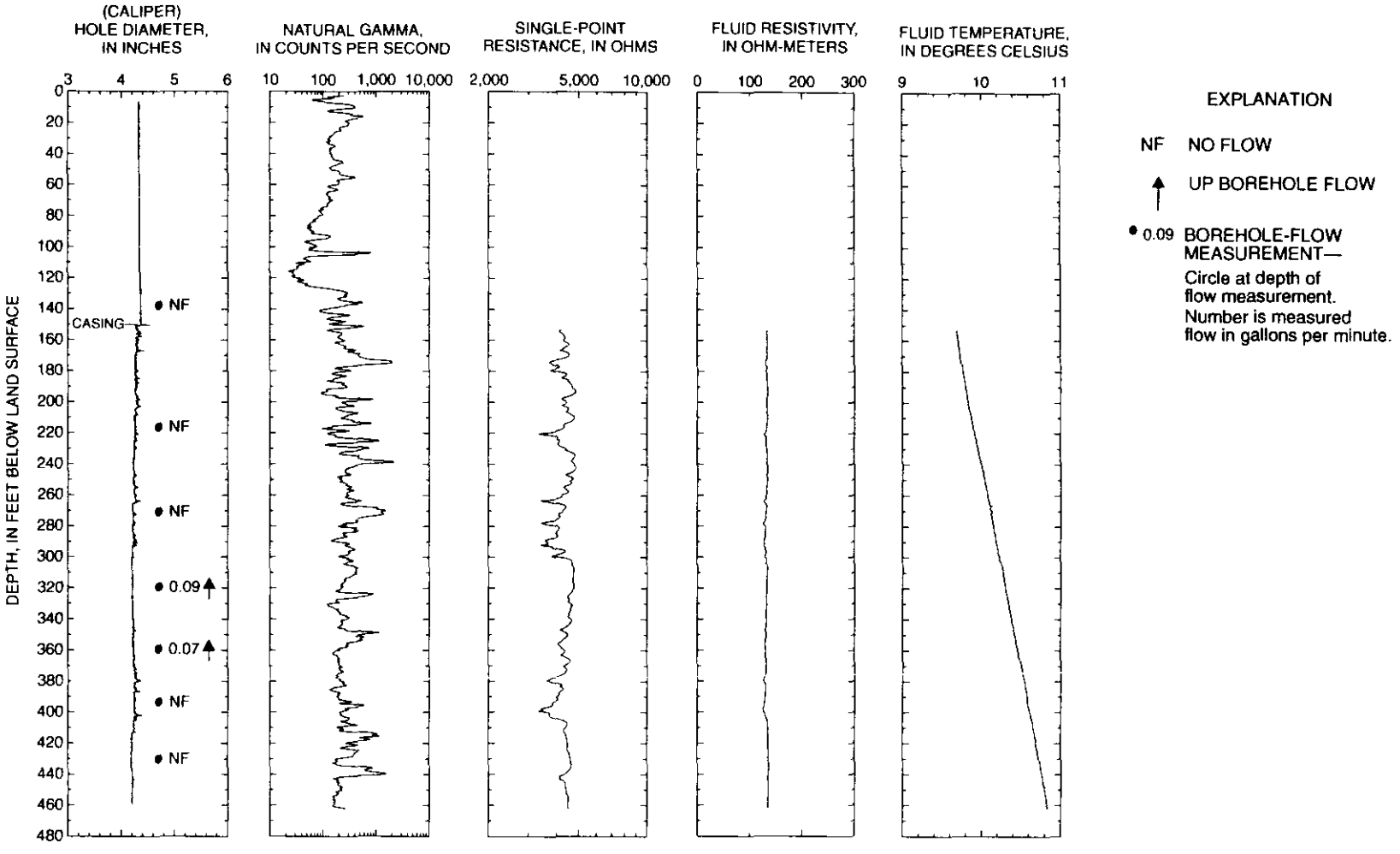


**Figure 29.** Borehole geophysical logs for borehole BE-1653 (HN-17-D), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301086

## BE-1654 (HN-10-I)

Well BE-1654 was drilled in the Precambrian hornblende gneiss. The caliper log shows the total depth of the borehole is 145 ft, and it is cased with 6.5-in.-diameter casing to 69 ft bls (fig. 30). The static water level at the time of logging was 15.36 ft bls. The caliper log shows major fractures at 69.5, 73, 74-75, 78-79, and 116-118 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured upward borehole flow inside casing at 40 ft bls and in the open borehole at 100 ft bls and no flow at 130 ft bls (table 9). The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 116-118 ft bls, moves upward, and exits the borehole through fractures at 70-82 ft bls. A minor quantity of water continues to flow upward and exists the borehole through a break in casing above 40 ft bls, probably between 20-30 ft bls. A screen was placed at 71-81 and 112-122 ft bls to include the water-producing fractures at 73-75, 78-79, and 116-118 ft bls. The sand-pack interval extends from 65-86 and 105-132 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 9.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1654 (HN-10-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 40 | 0.04 | up |
| 100 | .6 | up |
| 130 | no flow | -- |



AR301087

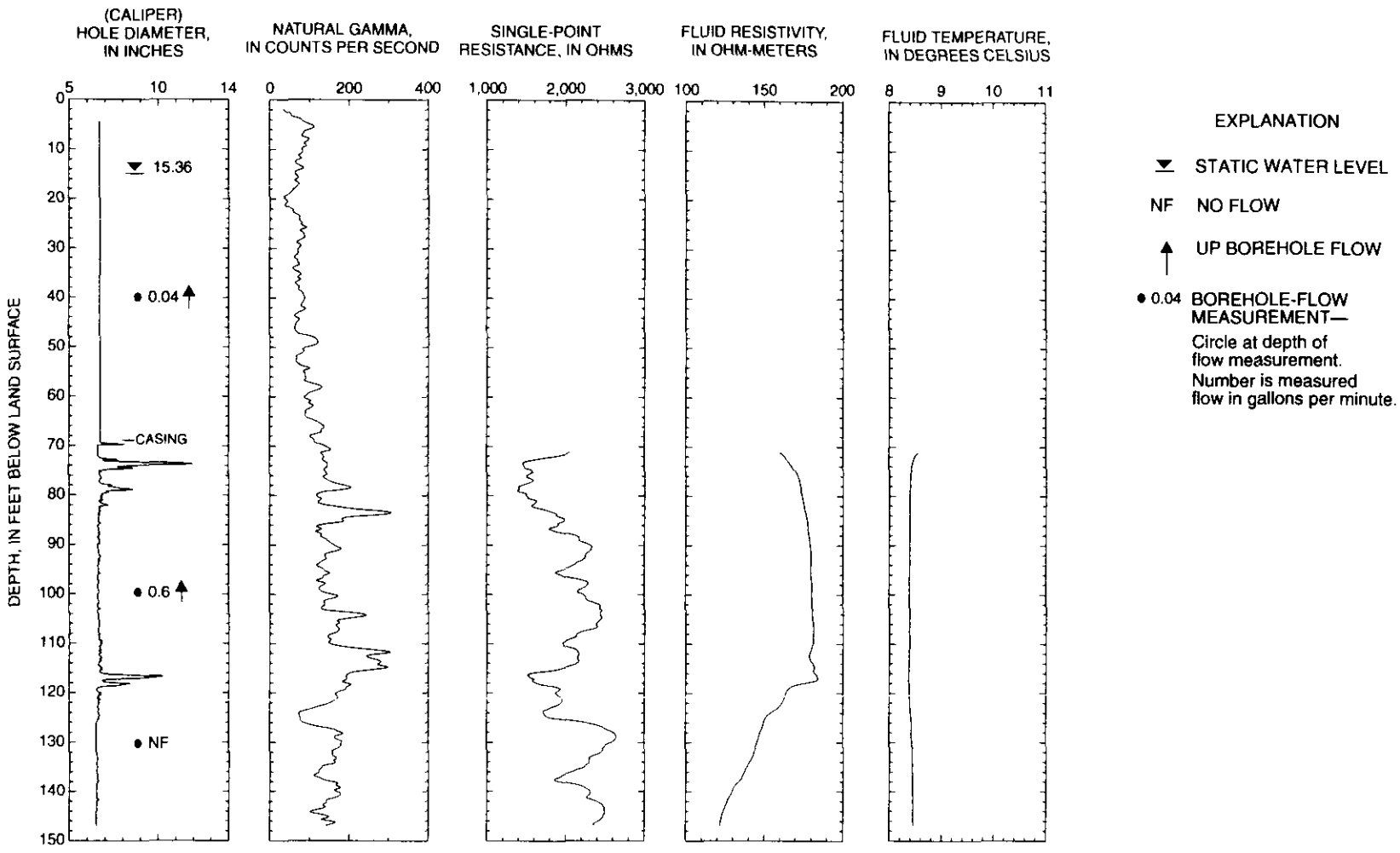


**Figure 30.** Borehole geophysical logs for borehole BE-1654 (HN-10-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301088

## BE-1655 (HN-19-I)

Well BE-1655 was drilled in the granitic gneiss. The caliper log shows the total depth of the borehole is 168 ft, and it is cased with 6-in.-diameter casing to 60 ft bls (fig. 31). The static water level at the time of logging was 20.63 ft bls. The caliper log shows major fractures at 70-72, 77-79, 89-93, 97-99, and 108-110 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured upward borehole flow at 85 and 95 ft bls and no flow at 65 ft bls (table 10). After collecting geophysical data the borehole bridged or collapsed at 99 ft bls. Because the borehole collapsed at 99 ft, flowmeter measurements could not be made below that depth. The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures below 99 ft bls, moves upward, and exits the borehole through fractures at 70-72 or 77-79 ft bls. The driller reported a yield of 8-10 gal/min from a depth of 97-99 ft bls. The borehole was cleaned out, and a screen was placed at 90-100 ft bls to include the water-producing fractures at 97-99 ft bls. The sand pack was placed from 84-105 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 10.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1655 (HN-19-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 65 | no flow | |
| 85 | 0.2 | up |
| 95 | .2 | up |



AR301089

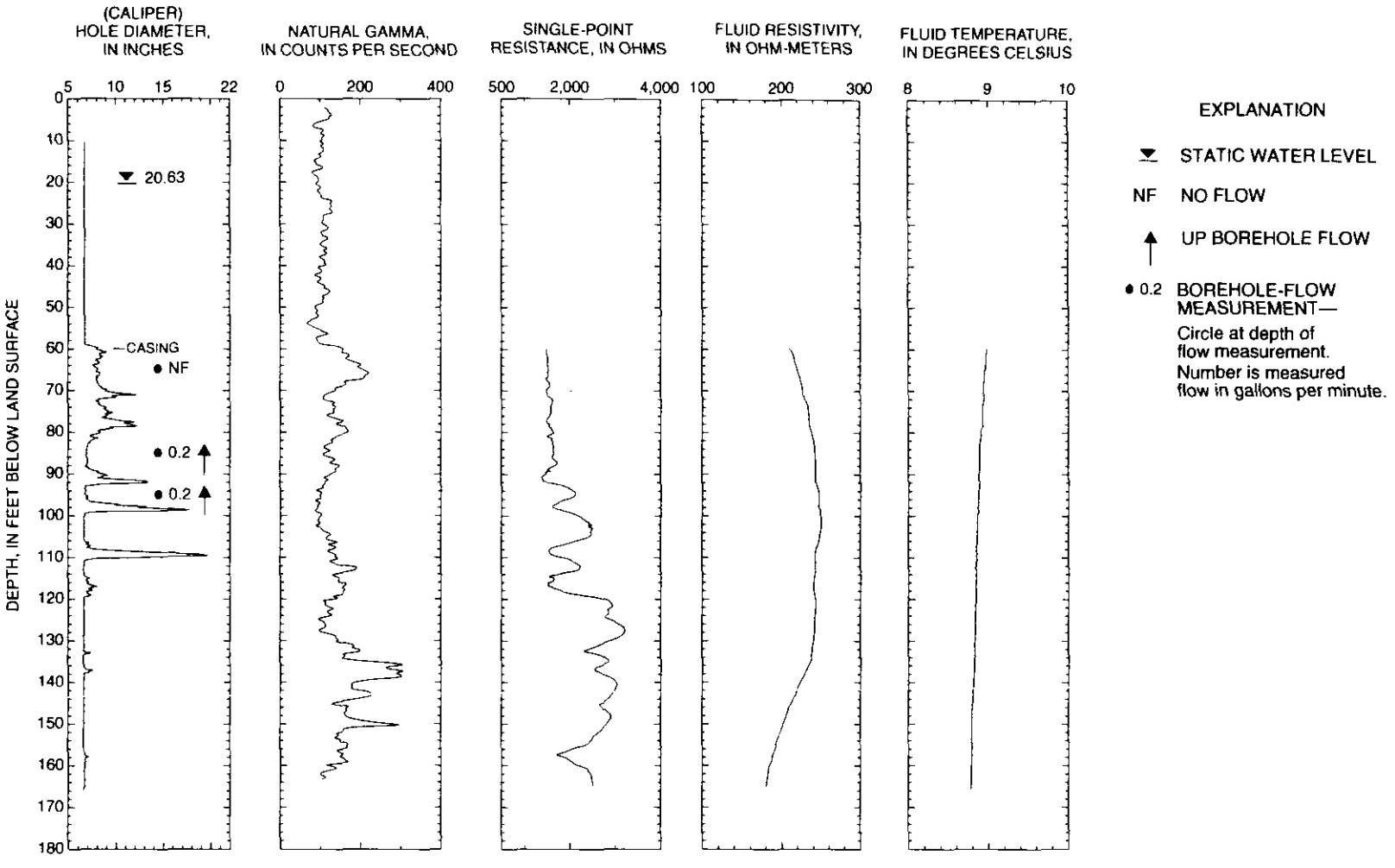


**Figure 31.** Borehole geophysical logs for borehole BE-1655 (HN-19-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301090

## BE-1656 (HN-20-I)

Well BE-1656 was drilled in the fault between Hardyston Formation and the Granitic Gneiss. The caliper log shows the total depth of the borehole is 194 ft, and it is cased with 6.5-in.-diameter casing to 60 ft bls (fig. 32). The static water level at the time of logging was 26.50 ft bls. The caliper log shows a major fracture at 70 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 77, 92, 108, and 138 ft bls and no flow at 146 and 165 ft bls (table 11). The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 70, 72, and about 115 ft bls, moves downward, and exits the borehole through a fracture at 144 ft bls. A screen was placed at 110-120 ft bls to include the water-producing fracture at 115 ft bls. The sand pack was placed at 107-126.5 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 11.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1656 (HN-20-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under *nonpumping* conditions |
|---|---|---|
| 77 | 0.08 | down |
| 92 | .10 | down |
| 108 | .09 | down |
| 138 | .25 | down |
| 146 | no flow | -- |
| 165 | no flow | -- |



AR301091

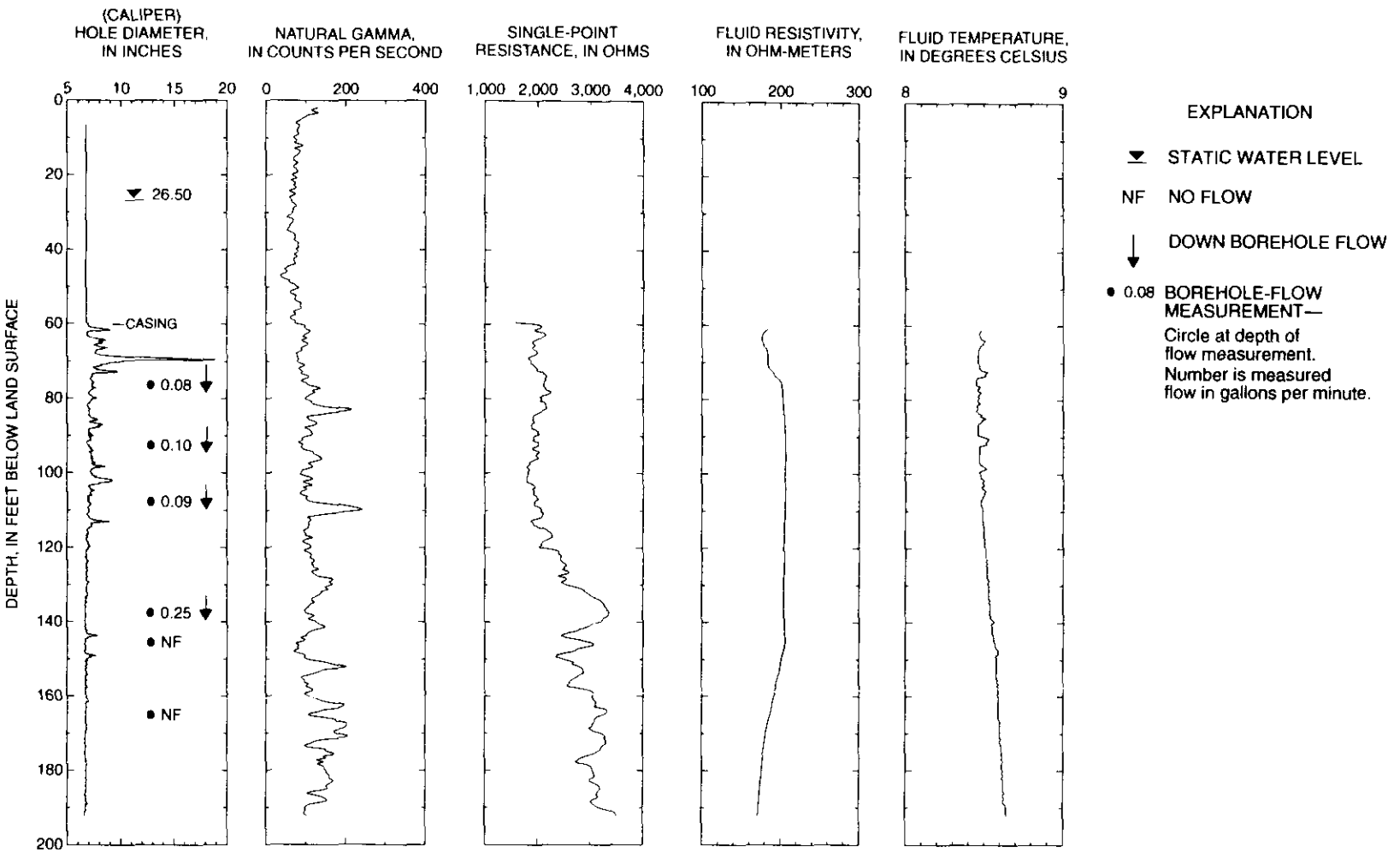


**Figure 32.** Borehole geophysical logs for borehole BE-1656 (HN-20-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301092

## BE-1657 (HN-21-I)

Well BE-1657 was drilled in the granitic gneiss. The caliper log shows the total depth of the borehole is 193 ft. No casing was installed at the time of logging (fig. 33). The borehole was drilled with an 8.5-in.-diameter drill bit to 78 ft bls, then drilled from 79 ft bls to 193 ft bls with a 6.5-in.-diameter bit. The static water level at the time of logging was approximately 23 ft bls. The caliper log shows numerous fractures down to 115 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured upward borehole flow at 82, 92, and 106 ft bls and no flow at 120 and 170 ft bls (table 12). The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through a fracture at 115 ft bls, moves upward, and exits the borehole through fractures at 97, 87, and 77-81 ft bls. A screen was placed from 110-120 ft bls to include the water-producing fracture at 115 ft bls. The sand pack was placed from 108-122 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 12.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1657 (HN-21-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute; --, not determined]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 82 | 0.3 | up |
| 92 | .5 | up |
| 106 | >1.2 | up |
| 120 | no flow | -- |
| 170 | no flow | -- |



AR301093

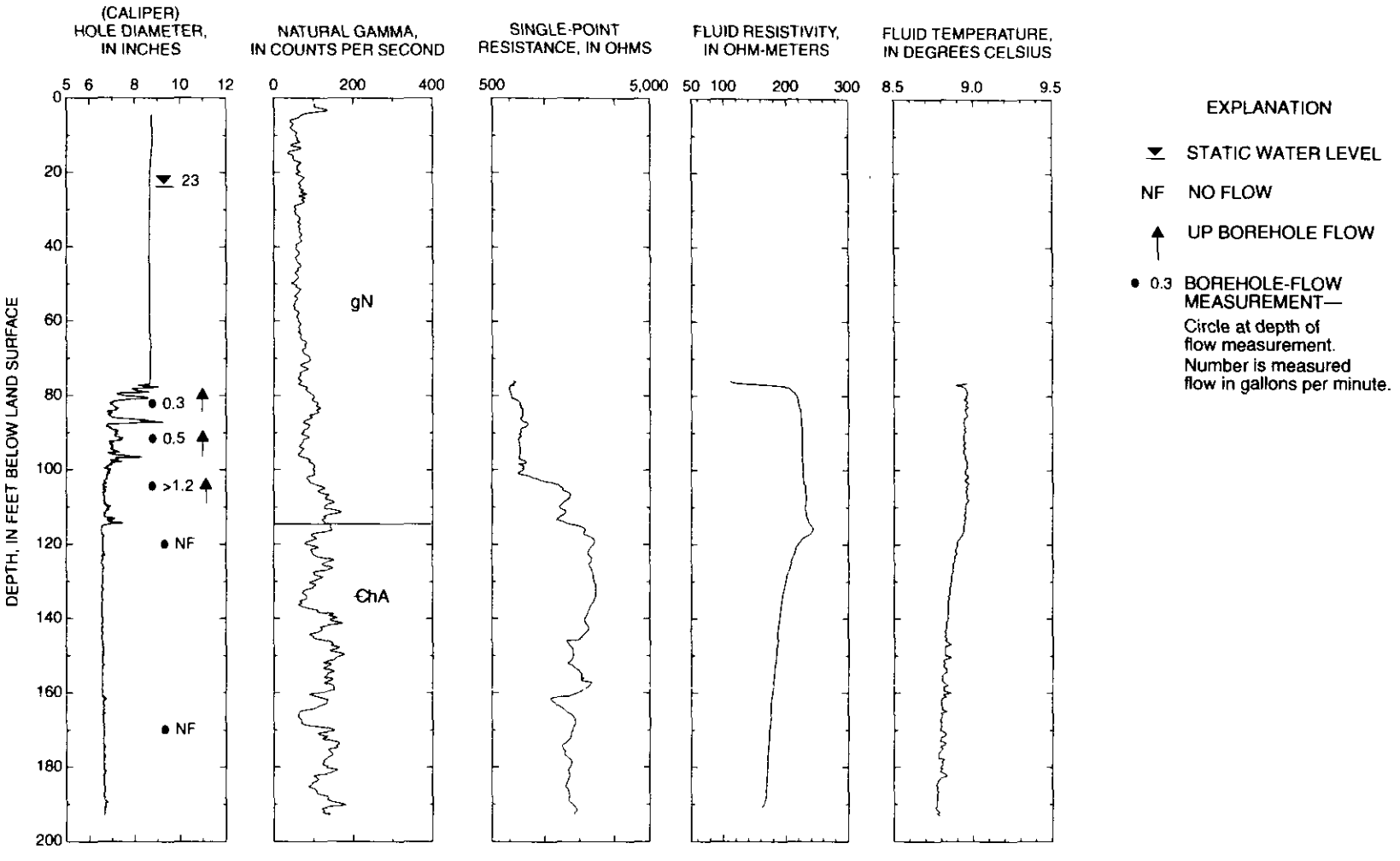


**Figure 33.** Borehole geophysical logs for borehole BE-1657 (HN-21-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301094

## BE-1658 (HN-22-I)

Well BE-1658 was drilled in the granitic gneiss. The caliper log shows the total depth of the borehole is 151 ft, and it is cased with 6.5-in.-diameter casing to 57 ft bls (fig. 34). The static water level at the time of logging was 26.07 ft bls. The caliper log shows major fractures at 73, 84, 95, and 149 ft bls. Under nonpumping conditions, the heatpulse flowmeter measured downward borehole flow at 70, 80, 90, 102, 116, 130, and 140 ft bls (table 13). The geophysical logs and the heatpulse-flowmeter measurements indicate water enters the borehole through fractures at 63, 66, 73, and 126 ft bls, moves downward, and exits the borehole through fractures at 92, 95, 104, 138, and 149 ft bls. A screen was placed at 68-78 and 132-142 ft bls to include the water-producing fracture at 73 ft and water-receiving fracture at 138 ft bls. The sand pack was placed from 64.5-92 and 127-146 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

***Table 13.*** *Summary of heatpulse-flowmeter measurements for borehole BE-1658 (HN-22-I) at Crossley Farms Superfund Site, Berks County, Pennsylvania*

[ft bls, feet below land surface; gal/min, gallon per minute]

| Depth (ft bls) | Flow rate under nonpumping conditions (gal/min) | Flow direction under nonpumping conditions |
|---|---|---|
| 70 | 0.2 | down |
| 80 | .9 | down |
| 90 | .9 | down |
| 102 | .5 | down |
| 116 | .4 | down |
| 130 | .6 | down |
| 140 | .1 | down |



AR301095

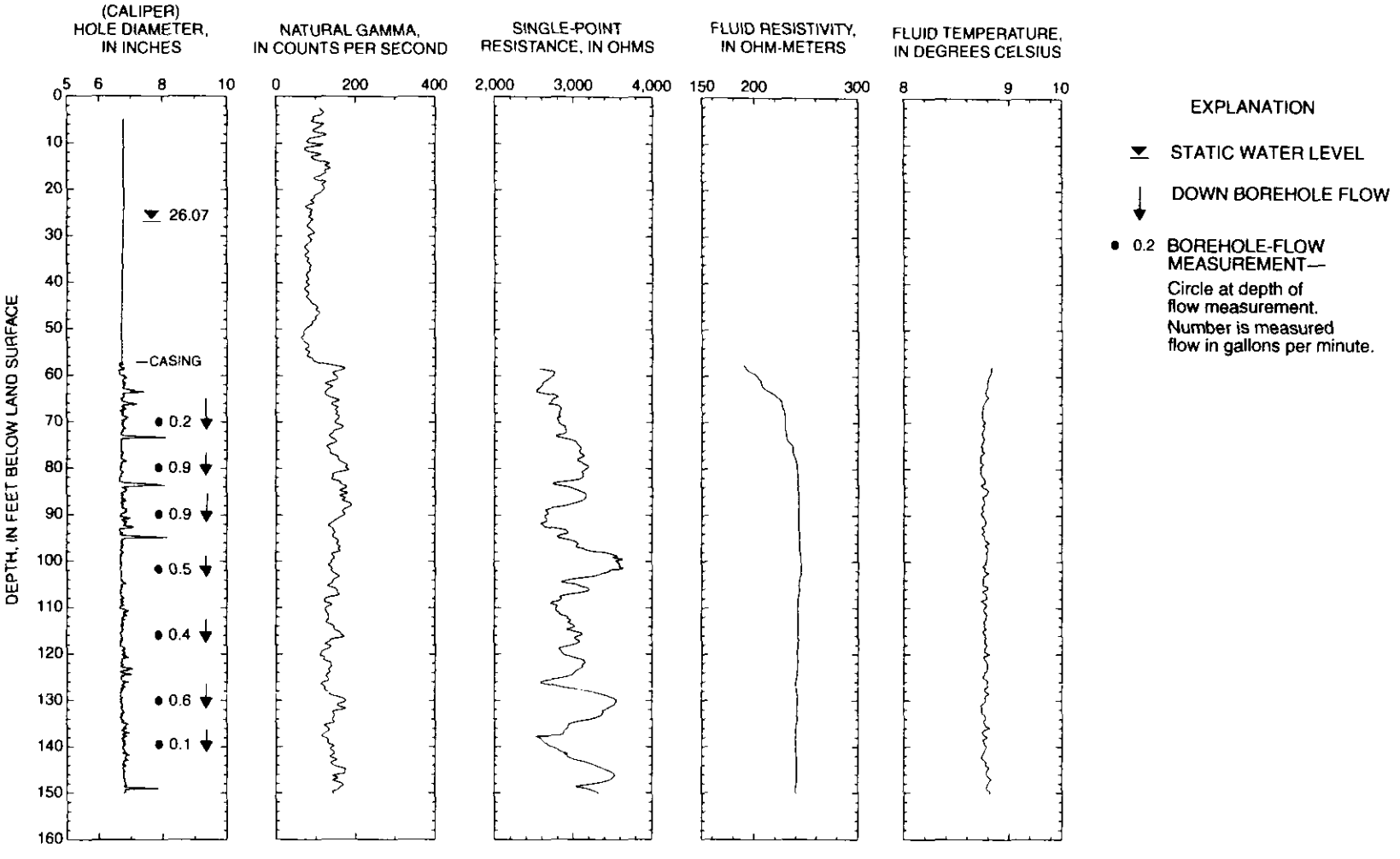


**Figure 34.** Borehole geophysical logs for borehole BE-1658 (HN-22-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301096

## BE-1659 (HN-23-I)

Well BE-1659 was drilled in the granitic gneiss. The caliper log shows the total depth of the borehole is 130 ft, and it is cased with 6.5-in.-diameter casing to 74 ft bls (fig. 35). The static water level at the time of logging was 6.11 ft bls. The caliper log shows a major fracture at 120.5-123 ft bls. The single-point-resistance and fluid-resistivity logs show deflections at 87-88, 98-100, and 120.5-123 ft bls that correspond to fractures on the caliper log, which suggest water-producing zones. Under nonpumping conditions, the heatpulse flowmeter measured no borehole flow at 81, 95, 103, and 117 ft bls. The driller reported the greatest water production below 102 ft bls (Robert Good, Tetra Tech NUS, written commun., 1999). A screen was placed at 100-125 ft bls to include the reported water-producing fracture below 102 ft bls. The sand pack was placed from 95-132 ft bls (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).

## BE-1660 (HN-9-D)

The acoustic televiewer log shows the total depth of the borehole is approximately 360 ft, and it is cased to 150 ft bls. The static water level at the time of logging was 59.30 ft bls. The deviation log shows the borehole deviates from vertical approximately 10 ft to the northeast from 150 to 360 ft bls (fig. 36). An equal-area stereonet, with poles plotted at right angles to the fracture planes, shows most fracture planes trend northeast-southwest (fig. 37). The greatest concentration of poles to possible fracture planes are in the upper left of figure 37, indicating high-angle fracture planes. The average orientation of all fracture planes are N. 50° E., dipping 65° SE. The driller reported no noticeable water production during drilling (Robert Good, Tetra Tech NUS, Inc., written commun., 1999). This borehole yields little water and will remain an open-borehole monitor well (Kevin Kilmartin, Tetra Tech NUS, Inc., written commun., 1999).



AR301097

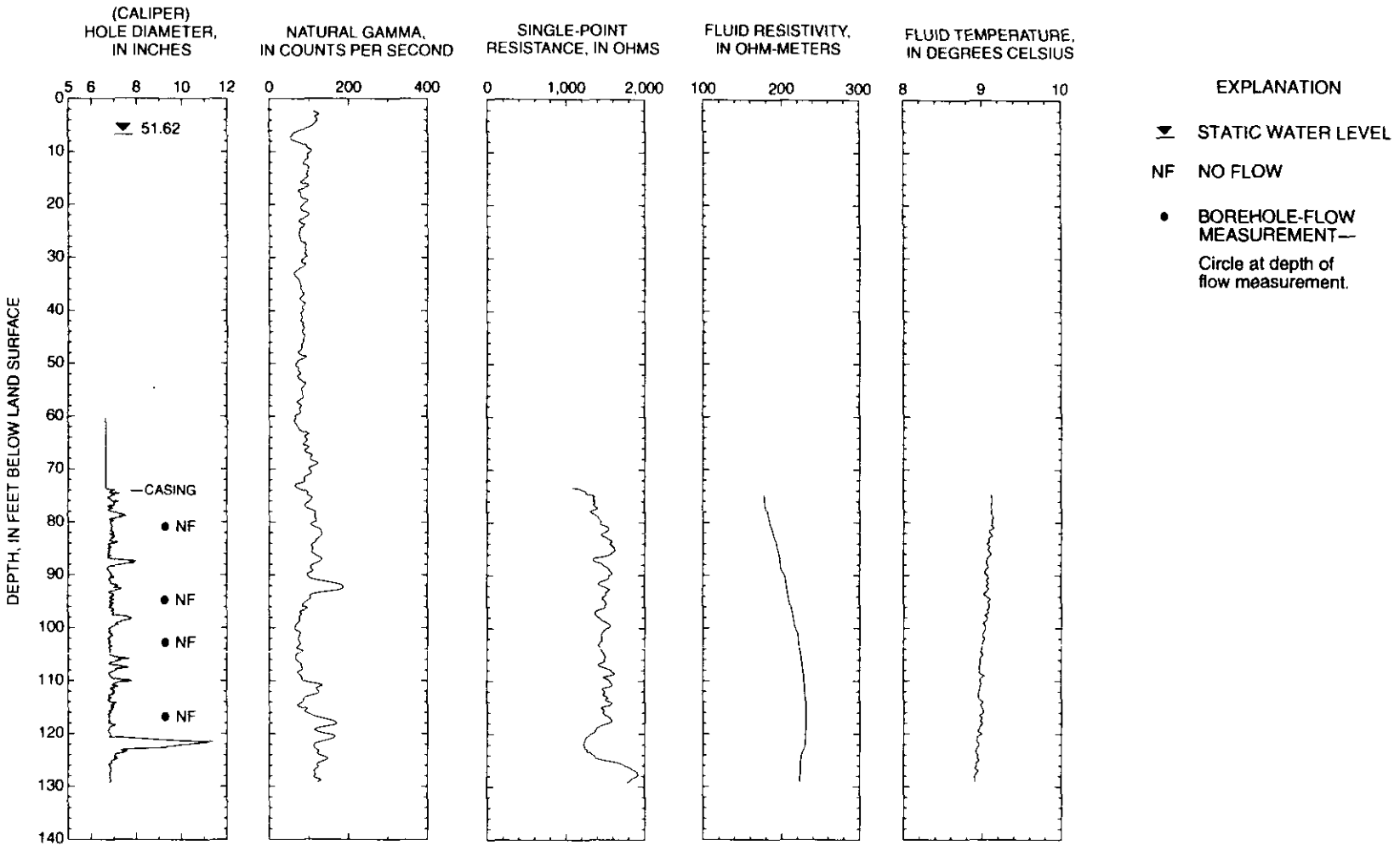


**Figure 35.** Borehole geophysical logs for borehole BE-1659 (HN-23-I), Crossley Farms Superfund Site, Berks County, Pennsylvania.



AR301098

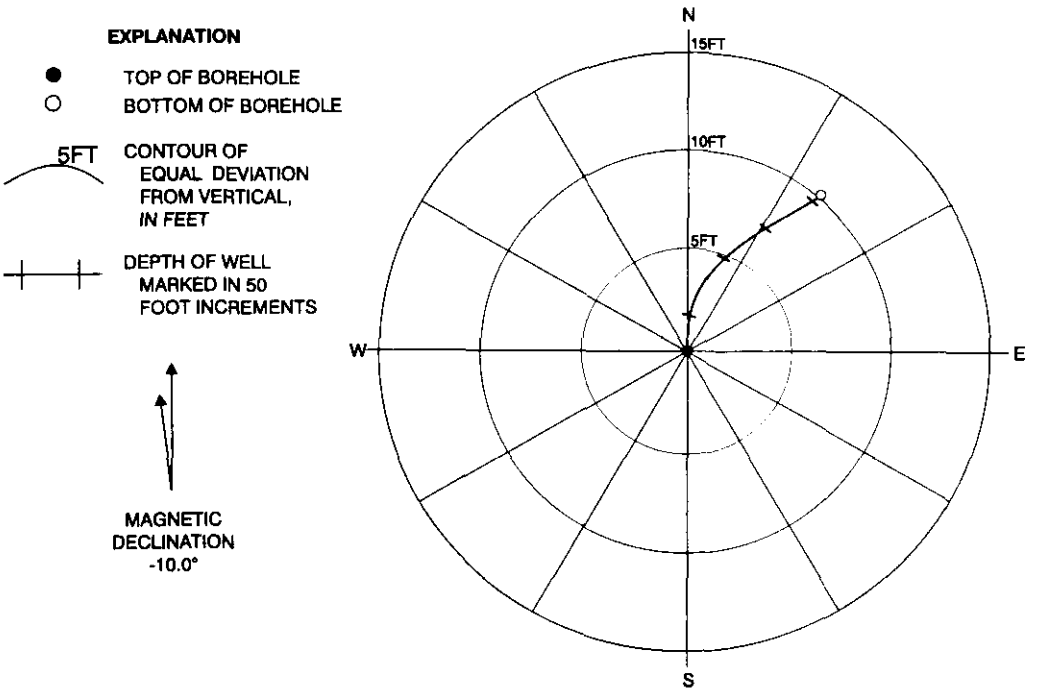


**Figure 36.** Magnitude and direction of deviation from vertical of borehole BE-1660 (HN-9-D).

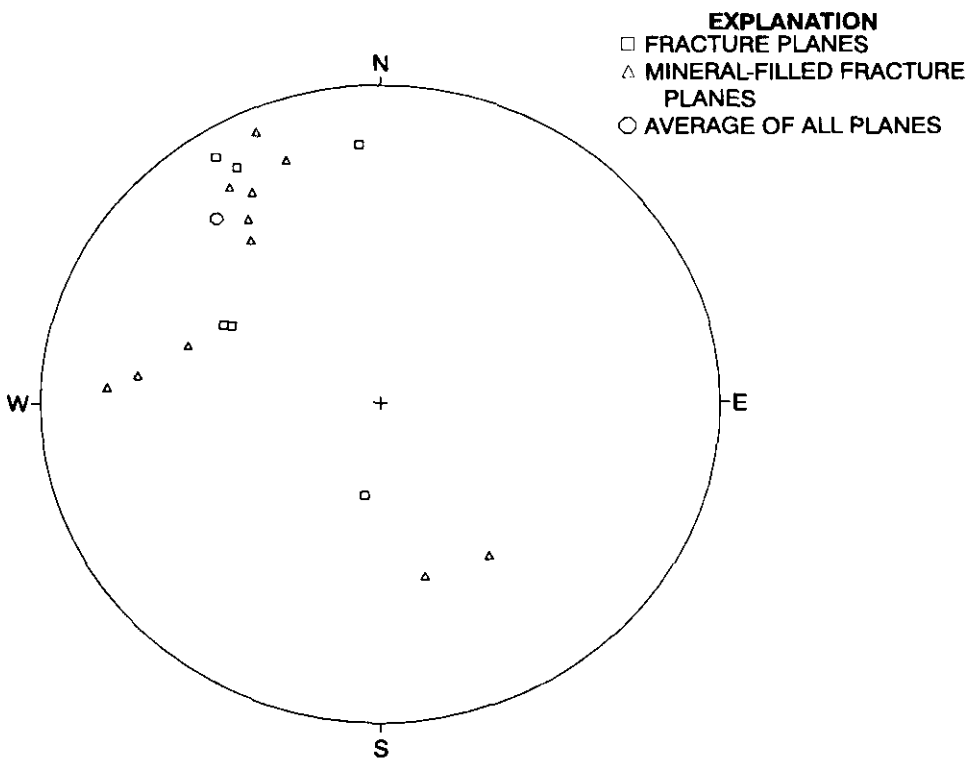


**Figure 37.** Equal-area lower-hemisphere, stereographic projection of poles perpendicular to fracture planes in borehole BE-1660 (HN-9-D).



AR301099

## SUMMARY

Water-producing zones, water-receiving zones, and intervals of vertical flow in boreholes at the Crossley Farms Superfund Site in Berks County, Pa., were identified by the use of geophysical logs, heatpulse-flowmeter measurements, and video and acoustic-televiewer logs. These data, collected from November 1998 to May 1999, were used to help place well screens and packers in monitor wells. Screens and packers are used to monitor horizontal and vertical distribution of ground water from selected horizons within individual boreholes.

Geophysical logging was conducted in 29 boreholes completed in either the Precambrian granite gneiss, Hardyston Quartzite, and Leithsville Formation. Of the 29 boreholes, 20 located on top of Blackhead Hill range in depth from 110 to 500 ft bls, 10 showed no borehole flow under nonpumping conditions, 5 boreholes showed upward borehole flow ranging from 0.06 to greater than 1.2 gal/min over a depth range of approximately 80 to 320 ft bls, and 5 boreholes showed downward flow from 0.01 to 0.9 gal/min over a depth range of about 140-300 ft bls. Generally, downward flow occurred mostly in wells on top of Blackhead Hill (Crossley Farm property) that penetrate the Hardyston Quartzite. Borehole flow and yield of water from the granite-gneiss, granite-hornblende-gneiss depend upon chance penetration of interconnected water-producing zones. Boreholes BE-1644, BE-1655, BE-1656, BE-1657, and BE-1659 of the wells onsite, which are in close proximity to a thrust fault and lithologic contact, produce the site's greatest yields (3 to 20 gal/min). These boreholes are downgradient from a drum burial site and are the most contaminated boreholes onsite.

Nine of the boreholes logged are off the Crossley Farm property to the south and are down gradient from the Crossley Farm. Of these nine, seven boreholes are near Blackhead Hill in the Leithsville Formation. Generally, rocks penetrated in these boreholes are intensely fractured, the boreholes collapse easily, the boreholes yield very high large quantities of water, and little or no hydraulic-head difference exists within the boreholes down to depths of 380 ft bls.

In general, water production and nonpumping-flow direction are formation and elevation dependant. Heatpulse-flowmeter data indicate most boreholes penetrate several water-bearing zones depending on well depth; the deeper wells penetrate more fractures. The boreholes with the highest yields are in the Leithsville Formation.

## REFERENCES CITED

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AR301100

D

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-01
DATE: 12-15-98
GEOLOGIST: KEN WRIGHT, JOE GRAM
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Drifter BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB1-02 @ 0815 | 2 | 5/6, 14/20 | | | | DK BRN | ROCKY SOIL, ½" TO 2" FRAGMENTS | | VOA, SVOA INORG, PCB/PEST | | | | |
| SB1-24 @ 0827 | 4 | 21/21, 31/51(4) | | | | MED BRN | MOSTLY ROCKS, ½" TO 2½" | | INORG, PCB/PEST | 0.0 | | | |
| SB1-46 @ 0840 | 6 | 31/51(3) | | | | LT. BRN | | | VOA, SVOA | 0.0 | | | |
| SB1-68 @ 0850 | 8 | 16/41, 32/51(4) | | | | V. LT. BRN, TAN | SANDY | | INORG, PCB/PEST | 0.0 | | | |
| SB1-810 @ 0900 | 10 | 51(5), 51(3) | VERY LITTLE | | | | | | VOA, SVOA REF @ 9.5' | | | | |
| | 12 | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301102

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE - B61

BORING No.: SB-02
DATE: 12-15-99
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB2-02 @ 1015 | | 6/8 | | | | LT. BRN | TOPSOIL, 0"-4" | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 2 | 16/27 | | | | DK BRN | HARD DRY CLAY, FEW ROOTS | | | | | | |
| SB2-2.4 @ 1023 | | 8/12 | | | | LT. BRN | -AS ABOVE, SL. MORE MOIST | | INORG., PCB/PEST | | | | |
| | 4 | 28/42 | | | | | | | | | | | |
| SB2-4.6 @ | | 12/28 | | | | | -AS ABOVE, MORE ROOTS, DRIER | | VOA, SVOA | | | | |
| | 6 | 36/51(2) | | | | | | | | | | | |
| SB2-6.8 @ | | / | | | | | | | | 0.0 | | | |
| | 8 | /51(5) | | | | | | | | | | | |
| SB2-8.10 @ 1045 | | / | | | | | (NO REC.) | | INORG., PCB/PEST FROM 6'-12' | | | | |
| | 10 | /51(6) | 0 | | | | | | | | | | |
| SB2-10.12 @ | | 12/14 | | | | | | | | | | | |
| | 12 | 16/22 | | | | | | | | | | | |
| SB2-12.14 @ | | 4/10 | | | | MED BRN | DRY, ROCKY, SANDY, NO CLAY | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 14 | 12/12 | | | | | | | | | | | |
| SB2-14.16 @ | | 8/10 | | | | | | | | | | | |
| | 16 | 8/12 | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301103

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-03
DATE: 12-16-99
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB3-02 @ | | 7/9 | | | | | TOPSOIL | | VOA, SVOA INORG., PCB/PEST GEOTECH. | | | | |
| | 2 | 12/9 | | | | | | | | | | | |
| SB3-24 @ 0904 | | 9/12 | | | | | | | INORG., PCB/PEST GEOTECH. | | | | |
| | 4 | 16/9 | | | | | | | | | | | |
| SB3-46 @ 0918 | | 8/9 | | | | | | | VOA, SVOA | | | | |
| | 6 | 14/14 | | | | | | | | | | | |
| SB3-68 @ | | 6/7 | | | | | LIGHTER THAN BEFORE, CLAY, WHITE MOTTLING, SMALL GRAVEL | | INORG, PCB/PEST | | | | |
| | 8 | 9/12 | | | | | | | | | | | |
| SB3-810 @ | | 5/9 | | | | RED YELLOW-WHITE | CLAY, DRIER, BETTER SORTED | | VOA, SVOA | | | | |
| | 10 | 7/9 | | | | | | | | | | | |
| SB3-1012 @ 0944 | | 4/8 | | | | | | | INORG, PCB/PEST | | | | |
| | 12 | 9/7 | | | | | | | | | | | |
| SB3-1214 @ | | 9/9 | | | | DARKER TAN | MUCH SANDIER, MORE COARSE-GRAINED, BUT STILL FINE | | VOA, SVOA | | | | |
| | 14 | 13/9 | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301104

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-04
DATE: 12-15-99
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: ROB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB4-02 | | 6/7 | | | | DK. BRN | TOPSOIL, SEVERAL LG ROCKS | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 2 | 9/9 | | | | | | | | | | | |
| SB4-24 | | 2/2 | | | | BRN | CLAY | | INORG, PCB/PEST | | | | |
| | 4 | 3/5 | | | | | | | | | | | |
| SB4-46 | | 3/7 | | | | | CLAY, DRY | | VOA, SVOA | | | | |
| | 6 | 8/14 | | | | | | | | | | | |
| SB4-68 | | 16/24 | | | | | CLAY, HARD, DRY, SM BLK. STAINS | | INORG, PCB/PEST | | | | |
| | 8 | 26/30 | | | | | | | | | | | |
| SB4-810 | | 16/22 | | | | | | | INORG, PCB/PEST | | | | |
| | 10 | 36/42 | | | | | | | | | | | |
| SB4-1012 | | 6/9 | | | | RED BRN | SANDY | | VOA, SVOA | | | | |
| | 12 | 12/7 | | | | | | | | | | | |
| SB4-1214 | | 7/9 | | | | LT. BRN | | | VOA, SVOA | | | | |
| | 14 | 14/9 | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301105

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HURER
DRILLING RIG: MOBILE B-61
BORING No.: SB-05
DATE: 12-15-99
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SBS-02 | | 51(1) | | | | | TOPSOIL, SOME LG. ROCKS | | VOA, SVOA | 0.0 | | | |
| | 2 | | POOR | | | | | | | | | | |
| SBS-24 | | 51(5) | | | | | ROCKS & GRAVEL | | | 0.0 | | | |
| | 4 | | POOR | | | | | | | | | | |
| SBS-46 | | 51(5) | | | | | SAND, LG. ROCKS, SOME DRY CLAYEY SOIL | | | | | | |
| | 6 | | POOR | | | | | | | | | | |
| SBS-68 | | 29 51(3) | | | | | | | | | | | |
| | 8 | | POOR | | | | | | | | | | |
| SBS-810 | | 17 51(5) | | | | | DRY CLAY, FEW SMALL ROCKS | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 10 | | | | | | | | | | | | |
| SBS-1012 | | 8 16 | | | | | | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 12 | 12 7 | | | | | | | | | | | |
| SBS-1214 | | 14 26 | | | | | | | VOA, SVOA | | | | |
| | 14 | 51(2) | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301106

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-06
DATE: 12-16-95
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB6-02 | | 4/5 | | | | | TOPSOIL | | VOA, SVOA INORG, PCB/PEST | | | | |
| | 2 | 3/4 | | | | | | | | | | | |
| SB6-24 | | 6/8 | | | | | | | INORG., PCB/PEST | | | | |
| | 4 | 12/24 | | | | | | | | | | | |
| SB6-46 | | 20/34 | | | | | | | VOA, SVOA | | | | |
| | 6 | 51(3) | | | | | | | | | | | |
| SB6-68 | | 11/15 | | | | | | | INORG, PCB/PEST | | | | |
| | 8 | 17/21 | | | | | | | | | | | |
| SB6-810 | | 6/9 | | | | | | | VOA, SVOA | | | | |
| | 10 | 12/7 | | | | | | | | | | | |
| SB6-1012 | | 51(4) | | | | | | | INORG, PCB/PEST | | | | |
| | 12 | | | | | | | | | | | | |
| SB6-1214 | | 54(0) | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 5 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301107

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN-HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-07
DATE: 12-16-99
GEOLOGIST: KEN WRIGHT, JOE GAM
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (SAMPLE ANALYSIS) | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB7-02 | | 34/40 | | | | | SILTY SAND, SOME GRAVEL, PEBBLY SOFTED SM. CLAYBALLS | | VOA, SVOA INORG, PCB/PEST | | | | |
| | | 49/5(1) | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | |
| SB7-24 | | 34/5(5) | | | | | SILTY SAND MIXED w/ GRAVEL | | INORG, PCB/PEST | | | | |
| | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
| SB7-46 | | 24/36 | | | | | | | VOA, SVOA | | | | |
| | | 28/22 | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | |
| SB7-68 | | 9/12 | | | | | | | INORG, PCB/PEST | | | | |
| | | 19/24 | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | |
| SB7-810 | | 36/45 | | | | | | | VOA, SVOA | | | | |
| | | 51(2) | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | |
| SB7-1012 | | 51(6) | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | |
| SB7-1214 | | 51(1) | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301108

Tetra Tech NUS, Inc.

# BORING LOG



PROJECT NAME: CROSSLEY FARM RI
PROJECT NUMBER: 7525
DRILLING COMPANY: HARDIN - HUBER
DRILLING RIG: MOBILE B-61

BORING No.: SB-08
DATE: 12-16-99
GEOLOGIST: KEN WRIGHT, JOE GRAY
DRILLER: BOB JORDAN

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| SB8-02 | | 4/6 | | | | GRAY GREEN | SAPROLITE | | SVOA, VOA INORG, PCB/PEST | | | | |
| | 2 | 7/7 | | | | TAN | SANDY SOIL | | GEOTECH. | | | | |
| SB8-24 | | 7/4 | | | | WHT TAN ORG | ROCKY | | INORG, PCB/PEST. | | | | |
| | 4 | 12/16 | | | | | | | | | | | |
| SB8-46 | | 41/51(2) | | | | WHT TAN ORG | ROCKY SAND AS ABOVE | | VOA, SVOA GEOTECH. | | | | |
| | 6 | | | | | | | | | | | | |
| SB8-68 | | 48/50(1) | | | | | | | INORG., PCB/PEST | | | | |
| | 8 | | | | | | | | | | | | |
| SB8-810 | | 48/50(1) | | | | | | | VOA, SVOA | | | | |
| | 10 | | | | | | | | | | | | |
| SB8-1012 | | 51(3) | | | | | | | INORG., PCB/PEST. | | | | |
| | 12 | | | | | | | | | | | | |
| SB8-1214 | | 51(1) | | | | | | | VOA, SVOA | | | | |
| | 14 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

AR301109

E

CROSSLEY FARM SITE

Benchmark: USGS Monument
H181
Near Huff's Church

SAMPLE POINTS' LOCATIONS

PREPARED BY: LUDGATE ENGINEERNG CORPORTION

PREPARED FOR: HALIBURTON NUS

2/7/97

COORDINATES TIED TO PA STATE PLANE SYSTEM

ELEVATIONS TIED TO NGVD 1929

| POINT NAME | NORTH | EAST | ELEV. | PT# |
|---|---|---|---|---|
| AD100100 | 409351.20 | 2593432.16 | 878.76 | 711 |
| AD100380 | 409449.54 | 2593179.74 | 850.23 | 712 |
| AD400480 | 409759.18 | 2593211.71 | 868.85 | 722 |
| ADA40080 | 409609.73 | 2593588.26 | 882.16 | 710 |
| BP1500 | 408689.49 | 2593667.55 | 879.13 | 725 |
| BP150400 | 409075.62 | 2593569.16 | 896.39 | 713 |
| BP234200 | 408902.60 | 2593697.78 | 894.69 | 708 |
| BP85200 | 408867.67 | 2593560.81 | 915.61 | 726 |
| DU00 | 409963.17 | 2593086.40 | 899.36 | 724 |
| DU0200 | 410160.53 | 2593097.56 | 919.78 | 732 |
| DU2500 | 409943.97 | 2593335.31 | 898.51 | 723 |
| DU250200 | 410137.02 | 2593342.52 | 932.05 | 705 |
| PA200200 | 409600.40 | 2593965.78 | 890.48 | 703 |
| PA200400 | 409688.75 | 2593785.92 | 889.71 | 704 |
| PA400200 | 409776.41 | 2594061.09 | 891.25 | 702 |
| PA400400 | 409865.74 | 2593878.54 | 893.87 | 701 |
| QA00 | 408820.73 | 2592910.58 | 877.00 | 719 |
| QA0150 | 408858.26 | 2592781.06 | 815.55 | 752 |
| QA2000 | 409012.89 | 2592964.62 | 865.84 | 718 |
| QB2000 | 409121.56 | 2593130.48 | 868.88 | 717 |
| QB200150 | 409243.39 | 2593049.02 | 841.40 | 716 |

| | | | | |
|---|---|---|---|---|
| SG-01 | 401247.06 | 2594140.55 | 559.48 | 744 |
| SG-02 | 406230.71 | 2591766.33 | 620.09 | 741 |
| SG-03 | 409051.53 | 2591675.71 | 663.30 | 755 |
| SG-04 | 412873.34 | 2592427.80 | 751.51 | 753 |

| | | | | |
|---|---|---|---|---|
| SP. 101 | 409432.83 | 2592969.44 | 814.93 | 721 |
| TCULVERT | 409840.12 | 2593734.16 | 893.59 | 700 |
| SP. 179 | 408657.28 | 2594256.52 | 847.33 | 730 |
| SP. 178 | 408561.92 | 2593953.55 | 853.63 | 729 |

| | | | ELEVS INNER | OUTER | GND |
|---|---|---|---|---|---|
| MW-1IOB | 409910.79 | 2595900.68 | 848.58 | 848.85 | 846.28 |
| MW-1IR | 409905.00 | 2595898.32 | | 848.43 | 845.86 |
| MW-1.1OB | 409251.71 | 2593074.26 | 846.46 | 846.63 | 844.39 |
| MW-1.2OB | 409170.79 | 2593240.46 | 881.68 | 882.06 | 879.55 |
| MW-2DR | 409890.40 | 2593328.05 | | 890.8 | 889.55 |
| MW-2OB | 409888.11 | 2593315.32 | 889.37 | 889.93 | 888.02 |
| MW-2R | 409892.47 | 2593320.55 | | 891.25 | 888.84 |
| MW-2.1OB | 412163.93 | 2594872.52 | 932.16 | 932.66 | 930.47 |
| MW-3DOB | 409000.22 | 2592359.84 | 705.49 | 705.68 | 703.08 |
| MW-3OB | 408992.27 | 2592308.70 | 700.38 | 700.61 | 698.65 |
| MW-4OB | 408542.64 | 2592098.46 | 679.14 | 678.34 | 677.07 |
| MW-4R | 408515.04 | 2592109.34 | | 680.98 | 678.98 |
| MW-5DOB | 408105.48 | 2592193.31 | 687.44 | 688.03 | 385.89 |
| MW-5OB | 408102.09 | 2592195.80 | 687.48 | 687.78 | 685.76 |
| MW-5R | 408106.02 | 2592180.36 | | 686.77 | 684.84 |
| MW-6OB | 406724.57 | 2594422.37 | 645.2 | 645.35 | 643.37 |

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| | | | | | |
|---|---|---|---|---|---|
| MW-6R | 406728.00 | 2594432.51 | | 645.19 | 643.57 |
| MW-7DR | 406483.57 | 2593237.58 | | 642.47 | 641.28 |
| MW-7DB | 406463.04 | 2593232.55 | 643.61 | 644.07 | 641.51 |
| MW-7R | 406470.74 | 2593236.81 | | 643.08 | 641.09 |
| MW-8R | 404965.53 | 2593932.32 | | 598.56 | 597.12 |

**CROSSLEY FARM SITE**

**SAMPLE POINT COORDINATES AND ELEVATIONS**

**PREPARED BY LUDGATE ENGINEERING CORPORATION**

**6/3/99**

| NAME | NORTH | EAST | ELEV. | PT# |
|---|---|---|---|---|
| SB02 | 410059.36 | 2596071.63 | 910.95 | 4053 |
| SB03 | 409369.43 | 2594152.12 | 885.73 | 4051 |
| SB07 | 408961.49 | 2593685.08 | 900.08 | 4050 |
| SB08 | 408848.93 | 2593688.04 | 889.90 | 4049 |

| NAME | NORTH | EAST | ELEV. GND | ELEV. OUT CASE | ELEV. IN CASE | PT# |
|---|---|---|---|---|---|---|
| HN01D | 408384.01 | 2593944.68 | 845.49 | 848.16 | 847.14 | 4041 |
| HNO6D | 406704.92 | 2594429.48 | 642.64 | 644.82 | 644.66 | 210 |
| HN07D | 406477.84 | 2593229.15 | 640.87 | 643.84 | 643.60 | 4011 |
| HN08I | 404948.56 | 2593933.84 | 598.28 | 600.91 | 600.62 | 4012 |
| HN09S | 410354.44 | 2594092.75 | 924.10 | 927.54 | 927.23 | 4001 |
| HNO9I | 410352.14 | 2594079.86 | 923.69 | 927.18 | 926.91 | 4002 |
| HN09D | 410349.51 | 2594067.99 | 923.28 | 926.42 | * | 4003 |
| HN10S | 409290.64 | 2592960.29 | 823.09 | 825.90 | 825.63 | 4033 |
| HN10I1+2 | 409284.97 | 2592944.55 | 820.85 | 823.57 | 823.25<br>823.28 | 4034 |
| HN10D | 409277.48 | 2592920.99 | 819.30 | 822.32 | 822.07 | 4035 |
| HN11I | 408486.70 | 2592564.40 | 755.51 | 758.66 | 758.28 | 3068 |
| HN11D | 408498.55 | 2592557.92 | 754.98 | 757.89 | 757.70 | 3069 |
| HN11S | 408502.34 | 2592570.09 | 755.67 | 758.65 | 758.25 | 30[illegible] |

| | | | | | | |
|---|---|---|---|---|---|---|
| HN12D | 408532.32 | 2593277.23 | 881.30 | 884.64 | 884.11 | 4046 |
| HN12I | 408535.63 | 2593292.21 | 882.22 | 885.04 | 884.48 | 4047 |
| HN12S | 408535.41 | 2593307.67 | 882.69 | 885.70 | 884.55 | 4048 |
| HN13 | 406126.46 | 2591683.50 | 613.46 | 613.48 | 613.20 | 4054 |
| HN13 | 406118.37 | 2591695.57 | 612.93 | 612.98 | 612.60 | 4055 |
| HN13 | 406109.96 | 2591706.69 | 612.17 | 612.22 | 612.02 | 4056 |
| HN14D | 403859.67 | 2592713.19 | 657.81 | 660.49 | 660.35 | 4057 |
| HN14S | 403870.00 | 2592719.88 | 657.45 | 660.25 | 660.12 | 4058 |
| HN14I | 403880.18 | 2592729.34 | 657.23 | 659.94 | 659.88 | 4059 |
| HN15D | 408220.91 | 2594301.15 | 839.11 | 841.91 | 841.67 | 4043 |
| HN15I | 408230.07 | 2594312.13 | 840.56 | 843.40 | 843.04 | 4044 |
| HN15S | 408244.39 | 2594314.68 | 842.16 | 845.16 | 844.87 | 4045 |
| HN16S | 402006.76 | 2593411.62 | 568.99 | 571.58 | 571.38 | 4016 |
| HN16I | 402013.96 | 2593402.55 | 569.24 | 571.72 | 571.61 | 4017 |
| HN16D | 402020.16 | 2593394.88 | 569.52 | 572.51 | 572.34 | 4018 |
| HN17S | 397599.23 | 2595050.96 | 503.92 | 507.42 | 507.07 | 4060 |
| HN17I | 397598.83 | 2595063.00 | 504.38 | 507.53 | 506.98 | 4061 |
| HN17D | 397597.79 | 2595075.19 | 504.64 | 507.39 | 507.19 | 4062 |
| HN18S | 409505.33 | 2593177.72 | 846.62 | 849.30 | 849.14 | 4027 |
| HN18I | 409516.91 | 2593181.02 | 846.78 | 849.48 | * | 4028 |
| HN18V | 409528.83 | 2593191.45 | 848.60 | 851.48 | 851.11 | 4029 |
| HN19I | 408623.37 | 2593724.85 | 873.98 | 876.69 | 876.59 | 4037 |
| HN20S | 408564.24 | 2593675.86 | 872.46 | 875.60 | 875.36 | 4038 |
| HN20I | 408564.24 | 2593675.86 | 872.46 | 875.60 | 875.35 | 4038 |
| HN22S | 409184.94 | 2593714.61 | 894.02 | 897.05 | 896.83 | 4006 |
| HN22I | 409184.94 | 2593714.61 | 894.02 | 897.05 | 896.78 | 4006 |
| HN23I | 408709.59 | 2593793.58 | 873.16 | 876.01 | 875.84 | 4036 |

2600197\LIST.02

Revised Coordinates at Cluster 1

LUDGATE ENGINEERING CORP.
Project: U:2600197
Thu Jul 1 1999 CROSSLEY FARM Page 1

| Point | North | East | Elev | Name |
|---|---|---|---|---|
| 727 | 408409.3877 | 2593921.0847 | 846.259 | MW-11OB |
| 728 | 408410.6211 | 2593914.9511 | 848.630 | MW-11R |

F

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | HN01D-02 | | HN01E-02 | | HN01E-02-X | | HN01F-02 | | HN06D-02 | | HN06D-02-X | | HN08S-02 | | HN08S-02-X | | HN09I-02 | | HN09I-02-X | | HN09S-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | NA | | 9 | B | 10 | | NA | | 68.9 | B | | | 228 | B | | | 271 | B | 14 | B | 764 | |
| Antimony | NA | | | | | | NA | | | | | | | | | | | | | | | |
| Arsenic | NA | | | | | | NA | | | | | | | | | | | | | | | |
| Barium | NA | | 30.7 | | 30.1 | | NA | | 23.5 | B | 21.4 | | 10.2 | J | 8.3 | | 22.1 | B | 13 | | 30.8 | |
| Beryllium | NA | | 1.3 | B | 1.4 | B | NA | | 1.9 | B | 2.4 | B | | | | | | | 1.6 | B | | |
| Cadmium | NA | | | | | | NA | | | | | | | | | | | | | | | |
| Calcium | NA | | 6150 | B | 6220 | | NA | | 25800 | | 23800 | | 26300 | J | 23500 | | 38200 | | 27500 | | 80200 | |
| Chromium | NA | | | | | | NA | | 1.4 | | 1.5 | B | 1.7 | B | | | 27.1 | | 5.3 | | 18.9 | |
| Cobalt | NA | | | | 1.3 | K | NA | | | | | | | | | | 2.8 | K | | | 1.1 | K |
| Copper | NA | | 17.9 | B | 16.8 | K | NA | | 6.6 | B | 3.8 | B | | | | | 59.8 | B | 5.5 | B | 62.6 | B |
| Cyanide | NA | | | | NA | | NA | | | | | | | | | | | | | | | |
| Iron | NA | | 107 | B | 70.6 | | NA | | | | | | 564 | J | 53.9 | B | 404 | B | | | 776 | |
| Lead | NA | | | | | | NA | | 10.4 | B | | | | | | | 10.1 | B | | | 13.2 | B |
| Magnesium | NA | | 1810 | | 1810 | | NA | | 14600 | | 13300 | | 15400 | J | 13900 | | 10800 | | 9500 | | 1560 | |
| Manganese | NA | | 32.6 | | 33 | | NA | | 3.7 | B | 3.2 | B | 14.1 | J | 2.3 | B | 24.6 | K | 11.1 | K | 14 | K |
| Mercury | NA | | | | | | NA | | | | | | | | | | | | | | | |
| Nickel | NA | | 2.1 | K | 1.6 | K | NA | | | | | | | | | | 21.4 | | 2.6 | | 9.6 | |
| Potassium | NA | | 1680 | | 1670 | | NA | | 989 | | 888 | | 2070 | | 1780 | | 7350 | | 7040 | | 11200 | |
| Selenium | NA | | | | | | NA | | | | | | | | | | | | | | 4.6 | L |
| Silver | NA | | | | | | NA | | | | | | | | | | 1.4 | K | 1.1 | B | 1.6 | K |
| Sodium | NA | | 6080 | | 6090 | | NA | | 3830 | | 3510 | | 2890 | B | 2570 | B | 9530 | | 8610 | | 22800 | |
| Thallium | NA | | | | | | NA | | | | | | | | | | | | | | | |
| Vanadium | NA | | 1.1 | K | | | NA | | | | | | | | | | | | | | 25 | K |
| Zinc | NA | | 25.9 | B | 25.6 | J | NA | | 41.2 | B | 54 | B | 11.4 | B | 5.9 | B | 25.5 | B | 14.3 | B | 328 | |
| **SEMIVOLATILES** | | | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | NA | | | | NA | | | | NA | | 2 | B | NA | | 6 | B |
| Di-n-butylphthalate | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | | | 4 | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | | | 0.5 | J | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | | | 2 | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | | | 16 | | NA | | | | | | NA | | 0.4 | J | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | 2 | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 2-Hexanone | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Acetone | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Benzene | | | 0.4 | J | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |

AR301118

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN01D-02 | | HN01E-02 | | HN01E-02-X | | HN01F-02 | | HN06D-02 | | HN06D-02-X | | HN08S-02 | | HN08S-02-X | | HN09I-02 | | HN09I-02-X | | HN09S-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | | | 5 | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | | | 0.8 | J | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | | | 7 | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | 0.4 | B | NA | | | | | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | 450 | J | 570 | J | NA | | 880 | J | | | NA | | 5 | | NA | | | | NA | | | |
| Toluene | | | | | NA | | | | | | NA | | | | NA | | 15 | | NA | | 100 | |
| Trichloroethene | 18000 | | 22000 | | NA | | 36000 | | 1200 | B | NA | | 300 | | NA | | | | NA | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | | | NA | | 0.9 | J | NA | | | | NA | | | |
| Xylene (Total) | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | |
| PESTICIDES/PCBS | | | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 4,4'-DDD | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301119

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | HN09S-02-X | | HN10D-02 | | HN10D-02-X | | HN10I1-02 | | HN10I1-02-X | | HN10I2-02 | | HN10I2-02-X | | HN10S-02 | | HN10S-02-X | | HN11D-02 | | HN11E-02 | | HN11F-02 | | HN11G-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | | | | | | |
| Aluminum | 75.8 | | 134 | B | 62.4 | B | 62.6 | B | 30.7 | B | 1070 | | 37 | B | 730 | | 53.4 | B | NA | | NA | | NA | | NA | |
| Antimony | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Arsenic | 6.9 | K | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Barium | 21.7 | | 31.9 | | 36.2 | | 19.1 | B | 19.7 | | 16.5 | B | 6.1 | | 61.6 | | 47.8 | | NA | | NA | | NA | | NA | |
| Beryllium | 2.3 | B | 2 | B | 2.4 | B | 2.2 | B | | | 3.1 | B | 2.6 | B | 2.3 | B | | | NA | | NA | | NA | | NA | |
| Cadmium | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Calcium | 67300 | | 32200 | | 35000 | | 9140 | | 9730 | | 22600 | | 14900 | | 9840 | | 12500 | | NA | | NA | | NA | | NA | |
| Chromium | 9.1 | | 4.7 | | 4.5 | B | 2 | | | | 3.1 | | | | 4 | | | | NA | | NA | | NA | | NA | |
| Cobalt | | | | | | | | | | | | | | | | | 1.5 | K | NA | | NA | | NA | | NA | |
| Copper | 18.6 | B | 4.7 | B | 5.8 | B | 4.3 | B | 9 | B | 22.9 | B | 19.5 | B | 25 | B | 63.9 | | NA | | NA | | NA | | NA | |
| Cyanide | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Iron | 41.9 | | | | 40.6 | | | | | | 920 | | 38.7 | | 1320 | | 21.6 | | NA | | NA | | NA | | NA | |
| Lead | | | 6.8 | B | | | | | | | 7.3 | B | | | | | | | NA | | NA | | NA | | NA | |
| Magnesium | 1120 | | 1500 | | 1690 | | 2810 | | 2980 | | 4510 | | 2950 | | 3700 | | 4230 | | NA | | NA | | NA | | NA | |
| Manganese | 1.5 | B | | | 2.1 | B | 5.8 | B | 7.3 | K | 57.3 | | 32.2 | | 80.6 | | 74.1 | | NA | | NA | | NA | | NA | |
| Mercury | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Nickel | 2.6 | | | | | | | | | | | | | | 3.8 | | | | NA | | NA | | NA | | NA | |
| Potassium | 11100 | | 13400 | | 13500 | | 1170 | | 1190 | | 1550 | | 1230 | | 1750 | | 1980 | | NA | | NA | | NA | | NA | |
| Selenium | | | | | | | | | | | | | 5.2 | K | | | | | NA | | NA | | NA | | NA | |
| Silver | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Sodium | 21700 | | 11400 | | 11800 | | 5110 | | 5390 | | 14300 | | 12600 | | 5180 | | 6640 | | NA | | NA | | NA | | NA | |
| Thallium | | | | | | | | | | | | | | | | | | | NA | | NA | | NA | | NA | |
| Vanadium | 22.1 | | 1.2 | L | 2.4 | | | | | | | | | | 1.5 | L | | | NA | | NA | | NA | | NA | |
| Zinc | 26.8 | B | 30.8 | B | 34.3 | B | 44 | B | 45 | B | 61.2 | B | 36.7 | B | 49.4 | B | 50.9 | B | NA | | NA | | NA | | NA | |
| **SEMIVOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 2-Butanone | NA | | | | NA | | | | NA | | | | NA | | 590 | L | NA | | | | | | | | | |
| 2-Hexanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Acetone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |

AR301120

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN09S-02-X | | HN10D-02 | | HN10D-02-X | | HN10I1-02 | | HN10I1-02-X | | HN10I2-02 | | HN10I2-02-X | | HN10S-02 | | HN10S-02-X | | HN11D-02 | | HN11E-02 | | HN11F-02 | | HN11G-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Chloroform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 9 | B | 15 | B | 12 | B | 11 | B |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | 3 | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Toluene | NA | | 2 | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| Trichloroethene | NA | | 53 | B | NA | | 8500 | | NA | | 4200 | | NA | | 1200 | | NA | | 280 | | 340 | | 350 | | 250 | |
| Trichlorofluoromethane | NA | | 0.2 | J | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | | | | |
| PESTICIDES/PCBS | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | | | | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |



AR301121

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN11H-02 | | HN11I-02 | | HN11I-02-X | | HN11J-02 | | HN11J-02-X | | HN11S-02 | | HN11S-02-X | | HN12D-02 | | HN12D-02-X | | HN12I-02 | | HN12I-02-X | | HN12S-02 | | HN12S-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | NA | | 936 | | 217 | B | 20.8 | B | 14.6 | | 2910 | | 73.2 | B | 293 | B | 116 | B | 59.1 | B | | | 267 | B | 20 | B |
| Antimony | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | NA | | 77.1 | | 60.9 | J | 109 | | 107 | | 154 | | 102 | J | 17.3 | | 17.6 | J | 2.4 | B | 1.8 | B | 31.9 | | 25.2 | |
| Beryllium | NA | | | | | | 1.8 | B | 1.8 | B | 0.4 | L | | | | | | | | | | | 2 | B | 2.5 | B |
| Cadmium | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | NA | | 9190 | | 8810 | J | 9030 | | 8990 | | 5640 | B | 4970 | B | 19700 | | 20500 | J | 12800 | | 13600 | J | 6480 | | 5360 | |
| Chromium | NA | | 2.9 | B | | | | | | | 8.2 | | | | 2.8 | B | 1.4 | | 1.2 | B | | | 2.7 | | 1.8 | B |
| Cobalt | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | NA | | 62.4 | J | 3.5 | B | 16 | B | 19.1 | K | 50 | J | 3 | B | 31.3 | J | | | 15.3 | B | 5.3 | B | 5.8 | B | 19.3 | B |
| Cyanide | NA | | 1.9 | B | | | | | NA | | | | | | 6.6 | B | | | | | | | | | | |
| Iron | NA | | 772 | | 113 | | 218 | B | 63.3 | | 3640 | | 41 | B | 110 | B | 26.9 | B | 90.2 | B | | | 429 | B | 20.3 | |
| Lead | NA | | 20.7 | B | 6.2 | B | | | | | 18.7 | B | 3.5 | B | 14 | B | 4.3 | B | 10.5 | B | 8.8 | B | 15 | B | | |
| Magnesium | NA | | 1670 | | 1410 | | 1750 | | 1730 | | 2250 | | 2140 | | 2370 | | 2440 | | 3060 | | 3310 | | 1810 | | 1400 | |
| Manganese | NA | | 29.2 | J | 23.2 | | 23.1 | K | 23.8 | K | 11.7 | J | 4.5 | B | 1.6 | B | 2.3 | B | 7.2 | B | 5.5 | B | 22.4 | | 13.9 | |
| Mercury | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | NA | | 2.7 | B | | | | | | | 5.7 | B | 1.9 | | | | | | | | | | | | | |
| Potassium | NA | | 2930 | | 2760 | | 1140 | | 1120 | | 2010 | | 1580 | | 3850 | | 3870 | | 1420 | | 1490 | | 1310 | | 1010 | |
| Selenium | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | NA | | 1.3 | | | | | | | | | | | | 0.74 | | | | | | | | | | | |
| Sodium | NA | | 10900 | | 11000 | | 4020 | B | 4020 | | 4100 | | 4230 | | 6990 | | 7230 | | 4810 | | 5080 | | 5210 | | 4320 | |
| Thallium | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | NA | | 1.8 | | | | | | | | 5.1 | | | | 1.6 | | | | | | | | | | | |
| Zinc | NA | | 55.2 | B | 21 | B | 24.5 | B | 33 | J | 60.7 | J | 20.8 | B | 37.4 | B | 6.3 | B | 33.9 | B | 27 | B | 44.8 | B | 49.5 | B |
| **SEMIVOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Di-n-butylphthalate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **VOLATILES** | ug/L | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2,2-Tetrachloroethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2-Trichloroethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 2-Butanone | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 2-Hexanone | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4-Methyl-2-pentanone | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acetone | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Benzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Carbon Disulfide | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301122

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN11H-02 | | HN11I-02 | | HN11I-02-X | | HN11J-02 | | HN11J-02-X | | HN11S-02 | | HN11S-02-X | | HN12D-02 | | HN12D-02-X | | HN12I-02 | | HN12I-02-X | | HN12S-02 | | HN12S-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chlorobenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloroform | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloromethane | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Ethylbenzene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 12 | B | | | NA | | 12 | B | NA | | | | NA | | | | NA | | | | NA | | 0.4 | B | NA | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | 4 | J | NA | | | | NA | | | | NA | | | | NA | | 6 | J | NA | | | | NA | |
| Toluene | 10 | B | | | NA | | | | NA | | 5 | J | NA | | | | NA | | | | NA | | | | NA | |
| Trichloroethene | 180 | | 120 | | NA | | 210 | | NA | | 93 | | NA | | 3700 | B | NA | | 130 | B | NA | | | | NA | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Xylene (Total) | | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **PESTICIDES/PCBS** | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301123

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | HN13D-02 | | HN13D-02-X | | HN13I-02 | | HN13I-02-X | | HN13S-02 | | HN13S-02-X | | HN14D-02 | | HN14D-02-X | | HN14I-02 | | HN14I-02-X | | HN14S-02 | | HN14S-02-X | | HN15D-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | HN15D-02-D | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 52.1 | B | | | 306 | B | 91.3 | B | 432 | | 83.3 | B | | | | | 35.3 | B | | | 215 | B | 42.6 | B | 2100 | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | 7.5 | K | 6.4 | K | | | | | | | | | | | | | | | | | | |
| Barium | 30.2 | J | 26.9 | | 38.9 | | 18.4 | | 23.9 | | 21.1 | | 1.6 | B | 1.7 | B | 5.8 | B | 4.9 | B | 13.9 | | 13.6 | J | 76.8 | |
| Beryllium | | | | | 1.5 | B | 2.4 | B | | | | | | | | | | | | | | | | | 1.4 | B |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | 43000 | J | 38100 | | 44600 | | 22000 | | 52900 | | 51900 | | 16300 | | 18800 | J | 7380 | | 7810 | | 1870 | B | 2160 | B | 12300 | |
| Chromium | 1.5 | B | 1.4 | | 41.4 | | 40.1 | | 1.8 | B | | | 0.82 | B | | | 1.4 | B | 0.73 | | 2 | B | | | 15 | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | | | 4.2 | B | 11.4 | B | 8.9 | B | 3.5 | B | 21.2 | | | | 4.3 | B | 5 | B | | | 3.7 | B | 5.5 | B | 25.1 | B |
| Cyanide | | | | | | | | | | | | | | | | | | | | | 1.1 | B | | | | |
| Iron | 223 | B | | | 87.9 | B | | | 704 | | 53.5 | B | 40.7 | B | | | 42.9 | B | | | 269 | B | | | 6780 | |
| Lead | | | | | 3.3 | B | | | 6.7 | B | 7.5 | B | 3.3 | B | 8.3 | B | 5.9 | B | | | 6.4 | B | 4 | B | 9 | |
| Magnesium | 25000 | J | 22300 | | 10400 | | 9330 | | 29800 | | 28300 | | 12000 | | 13700 | | 4970 | | 5070 | | 1630 | | 1690 | | 2590 | |
| Manganese | 5 | B | 3.9 | B | 1.9 | B | 1.7 | B | 149 | | 118 | | 1 | B | 2.6 | B | 6.8 | B | 4.3 | B | 22.4 | | 15.6 | | 249 | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | 2.3 | | 2.6 | | 1.6 | | 1.9 | L | 3 | | | | | | | | 2.5 | | | | 2.2 | | 12.2 | K |
| Potassium | 1510 | | 1370 | | 65900 | | 68900 | | 1260 | | 1140 | | 3770 | | 4430 | | 3550 | | 3660 | | 3800 | | 4230 | | 13700 | |
| Selenium | | | 3.3 | K | | | | | | | 3.2 | K | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sodium | 3560 | B | 3110 | | 40500 | | 41100 | | 4120 | | 4110 | | 2570 | B | 3130 | | 989 | B | 1060 | B | 1450 | B | 1790 | B | 14900 | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | 5.9 | | 5.6 | | | | | | | | | | | | | | | | | | 4.4 | K |
| Zinc | 8.1 | B | 9.2 | B | 47.6 | B | 33.5 | B | 10.9 | B | 22.9 | B | 7.1 | B | 22.8 | B | 12.1 | B | 18.4 | B | 17.6 | B | 23.5 | B | 52.6 | B |
| **SEMIVOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 3,3'-Dichlorobenzidine | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 3 | J |
| Di-n-butylphthalate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Hexanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Benzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301124

Analytical Results for Monitoring Well Groundwater Samples
*Crossley Farm Site, Pennsylvania*

| Sample ID | HN13D-02 | | HN13D-02-X | | HN13I-02 | | HN13I-02-X | | HN13S-02 | | HN13S-02-X | | HN14D-02 | | HN14D-02-X | | HN14I-02 | | HN14I-02-X | | HN14S-02 | | HN14S-02-X | | HN15D-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | HN15D-02-D | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 0 4 | B |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toluene | | | NA | | 0 9 | J | NA | | 0 6 | J | NA | | 2 | | NA | | 0.5 | J | NA | | 1 | | NA | | 0 5 | B |
| Trichloroethene | 13 | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 3 | |
| Trichlorofluoromethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 4,4'-DDD | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | | | NA | | | | NA | | 0 02 | B | NA | | | | NA | | 0 018 | B | NA | | | | NA | | | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301125

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN15D-02-D | | HN15D-02-D-X | | HN15D-02-X | | HN15I-02 | | HN15I-02-X | | HN15S-02 | | HN15S-02-X | | HN16D-02 | | HN16D-02-X | | HN16I-02 | | HN16I-02-X | | HN16S-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | HN15D-02 | | HN15D-02-X | | HN15D-02-D-X | | | | | | | | | | | | | | | | | | | |
| Sacode | DUP | | DUP | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 1560 | | 87.5 | | 58.6 | | 3670 | | 824 | | 57.1 | B | 25.3 | B | 25.8 | B | 122 | B | 221 | B | 36.1 | B | 48.2 | B |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | 4.5 | B | | | | | | |
| Barium | 58.3 | | 3.4 | | 2 | | 121 | | 2.7 | | 42.4 | | 45.7 | J | 25.2 | J | 25.2 | | 35.2 | J | 23.6 | | 35.6 | J |
| Beryllium | 3.1 | B | | | | | 2.6 | B | 2.2 | B | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | 11500 | | 8260 | | 7940 | | 6940 | | 298 | B | 3160 | B | 3290 | B | 23000 | J | 22300 | | 23800 | J | 22200 | | 15800 | J |
| Chromium | 12.7 | | 1.2 | L | 1.1 | L | 10.3 | | | | 0.81 | B | | | 1 | B | 0.99 | | 3.2 | B | | | 0.77 | B |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | 2.7 | |
| Copper | 24.6 | B | 17 | K | 17.2 | K | 53.7 | B | 10.2 | B | 20.1 | B | 3.4 | B | | | 90.9 | | | | 16.3 | B | | |
| Cyanide | | | NA | | NA | | | | | | 1.7 | B | | | | | | | | | | | | |
| Iron | 5080 | | 195 | | 92.8 | | 2890 | | 314 | | 18.9 | B | | | 31.1 | B | 26.2 | B | 968 | J | 49.7 | B | 135 | B |
| Lead | 5.7 | K | | | | | 16.8 | B | | | 4.4 | B | | | | | 52.4 | J | 2 | B | 3.2 | B | 3.4 | B |
| Magnesium | 2420 | | 1470 | | 1420 | | 2340 | | 187 | | 2370 | | 2590 | | 13000 | J | 12600 | | 13200 | J | 12600 | | 6710 | J |
| Manganese | 222 | | 41.2 | | 37 | | 115 | | 6.5 | B | 8.3 | J | 10.1 | B | 3.5 | B | 10.2 | B | 41.4 | J | 5.5 | B | 17 | J |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | 9.9 | K | 4 | K | 1.1 | K | 8.5 | | | | 2.4 | B | | | | | 4.8 | | 2.3 | | | | | |
| Potassium | 11800 | | 13600 | | 14000 | | 1770 | | 734 | | 1770 | | 1900 | | 1970 | | 1950 | | 2280 | | 2070 | | 894 | |
| Selenium | | | | | | | | | | | | | | | | | | | 3.1 | K | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | |
| Sodium | 13400 | | 15500 | | 15500 | | 12800 | | 9530 | | 1980 | | 2070 | B | 3350 | B | 3200 | | 3420 | B | 3190 | | 11700 | J |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | 2.2 | K | | | | | | | | | | | | | | | | | | | | | | |
| Zinc | 43.7 | B | 20.6 | J | 17.3 | B | 43.8 | B | 16.3 | B | 19.3 | B | 18 | B | 6.6 | B | 164 | J | 14 | B | 29.4 | B | 7.6 | B |
| **SEMIVOLATILES** | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 3,3'-Dichlorobenzidine | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | 2 | J | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Di-n-butylphthalate | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Hexanone | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | 8 | J | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Benzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301126

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN15D-02-D | | HN15D-02-D-X | | HN15D-02-X | | HN15I-02 | | HN15I-02-X | | HN15S-02 | | HN15S-02-X | | HN16D-02 | | HN16D-02-X | | HN16I-02 | | HN16I-02-X | | HN16S-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | HN15D-02 | | HN15D-02-X | | HN15D-02-D-X | | | | | | | | | | | | | | | | | | | |
| Sacode | DUP | | DUP | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 0.3 | B | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | NA | | NA | | | | NA | | | | NA | | 6 | J | NA | | | | NA | | 2 | |
| Toluene | | | NA | | NA | | 1 | | NA | | 2 | | NA | | | | NA | | | | NA | | 0.3 | J |
| Trichloroethene | 4 | | NA | | NA | | 9 | | NA | | 1 | | NA | | 420 | | NA | | | | NA | | 120 | |
| Trichlorofluoromethane | NA | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 0.5 | J |
| Xylene (Total) | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| PESTICIDES/PCBS | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | |
| 4,4'-DDD | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | 0.018 | J | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | | | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301127

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN16S-02-X | | HN17D-02 | | HN17D-02-X | | HN17E-02 | | HN17F-02 | | HN17I-02 | | HN17I-02-X | | HN17S-02 | | HN17S-02-X | | HN18D-02 | | HN18E-02 | | HN18E-02-X | | HN18F-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| ***INORGANICS*** | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | | |
| Aluminum | | | 3290 | | 78.5 | | NA | | NA | | 60.7 | B | 70.7 | B | 369 | | 31.5 | B | NA | | 198 | | 42.8 | B | NA | |
| Antimony | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Arsenic | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Barium | 33.6 | | 39.6 | | 6.4 | | NA | | NA | | 7.3 | J | 7.1 | | 15.6 | J | 13.1 | | NA | | 17.7 | | 17 | | NA | |
| Beryllium | | | 1.6 | B | 1.5 | B | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Cadmium | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Calcium | 15100 | | 20100 | | 18000 | | NA | | NA | | 24800 | J | 24500 | | 9020 | J | 9320 | | NA | | 13600 | | 13300 | | NA | |
| Chromium | | | | | | | NA | | NA | | 3.1 | B | 1.5 | | 3.6 | B | 1.5 | | NA | | 1.4 | L | | | NA | |
| Cobalt | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Copper | 3.2 | B | 25.6 | B | 21.2 | K | NA | | NA | | | | | | | | 6 | B | NA | | 21.8 | B | 21 | K | NA | |
| Cyanide | | | | | NA | | NA | | NA | | | | | | | | | | NA | | | | NA | | NA | |
| Iron | | | 12200 | | 146 | | NA | | NA | | 128 | B | | | 587 | J | 19.9 | B | NA | | 502 | | 74.7 | | NA | |
| Lead | | | | | | | NA | | NA | | 4 | B | 2.6 | B | | | 3.2 | B | NA | | | | | | NA | |
| Magnesium | 6450 | | 2640 | | 2110 | | NA | | NA | | 2840 | J | 2800 | | 3610 | J | 3680 | | NA | | 2750 | | 2550 | | NA | |
| Manganese | 15.5 | | 113 | | 13.4 | K | NA | | NA | | 1.3 | B | 1.9 | B | 13.4 | J | 2.8 | B | NA | | 34 | | 42.8 | | NA | |
| Mercury | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Nickel | | | | | | | NA | | NA | | | | | | | | 2.6 | | NA | | 2 | K | | | NA | |
| Potassium | 862 | | 2830 | | 1090 | | NA | | NA | | 2370 | | 2340 | | 1100 | | 1090 | | NA | | 1110 | | 1080 | | NA | |
| Selenium | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Silver | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Sodium | 11400 | | 13100 | | 11300 | | NA | | NA | | 8930 | J | 8930 | | 5220 | J | 5410 | | NA | | 12000 | | 11900 | | NA | |
| Thallium | | | | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| Vanadium | | | | | | | NA | | NA | | 1.5 | | | | 1.6 | | | | NA | | 1.7 | K | | | NA | |
| Zinc | 8.5 | B | 205 | J | 23.6 | J | NA | | NA | | 9.1 | B | 12.4 | B | 13.4 | B | 11.4 | B | NA | | 37.2 | B | 25.4 | J | NA | |
| ***SEMIVOLATILES*** | | | ug/L | | | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Acenaphthene | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Di-n-butylphthalate | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | ug/L | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | | | | | | | NA | | | | NA | | 69 | | 4 | | NA | | 0.6 | J |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Butanone | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Hexanone | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Acetone | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Benzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Carbon Disulfide | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN16S-02-X | | HN17D-02 | | HN17D-02-X | | HN17E-02 | | HN17F-02 | | HN17I-02 | | HN17I-02-X | | HN17S-02 | | HN17S-02-X | | HN18D-02 | | HN18E-02 | | HN18E-02-X | | HN18F-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | ug/L | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Chlorobenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Chloroform | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Chloromethane | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Ethylbenzene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | | | | | NA | | | | NA | | 18 | B | 0.5 | B | NA | | 0.5 | B |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | | | NA | | | | | | | | NA | | | | NA | | | | 0.5 | J | NA | | | |
| Toluene | NA | | | | NA | | | | | | 2 | | NA | | | | NA | | 23 | B | | | NA | | | |
| Trichloroethene | NA | | | | NA | | | | | | | | NA | | | | NA | | 460 | | 25 | | NA | | 5 | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| **PESTICIDES/PCBS** | | | ug/L | | | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | |
| 4,4'-DDD | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDE | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDT | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aldrin | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Alpha-BHC | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Alpha-Chlordane | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1016 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1221 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1232 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1242 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1248 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1254 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Aroclor-1260 | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Beta-BHC | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Delta-BHC | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Dieldrin | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endosulfan I | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endosulfan II | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endosulfan Sulfate | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endrin | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endrin Aldehyde | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Endrin Ketone | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Gamma-Chlordane | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Heptachlor | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Heptachlor Epoxide | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Methoxychlor | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Toxaphene | NA | | | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | HN18S-02 | | HN18S-02-D | | HN18S-02-D-X | | HN18S-02-X | | HN19I-02 | | HN19I-02-D | | HN19I-02-D-X | | HN19I-02-X | | HN20I-02 | | HN20I-02-X | | HN20S-02 | | HN20S-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | HN18S-02-D | | HN18S-02 | | HN18S-02-X | | HN18S-02-D-X | | HN19I-02-D | | HN19I-02 | | HN19I-02-X | | HN19I-02-D-X | | | | | | | | | |
| Sacode: | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 2090 | | 2220 | | | | 27.5 | B | 271 | B | 252 | B | 40.6 | B | 36.7 | B | 149 | B | 54.9 | B | 343 | B | 80.9 | B |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | 48.3 | | 48.4 | | 30.4 | J | 29.9 | J | 40 | | 41.6 | | 35.6 | | 35.3 | | 18.1 | B | 34.8 | | 102 | | 87.6 | |
| Beryllium | | | | | | | | | 2.1 | B | 2.1 | B | 2.6 | B | 2.5 | B | 2 | B | 2.5 | B | 2 | B | | |
| Cadmium | | | 0.42 | | | | | | | | | | | | | | | | | | | | | |
| Calcium | 15100 | | 15800 | | 16000 | J | 16200 | J | 7830 | | 8070 | | 7410 | | 7440 | | 17800 | | 27900 | | 18300 | | 17000 | |
| Chromium | 7.1 | | 6.8 | | | | | | 1.2 | | 1.7 | | 1 | B | 1.4 | B | 4.4 | | 3 | B | 3.7 | | 1.7 | |
| Cobalt | | | 2.5 | | | | | | | | | | | | | | | | | | | | | |
| Copper | 48.7 | J | 92.7 | J | | | | | 8.2 | B | 10 | B | 20.7 | B | 12.5 | B | 5.3 | B | 12.6 | B | 6.1 | B | 16.3 | B |
| Cyanide | 4.3 | B | | | | | | | | | | | | | | | | | | | | | | |
| Iron | 2530 | | 2450 | | | | 25.4 | B | 143 | B | 160 | B | 30.5 | | 48.4 | | 54.2 | B | | | 231 | B | | |
| Lead | 16.7 | B | 26.2 | B | | | | | 11.7 | B | 3.9 | B | | | | | 7.5 | B | 2.2 | K | | | 4.3 | K |
| Magnesium | 8700 | | 8590 | | 8750 | | 8850 | | 2420 | | 2520 | | 2250 | | 2240 | | 2480 | | 2300 | | 2100 | | 1850 | |
| Manganese | 48.8 | J | 47.3 | J | 4.5 | B | 4.4 | B | 28.4 | | 29.5 | | 27 | | 27.2 | | 7.9 | B | 2.6 | B | 11.5 | | 7.4 | K |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | 3.7 | B | 4.2 | | | | | | | | | | | | | | 1.1 | | | | | | | |
| Potassium | 1290 | | 1330 | | 1010 | | 1000 | | 1270 | | 1340 | | 1240 | | 1210 | | 4220 | | 13500 | | 3400 | | 3010 | |
| Selenium | | | | | | | | | | | | | | | 4.7 | K | | | | | | | | |
| Silver | 1.1 | | 1.5 | | | | | | | | | | | | | | | | | | | | | |
| Sodium | 4360 | | 4360 | | 4310 | | 4350 | | 8100 | | 8550 | | 8090 | | 7910 | | 9370 | | 15900 | | 6760 | | 6290 | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | 7.4 | | 7.3 | | | | | | | | | | | | | | 2.2 | L | 3.8 | | 1.6 | L | | |
| Zinc | 49.5 | B | 82.3 | J | 14.2 | B | 15.7 | B | 44.8 | B | 46.4 | B | 45 | B | 38.3 | B | 39.8 | B | 38.5 | B | 38.2 | B | 36.6 | B |
| **SEMIVOLATILES** | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| 3,3'-Dichlorobenzidine | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Acenaphthene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Bis(2-ethylhexyl)phthalate | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Di-n-butylphthalate | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| **VOLATILES** | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,1,2,2-Tetrachloroethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,1,2-Trichloroethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (cis) | 280 | | 280 | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 2-Butanone | | | | | NA | | NA | | 6100 | J | | | NA | | NA | | | | NA | | | | NA | |
| 2-Hexanone | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 4-Methyl-2-pentanone | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Acetone | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Benzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Carbon Disulfide | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN18S-02 | | HN18S-02-D | | HN18S-02-D-X | | HN18S-02-X | | HN19I-02 | | HN19I-02-D | | HN19I-02-D-X | | HN19I-02-X | | HN20I-02 | | HN20I-02-X | | HN20S-02 | | HN20S-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | HN18S-02-D | | HN18S-02 | | HN18S-02-X | | HN18S-02-D-X | | HN19I-02-D | | HN19I-02 | | HN19I-02-X | | HN19I-02-D-X | | | | | | | | | |
| Sacode | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Chlorobenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Chloroform | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Chloromethane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Ethylbenzene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 51 | B | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | 40 | J | 39 | J | NA | | NA | | 1700 | | 1400 | J | NA | | NA | | 1100 | | NA | | 380 | J | NA | |
| Toluene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Trichloroethene | 2300 | | 2300 | | NA | | NA | | 41000 | | 37000 | | NA | | NA | | 24000 | | NA | | 7500 | | NA | |
| Trichlorofluoromethane | 50 | J | 50 | J | NA | | NA | | 140 | J | | | NA | | NA | | | | NA | | | | NA | |
| Xylene (Total) | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| PESTICIDES/PCBS | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| 4,4'-DDD | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 4,4'-DDE | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| 4,4'-DDT | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aldrin | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Alpha-BHC | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Alpha-Chlordane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1016 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1221 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1232 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1242 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1248 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1254 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Aroclor-1260 | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Beta-BHC | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Delta-BHC | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Dieldrin | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Endosulfan I | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Endosulfan II | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Endosulfan Sulfate | | | | | NA | | NA | | | | 0.037 | J | NA | | NA | | | | NA | | | | NA | |
| Endrin | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Endrin Aldehyde | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Endrin Ketone | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Gamma-BHC (Lindane) | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Gamma-Chlordane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Heptachlor | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Heptachlor Epoxide | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Methoxychlor | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |
| Toxaphene | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | | | NA | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN22I-02 | | HN22I-02-X | | HN22S-02 | | HN22S-02-X | | HN23I-02 | | HN23I-02-X | | HN7D-02 | | HN7D-02-X | | MW1.1OB-01 | | MW1.1OB-01-X | | MW1.1OB-02 | | MW1.1OB-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | |
| Aluminum | 80.3 | B | | | 82 | B | | | 168 | B | 96.3 | | 30.1 | B | | | 10800 | | | | 335 | | | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | 5.4 | B | 4.4 | | 11.3 | B | 11.8 | | 46.3 | | 37.8 | | 15.4 | | 17.8 | | | | 33 | | 33.8 | | 32.8 | J |
| Beryllium | 2 | B | 2.5 | B | 2.1 | B | 2.6 | B | | | 1.6 | B | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | 4.9 | | | | | |
| Calcium | 11800 | | 11300 | | 9060 | | 9750 | | 10700 | | 8670 | | 29100 | | 33800 | | 9370 | | 8020 | J | 7840 | | 8530 | J |
| Chromium | 1.4 | | 1.5 | B | 1.1 | | | | | | | | 2.3 | B | 1.9 | | 66 | | | | 2.9 | B | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | 6.7 | B | 12.2 | B | 4.6 | B | 4.9 | B | 58.3 | B | 13.4 | B | 3.6 | B | 4 | B | | | | | 31 | J | 5.1 | B |
| Cyanide | | | | | | | | | | | | | | | | | NA | | NA | | 1.6 | B | | |
| Iron | 45.5 | B | | | 69.2 | B | | | 167 | B | 71.4 | | | | | | 19800 | | 44.2 | B | 402 | | | |
| Lead | 9 | B | | | 4.2 | B | | | 44.1 | | | | 5.4 | B | | | 16 | | | | 13.4 | B | 7 | B |
| Magnesium | 3110 | | 2930 | | 2750 | | 2940 | | 3180 | | 2750 | | 15600 | | 18200 | | 7970 | | 3310 | J | 2910 | | 2960 | |
| Manganese | 11.9 | | 12.4 | | 5.6 | B | 7.3 | | 110 | | 96.1 | | 0.63 | B | 2.5 | B | 226 | | 2.9 | | 6.2 | B | 3.4 | B |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | | | | | | | | |
| Potassium | 1580 | | 1470 | | 1160 | | 1250 | | 1480 | | 1340 | | 2610 | | 2920 | | 4220 | | 1970 | J | 1820 | | 1860 | |
| Selenium | | | 4.3 | K | | | 4.6 | K | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | |
| Sodium | 8010 | | 7630 | | 5780 | | 6390 | | 8020 | | 7210 | | 4020 | | 4640 | | 5960 | | 5350 | | 4880 | | 5360 | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | |
| Zinc | 47.2 | B | 42.4 | B | 41.7 | B | 37.2 | B | 21.5 | B | 16.4 | B | 13.3 | B | 7.6 | B | 114 | | 16 | | 41.9 | B | 25.9 | B |
| **SEMIVOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | ug/L | | | |
| 3,3'-Dichlorobenzidine | | | NA | | | | NA | | | | NA | | | | NA | | 5 | R | NA | | | | NA | |
| Acenaphthene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bis(2-ethylhexyl)phthalate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Di-n-butylphthalate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **VOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2,2-Tetrachloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | | | NA | | 0.7 | J | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 2-Butanone | | | NA | | | | NA | | | | NA | | | | NA | | 5 | R | NA | | | | NA | |
| 2-Hexanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4-Methyl-2-pentanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acetone | | | NA | | | | NA | | | | NA | | | | NA | | 5 | R | NA | | | | NA | |
| Benzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Carbon Disulfide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | HN22I-02 | | HN22I-02-X | | HN22S-02 | | HN22S-02-X | | HN23I-02 | | HN23I-02-X | | HN7D-02 | | HN7D-02-X | | MW1 1OB-01 | | MW1 1OB-01-X | | MW1 1OB-02 | | MW1 1OB-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | NA | | | | NA | | | | NA | | | | NA | | 0 7 | J | NA | | | | NA | |
| Chlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloroform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloromethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Ethylbenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | NA | | | | NA | | 2400 | B | NA | | | | NA | | | | NA | | | | NA | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | NA | | | | NA | | 6000 | | NA | | | | NA | | 80 | J | NA | | 110 | J | NA | |
| Toluene | 1 | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Trichloroethene | 4 | | NA | | | | NA | | 190000 | | NA | | 210 | | NA | | 2700 | | NA | | 4300 | | NA | |
| Trichlorofluoromethane | | | NA | | | | NA | | 1000 | J | NA | | | | NA | | NA | | NA | | | | NA | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **PESTICIDES/PCBS** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | | | ug/L | | | |
| 4,4'-DDD | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDE | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDT | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1016 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1221 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1232 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1242 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1248 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1254 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1260 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Beta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Delta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Dieldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan I | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan II | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan Sulfate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Aldehyde | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Ketone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-BHC (Lindane) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Methoxychlor | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Toxaphene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

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Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW12OB-02 | | MW12OB-02-X | | MW10B-01 | | MW10B-01-X | | MW10B-02 | | MW10B-02-X | | MW1R-01 | | MW1R-01-D | | MW1R-01-D-X | | MW1R-01-X | | MW1R-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | MW1R-01-D | | MW1R-01 | | MW1R-01-X | | MW1R-01-D-X | | MW1R-02-D | |
| Sacode | | | | | | | | | | | | | DUP | | DUP | | DUP | | DUP | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | | | | | ug/L | |
| Aluminum | 866 | | 53.9 | B | 649 | | 52.7 | B | 1210 | | 7.4 | B | 207 | | 249 | | | | | | 176 | B |
| Antimony | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | |
| Barium | 34.2 | | 19.5 | | | | 44.5 | | 66.1 | | 45.6 | | | | | | 26.4 | | 28.3 | | 53.6 | J |
| Beryllium | 1.9 | B | 2.3 | B | | | | | | | 2.2 | B | | | | | | | | | | |
| Cadmium | | | | | | | 5.3 | | | | | | | | | | | | 0.37 | | | |
| Calcium | 3950 | B | 3440 | | 20200 | | 5030 | J | 6330 | | 4650 | | 9160 | | 9840 | | 6610 | J | 6550 | J | 11200 | J |
| Chromium | 5 | | 2.1 | | | | | | 7.2 | | | | | | | | | | | | 1.9 | B |
| Cobalt | | | | | | | 1.9 | | 5.6 | | 4.3 | | | | | | | | | | | |
| Copper | 10.2 | B | 6.4 | B | | | 5.1 | | 36 | B | 6.6 | B | | | | | | | | | 3.2 | B |
| Cyanide | | | | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | | |
| Iron | 1790 | | 21.8 | | 2170 | | 38.3 | B | 3530 | | 24.9 | | 49000 | | 60000 | | 1850 | | 38.4 | B | 1270 | J |
| Lead | 19.5 | B | 2.2 | K | 3 | | | | | | | | 2 | | | | | | | | 3.4 | B |
| Magnesium | 1920 | | 1350 | | 2320 | | 2430 | J | 2780 | | 1960 | | 1800 | | 1840 | | 1660 | J | 1710 | J | 2850 | J |
| Manganese | 34.4 | | 7.2 | | 31 | | 4.8 | | 22.6 | K | 6.2 | B | 586 | | 732 | | 50.6 | | 37.4 | | 84.6 | J |
| Mercury | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | 7.5 | | 2.5 | | | | | | | | | | 3.1 | |
| Potassium | 2070 | | 1480 | | 2720 | | 2340 | J | 1780 | | 1170 | | 2830 | | 3380 | | 3530 | J | 3460 | J | 2190 | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | 1.4 | K | | | | | | | | | | | | |
| Sodium | 5390 | | 4600 | | 7300 | | 7070 | | 6300 | | 5590 | | 6460 | | 6620 | | 6260 | | 6380 | | 5840 | J |
| Thallium | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | 1.9 | L | | | | | | | 2 | J | | | | | | | | | | | | |
| Zinc | 44.7 | B | 35 | B | | | 12.3 | | 34.1 | B | 22.9 | B | | | | | 11.1 | | 16.9 | | 23.7 | B |
| **SEMIVOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | | | | | ug/L | |
| 3,3'-Dichlorobenzidine | | | NA | | 5 | R | NA | | | | NA | | | | | | NA | | NA | | | |
| Acenaphthene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Bis(2-ethylhexyl)phthalate | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Di-n-butylphthalate | | | NA | | | | NA | | | | NA | | 2 | B | | | NA | | NA | | | |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,1,2,2-Tetrachloroethane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,1,2-Trichloroethane | | | NA | | | | NA | | | | NA | | 2 | | 2 | | NA | | NA | | | |
| 1,1-Dichloroethane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,1-Dichloroethene | | | NA | | | | NA | | | | NA | | | | 0.9 | J | NA | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | | | NA | | | | 1 | R | NA | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,2-Dichloroethane | | | NA | | | | NA | | | | NA | | 1 | | 1 | | NA | | NA | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | 12 | | 16 | | NA | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | 2 | | 2 | | NA | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 2-Butanone | | | NA | | 5 | R | NA | | | | NA | | 5 | R | 5 | R | NA | | NA | | | |
| 2-Hexanone | | | NA | | | | NA | | | | NA | | | | 5 | R | NA | | NA | | | |
| 4-Methyl-2-pentanone | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Acetone | | | NA | | 5 | R | NA | | | | NA | | 5 | R | 3 | B | NA | | NA | | | |
| Benzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Carbon Disulfide | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |

AR301134

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW12OB-02 | | MW12OB-02-X | | MW1OB-01 | | MW1OB-01-X | | MW1OB-02 | | MW1OB-02-X | | MW1R-01 | | MW1R-01-D | | MW1R-01-D-X | | MW1R-01-X | | MW1R-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | MW1R-01-D | | MW1R-01 | | MW1R-01-X | | MW1R-01-D-X | | MW1R-02-D | |
| Sacode | | | | | | | | | | | | | DUP | | DUP | | DUP | | DUP | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | | | | | ug/L | |
| Carbon Tetrachloride | | | NA | | | | NA | | | | NA | | 4 | | 5 | | NA | | NA | | | |
| Chlorobenzene | | | NA | | | | NA | | | | NA | | 0.7 | J | 0.8 | J | NA | | NA | | | |
| Chloroform | | | NA | | | | NA | | | | NA | | 4 | | 5 | | NA | | NA | | | |
| Chloromethane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Ethylbenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | NA | | 4 | | NA | | 5 | J | NA | | 400 | | 370 | J | NA | | NA | | 720 | J |
| Toluene | | | NA | | | | NA | | 11 | | NA | | | | | | NA | | NA | | | |
| Trichloroethene | 1800 | B | NA | | 83 | | NA | | 82 | | NA | | 21000 | | 19000 | | NA | | NA | | 24000 | |
| Trichlorofluoromethane | | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| **PESTICIDES/PCBS** | ug/L | | | | | | | | ug/L | | | | | | | | | | | | ug/L | |
| 4,4'-DDD | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 4,4'-DDE | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| 4,4'-DDT | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aldrin | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Alpha-BHC | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Alpha-Chlordane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1016 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1221 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1232 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1242 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1248 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1254 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Aroclor-1260 | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Beta-BHC | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Delta-BHC | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Dieldrin | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endosulfan I | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endosulfan II | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endosulfan Sulfate | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endrin | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endrin Aldehyde | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Endrin Ketone | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Gamma-BHC (Lindane) | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Gamma-Chlordane | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Heptachlor | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Methoxychlor | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |
| Toxaphene | | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | |

AR301135

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW1R-02-D | | MW1R-02-D-X | | MW1R-02-X | | MW2.1OB-01 | | MW2.1OB-01-X | | MW2.1OB-02 | | MW2.1OB-02-X | | MW2DR-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | MW1R-02 | | MW1R-02-X | | MW1R-02-D-X | | | | | | | | | | | |
| Sacode: | DUP | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | |
| Aluminum | 119 | B | | | | | 387 | | 24 | L | 369 | | 61.6 | B | | |
| Antimony | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | |
| Barium | 51.6 | J | 46.6 | | 47.4 | | 241 | | 248 | | 200 | | 179 | | | |
| Beryllium | | | | | | | | | 0.64 | | 2.1 | B | 2.6 | B | | |
| Cadmium | | | | | | | | | 1.9 | K | | | | | | |
| Calcium | 11000 | J | 10100 | | 10100 | | 7720 | | 7310 | J | 6520 | | 5870 | | 44400 | |
| Chromium | 1.8 | B | | | | | 13 | | | | 10.5 | | 2.3 | | | |
| Cobalt | | | | | | | | | | | | | | | | |
| Copper | 3.8 | B | | | | | | | 9 | B | 14 | B | 11.4 | B | | |
| Cyanide | | | | | | | NA | | NA | | | | | | NA | |
| Iron | 1060 | J | 234 | | 211 | | 983 | | 40.1 | B | 522 | B | | | 20100 | |
| Lead | 4.4 | B | | | | | | | | | 2.1 | B | | | 8 | |
| Magnesium | 2760 | J | 2370 | | 2390 | | 6500 | | 7210 | | 5530 | | 4880 | | 7600 | |
| Manganese | 81.5 | J | 41.4 | | 40 | | 69 | | 58.7 | | 44.9 | | 25.1 | | 245 | |
| Mercury | | | | | | | 0.9 | L | | | | | | | | |
| Nickel | 3.5 | | 2.8 | | 2.7 | | | | 4 | | 5.5 | | 1.4 | | | |
| Potassium | 2100 | | 2070 | | 2090 | | 4100 | | 4300 | | 2050 | | 1780 | | 2360 | |
| Selenium | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | |
| Sodium | 5650 | J | 5560 | | 5610 | | 4280 | | 4100 | | 3670 | | 3290 | | 5690 | |
| Thallium | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | |
| Zinc | 22.3 | B | 17.8 | B | 20.8 | B | 29 | | 41.3 | | 62 | B | 58.8 | B | 79 | |
| **SEMIVOLATILES** | ug/L | | | | | | | | | | ug/L | | | | | |
| 3,3'-Dichlorobenzidine | | | NA | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | | | NA | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | | | NA | | NA | | 2 | B | NA | | | | NA | | 7 | B |
| Di-n-butylphthalate | | | NA | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | ug/L | | | | | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | | | NA | | NA | | 5 | R | NA | | | | NA | | 5 | R |
| 2-Hexanone | | | NA | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | | | NA | | NA | | | | NA | | | | NA | | | |
| Acetone | | | NA | | NA | | 5 | R | NA | | | | NA | | 5 | R |
| Benzene | | | NA | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | | | NA | | NA | | | | NA | | | | NA | | | |

AR301136

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW1R-02-D | | MW1R-02-D-X | | MW1R-02-X | | MW2 1OB-01 | | MW2.1OB-01-X | | MW2.1OB-02 | | MW2.1OB-02-X | | MW2DR-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | MW1R-02 | | MW1R-02-X | | MW1R-02-D-X | | | | | | | | | | | |
| Sacode | DUP | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | NA | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| Chloroform | | | NA | | NA | | | | NA | | | | NA | | | |
| Chloromethane | | | NA | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | | | NA | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | NA | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | 630 | J | NA | | NA | | | | NA | | | | NA | | | |
| Toluene | | | NA | | NA | | | | NA | | 3 | | NA | | | |
| Trichloroethene | 22000 | | NA | | NA | | | | NA | | | | NA | | | |
| Trichlorofluoromethane | | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | | | NA | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | ug/L | | | | | | | | | | ug/L | | | | | |
| 4,4'-DDD | | | NA | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | | | NA | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | | | NA | | NA | | | | NA | | | | NA | | | |
| Aldrin | | | NA | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | | | NA | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | | | NA | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | | | NA | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | | | NA | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | | | NA | | NA | | | | NA | | | | NA | | | |
| Dieldrin | | | NA | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | | | NA | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | | | NA | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | | | NA | | NA | | | | NA | | | | NA | | | |
| Endrin | | | NA | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | | | NA | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | | | NA | | NA | | | | NA | | 0 056 | J | NA | | | |
| Gamma-BHC (Lindane) | | | NA | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | | | NA | | NA | | | | NA | | | | NA | | | |
| Heptachlor | | | NA | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | | | NA | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | | | NA | | NA | | | | NA | | | | NA | | | |
| Toxaphene | | | NA | | NA | | | | NA | | | | NA | | | |

AR301137

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW2DR-01-X | | MW2R-01 | | MW2R-01-X | | MW2R-02 | | MW2R-02-X | | MW3DOB-01 | | MW3DOB-01-X | | MW3DOB-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | | | | | ug/L | | ug/L | | | | | | ug/L | |
| Aluminum | 65.7 | B | 219 | | | | 40.3 | B | | | 1320 | | 118 | B | 206 | B |
| Antimony | | | | | | | | | | | | | 2.9 | | | |
| Arsenic | | | | | | | | | | | | | 3.1 | | | |
| Barium | 3.4 | | | | 10.7 | | 12.8 | | 13.8 | J | | | 16.5 | | 37.4 | |
| Beryllium | | | | | | | | | | | | | | | 1.9 | B |
| Cadmium | 8.9 | | | | 1.2 | K | | | | | | | | | | |
| Calcium | 39700 | J | 27600 | | 23900 | J | 22600 | | 26600 | J | 94600 | | 18100 | J | 15500 | |
| Chromium | | | | | | | 1.7 | B | | | | | | | 1.8 | |
| Cobalt | | | | | | | | | | | | | | | | |
| Copper | | | | | | | 29.2 | J | | | | | 4.5 | | 6.5 | B |
| Cyanide | NA | | NA | | NA | | | | | | NA | | NA | | | |
| Iron | 28.6 | B | 170000 | | 212 | | 3410 | | 33.5 | B | 2950 | | 28.7 | B | 71.6 | B |
| Lead | | | 4 | | | | 14.9 | B | | | 22 | | | | 8.3 | B |
| Magnesium | 8420 | J | 11700 | | 11400 | | 10200 | | 12100 | | 829 | | 395 | J | 494 | B |
| Manganese | 12 | | 928 | | 119 | | 142 | J | 50.1 | | 116 | | | | 4.3 | B |
| Mercury | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | |
| Potassium | 2620 | J | 1120 | | 1220 | | 1210 | | 1200 | | 3150 | | 2440 | J | 1150 | |
| Selenium | | | | | | | | | | | | | | | | |
| Silver | | | | | | | 1.4 | | | | | | | | | |
| Sodium | 5990 | | 4250 | | 4030 | | 3970 | | 4290 | | 7100 | | 6640 | | 4700 | |
| Thallium | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | 62 | | | | | |
| Zinc | 6.1 | | 26 | | 24.4 | B | 37 | B | 8.7 | B | 36 | | 4.8 | L | 38.7 | B |
| **SEMIVOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | 5 | R | NA | | | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | 2 | B | NA | | | | NA | | 2 | B | NA | | | |
| Di-n-butylphthalate | NA | | | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | 25 | R | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | NA | | 5 | R | NA | | | | NA | | 125 | R | NA | | | |
| 2-Hexanone | NA | | | | NA | | | | NA | | 125 | R | NA | | | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | NA | | 5 | R | NA | | | | NA | | 125 | R | NA | | | |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | NA | | | |

AR301138

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW2DR-01-X | | MW2R-01 | | MW2R-01-X | | MW2R-02 | | MW2R-02-X | | MW3DOB-01 | | MW3DOB-01-X | | MW3DOB-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | | | NA | | | | NA | | | | NA | | | |
| Toluene | NA | | | | NA | | 0.3 | J | NA | | | | NA | | | |
| Trichloroethene | NA | | | | NA | | | | NA | | 280 | | NA | | 460 | B |
| Trichlorofluoromethane | NA | | NA | | NA | | | | NA | | NA | | NA | | | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | ug/L | | | | | | | | ug/L | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | |

AR301139

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW3DOB-02-X | | MW3OB-01 | | MW3OB-01-X | | MW3OB-02 | | MW3OB-02-X | | MW4OB-01 | | MW4OB-01-X | | MW4OB-02 | | MW4OB-02-X | | MW4R-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | |
| Aluminum | 88.4 | B | 2160 | | 121 | B | 512 | | 38.3 | B | 2020 | | 35.3 | B | 115 | B | 35.9 | B | | |
| Antimony | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | |
| Barium | 32 | | | | 54.5 | | 49.5 | | 31.1 | | | | 36.7 | | 45.8 | | 41 | | | |
| Beryllium | 2.5 | B | | | | | 1.9 | B | 2.7 | B | | | | | | | | | | |
| Cadmium | | | | | 0.86 | | | | | | | | | | | | | | | |
| Calcium | 13400 | | 10400 | | 11000 | J | 6350 | | 6570 | | 4070 | | 4140 | J | 4900 | B | 4730 | B | 6840 | |
| Chromium | 1.1 | B | 12 | | | | 1.9 | | 1.2 | B | | | | | 1.9 | B | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | |
| Copper | 14.4 | B | | | | | 8.2 | B | 24.1 | B | | | | | 3.1 | B | 30.5 | | | |
| Cyanide | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Iron | 34.4 | | 10500 | | 146 | | 1180 | | 52.8 | | 3530 | | 59.9 | B | 67.1 | B | | | 44000 | |
| Lead | | | 7 | | | | 11.8 | B | | | 10 | | | | 6.2 | B | 3.1 | B | 2 | |
| Magnesium | 421 | | 2800 | | 3040 | J | 2100 | | 2100 | | 1760 | | 1940 | J | 2250 | | 2050 | | 914 | |
| Manganese | 2.5 | B | 768 | | 18.3 | | 237 | | 36.1 | | 19 | | 2.2 | | 1.6 | B | 2.5 | B | 704 | |
| Mercury | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | 1.1 | | | | | | | | | | | | | |
| Potassium | 999 | | 1070 | | 1340 | J | 470 | | 472 | | 1250 | | 1710 | J | 1420 | | 1310 | | 3290 | |
| Selenium | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | |
| Sodium | 4170 | | 8270 | | 8560 | | 7210 | | 7740 | | 8770 | | 8580 | | 8260 | | 7830 | | 4030 | |
| Thallium | | | | | | | | | | | | | 3.4 | B | | | | | | |
| Vanadium | | | | | | | 1.1 | L | | | | | | | | | | | | |
| Zinc | 30.8 | B | 44 | | 8 | | 46.4 | B | 44.1 | B | | | 6.5 | | 12.4 | B | 20.4 | B | 26 | C |
| **SEMIVOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 3,3'-Dichlorobenzidine | NA | | 5 | R | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 3 | B |
| Di-n-butylphthalate | NA | | | | NA | | | | NA | | 2 | B | NA | | | | NA | | | |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 2.5 | R |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | NA | | 7 | | NA | | 18 | | NA | | 17 | | NA | | | | NA | | 5 | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | NA | | 5 | R | NA | | | | NA | | 310 | B | NA | | | | NA | | 12.5 | R |
| 2-Hexanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 12.5 | R |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | NA | | 5 | R | NA | | | | NA | | 5 | R | NA | | | | NA | | 12.5 | R |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301140

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW3DOB-02-X | | MW3OB-01 | | MW3OB-01-X | | MW3OB-02 | | MW3OB-02-X | | MW4OB-01 | | MW4OB-01-X | | MW4OB-02 | | MW4OB-02-X | | MW4R-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | NA | | 37 | B | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | 1 | | NA | | | | NA | | 22 | | NA | | | | NA | | 1 | J |
| Toluene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 8 | |
| Trichloroethene | NA | | 81 | | NA | | 150 | B | NA | | 800 | | NA | | 640 | | NA | | 52 | |
| Trichlorofluoromethane | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | 0.065 | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301141

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW4R-01-X | | MW4R-02 | | MW4R-02-X | | MW5DOB-01 | | MW5DOB-01-X | | MW5DOB-02 | | MW5DOB-02-X | | MW5OB-01 | | MW5OB-01-X | | MW5OB-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | |
| Aluminum | 54.8 | B | 49 | B | | | 1320 | | 48.6 | B | 751 | | 76.4 | B | 28700 | | 28.3 | | 107 | B |
| Antimony | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | 5.4 | K |
| Barium | 3.4 | | 29.2 | | 28.7 | | 224 | | 102 | | 122 | | 107 | | 630 | | 181 | | 259 | |
| Beryllium | | | | | | | | | 0.17 | | 1.9 | B | 2.6 | B | | | | | | |
| Cadmium | 1.7 | | | | | | | | 4.3 | | | | | | | | 7.4 | | | |
| Calcium | 5020 | J | 12500 | | 14000 | | 25800 | | 6610 | J | 5220 | B | 4980 | | 14400 | | 7180 | J | 6660 | B |
| Chromium | | | 0.86 | B | | | 26 | | | | 3.1 | | | | 37 | | | | 2.3 | B |
| Cobalt | | | | | | | | | | | | | | | | | | | | |
| Copper | | | 3.8 | B | | | | | | | 15.5 | B | 18.6 | B | 98 | | | | 31.9 | J |
| Cyanide | NA | | | | | | NA | | NA | | | | | | NA | | NA | | 1.8 | B |
| Iron | 63.4 | B | 775 | | 22.3 | B | 6300 | | 30.6 | B | 750 | | | | 98500 | | 34.2 | B | 96.5 | B |
| Lead | | | 5.7 | B | 2.3 | B | 17 | | | | | | | | 60 | | | | 14 | B |
| Magnesium | 577 | J | 7310 | | 7720 | | 2940 | | 2330 | J | 2420 | | 2150 | | 7140 | | 4400 | | 4190 | |
| Manganese | 2.2 | | 29.2 | | 7.3 | B | 294 | | 31.4 | | 79.2 | | 24.5 | | 3220 | | 100 | | 112 | J |
| Mercury | | | | | | | | | | | | | | | 28 | | 2.7 | | | |
| Nickel | | | | | | | | | | | 3.4 | | 2.1 | | 92 | | | | 3.7 | B |
| Potassium | 3650 | J | 1090 | | 1160 | | 4630 | | 4140 | J | 2080 | | 1820 | | 8610 | | 3370 | | 3350 | |
| Selenium | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | 1.7 | |
| Sodium | 4150 | | 1870 | B | 2030 | B | 4580 | | 4290 | | 3660 | | 3580 | | 57400 | | 50100 | | 58300 | |
| Thallium | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | 1.3 | L | | | 82 | | | | | |
| Zinc | 4.4 | L | 6.5 | B | 7.4 | B | 60 | | 17.7 | | 52.5 | B | 52.2 | B | 280 | | 16.7 | B | 115 | J |
| **SEMIVOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | 2 | B | NA | | | | NA | | | | NA | | | |
| Di-n-butylphthalate | NA | | | | NA | | | | NA | | | | NA | | 2 | B | NA | | | |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | NA | | | | NA | | 5 | R | NA | | | | NA | | 5 | R | NA | | | |
| 2-Hexanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | NA | | | | NA | | 29 | B | NA | | | | NA | | 5 | R | NA | | 13 | B |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301142

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW4R-01-X | | MW4R-02 | | MW4R-02-X | | MW5DOB-01 | | MW5DOB-01-X | | MW5DOB-02 | | MW5DOB-02-X | | MW5OB-01 | | MW5OB-01-X | | MW5OB-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | | | NA | | 2 | | NA | | | | NA | | | | NA | | | |
| Toluene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Trichloroethene | NA | | 6000 | | NA | | 150 | | NA | | 220 | B | NA | | 8 | | NA | | 1 | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | NA | | | | NA | | NA | | NA | | | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | | | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | NA | | 0.018 | B | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301143

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW5OB-02-X | | MW5R-01 | | MW5R-01-X | | MW5R-02 | | MW5R-02-X | | MW6OB-01 | | MW6OB-01-X | | MW6OB-02 | | MW6OB-02-X | | MW6R-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | |
| Aluminum | 51.2 | B | 2840 | | | | 156 | B | | | 30700 | | | | 1120 | | 35.9 | B | 1360 | C |
| Antimony | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | |
| Barium | 270 | J | | | 53.7 | | 56.4 | | 56.9 | J | 272 | | 23.8 | | 37.5 | | 21.1 | | | |
| Beryllium | | | | | | | | | | | | | | | 1.7 | B | 2.2 | B | | |
| Cadmium | | | | | 0.52 | | | | | | | | 2.6 | K | | | | | | |
| Calcium | 6760 | J | 4940 | | 4570 | J | 2120 | B | 2220 | B | 9230 | | 5960 | J | 6330 | | 5270 | | 21100 | |
| Chromium | 0.84 | | 13 | | | | 0.94 | B | | | 36 | | | | 3.4 | | | | | |
| Cobalt | | | | | 4.2 | | | | | | | | | | | | | | | |
| Copper | 6.4 | B | | | | | 25.2 | J | 4 | B | | | | | 20.8 | B | 4.4 | B | | |
| Cyanide | | | NA | | NA | | 2 | B | | | NA | | NA | | | | | | NA | |
| Iron | 21.9 | B | 137000 | | 2340 | | 10000 | | 73.4 | B | 54600 | | 61.8 | B | 2600 | | 61.9 | | 55600 | |
| Lead | 3.4 | B | 38 | | | | 11.3 | B | 6.9 | B | 34 | | | | 3.5 | B | | | 7 | |
| Magnesium | 4410 | | 1780 | | 1270 | | 829 | | 862 | | 5280 | | 2120 | | 2230 | | 2080 | | 10600 | |
| Manganese | 115 | | 2110 | | 528 | | 177 | J | 186 | | 864 | | 142 | | 54.1 | | 17 | | 1130 | |
| Mercury | | | 0.2 | | | | | | | | | | | | | | | | | |
| Nickel | 4.2 | | | | 6.5 | | 3.1 | B | 1.9 | | | | | | 1 | | | | | |
| Potassium | 3510 | | 4720 | | 3800 | | 2880 | | 3110 | | 5160 | | 2560 | | 1870 | | 1800 | | 6500 | |
| Selenium | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | 1.6 | | | | | | | | | | | | | |
| Sodium | 61500 | | 4070 | | 3530 | | 2810 | B | 3060 | B | 4260 | | 3570 | | 3580 | | 3360 | | 12000 | |
| Thallium | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | 76 | | | | 3.7 | | | | | |
| Zinc | 76.4 | | 697 | | 109 | | 32.7 | B | 20.7 | B | 124 | | 8.9 | B | 54.1 | B | 36.6 | B | 39 | |
| **SEMIVOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | 15 | B | NA | | | | NA | | | | NA | | | | NA | | | |
| Di-n-butylphthalate | NA | | 5 | B | NA | | | | NA | | 2 | B | NA | | | | NA | | 2 | B |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | 1 | R | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (cis) | NA | | 15 | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 2-Butanone | NA | | 5 | R | NA | | | | NA | | 2 | B | NA | | | | NA | | 5 | R |
| 2-Hexanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Acetone | NA | | 11 | B | NA | | | | NA | | 5 | B | NA | | | | NA | | 5 | B |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Carbon Disulfide | NA | | 0.5 | J | NA | | | | NA | | | | NA | | | | NA | | | |

AR301144

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW5OB-02-X | | MW5R-01 | | MW5R-01-X | | MW5R-02 | | MW5R-02-X | | MW6OB-01 | | MW6OB-01-X | | MW6OB-02 | | MW6OB-02-X | | MW6R-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloroform | NA | | 0.5 | J | NA | | | | NA | | | | NA | | | | NA | | | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | 150 | B | NA | | | | NA | | | | NA | | | | NA | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | 55 | J | NA | | | | NA | | | | NA | | | | NA | | | |
| Toluene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Trichloroethene | NA | | 2500 | | NA | | 1200 | | NA | | | | NA | | 1 | B | NA | | 2 | |
| Trichlorofluoromethane | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | | | |

AR301145

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW6R-01-X | | MW6R-02 | | MW6R-02-X | | MW7DR-01 | | MW7DR-01-X | | MW7DR-02 | | MW7DR-02-X | | MW7OB-01 | | MW7OB-01-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | |
| Aluminum | | | 332 | | 32.5 | B | | | | | 1730 | | 46.2 | B | 69500 | | | |
| Antimony | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | |
| Barium | 3.8 | | 34.9 | J | 24.6 | | | | 7.9 | | 52.8 | J | 28.5 | | 1050 | | 23.3 | |
| Beryllium | | | | | | | | | | | 0.89 | | | | 32 | | | |
| Cadmium | | | | | | | | | 0.39 | K | | | | | 8 | | | |
| Calcium | 9540 | J | 23400 | J | 22500 | | 19000 | | 15500 | J | 29500 | J | 31800 | | 35900 | | 29400 | J |
| Chromium | | | 1.5 | B | | | | | | | 2.8 | B | | | 68 | | | |
| Cobalt | | | | | | | | | | | 4.8 | | | | 225 | | | |
| Copper | | | 3.9 | B | | | | | | | 9.9 | B | 10.9 | B | 150 | | | |
| Cyanide | NA | | | | | | NA | | NA | | | | | | NA | | NA | |
| Iron | 30.6 | B | 2150 | J | | | 37100 | | 59.3 | B | 12100 | J | | | 494000 | | 39.2 | B |
| Lead | 1.4 | B | 3.5 | B | | | | | | | 7.2 | B | 2.7 | B | 172 | | | |
| Magnesium | 6060 | | 13400 | J | 13000 | | 11400 | | 11300 | | 19400 | J | 20400 | | 36300 | | 19300 | |
| Manganese | 8.8 | | 193 | J | 41.2 | | 418 | | 13.9 | | 684 | J | 2.3 | B | 28400 | | 1.7 | |
| Mercury | | | | | | | | | | | | | | | | | | |
| Nickel | | | 3 | | | | | | | | 7.4 | | | | 324 | | | |
| Potassium | 8990 | | 1870 | | 1860 | | 3130 | | 3610 | | 4700 | | 4440 | | 16200 | | 4080 | |
| Selenium | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | |
| Sodium | 12100 | | 5790 | J | 5660 | | 3280 | | 3140 | | 36800 | J | 40200 | | 30000 | | 27800 | |
| Thallium | | | | | | | | | | | | | | | | | | |
| Vanadium | | | 2.1 | | | | | | | | 11.8 | | | | 412 | | | |
| Zinc | | | 11.1 | B | 8.2 | B | 52 | | 8.7 | B | 38.5 | B | 10.4 | B | 859 | | 2.8 | B |
| **SEMIVOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | | | NA | | 3 | B | NA | | | | NA | | | | NA | |
| Di-n-butylphthalate | NA | | | | NA | | 2 | B | NA | | | | NA | | 2 | B | NA | |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2,2-Tetrachloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2-Trichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 2-Butanone | NA | | | | NA | | 5 | R | NA | | | | NA | | 5 | R | NA | |
| 2-Hexanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4-Methyl-2-pentanone | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acetone | NA | | | | NA | | 5 | R | NA | | | | NA | | 2 | B | NA | |
| Benzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301146

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW6R-01-X | | MW6R-02 | | MW6R-02-X | | MW7DR-01 | | MW7DR-01-X | | MW7DR-02 | | MW7DR-02-X | | MW7OB-01 | | MW7OB-01-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | | |
| Carbon Tetrachloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chlorobenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloroform | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloromethane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Ethylbenzene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | NA | | 0.5 | J | NA | | | | NA | | 1 | | NA | | | | NA | |
| Toluene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Trichloroethene | NA | | 26 | | NA | | 14 | | NA | | 79 | | NA | | | | NA | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | NA | | 0.3 | J | NA | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **PESTICIDES/PCBS** | | | ug/L | | | | | | | | ug/L | | | | | | | |
| 4,4'-DDD | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDE | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDT | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1016 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1221 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1232 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1242 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1248 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1254 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1260 | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Beta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Delta-BHC | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Dieldrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan I | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan II | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan Sulfate | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Aldehyde | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Ketone | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-BHC (Lindane) | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-Chlordane | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Methoxychlor | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Toxaphene | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301147

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | MW7OB-02 | | MW7OB-02-X | | MW7R-01 | | MW7R-01-X | | MW7R-02 | | MW7R-02-X | | MW8R-01 | | MW8R-01-X | | MW8R-02 | | MW8R-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | |
| Aluminum | 2330 | | 162 | B | | | | | 23400 | | 140 | B | | | | | 28 | B | | |
| Antimony | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | 15.6 | K | | | | | | | | | | |
| Barium | 106 | J | 23.8 | | | | 2.9 | | 596 | J | 11.7 | | | | 1.2 | L | 14.3 | | 15 | J |
| Beryllium | 1.6 | | | | | | | | 11.1 | | | | | | | | | | | |
| Cadmium | 0.48 | | | | | | | | 2.7 | | | | | | 1.6 | | | | | |
| Calcium | 27000 | J | 27300 | | 13700 | | 10000 | J | 144000 | J | 34300 | | 9980 | | 8050 | J | 25200 | | 27600 | J |
| Chromium | 4.6 | | | | | | | | 26.1 | | | | | | | | | | | |
| Cobalt | 7 | | | | | | | | 52.1 | | | | | | | | | | | |
| Copper | 13.2 | B | | | | | | | 133 | | 15.9 | B | | | | | | | 3.9 | B |
| Cyanide | | | | | NA | | NA | | | | | | NA | | NA | | | | | |
| Iron | 18800 | J | 829 | | 42100 | | 47.1 | B | 99100 | J | 292 | | 38800 | | 42.3 | B | 172 | B | | |
| Lead | 7 | B | 6.2 | B | 3 | | | | 43.7 | J | | | 7 | | | | 2.6 | B | 7.3 | B |
| Magnesium | 16300 | J | 16000 | | 10000 | | 9820 | | 82600 | J | 16300 | | 8050 | | 8470 | | 14900 | | 16200 | |
| Manganese | 1320 | J | 66 | | 444 | | 29.8 | | 5960 | J | 22.6 | | 392 | | 26.1 | | 8.2 | | 3.6 | B |
| Mercury | | | | | | | | | | | | | | | | | | | | |
| Nickel | 11.3 | | 2.3 | | | | | | 79.2 | | 86.2 | | | | | | | | | |
| Potassium | 2120 | | 1890 | | 13000 | | 14300 | | 5950 | | 2360 | | 1980 | | 2340 | | 1660 | | 1860 | |
| Selenium | | | | | | | | | | | | | | | | | | | 3.2 | K |
| Silver | 1 | B | | | | | | | 4.8 | | | | | | | | | | | |
| Sodium | 2030 | B | 1970 | | 11700 | | 11700 | | 4310 | J | 4810 | | 2700 | | 2520 | | 2410 | B | 2780 | B |
| Thallium | | | | | | | | | | | | | | | | | | | | |
| *Vanadium* | 16.5 | | | | | | | | 103 | | | | | | | | | | | |
| Zinc | 45.6 | B | 11.1 | B | 60 | | 3.1 | B | 230 | | 83.7 | J | 39 | | 2.5 | B | 5.2 | B | 16.8 | B |
| **SEMIVOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Acenaphthene | | | NA | | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | | | NA | | 2 | B | NA | | | | NA | | 5 | B | NA | | NA | | NA | |
| Di-n-butylphthalate | | | NA | | | | NA | | | | NA | | 2 | B | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2,2-Tetrachloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1,2-Trichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,1-Dichloroethene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 2-Butanone | | | NA | | 52 | B | NA | | | | NA | | 5 | R | NA | | | | NA | |
| 2-Hexanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4-Methyl-2-pentanone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Acetone | | | NA | | 5 | R | NA | | | | NA | | 2 | B | NA | | | | NA | |
| *Benzene* | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Carbon Disulfide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301148

Analytical Results for Monitoring Well Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | MW7OB-02 | | MW7OB-02-X | | MW7R-01 | | MW7R-01-X | | MW7R-02 | | MW7R-02-X | | MW8R-01 | | MW8R-01-X | | MW8R-02 | | MW8R-02-X | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chlorobenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloroform | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Chloromethane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Ethylbenzene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | NA | | 0 9 | J | NA | | 5 | | NA | | | | NA | | | | NA | |
| Toluene | 0 3 | J | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Trichloroethene | | | NA | | 68 | | NA | | 240 | | NA | | 35 | | NA | | 500 | | NA | |
| Trichlorofluoromethane | | | NA | | NA | | NA | | 1 1 | J | NA | | NA | | NA | | | | NA | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| **PESTICIDES/PCBS** | ug/L | | | | | | | | ug/L | | | | | | | | ug/L | | | |
| 4,4'-DDD | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDE | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| 4,4'-DDT | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Alpha-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1016 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1221 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1232 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1242 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1248 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1254 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Aroclor-1260 | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Beta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Delta-BHC | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Dieldrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan I | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan II | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endosulfan Sulfate | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Aldehyde | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Endrin Ketone | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-BHC (Lindane) | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Gamma-Chlordane | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Methoxychlor | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |
| Toxaphene | | | NA | | | | NA | | | | NA | | | | NA | | | | NA | |

AR301149

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
C
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
JJ
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: D:\AASTRSK\STATINDA\CR__GW.DBF data retrieved on: 07/20/00

AR301150

G

Analytical Results for Surface Water Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SW1-01 | | SW1-02 | | SW10-01 | | SW10-02 | | SW10D-02 | | SW11-01 | | SW11-02 | | SW12-01 | | SW13-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | SW10D-02 | | SW10-02 | | | | | | | | | |
| Sacode: | | | | | | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | | | 174 | | | | | | 31.9 | B | | | 84.6 | | 1490 | | 241 | |
| Arsenic | | | | | | | | | | | | | | | 3 | | | |
| Barium | | | 28.4 | | | | 24.9 | | 25 | | | | 53 | | | | 32.4 | |
| Beryllium | | | | | | | | | | | | | 0.11 | | | | | |
| Calcium | 13700 | | 9940 | | 29300 | | 26600 | | 27000 | | 14700 | | 14400 | | 17000 | | 12500 | |
| Chromium | | | | | | | | | | | | | | | | | | |
| Copper | | | 55.3 | B | | | 48.7 | B | 59.3 | B | | | 3.7 | B | | | 1.8 | B |
| Cyanide | | | 1.4 | B | | | 1.9 | B | 1.2 | B | | | 1.7 | | | | 1.8 | |
| Iron | 287 | | 218 | | 108 | | 43.1 | B | 34.6 | B | 114 | | 137 | | 128000 | | 339 | |
| Lead | | | 30.1 | B | | | 33.8 | B | 34 | B | 3 | | 12 | B | 15 | | 7 | B |
| Magnesium | 5290 | | 4330 | | 16900 | | 16400 | | 16800 | | 6850 | | 6860 | | 5190 | | 6700 | |
| Manganese | | | 12.6 | | | | | | | | | | 5.8 | | 3790 | | 4.7 | |
| Potassium | 1250 | | 1400 | J | 1700 | | 2010 | J | 2040 | J | 1860 | | 1970 | J | 2270 | | 3620 | J |
| Sodium | 7740 | | 5870 | | 3280 | | 3180 | | 3080 | | 6220 | | 5760 | | 5140 | | 2740 | |
| Thallium | | | | | | | | | | | | | | | | | | |
| Zinc | | | 30.9 | B | | | 28.2 | B | 29.9 | B | | | 8.6 | B | 57 | | 11.2 | B |
| **SEMIVOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Di-n-butylphthalate | 1 | B | | | | | | | | | | | | | | | | |
| **VOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 1,1,2-Trichloroethane | | | | | | | | | | | 2 | J | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | 1 | J | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | 0.9 | J | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | 0.6 | J | NA | | NA | | 638 | | NA | | 0.7 | J | NA | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | | | | | NA | | 1100 | | NA | | | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | NA | | 7.5 | | NA | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | | | | | | | 4 | B | | | | | | |
| Carbon Disulfide | | | | | 1 | J | | | | | | | | | 2 | J | | |
| Chloroform | | | | | | | | | | | 1 | J | | | | | | |
| Chloromethane | 5 | | | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | 1 | B | | | | | 3 | B |
| Tetrachloroethene | | | | | 8.8 | | 8 | | 9 | | 81.2 | | 120 | J | | | 32 | |
| Toluene | | | | | | | | | | | | | | | 0.6 | J | | |
| Trichloroethene | 1 | J | | | 486 | | 380 | | 380 | | 2650 | | 3000 | | 4 | J | 240 | |
| Trichlorofluoromethane | | | NA | | 3 | J | NA | | NA | | 124 | | NA | | | | NA | |
| Vinyl Chloride | | | | | | | | | | | 0.7 | J | | | | | | |
| **PESTICIDES/PCBS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 4,4'-DDT | | | 0.015 | B | | | | | | | | | | | | | | |
| Aroclor-1260 | | | | | | | | | | | | | | | | | | |
| Delta-BHC | | | | | | | | | | | | | | | | | | |

AR301152

Analytical Results for Surface Water Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SW14-02 | | SW15-02 | | SW16-02 | | SW17-02 | | SW18-02 | | SW19-02 | | SW2-01 | | SW20-02 | | SW21-03 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 528 | | 870 | | | | 24.5 | B | 143 | | 25.3 | L | 398 | | 492 | | 206 | B |
| Arsenic | | | | | | | | | 2.2 | | | | | | | | | |
| Barium | 45.6 | | 58.2 | | 17.7 | | 19.4 | | 30.3 | | 18.2 | | | | 15.3 | | 42.6 | |
| Beryllium | | | 0.23 | | | | | | | | | | | | | | | |
| Calcium | 5030 | | 5200 | | 11300 | | 12000 | | 10100 | | 11300 | | 23300 | | 8610 | | 15100 | |
| Chromium | 1 | | 2.1 | | | | | | | | | | | | | | | |
| Copper | 3.7 | B | 33.3 | | | | | | 68.5 | B | | | | | 4.4 | B | 49.4 | B |
| Cyanide | 1.5 | | | | | | 2 | B | 1.6 | B | 3.8 | B | | | | | | |
| Iron | 708 | | 1320 | | 74.2 | B | 95.6 | B | 225 | | 115 | B | 698 | | 417 | | 356 | B |
| Lead | 12.1 | B | 27.2 | B | 11.4 | B | 9.6 | B | 37.7 | B | 8.6 | B | | | 9.4 | B | | |
| Magnesium | 2590 | | 3060 | | 5590 | | 5980 | | 4350 | | 5310 | | 9500 | | 3760 | | 6420 | |
| Manganese | 40.4 | | 11.6 | | 5.7 | | 6.6 | | 12.6 | | 5.6 | | 25 | | 7.7 | | 9.3 | K |
| Potassium | 1290 | J | 1810 | J | 1340 | J | 1410 | J | 1440 | J | 1230 | J | 2520 | | 3420 | J | 774 | |
| Sodium | 2490 | | 2300 | | 4970 | | 5300 | | 5810 | | 5660 | | 9820 | | 1640 | | 6470 | |
| Thallium | | | | | 2.5 | | | | 2.5 | | | | | | | | | |
| Zinc | 29.1 | B | 21.2 | B | | | | | 52.9 | B | | | | | 14.6 | B | 25 | B |
| **SEMIVOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Di-n-butylphthalate | | | | | | | | | | | | | 1 | B | | | | |
| **VOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | 2 | |
| 1,2-Dichloroethene (Total) | | | | | | | | | | | | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | | |
| 2-Hexanone | | | 20 | R | | | | | | | | | | | 10 | R | | |
| Acetone | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | 6 | J | | |
| Chloroform | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Methylene Chloride | 1 | B | | | 0.2 | B | | | | | | | | | | | | |
| Tetrachloroethene | | | 10 | J | 0.4 | J | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | 250 | | 16 | | 14 | | | | 12 | | | | | | 9 | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 4,4'-DDT | 0.011 | B | | | | | | | | | | | | | | | | |
| Aroclor-1260 | | | 0.13 | J | | | | | | | | | | | | | | |
| Delta-BHC | | | | | | | | | | | | | | | 0.0031 | J | | |

AR301153

Analytical Results for Surface Water Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SW22-03 | | SW3-01 | | SW4-01 | | SW5-01 | | SW6-01 | | SW7-01 | | SW7D-01 | | SW8-01 | | SW9-01 | | SW9-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | SW7D-01 | | SW7-01 | | | | | | | |
| Sacode: | | | | | | | | | | | DUP | | DUP | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 684 | | | | | | | | 297 | | | | | | | | | | 56.4 | B |
| Arsenic | | | | | | | | | | | | | | | | | | | | |
| Barium | 40.7 | | | | | | | | | | | | | | | | | | 21.1 | |
| Beryllium | | | | | | | | | | | | | | | | | | | | |
| Calcium | 14600 | | 15600 | | 15100 | | 15200 | | 15700 | | 10400 | | 10300 | | 26700 | | 16400 | | 11700 | |
| Chromium | | | | | | | | | | | | | | | | | | | | |
| Copper | 45.5 | B | | | | | | | 48 | | | | | | | | | | 54.8 | B |
| Cyanide | | | | | | | | | | | | | 20 | | | | | | 3.5 | B |
| Iron | 1310 | | 334 | | 339 | | 214 | | 1530 | | 392 | | 389 | | 108 | | 177 | | 96.4 | |
| Lead | 2.9 | B | | | | | | | | | | | | | 15 | | | | 40.6 | B |
| Magnesium | 6030 | | 5930 | | 5720 | | 5880 | | 6870 | | 4520 | | 4430 | | 15500 | | 7440 | | 5650 | |
| Manganese | 32.8 | | 22 | | | | | | 493 | | 28 | | 30 | | | | | | 7.5 | |
| Potassium | 738 | | 1360 | | 1360 | | 1290 | | 28700 | | 8520 | | 8590 | | 1850 | | 1950 | | 1470 | J |
| Sodium | 8220 | | 8220 | | 8140 | | 7350 | | 11500 | | 6980 | | 7050 | | 2800 | | 6270 | | 5300 | |
| Thallium | | | | | | | | | | | | | | | | | | | | |
| Zinc | 31.3 | B | | | | | | | 49 | | | | | | | | | | 35.6 | B |
| **SEMIVOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Di-n-butylphthalate | | | | | 1 | J | 1 | B | 2 | B | 1 | J | | | 2 | B | | | | |
| **VOLATILES** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | | | | | | | | | | | 0.5 | J | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | | | | | | | | | | | | | | | | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | | | | | 15.1 | | 4 | B | | | | | 5 | B | | |
| Carbon Disulfide | | | | | 0.6 | J | 0.8 | J | | | 0.6 | J | 0.5 | J | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | 0.6 | J | | | | | | | | | 0.6 | J | | | 11 | |
| Trichlorofluoromethane | | | | | | | | | | | | | | | 3 | J | | | NA | |
| Vinyl Chloride | | | | | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| 4,4'-DDT | | | | | | | | | | | | | | | | | | | | |
| Aroclor-1260 | | | | | | | | | | | | | | | | | | | | |
| Delta-BHC | | | | | | | | | | | | | | | | | | | | |

AR301154

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.
NA -- No result is available/applicable for this parameter in this sample.

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AR301155

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD1-01 | | SD1-02 | | SD10-01 | | SD10-02 | | SD10D-02 | | SD11-01 | | SD11-02 | | SD12-01 | | SD13-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | SD10D-02 | | SD10-02 | | | | | | | | | |
| Sacode: | | | | | | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | |
| Aluminum | 10900 | | 2070 | | 15600 | | 9070 | | 8050 | | 15000 | | 7580 | | 22200 | | 8800 | |
| Antimony | | | | | | | | | | | | | | | | | | |
| Arsenic | 2.2 | | 0.97 | L | 2.2 | | 3.3 | L | 1.5 | L | 1.5 | | 1.1 | | 18.3 | | 3.1 | |
| Barium | 72.4 | | 23.3 | | 88.8 | | 88 | | 73.3 | | 111 | | 185 | | 166 | | 41.3 | |
| Beryllium | 0.6 | | 0.31 | | 1.3 | | 2.3 | | 1.3 | | 1.6 | | 0.65 | | 1.6 | | 0.74 | |
| Cadmium | | | | | | | 0.85 | | 0.73 | | | | | | | | | |
| Calcium | 1690 | | 394 | | 4450 | | 3250 | | 3160 | | 2730 | | 524 | J | 2840 | | 704 | J |
| Chromium | 14.9 | | 3.6 | | 26.3 | | 25.6 | | 18.6 | | 23.2 | | 12.4 | | 20.9 | | 11.9 | |
| Cobalt | 8.6 | | 2.3 | | 12.4 | | 13.7 | | 9.5 | | 6.1 | | 6.4 | | 14.1 | | 5.5 | |
| Copper | 8.6 | | 14.2 | B | 16.9 | | 33.1 | B | 31.8 | B | 10.4 | | 6.9 | | 27.8 | | 6.5 | |
| Cyanide | | | 0.51 | B | | | 0.59 | B | 10.2 | | | | 0.14 | | | | 0.25 | |
| Iron | 14400 | | 5570 | J | 24600 | | 36700 | J | 22800 | J | 15400 | | 13500 | | 92200 | | 15100 | |
| Lead | 15 | | 9.5 | B | 30.5 | | 38.9 | B | 37.8 | B | 30.5 | | 14 | | 62.7 | | 12.7 | B |
| Magnesium | 1480 | | 463 | J | 4080 | | 3750 | J | 3430 | J | 2460 | | 1450 | J | 2480 | | 1300 | J |
| Manganese | 265 | | 188 | | 250 | | 534 | | 529 | | 82.2 | | 840 | | 1300 | | 167 | |
| Mercury | | | | | | | | | | | 0.3 | L | | | 0.1 | | | |
| Nickel | 7 | | 1.8 | | 19.4 | | 27.8 | | 14.1 | | 14.3 | | 4.6 | | 28.5 | | 3.8 | |
| Potassium | 609 | | 261 | J | 1700 | | 1480 | J | 1300 | J | 1240 | | 965 | J | 1550 | | 856 | J |
| Selenium | 0.4 | | | | 1.6 | | 1.7 | L | | | 2.3 | | | | 1.5 | | | |
| Silver | | | | | | | 2.6 | B | 2.7 | L | | | 0.4 | L | | | 0.3 | L |
| Sodium | | | | | | | 122 | | 146 | | | | 93.3 | | | | 85.5 | |
| Thallium | | | | | 0.2 | | | | | | 0.3 | | | | 0.6 | | | |
| Vanadium | 28.2 | | NA | | 37.5 | | 33.7 | | 29.3 | | 27.3 | | 17.5 | | 41 | | 21.3 | |
| Zinc | 69.4 | | 26.4 | B | 156 | | 219 | | 169 | | 62.4 | | 31.7 | | 263 | | 37.2 | |
| **SEMIVOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4-Methylphenol | | | | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | | | | |
| Benz(a)anthracene | | | | | | | | | | | | | | | | | | |
| Benzo(a)pyrene | | | | | | | | | | | | | | | 617.284 | J | | |
| Benzo(b)fluoranthene | | | | | | | | | | | | | | | | | | |
| Benzo(g,h,i)perylene | | | | | | | | | | | | | | | | | | |
| Benzo(k)fluoranthene | | | | | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | | | | | | | 73 | B | | | | | | | 925.9259 | J | 62 | B |
| Chrysene | | | | | | | | | | | | | | | | | | |
| Di-n-butylphthalate | 77.6398 | B | | | | | | | | | | | | | | | | |
| Fluoranthene | 93.1677 | J | | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | | | | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | | | | |
| Phenol | | | | | | | | | | | | | | | | | | |
| Pyrene | 93.1677 | J | | | | | | | | | | | | | 123.4568 | J | | |

AR301156

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD1-01 | | SD1-02 | | SD10-01 | | SD10-02 | | SD10D-02 | | SD11-01 | | SD11-02 | | SD12-01 | | SD13-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | SD10D-02 | | SD10-02 | | | | | | | | | |
| Sacode: | | | | | | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 1,2-Dichloroethene (cis) | | | NA | | 44.4 | | NA | | NA | | 158 | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | | | 14 | J | NA | | 12 | J | NA | | | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | NA | | 0.5 | J | NA | | | | NA | |
| 2-Butanone | | | | | | | | | | | | | | | 18.8 | | | |
| Acetone | 6 | B | | | | | | | | | | | | | 69.3 | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | 1 | J | | | | | | |
| *Methylene Chloride* | *0.5* | *B* | | | *0.7* | *B* | | | | | *0.9* | *B* | *8* | *B* | *0.6* | *B* | *8* | *B* |
| Naphthalene | | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Tetrachloroethene | | | | | 6.9 | | 2 | J | | | 65.1 | | 4 | J | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 3 | J | | | 116 | | 53 | | 17 | | 6240 | | 65 | | | | 3 | J |
| Trichlorofluoromethane | | | NA | | | | NA | | NA | | 39 | J | NA | | | | NA | |
| Vinyl Chloride | | | | | 4 | J | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4,4'-DDD | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | 3.7 | J | 3.3 | J | | | 3.8 | J | 188 | R | 3.6 | J |
| 4,4'-DDT | | | | | | | | | | | | | 0.55 | B | | | 0.35 | B |
| Aldrin | | | | | | | | | | | | | | | | | | |
| Alpha-BHC | | | | | | | | | | | | | | | | | 0.18 | J |
| Alpha-Chlordane | | | | | | | 2.2 | J | 2.3 | J | | | | | | | | |
| Aroclor-1254 | | | 7 | J | | | 290 | J | 300 | J | | | | | | | | |
| Beta-BHC | | | | | | | | | | | | | | | | | | |
| Delta-BHC | | | | | | | 0.93 | J | | | | | 0.9 | J | 102 | R | 1.1 | J |
| Dieldrin | | | | | | | | | 1.7 | J | | | 0.26 | J | | | 2.8 | J |
| Endosulfan I | | | | | | | | | | | | | | | | | | |
| Endosulfan II | | | | | | | 4 | J | 3.9 | J | | | | | | | | |
| Endosulfan Sulfate | | | | | | | 0.72 | J | | | | | | | | | | |
| Endrin | | | | | | | | | | | | | | | | | | |
| Endrin Aldehyde | | | | | | | 3.4 | J | | | | | | | 167 | R | | |
| Endrin Ketone | | | | | | | 0.35 | J | 0.38 | J | | | | | | | | |
| Gamma-BHC (Lindane) | | | | | | | 0.086 | J | 0.34 | J | | | | | | | 0.65 | J |
| Gamma-Chlordane | | | | | | | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | | | | | | 0.16 | B |
| Heptachlor Epoxide | | | | | | | | | | | | | | | 49 | R | 0.42 | J |
| Methoxychlor | | | | | | | | | | | | | | | | | 1.2 | B |

AR301157

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD14-02 | | SD15-02 | | SD16-02 | | SD17-02 | | SD18-02 | | SD19-02 | | SD2-01 | | SD20-02 | | SD3-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | |
| Aluminum | 12800 | | 1510 | | 5790 | | 12700 | | 4670 | | 3770 | | 17200 | | 12800 | | 10800 | |
| Antimony | | | | | | | | | | | | | | | | | | |
| Arsenic | 3.8 | | 0.52 | | 1.1 | L | 2.8 | L | 1.9 | L | 1.3 | L | 2.3 | | 4.4 | | | |
| Barium | 78.4 | | 14.1 | | 60.6 | | 127 | | 45.4 | | 43.8 | | 96.3 | | 56.4 | | 55.4 | |
| Beryllium | 0.89 | | 0.3 | | 0.79 | | 1.5 | | 0.54 | | 0.52 | | 1 | | 0.89 | | | |
| Cadmium | 0.1 | | | | 0.43 | | 0.79 | | | | | | | | 0.11 | | | |
| Calcium | 1330 | J | 188 | J | 1320 | | 2190 | | 802 | | 774 | | 4100 | | 868 | J | 1550 | |
| Chromium | 19.6 | | 3.9 | | 12.7 | | 25.1 | | 8.3 | | 11.2 | | 59.6 | | 12.4 | | 21.4 | |
| Cobalt | 13.4 | | 0.56 | | 6.4 | | 9 | | 4 | | 6.4 | | 17.4 | | 4.4 | | | |
| Copper | 8.3 | | 3.4 | | 21.1 | | 34.3 | B | 15.9 | B | 14.2 | | 17.2 | | 9.2 | | 3.2 | |
| Cyanide | 0.43 | | 0.13 | | 0.55 | B | 14.2 | | 0.38 | B | 0.1 | B | | | 0.27 | | | |
| Iron | 19700 | | 5100 | | 12300 | J | 18400 | J | 9370 | J | 10600 | J | 32600 | | 15100 | | 6490 | |
| Lead | 21.7 | | 7.8 | B | 20.9 | J | 41.2 | B | 15.6 | B | 13.2 | B | 11.8 | | 28.5 | | 3.9 | |
| Magnesium | 1150 | J | 180 | J | 1270 | J | 2490 | J | 955 | J | 835 | J | 3820 | | 888 | J | 982 | |
| Manganese | 1190 | | 12.2 | | 411 | | 326 | | 279 | | 353 | | 702 | | 218 | | 121 | |
| Mercury | | | | | | | | | | | | | | | | | | |
| Nickel | 6.1 | | 0.7 | | 5.5 | | 9.7 | | 2.1 | | 3.9 | | 17.2 | | 5.2 | | 5.4 | |
| Potassium | 648 | J | 253 | J | 545 | J | 856 | J | 395 | J | 356 | J | 1190 | | 627 | J | 313 | |
| Selenium | 0.8 | L | | | | | | | | | | | | | | | | |
| Silver | 0.62 | L | 0.27 | L | 0.43 | L | 0.71 | L | 0.38 | B | 0.41 | L | | | 0.4 | L | | |
| Sodium | 96.8 | | 77.7 | | 101 | | 153 | | 108 | | 106 | | | | 84 | | | |
| Thallium | | | | | | | | | | | | | | | | | | |
| Vanadium | 34 | | 5.4 | | 21.3 | | 38.5 | | 18.8 | | 17.6 | | 66.6 | | 26 | | 25.8 | |
| Zinc | 43.6 | | 6.4 | B | 66.8 | | 148 | | 50.3 | B | 47 | | 72.2 | | 39.3 | | 20.2 | |
| **SEMIVOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4-Methylphenol | | | 3500 | | 200 | J | | | | | 230 | J | | | | | | |
| Anthracene | | | | | | | | | | | 100 | J | | | | | | |
| Benz(a)anthracene | | | | | | | | | | | 220 | J | | | | | | |
| Benzo(a)pyrene | | | | | | | | | | | 160 | J | | | | | | |
| Benzo(b)fluoranthene | | | | | | | | | | | 200 | N | | | | | | |
| Benzo(g,h,i)perylene | | | | | | | | | | | 58 | J | | | | | | |
| Benzo(k)fluoranthene | | | | | | | | | | | 240 | N | | | | | | |
| Bis(2-ethylhexyl)phthalate | 80 | B | 100 | B | 96 | B | | | | | 160 | B | | | | | | |
| Chrysene | | | | | | | | | | | 190 | J | | | | | | |
| Di-n-butylphthalate | 70 | J | | | 77 | J | | | | | 69 | J | | | | | | |
| Fluoranthene | | | | | | | | | | | 430 | J | | | | | | |
| Indeno(1,2,3-cd)pyrene | | | | | | | | | | | 64 | J | | | | | | |
| Phenanthrene | | | | | | | | | | | 310 | J | | | | | | |
| Phenol | | | 80 | J | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | 310 | J | | | | | | |

AR301158

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD14-02 | | SD15-02 | | SD16-02 | | SD17-02 | | SD18-02 | | SD19-02 | | SD2-01 | | SD20-02 | | SD3-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 1,2-Dichloroethene (cis) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | | | 8 | J | | | | | | | | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | | |
| 2-Butanone | | | | | | | | | | | | | | | | | | |
| Acetone | | | 17 | B | 42 | B | | | | | | | 9 | B | 18 | B | 5 | B |
| Carbon Disulfide | | | | | | | | | | | | | | | | | 2 | J |
| Chlorobenzene | | | | | | | | | | | | | | | | | | |
| Methylene Chloride | 5 | B | 2 | B | 3 | B | | | | | 3 | B | 1 | B | 1 | B | 0.6 | B |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | 0.6 | B | NA | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | 4 | J | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4,4'-DDD | | | | | | | 2.7 | J | 0.35 | B | | | | | 0.52 | B | | |
| 4,4'-DDE | 1.4 | J | | | 5.5 | J | 7.5 | J | 0.18 | B | 2.1 | J | | | 2.2 | J | | |
| 4,4'-DDT | 0.83 | B | | | 8.4 | B | 5.1 | B | 5.8 | B | 12 | B | | | 1.7 | B | | |
| Aldrin | | | | | | | 0.42 | J | | | | | | | | | | |
| Alpha-BHC | | | | | | | | | | | | | 16.7 | R | | | | |
| Alpha-Chlordane | | | | | | | | | | | 0.48 | J | | | 0.34 | J | | |
| Aroclor-1254 | | | | | 23 | J | | | | | 53 | J | | | | | | |
| Beta-BHC | | | | | | | | | | | | | 28 | R | | | | |
| Delta-BHC | 3.6 | J | | | 0.83 | J | 1.4 | J | 0.28 | J | | | 52 | R | | | | |
| Dieldrin | 1.9 | J | | | 0.95 | J | 1.6 | J | | | | | | | 1.4 | B | | |
| Endosulfan I | | | | | | | 0.18 | J | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | 0.68 | J | | | | | | |
| Endosulfan Sulfate | | | | | 0.42 | J | 0.86 | J | | | | | | | | | | |
| Endrin | | | | | | | 0.26 | J | | | | | | | 0.1 | J | | |
| Endrin Aldehyde | | | | | | | | | | | | | 36 | J | 0.26 | B | | |
| Endrin Ketone | 0.47 | J | | | | | | | | | | | | | | | | |
| Gamma-BHC (Lindane) | | | | | | | | | | | | | | | | | | |
| Gamma-Chlordane | 0.26 | J | | | 0.26 | J | | | | | | | | | | | | |
| Heptachlor | | | | | | | 0.23 | B | | | | | | | | | | |
| Heptachlor Epoxide | | | | | | | | | | | 0.25 | J | | | | | | |
| Methoxychlor | | | | | | | | | | | | | | | | | | |

AR301159

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD4-01 | | SD5-01 | | SD6-01 | | SD7-01 | | SD7D-01 | | SD8-01 | | SD9-01 | | SD9-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | SD7D-01 | | SD7-01 | | | | | | | |
| Sacode: | | | | | | | DUP | | DUP | | | | | | | |
| | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** | **RESULT** | **QUAL** |
| **INORGANICS** | **mg/kg** | | **mg/kg** | | **mg/kg** | | **mg/kg** | | **mg/kg** | | **mg/kg** | | **mg/kg** | | **mg/kg** | |
| Aluminum | 8280 | | 10100 | | 3000 | | 3000 | | 3840 | | 18900 | | 9330 | | 4540 | |
| Antimony | | | | | 0.5 | L | | | | | | | | | | |
| Arsenic | 1.1 | | 1.7 | | 0.5 | | 0.5 | | 0.4 | | 3.6 | | 1.4 | | 0.89 | L |
| Barium | 57 | | 65.4 | | 20.1 | | 22.4 | | 24.3 | | 138 | | 69.9 | | 48 | |
| Beryllium | 0.6 | | 0.7 | | | | | | | | 1.8 | | 0.8 | | 0.65 | |
| Cadmium | | | | | | | | | | | | | | | | |
| Calcium | 1600 | | 1790 | | 393 | | 313 | | 373 | | 5190 | | 1500 | | 1100 | |
| Chromium | 21.1 | | 19 | | 4.1 | | 3.5 | | 3.9 | | 26.2 | | 15.8 | | 10.2 | |
| Cobalt | 7.1 | | 8.2 | | | | | | | | 17.5 | | 7.7 | | 4.3 | |
| Copper | 7.7 | | 7.9 | | 4 | | 2.7 | | 2.7 | | 35.5 | | 8.4 | | 17.7 | B |
| Cyanide | | | | | | | | | | | | | | | 0.31 | |
| Iron | 15900 | | 16500 | | 4750 | | 4310 | | 5250 | | 37500 | | 14800 | | 9340 | J |
| Lead | 10.4 | | 13.8 | | 7.5 | | 9.3 | | 8.8 | | 246 | | 15.9 | | 18 | B |
| Magnesium | 1530 | | 1600 | | 284 | | 262 | | 279 | | 5540 | | 1450 | | 1070 | J |
| Manganese | 188 | | 360 | | 65.3 | | 47 | | 54.5 | | 597 | | 264 | | 145 | |
| Mercury | | | | | | | | | | | 3.4 | | | | | |
| Nickel | 7 | | 8.3 | | | | | | | | 18.5 | | 8.6 | | 4.4 | |
| Potassium | 670 | | 658 | | 290 | | 302 | | 297 | | 1600 | | 712 | | 472 | J |
| Selenium | | | | | | | | | | | 1.5 | | 0.6 | | | |
| Silver | | | | | | | | | | | | | | | 0.34 | L |
| Sodium | | | | | | | | | | | | | | | 107 | |
| Thallium | | | | | | | | | | | 0.3 | | | | | |
| Vanadium | 29.5 | | 29.1 | | 7 | | 6.4 | | 6.3 | | 41.5 | | 24.6 | | 16.6 | |
| Zinc | 56 | | 50.5 | | 26.8 | | 21.9 | J | 24.8 | | 229 | | 63.5 | | 58 | B |
| **SEMIVOLATILES** | **ug/kg** | | **ug/kg** | | **ug/kg** | | **ug/kg** | | **ug/kg** | | **ug/kg** | | **ug/kg** | | **ug/kg** | |
| 4-Methylphenol | | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | | |
| Benz(a)anthracene | | | | | | | | | | | 511.509 | J | | | | |
| Benzo(a)pyrene | | | | | | | | | | | 511.509 | J | | | | |
| Benzo(b)fluoranthene | | | | | | | | | | | 767.2634 | J | | | | |
| Benzo(g,h,i)perylene | | | | | | | | | | | | | | | | |
| *Benzo(k)fluoranthene* | | | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | | | | | | | | | | | 230.179 | J | | | | |
| Chrysene | | | | | | | | | | | 511.509 | J | | | | |
| Di-n-butylphthalate | 142.8571 | B | 60.7903 | B | | | 286.944 | B | | | | | 106.2215 | B | | |
| Fluoranthene | | | | | | | | | 105.2632 | J | 869.5652 | J | | | | |
| Indeno(1,2,3-cd)pyrene | | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | 90.2256 | J | 255.7545 | J | | | | |
| Phenol | | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | 90.2256 | J | 767.2634 | J | | | | |

AR301160

Analytical Results for Sediment Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SD4-01 | | SD5-01 | | SD6-01 | | SD7-01 | | SD7D-01 | | SD8-01 | | SD9-01 | | SD9-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | SD7D-01 | | SD7-01 | | | | | | | |
| Sacode: | | | | | | | DUP | | DUP | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 1,2-Dichloroethene (cis) | | | | | | | | | | | 3 | J | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | | | | | | | | | | | | | | | NA | |
| 2-Butanone | | | 9 | | 3 | J | | | 5 | | | | 4 | J | | |
| Acetone | 7 | B | 44 | B | 8 | B | 9 | B | 26 | B | | | 19 | B | | |
| Carbon Disulfide | | | | | | | | | | | | | 0.8 | J | | |
| Chlorobenzene | | | | | | | | | | | | | | | | |
| Methylene Chloride | | | 0.7 | B | 1 | B | 0.6 | J | | | 0.6 | B | 0.7 | J | | |
| Naphthalene | | | | | 0.9 | B | 0.7 | B | | | | | 1 | B | NA | |
| Tetrachloroethene | | | | | | | | | | | 4 | J | | | | |
| Toluene | | | | | 7.5 | | | | | | | | | | | |
| Trichloroethene | | | | | 0.6 | B | | | | | 86.5 | | | | | |
| Trichlorofluoromethane | | | | | | | | | | | | | | | NA | |
| Vinyl Chloride | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4,4'-DDD | | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | | 97 | J | | | 3.4 | J |
| 4,4'-DDT | | | | | | | | | | | 54 | J | | | 1.8 | B |
| Aldrin | | | | | | | | | | | | | | | | |
| Alpha-BHC | | | | | | | | | | | | | | | 0.14 | J |
| Alpha-Chlordane | | | | | | | | | | | | | | | 0.4 | J |
| Aroclor-1254 | | | | | | | | | | | | | | | 34 | J |
| Beta-BHC | | | | | | | | | | | | | | | | |
| Delta-BHC | | | | | | | | | | | | | | | 0.81 | J |
| Dieldrin | | | | | | | | | | | | | | | 0.26 | J |
| Endosulfan I | | | | | | | | | | | | | | | 0.12 | J |
| Endosulfan II | | | | | | | | | | | | | | | 0.4 | J |
| Endosulfan Sulfate | | | | | | | | | | | | | | | | |
| Endrin | | | | | | | | | | | | | | | | |
| Endrin Aldehyde | | | | | | | | | | | | | | | 0.49 | B |
| Endrin Ketone | | | | | | | | | | | | | | | | |
| Gamma-BHC (Lindane) | | | | | | | | | | | | | | | | |
| Gamma-Chlordane | | | | | | | | | | | | | | | 0.19 | J |
| Heptachlor | | | | | | | | | | | | | | | | |
| Heptachlor Epoxide | | | | | | | | | | | | | | | | |
| Methoxychlor | | | | | | | | | | | | | | | | |

AR301161

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
N
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: D:\AASTRSK\STATINDA\CRRASD.DBF data retrieved on: 07/20/00

AR301162

H

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW1-02 | | RW1-04 | | RW1-05 | | RW10-02 | | RW10-04 | | RW10-05 | | RW102-02 | | RW102-04 | | RW102-05 | | RW103-02 | | RW103-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| Aluminum | NA | | 54.8 | B | 40.4 | B | NA | | 50.2 | B | 40.3 | B | NA | | 100 | B | 41.3 | B | NA | | 24.1 | B |
| Antimony | NA | | | | 6.2 | | NA | | | | | | NA | | | | | | NA | | | |
| Arsenic | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Barium | NA | | 29.4 | J | 32.6 | | NA | | 14 | J | 13.9 | | NA | | 21 | J | 17.6 | J | NA | | 148 | J |
| Beryllium | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Cadmium | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Calcium | NA | | 14500 | | 13500 | | NA | | 17500 | | 16300 | | NA | | 24300 | | 8940 | J | NA | | 14000 | |
| Chromium | NA | | 1.3 | B | | | NA | | 9.4 | B | | | NA | | 1.1 | J | 1.3 | B | NA | | | |
| Cobalt | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Copper | NA | | 11 | B | 17.9 | | NA | | 55.3 | B | 626 | | NA | | 4.9 | J | 138 | J | NA | | 18.1 | J |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Iron | NA | | 716 | B | 1100 | | NA | | 132 | B | 2400 | | NA | | 189 | | 148 | B | NA | | 40.2 | B |
| Lead | NA | | | | | | NA | | | | 365 | | NA | | 1.4 | B | 19.4 | | NA | | 1.4 | B |
| Magnesium | NA | | 9940 | | 8960 | | NA | | 6920 | | 6620 | | NA | | 3790 | J | 2640 | J | NA | | 7330 | |
| Manganese | NA | | 24.8 | | 28.2 | | NA | | 1.2 | B | 10.9 | | NA | | 9.5 | J | 7.2 | K | NA | | 2.6 | J |
| Mercury | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Nickel | NA | | 2.8 | B | | | NA | | 8 | B | | | NA | | | | | | NA | | | |
| Potassium | NA | | 1360 | J | 2090 | | NA | | 648 | J | 685 | | NA | | 1250 | J | 1490 | J | NA | | 3990 | J |
| Selenium | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Silver | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Sodium | NA | | 3040 | J | 3630 | J | NA | | 5510 | | 5870 | J | NA | | 5470 | | 4940 | | NA | | 8680 | |
| Thallium | NA | | | | | | NA | | | | | | NA | | 4 | J | | | NA | | | |
| Vanadium | NA | | | | | | NA | | | | 4 | | NA | | | | | | NA | | | |
| Zinc | NA | | 17.5 | B | 29.8 | | NA | | 13.8 | B | 52.6 | | NA | | 75.5 | | 19.8 | B | NA | | 11 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | ug/L | | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 2-Butanone | | | 1 | R | | | | | NA | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | NA | | | | | | NA | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | 0.1 | J | 51 | | | | | | | |

AR301164

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW1-02 | | RW1-04 | | RW1-05 | | RW10-02 | | RW10-04 | | RW10-05 | | RW102-02 | | RW102-04 | | RW102-05 | | RW103-02 | | RW103-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | 2 | B | | | | | | | | | | | 18 | B | | | | |
| N-Butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Xylene (Total) | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301165

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW103-05 | | RW104-02 | | RW104-04 | | RW104-05 | | RW105-02 | | RW105-04 | | RW105-05 | | RW106-02 | | RW106-04 | | RW106-05 | | RW107-02 | | RW107-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| Aluminum | 29.9 | B | NA | | 25.8 | B | 40.2 | B | NA | | 26.1 | B | 41.4 | B | NA | | 114 | J | 67 | B | NA | | 17.9 | B |
| Antimony | | | NA | | | | 7.2 | | NA | | | | | | NA | | 4.6 | B | | | NA | | | |
| Arsenic | | | NA | | 3.2 | K | | | NA | | 3.9 | K | | | NA | | | | | | NA | | | |
| Barium | 149 | J | NA | | 50.3 | J | 42.1 | | NA | | 27 | J | 28.2 | | NA | | 28.4 | J | 41.6 | | NA | | 7 | |
| Beryllium | | | NA | | | | | | NA | | | | | | NA | | | | 0.1 | B | NA | | | |
| Cadmium | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Calcium | 12900 | J | NA | | 23900 | | 22300 | | NA | | 15400 | | 15400 | | NA | | 22200 | | 19800 | | NA | | 12800 | |
| Chromium | 3.1 | B | NA | | | | | | NA | | | | | | NA | | | | 0.3 | B | NA | | | |
| Cobalt | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Copper | 96.5 | J | NA | | 136 | | 141 | | NA | | 148 | | 675 | | NA | | 39.9 | | 160 | | NA | | 165 | |
| Cyanide | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Iron | 56.7 | B | NA | | 187 | | 152 | | NA | | 67.1 | B | 128 | | NA | | 114 | | 242 | B | NA | | | |
| Lead | 4 | K | NA | | 4.8 | | 7.6 | | NA | | | | | | NA | | 1.6 | J | 2.1 | K | NA | | | |
| Magnesium | 6800 | J | NA | | 11900 | | 10100 | | NA | | 6480 | | 6440 | | NA | | 8270 | | 7020 | | NA | | 5640 | |
| Manganese | 3.1 | B | NA | | 1.6 | J | 1.6 | | NA | | 1.6 | J | 2.9 | K | NA | | 1 | | 5.4 | | NA | | | |
| Mercury | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Nickel | | | NA | | | | | | NA | | | | | | NA | | | | 0.8 | B | NA | | | |
| Potassium | 3980 | J | NA | | 1600 | J | 1230 | | NA | | 755 | J | 734 | J | NA | | 2760 | J | 2880 | J | NA | | 659 | J |
| Selenium | | | NA | | | | | | NA | | 4 | R | | | NA | | | | | | NA | | | |
| Silver | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Sodium | 8080 | | NA | | 11000 | | 10500 | J | NA | | 6120 | | 7400 | | NA | | 9330 | | 11500 | | NA | | 4300 | |
| Thallium | | | NA | | | | | | NA | | | | | | NA | | | | 2.3 | | NA | | | |
| Vanadium | | | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| Zinc | 43.6 | | NA | | 21.5 | B | 38.9 | | NA | | 14.6 | B | 37.7 | K | NA | | 14.7 | B | 18.6 | B | NA | | 5.9 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | 0.1 | J | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | |
| 1,2-Dichloroethene (trans) | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | | | NA | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | 6 | B | | | NA | | | | | | NA | | | | | | NA | | 4 | B | | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301166

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW103-05 | | RW104-02 | | RW104-04 | | RW104-05 | | RW105-02 | | RW105-04 | | RW105-05 | | RW106-02 | | RW106-04 | | RW106-05 | | RW107-02 | | RW107-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | 0.5 | J | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | 17 | B | | | | | | | | | | | 28 | B | | | | | 17 | B | | | 30 | B |
| N-Butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | 0.07 | J | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | 0.6 | J | | | | | | | | | | | | | | |
| *Trichlorofluoromethane* | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| Xylene (Total) | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301167

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW108-02 | | RW108-04 | | RW109-02 | | RW109-04 | | RW109-05 | | RW110-02 | | RW110-05 | | RW111-02 | | RW111-04 | | RW111-05 | | RW111D-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | RW111D-04 | | | | RW111-04 | |
| Sacode: | | | | | | | | | | | | | | | | | DUP | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | ug/L | |
| Aluminum | NA | | | | NA | | 18.7 | B | 18.7 | B | NA | | 15.1 | B | NA | | 19.2 | B | | | 33.4 | B |
| Antimony | NA | | | | NA | | 3.1 | B | | | NA | | | | NA | | | | | | 4.7 | B |
| Arsenic | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Barium | NA | | 46.1 | J | NA | | 22.9 | J | 22.5 | | NA | | 97.9 | J | NA | | 88 | J | 70 | | 86.6 | J |
| Beryllium | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Cadmium | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Calcium | NA | | 18500 | | NA | | 13300 | | 13200 | | NA | | 18000 | J | NA | | 18500 | | 14000 | | 18200 | |
| Chromium | NA | | | | NA | | | | | | NA | | | | NA | | | | 0.6 | B | | |
| Cobalt | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Copper | NA | | 11.7 | J | NA | | 215 | | 356 | | NA | | 91.5 | J | NA | | 34.5 | | 677 | | 153 | |
| Cyanide | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Iron | NA | | 227 | | NA | | 155 | | 174 | B | NA | | 76.6 | B | NA | | 28.9 | B | 24.8 | B | 39.6 | B |
| Lead | NA | | | | NA | | 3.8 | | 2.4 | | NA | | 4.2 | L | NA | | 4.9 | | 133 | | 28.1 | |
| Magnesium | NA | | 6760 | | NA | | 6460 | | 6340 | | NA | | 7690 | J | NA | | 6840 | | 6860 | | 6730 | |
| Manganese | NA | | NA | | NA | | 2.8 | J | 3.1 | B | NA | | 0.92 | B | NA | | | | | | | |
| Mercury | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Nickel | NA | | | | NA | | | | | | NA | | | | NA | | | | 2.4 | | | |
| Potassium | NA | | 1820 | J | NA | | 2020 | J | 2240 | | NA | | 2440 | J | NA | | 2510 | J | 2420 | | 2490 | J |
| Selenium | NA | | 4 | R | NA | | | | | | NA | | | | NA | | | | | | | |
| Silver | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Sodium | NA | | 5370 | | NA | | 10500 | | 9520 | | NA | | 18500 | | NA | | 12600 | | 9920 | | 12400 | |
| Thallium | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Vanadium | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| Zinc | NA | | 8.1 | B | NA | | 21.3 | B | 8.6 | B | NA | | 9.1 | B | NA | | 28.7 | B | 522 | | 142 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | 0.2 | J | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| 1,2-Dichlorobenzene | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | | | | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Butanone | | | NA | | | | NA | | | | | | | | | | NA | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | NA | | | | | | | | | | NA | | | | NA | |
| Benzene | | | | | | | | | | | 0.1 | J | | | | | | | | | | |
| Bromobenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | 0.6 | J | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | |

AR301168

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW108-02 | | RW108-04 | | RW109-02 | | RW109-04 | | RW109-05 | | RW110-02 | | RW110-05 | | RW111-02 | | RW111-04 | | RW111-05 | | RW111D-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | RW111D-04 | | | | RW111-04 | |
| Sacode | | | | | | | | | | | | | | | | | DUP | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | 0.09 | J | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| M-xylene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Methylene Chloride | | | | | | | | | 15 | B | | | 13 | B | | | | | 12 | B | | |
| N-Butylbenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| N-Propylbenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Naphthalene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| O-chlorotoluene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| O-xylene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| P-chlorotoluene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| P-isopropyltoluene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Sec-butylbenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | 0.08 | J | | | | | | |
| Toluene | | | | | | | | | | | 0.2 | J | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | 0.2 | J | | | | | | | | | | |
| Trichlorofluoromethane | | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | |
| Xylene (Total) | NA | | | | NA | | | | | | NA | | | | NA | | | | | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301169

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW112-05 | | RW113-02 | | RW113-04 | | RW113-05 | | RW118-02 | | RW118-04 | | RW118-05 | | RW119-02 | | RW119-04 | | RW12-02 | | RW12-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Duplicate:* | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | ug/L | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | |
| Aluminum | 22.6 | B | NA | | 10.5 | B | 86.6 | B | NA | | 42.7 | B | 61.1 | B | NA | | 4.9 | B | NA | | 45.2 | B |
| Antimony | | | NA | | 3.5 | B | | | NA | | | | | | NA | | | | NA | | | |
| Arsenic | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| Barium | 237 | J | NA | | 106 | J | 86.2 | | NA | | 19.7 | J | 19.1 | | NA | | 86.5 | J | NA | | 7.7 | B |
| Beryllium | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| Cadmium | | | NA | | | | | | NA | | | | 2.5 | K | NA | | | | NA | | | |
| Calcium | 56400 | J | NA | | 26500 | | 24600 | | NA | | 17200 | | 16600 | | NA | | 19500 | | NA | | 15900 | |
| Chromium | | | NA | | | | | | NA | | 12 | B | 1.3 | K | NA | | | | NA | | 1.9 | B |
| Cobalt | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| Copper | 88.5 | J | NA | | 198 | | 159 | | NA | | 158 | | 187 | | NA | | 26.4 | | NA | | 72.8 | B |
| Cyanide | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Iron | 2440 | | NA | | 19.7 | B | 93.8 | | NA | | 174 | B | 1780 | | NA | | 59.4 | B | NA | | 142 | B |
| Lead | 6.8 | | NA | | 3 | B | 6.5 | | NA | | 8.6 | | 107 | | NA | | | | NA | | | |
| Magnesium | 22300 | J | NA | | 12500 | | 11200 | | NA | | 8650 | | 8130 | | NA | | 8820 | | NA | | 6260 | |
| Manganese | 125 | | NA | | | | 2.3 | K | NA | | 7.9 | J | 15.8 | K | NA | | 1.2 | J | NA | | 4.8 | B |
| Mercury | | | NA | | | | | | NA | | 0.2 | | | | NA | | | | NA | | | |
| Nickel | | | NA | | 1 | B | | | NA | | 21.4 | B | 6.7 | K | NA | | 1.1 | B | NA | | 3.4 | B |
| Potassium | 5010 | J | NA | | 2310 | J | 2000 | J | NA | | 1770 | J | 1690 | J | NA | | 1900 | J | NA | | 574 | J |
| Selenium | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| Silver | | | NA | | | | | | NA | | | | | | NA | | | | NA | | 1.2 | B |
| Sodium | 71600 | | NA | | 20900 | | 20500 | | NA | | 20800 | | 13600 | | NA | | 15100 | | NA | | 4100 | J |
| Thallium | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| Vanadium | | | NA | | | | | | NA | | | | | | NA | | | | NA | | 1.8 | L |
| Zinc | 21.8 | B | NA | | 24.2 | B | 34.8 | K | NA | | 105 | | 141 | | NA | | 34.3 | B | NA | | 28.2 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | | | | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | NA | | | | | | NA | | | | NA | | | | | |
| 1,2-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | NA | | | | | | NA | | 0.08 | J | | | | | | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | | | NA | | | | | | NA | | | | | | | | | |
| 1,3-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | | | | |
| 1,4-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | | | | | | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | | | NA | | | | | | NA | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | |

AR301170

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW112-05 | | RW113-02 | | RW113-04 | | RW113-05 | | RW118-02 | | RW118-04 | | RW118-05 | | RW119-02 | | RW119-04 | | RW12-02 | | RW12-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | ug/L | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | | | | | ug/L | | | | | | ug/L | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| M-xylene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Methylene Chloride | 12 | B | | | | | 3 | B | | | | | 20 | B | | | | | | | | |
| N-Butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| N-Propylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Naphthalene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| O-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| O-xylene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| P-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| P-isopropyltoluene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Sec-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Tetrachloroethene | | | 0.09 | J | | | | | 0.1 | J | | | | | 0.2 | J | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | 0.07 | J | | | | | 0.3 | J | | | | | | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| Xylene (Total) | | | NA | | | | | | NA | | | | | | NA | | | | NA | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301171

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW12-05 | | RW120-02 | | RW120-04 | | RW121-02 | | RW122-02 | | RW122-04 | | RW122-05 | | RW124-02 | | RW124-04 | | RW124-05 | | RW125-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | |
| Aluminum | 35.4 | B | NA | | 43.6 | B | NA | | NA | | 13 | B | 34.6 | B | NA | | 10.9 | B | | | 12.3 | B |
| Antimony | 7 | B | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Arsenic | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Barium | 5.7 | | NA | | 111 | J | NA | | NA | | 26.1 | J | 42.2 | | NA | | 43.8 | J | 37.5 | | 1.4 | J |
| Beryllium | | | NA | | | | NA | | NA | | | | | | NA | | | | 0.1 | B | | |
| Cadmium | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Calcium | 14200 | | NA | | 29100 | | NA | | NA | | 7450 | | 9460 | | NA | | 15900 | | 13700 | | 21700 | J |
| Chromium | | | NA | | | | NA | | NA | | | | | | NA | | | | 0.8 | B | | |
| Cobalt | | | NA | | | | NA | | NA | | | | | | NA | | | | 0.6 | B | | |
| Copper | 88.1 | | NA | | 36.1 | | NA | | NA | | 353 | | 94.9 | | NA | | 12.2 | J | 15.5 | | 29.5 | J |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Iron | 92.3 | | NA | | 2040 | | NA | | NA | | 193 | | 427 | | NA | | 12 | | | | 68.6 | B |
| Lead | | | NA | | 24.3 | | NA | | NA | | 5.3 | | 7.6 | | NA | | | | 1.2 | K | | |
| Magnesium | 5590 | | NA | | 13600 | | NA | | NA | | 2350 | J | 2260 | | NA | | 7450 | | 6690 | | 5070 | J |
| Manganese | 1.6 | | NA | | 5.1 | J | NA | | NA | | 8.7 | J | 5.5 | K | NA | | | | | | 0.75 | B |
| Mercury | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Nickel | | | NA | | | | NA | | NA | | 1.9 | B | | | NA | | 1.9 | B | 2.8 | | | |
| Potassium | 605 | | NA | | 2430 | J | NA | | NA | | 1160 | J | 1030 | J | NA | | 1630 | J | 1860 | | 1190 | J |
| Selenium | | | NA | | | | NA | | NA | | 4 | R | | | NA | | | | 2.3 | | | |
| Silver | | | NA | | | | NA | | NA | | 1.1 | J | | | NA | | | | | | | |
| Sodium | 4350 | J | NA | | 20400 | | NA | | NA | | 5240 | | 4740 | | NA | | 8540 | J | 7470 | | 6640 | |
| Thallium | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Vanadium | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| Zinc | 36.3 | | NA | | 21.1 | B | NA | | NA | | 266 | | 248 | | NA | | 11.3 | B | | | 6.6 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | | | | | | | ug/L | | | | | | ug/L | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | 0.2 | J | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | | | | | | | | | NA | | | | | | NA | | NA | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2-Dichlorobenzene | NA | | | | | | | | | | | | NA | | | | | | NA | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | 0.3 | J | | | | | NA | | 4.4 | | 10 | | NA | | NA | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | |
| 1,2-Dichloroethene (trans) | NA | | | | | | | | | | | | NA | | | | | | NA | | NA | |
| 1,3-Dichlorobenzene | NA | | | | | | | | | | | | NA | | | | | | NA | | NA | |
| 1,4-Dichlorobenzene | NA | | | | | | | | | | | | NA | | | | | | NA | | NA | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | | | NA | | | | | | NA | | 9 | B | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | 0.1 | J | | | | | | | | | | | | |

AR301172

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW12-05 | | RW120-02 | | RW120-04 | | RW121-02 | | RW122-02 | | RW122-04 | | RW122-05 | | RW124-02 | | RW124-04 | | RW124-05 | | RW125-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | | | | | ug/L | | | | | | ug/L | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| M-xylene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Methylene Chloride | 18 | B | | | | | | | | | | | 4 | B | | | | | 11 | B | 12 | B |
| N-Butylbenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Naphthalene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| O-xylene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | |
| Tetrachloroethene | | | 0.6 | J | | | 0.7 | J | | | | | | | 2.3 | | 3 | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | 0.7 | J | | | 0.8 | J | | | | | | | 3.6 | | 5 | | | | | |
| Trichlorofluoromethane | NA | | | | NA | | 0.05 | J | | | NA | | NA | | 0.1 | J | NA | | NA | | NA | |
| Xylene (Total) | | | NA | | | | NA | | NA | | | | | | NA | | | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301173

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW126-02 | | RW126-04 | | RW126-05 | | RW127-02 | | RW127-04 | | RW127-05 | | RW128-02 | | RW128-05 | | RW129-02 | | RW129-04 | | RW129-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | ug/L | |
| Aluminum | NA | | 19.5 | B | 41.7 | B | NA | | 37 | B | 38.6 | B | NA | | 21.7 | B | NA | | 40.2 | B | 91.1 | |
| Antimony | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Arsenic | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Barium | NA | | 21.4 | J | 21.2 | | NA | | 25.7 | J | 28.5 | | NA | | 62.9 | J | NA | | 8.4 | B | 9.1 | |
| Beryllium | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Cadmium | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Calcium | NA | | 26000 | | 23100 | | NA | | 8450 | | 8330 | | NA | | 11100 | J | NA | | 9500 | | 8920 | |
| Chromium | NA | | | | | | NA | | 4.2 | B | | | NA | | | | NA | | 2.9 | B | 2.2 | K |
| Cobalt | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Copper | NA | | 202 | | 43.5 | K | NA | | 145 | B | 38.4 | K | NA | | 49 | J | NA | | 39.6 | B | 35.3 | K |
| Cyanide | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Iron | NA | | 201 | | 86.5 | | NA | | 224 | B | 154 | | NA | | 24.6 | B | NA | | 386 | B | 319 | |
| Lead | NA | | 8.2 | | | | NA | | 21.2 | | 4.1 | K | NA | | | | NA | | 6.3 | | 7.4 | |
| Magnesium | NA | | 6720 | | 8830 | | NA | | 3460 | J | 3330 | | NA | | 3770 | J | NA | | 2600 | J | 2390 | |
| Manganese | NA | | 6.7 | J | 3 | K | NA | | 3.7 | B | 2.4 | K | NA | | 6.3 | | NA | | 5 | B | 6.1 | K |
| Mercury | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Nickel | NA | | 2.4 | B | | | NA | | 6 | B | | | NA | | | | NA | | 5.4 | B | | |
| Potassium | NA | | 1230 | J | 917 | J | NA | | 1340 | J | 1420 | J | NA | | 1760 | J | NA | | 947 | J | 963 | J |
| Selenium | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Silver | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Sodium | NA | | 7910 | J | 7400 | | NA | | 7090 | | 7420 | | NA | | 6620 | | NA | | 6420 | | 6970 | |
| Thallium | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | |
| Vanadium | NA | | 1 | J | | | NA | | | | | | NA | | | | NA | | | | | |
| Zinc | NA | | 198 | J | 45.9 | | NA | | 191 | | 39.4 | K | NA | | 381 | | NA | | 182 | | 259 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 2-Butanone | | | NA | | | | | | NA | | | | | | | | | | NA | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | NA | | | | | | | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | 0.2 | J | | | | |

AR301174

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW126-02 | | RW126-04 | | RW126-05 | | RW127-02 | | RW127-04 | | RW127-05 | | RW128-02 | | RW128-05 | | RW129-02 | | RW129-04 | | RW129-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | |
| *Carbon Tetrachloride* | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| M-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Methylene Chloride | | | | | 3 | B | | | | | 4 | B | | | 14 | B | | | | | 3 | B |
| N-Butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Naphthalene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| O-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | 1 | B | | | | | | | | | | | | |
| Trichlorofluoromethane | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | |
| Xylene (Total) | NA | | | | | | NA | | | | | | NA | | | | NA | | | | 3 | J |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| *Endrin Ketone* | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301175

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW13-02 | | RW13-04 | | RW13-05 | | RW130-02 | | RW131-02 | | RW131-04 | | RW131-05 | | RW131D-02 | | RW132-02 | | RW132-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | RW131D-02 | | | | | | RW131-02 | | | | | |
| Sacode | | | | | | | | | DUP | | | | | | DUP | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | | | | | ug/L | |
| Aluminum | NA | | 53.1 | B | 36.5 | B | NA | | NA | | 69 | B | 36 | B | NA | | NA | | 64.7 | B |
| Antimony | NA | | | | | | NA | | NA | | | | | | NA | | NA | | 4.6 | B |
| Arsenic | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Barium | NA | | 14.6 | B | 14.8 | | NA | | NA | | 65.5 | J | 62.3 | | NA | | NA | | 14.6 | J |
| Beryllium | NA | | | | | | NA | | NA | | | | | | NA | | NA | | 1.6 | J |
| Cadmium | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| *Calcium* | NA | | 35500 | | 32000 | | NA | | NA | | 8910 | | 8690 | | NA | | NA | | 5900 | B |
| Chromium | NA | | 1.3 | B | | | NA | | NA | | 13.2 | B | | | NA | | NA | | 13.7 | B |
| Cobalt | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Copper | NA | | 11.2 | B | 9.4 | B | NA | | NA | | 116 | B | 56.7 | | NA | | NA | | 229 | |
| Cyanide | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | NA | | 45.9 | B | 65.2 | B | NA | | NA | | 205 | B | 170 | | NA | | NA | | 28100 | |
| Lead | NA | | | | | | NA | | NA | | 3.9 | | | | NA | | NA | | 18.6 | |
| Magnesium | NA | | 18600 | | 18300 | | NA | | NA | | 3820 | J | 3690 | | NA | | NA | | 3090 | J |
| Manganese | NA | | 5.7 | B | 7.2 | | NA | | NA | | 1.6 | B | 4 | K | NA | | NA | | 82.8 | |
| Mercury | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Nickel | NA | | 2.4 | B | | | NA | | NA | | 11.7 | B | | | NA | | NA | | 10.3 | B |
| Potassium | NA | | 780 | J | 1100 | | NA | | NA | | 2040 | J | 1890 | J | NA | | NA | | 1230 | J |
| Selenium | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Silver | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Sodium | NA | | 4450 | J | 3980 | | NA | | NA | | 7050 | | 7260 | | NA | | NA | | 4530 | J |
| Thallium | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| Vanadium | NA | | | | | | NA | | NA | | | | | | NA | | NA | | 1.4 | J |
| Zinc | NA | | 21.6 | B | 4.5 | B | NA | | NA | | 29.1 | B | 39.8 | K | NA | | NA | | 60.7 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | |
| *3,3'-Dichlorobenzidine* | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | ug/L | | | | | | | | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | | | NA | | | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | | | | | NA | | | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | | | NA | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | | | | | NA | | | | | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | | | NA | | | | | | | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | | | NA | | | | | | | |
| *1,4-Dichlorobenzene* | | | | | NA | | | | | | | | NA | | | | | | | |
| 2-Butanone | | | NA | | | | | | | | 6 | B | | | | | | | NA | |
| 2-Hexanone | | | NA | | | | | | | | | | | | | | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | | | NA | | | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | |

AR301176

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW13-02 | | RW13-04 | | RW13-05 | | RW130-02 | | RW131-02 | | RW131-04 | | RW131-05 | | RW131D-02 | | RW132-02 | | RW132-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | RW131D-02 | | | | | | RW131-02 | | | | | |
| Sacode | | | | | | | | | DUP | | | | | | DUP | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | ug/L | | | | | | | | ug/L | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | 0.02 | J | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| M-xylene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Methylene Chloride | | | | | 15 | B | | | | | | | 4 | B | | | | | | |
| N-Butylbenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Naphthalene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| O-xylene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Xylene (Total) | NA | | | | | | NA | | NA | | | | | | NA | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301177

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW132-05 | | RW133-02 | | RW133-04 | | RW133-05 | | RW134-02 | | RW134-04 | | RW134-05 | | RW135-04 | | RW135-05 | | RW136-02 | | RW136-04 | | RW136-05 | | RW137-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | | |
| Aluminum | 140 | | NA | | 62.9 | B | | | NA | | 13.7 | B | 118 | | 8.5 | B | 18.5 | B | NA | | 22.8 | B | 43.2 | B | NA | |
| Antimony | 19.4 | B | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Arsenic | | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Barium | 80.8 | | NA | | 7.2 | B | 6.4 | B | NA | | 25.6 | J | 23.1 | | 8.5 | J | 8.2 | J | NA | | 65.7 | J | 66.2 | | NA | |
| Beryllium | 5.9 | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Cadmium | | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Calcium | 6470 | | NA | | 3730 | B | 2420 | | NA | | 701 | J | 2200 | | 8910 | | 8100 | J | NA | | 429 | B | 1990 | | NA | |
| Chromium | 8 | K | NA | | 9.7 | B | 0.5 | B | NA | | | | | | | | | | NA | | | | | | NA | |
| Cobalt | | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Copper | 1350 | | NA | | 74.3 | B | 65.4 | | NA | | 850 | | 500 | | 44.4 | | 183 | J | NA | | 29.1 | | 63.6 | | NA | |
| *Cyanide* | | | NA | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | |
| Iron | 411000 | | NA | | 1570 | | 7850 | | NA | | 24.1 | B | 292 | | 14.8 | B | 81.9 | B | NA | | 2350 | | 757 | | NA | |
| Lead | 85.4 | | NA | | | | 26.1 | | NA | | 54.8 | | 50.7 | | 1.7 | J | 7.6 | | NA | | 6.6 | | 7.3 | | NA | |
| Magnesium | 2940 | | NA | | 2040 | J | 1920 | | NA | | 659 | J | 823 | | 4590 | J | 4130 | J | NA | | 294 | J | 521 | | NA | |
| Manganese | 666 | | NA | | 11.6 | J | 54.8 | | NA | | 11.8 | J | 13.5 | K | 1 | | 1 | B | NA | | 9.3 | J | 9.8 | K | NA | |
| Mercury | | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Nickel | | | NA | | 7.9 | B | 0.7 | | NA | | 3.3 | B | 2.5 | K | | | | | NA | | | | 3.3 | K | NA | |
| Potassium | 1380 | J | NA | | 998 | J | 1440 | J | NA | | 725 | J | 537 | J | 1840 | J | 2080 | J | NA | | 2410 | J | 1840 | J | NA | |
| Selenium | 13.9 | | NA | | | | | | NA | | 4 | R | | | | | | | NA | | 4 | R | | | NA | |
| Silver | 3.7 | B | NA | | | | | | NA | | | | 13.9 | | | | | | NA | | | | | | NA | |
| Sodium | 5460 | | NA | | 6180 | | 6220 | | NA | | 1470 | J | 1940 | | 10500 | | 9160 | | NA | | 1870 | J | 2380 | | NA | |
| Thallium | 14.2 | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Vanadium | | | NA | | | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| Zinc | 401 | | NA | | 18.9 | B | | | NA | | 148 | | 133 | | 168 | | 269 | | NA | | 19.4 | B | 43.3 | | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| ***VOLATILES*** | ug/L | | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | 7.4 | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | | | | | NA | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

AR301178

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW132-05 | | RW133-02 | | RW133-04 | | RW133-05 | | RW134-02 | | RW134-04 | | RW134-05 | | RW135-04 | | RW135-05 | | RW136-02 | | RW136-04 | | RW136-05 | | RW137-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Methylene Chloride | 21 | B | | | | | 18 | B | | | | | 21 | B | | | 10 | B | | | | | 4 | B | | |
| N-Butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | | 2 | J |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | 63.7 | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | 5 | J |
| Xylene (Total) | | | NA | | | | NA | | NA | | | | | | | | | | NA | | | | | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301179

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW137-05 | | RW14-02 | | RW14-04 | | RW14-05 | | RW147-04 | | RW147-05 | | RW148-04 | | RW148-05 | | RW149-04 | | RW149-05 | | RW15-02 | | RW15-04 | | RW15-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | |
| Aluminum | | | NA | | 46.5 | B | | | | | | | 14.8 | B | 39.4 | B | | | 37.2 | B | NA | | 50 | B | 52.2 | B |
| Antimony | | | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| Arsenic | | | NA | | | | | | | | 2.1 | B | | | | | 3.3 | K | | | NA | | | | | |
| Barium | 9.5 | | NA | | 46.5 | B | 58.2 | | 47.6 | J | 44.7 | | 26.7 | J | 26.6 | | 20.7 | J | 20.1 | | NA | | 2.7 | B | 2.6 | |
| Beryllium | 0.1 | B | NA | | | | 0.1 | B | | | | | | | | | | | | | NA | | | | | |
| Cadmium | 0.6 | B | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| Calcium | 20400 | | NA | | 1720 | B | 1070 | | 10500 | | 10500 | | 8090 | | 9810 | | 14100 | | 14900 | | NA | | 38100 | | 39700 | |
| Chromium | 0.8 | B | NA | | 2.2 | B | | | | | 0.5 | B | | | | | | | | | NA | | 12 | B | | |
| Cobalt | | | NA | | | | 1.5 | | | | 0.6 | B | | | | | | | | | NA | | | | | |
| Copper | 16.4 | | NA | | 61 | B | 195 | | 50.5 | | 48.5 | | 56.9 | | 106 | | | | 18.4 | K | NA | | 51.6 | B | 62 | |
| Cyanide | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Iron | 93.8 | B | NA | | 305 | B | 441 | | 182 | | 61.8 | B | 72.8 | B | 118 | | 584 | | 781 | | NA | | 152 | B | 76.1 | |
| Lead | 4.2 | K | NA | | 3.9 | K | 8.5 | | 5.7 | | 10.1 | | 2.1 | J | 3.3 | K | | | 8.9 | | NA | | | | | |
| Magnesium | 9200 | | NA | | 2940 | J | 3420 | | 4580 | J | 4750 | | 2800 | J | 3080 | | 6780 | | 6550 | | NA | | 6960 | | 7750 | |
| Manganese | 3.2 | B | NA | | 12.2 | J | 11.4 | | 5.3 | J | 5.4 | B | 1 | J | 2.5 | K | 68.3 | | 66 | | NA | | | | 2.2 | K |
| Mercury | | | NA | | | | | | | | 0.19 | B | | | | | | | | | NA | | | | | |
| Nickel | 1.8 | | NA | | 6.9 | B | 13.6 | | 1.5 | B | | | 1.4 | B | | | | | | | NA | | 10.2 | B | 2.5 | K |
| Potassium | 1070 | J | NA | | 1700 | J | 3290 | J | 1500 | J | 1780 | | 1160 | J | 997 | J | 1340 | J | 1100 | J | NA | | 697 | J | 768 | J |
| Selenium | | | NA | | | | | | | | | | | | | | 4 | R | | | NA | | | | | |
| Silver | | | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| Sodium | 6240 | | NA | | 2540 | J | 3360 | | 9550 | J | 8490 | | 7990 | J | 8030 | | 6920 | | 7230 | | NA | | 5000 | J | 5990 | |
| Thallium | | | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| Vanadium | | | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| Zinc | | | NA | | 50 | B | | | 181 | J | | | 140 | J | 175 | | 11.4 | B | 46 | | NA | | 52 | B | 77.5 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichlorobenzene | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 1,2-Dichloroethene (Total) | 19 | L | NA | | NA | | | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| 2-Butanone | | | | | NA | | | | NA | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Hexanone | | | | | NA | | | | | | | | | | | | | | | | | | NA | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | 5 | B | NA | | | | NA | | | | NA | | | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Bromobenzene* | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

AR301180

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW137-05 | | RW14-02 | | RW14-04 | | RW14-05 | | RW147-04 | | RW147-05 | | RW148-04 | | RW148-05 | | RW149-04 | | RW149-05 | | RW15-02 | | RW15-04 | | RW15-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| M-xylene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Methylene Chloride | 10 | B | | | | | 6 | B | | | 11 | B | | | 4 | B | | | 21 | B | | | | | 14 | B |
| N-Butylbenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| N-Propylbenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Naphthalene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| O-chlorotoluene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| O-xylene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| P-chlorotoluene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| P-isopropyltoluene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Sec-butylbenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Tetrachloroethene | 2 | B | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethane | 120 | L | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | | | NA | | | | | | | | | | | | | | | | | | NA | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301181

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW150-04 | | RW150-05 | | RW151-04 | | RW151-05 | | RW152-04 | | RW152-05 | | RW153-04 | | RW154-04 | | RW154-05 | | RW156-04 | | RW156-05 | | RW157-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | | |
| Aluminum | 968 | | 51.4 | B | 13.7 | B | 123 | | | | 69.4 | B | 7.8 | B | | | 72 | B | 132 | B | 20.6 | B | | |
| Antimony | 7.7 | B | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | 44.6 | J | 31.3 | | 47.6 | J | 34.2 | | 66.9 | J | 63.3 | | 21.3 | J | 92.5 | J | 93.9 | | 34.5 | J | | | 1.6 | J |
| Beryllium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | 14200 | | 13300 | | 12500 | | 11900 | | 13500 | | 14500 | | 13200 | | 11800 | | 14500 | | 8680 | | 425 | B | 6430 | |
| Chromium | | | | | | | | | | | | | | | | | | | 1.3 | J | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | 126 | | 82.1 | | 675 | | 674 | | 31.6 | | 72.4 | | 18.7 | J | 27.8 | J | 95.7 | | 194 | | 105 | | 22.8 | J |
| Cyanide | NA | | | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | |
| Iron | 769 | | 188 | | 159 | | 256 | | 114 | | 370 | | 619 | | 24.1 | B | 198 | | 192 | | | | 43.3 | B |
| Lead | 19.7 | | 24.6 | | 5.7 | | 7.3 | | | | 10 | | 6.8 | | | | 29.8 | | 14.8 | | 4.4 | | | |
| Magnesium | 5030 | | 16700 | | 6180 | | 5560 | | 5830 | | 5890 | | 6430 | | 5610 | | 6360 | | 2780 | J | | | 5240 | |
| Manganese | 7.4 | J | 2.2 | K | 3.4 | J | 3.6 | | 1.9 | J | 2.9 | K | 69.4 | | | | 2.6 | K | 1.4 | J | | | 3.3 | J |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | 1 | B | 2 | K | 1.6 | B | 1.3 | B | | | 1.9 | B | | | | |
| Potassium | 2620 | J | 2010 | J | 1560 | J | 1350 | | 1580 | J | 1280 | J | 1440 | J | 1520 | J | 1220 | J | 1100 | J | 68.7 | B | 572 | J |
| Selenium | | | | | 4 | R | | | | | | | | | | | | | | | | | 4 | R |
| Silver | | | | | 1 | | | | | | 1.6 | B | | | | | | | | | | | | |
| Sodium | 3720 | J | 5690 | | 7590 | | 7080 | J | 17200 | J | 15800 | | 6960 | J | 19700 | J | 15700 | | 6790 | J | 33000 | | 9280 | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | |
| Zinc | 32.9 | B | 47.4 | | 121 | | 81.8 | | 14.6 | B | 68.1 | | 20.8 | B | 25.8 | B | 41.4 | | 23.5 | B | 17.1 | B | 43.7 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | | |
| 2-Butanone | NA | | | | NA | | | | NA | | | | 0.6 | B | NA | | | | NA | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | NA | | | | NA | | | | 6 | B | NA | | | | NA | | 9 | B | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301182

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW150-04 | | RW150-05 | | RW151-04 | | RW151-05 | | RW152-04 | | RW152-05 | | RW153-04 | | RW154-04 | | RW154-05 | | RW156-04 | | RW156-05 | | RW157-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | | | 21 | B | | | 3 | B | | | 22 | B | | | | | 4 | B | | | 19 | B | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Xylene (Total) | | | | | | | | | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301183

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW157-05 | | RW158-04 | | RW158-05 | | RW159-05 | | RW16-01 | | RW16-02 | | RW16-04 | | RW16-05 | | RW16-05-D | | RW161-04 | | RW161-05 | | RW162-04 | | RW162-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | RW16-05-D | | RW16-05 | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 21.6 | B | 6.6 | B | 38 | B | 22.6 | B | | | 38 | B | 50.7 | B | 28.1 | B | 30.7 | B | 49.2 | B | 21.7 | B | 51.9 | B | 39.6 | B |
| Antimony | | | | | | | | | | | | | | | | | | | | | 6.3 | L | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | | | 25.4 | J | 22.1 | | 6.1 | | | | 45.9 | | 42.8 | J | 46.1 | | 48.6 | | 71.1 | J | 60.3 | J | 128 | J | 103 | |
| Beryllium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | 9970 | | 9970 | | 9110 | | 31200 | | 28000 | | 27400 | | 26500 | | 26400 | | 26800 | | 12400 | | 13000 | J | 17700 | | 16000 | |
| Chromium | | | | | | | | | | | 3.5 | B | 12.8 | B | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | 44.8 | K | 45.4 | | 50.3 | | 75.8 | J | 19 | | 16.3 | B | 69.3 | B | 75.1 | | 49 | | 307 | | 510 | J | 64.8 | | 79.5 | |
| Cyanide | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | NA | | | |
| Iron | | | 85.6 | B | 169 | | | | 112 | | 60 | B | 186 | B | 667 | | 958 | | 387 | | 106 | B | 194 | | 486 | |
| Lead | | | 4.1 | | 5.9 | K | 8.7 | | 11 | | 4.1 | | 5.2 | K | 32.1 | | 38.1 | | 2.4 | K | 6.4 | | 2.2 | K | 10.3 | |
| Magnesium | 5500 | | 2140 | J | 2460 | | 18700 | | 16400 | | 15700 | | 14700 | | 15300 | | 15600 | | 3870 | J | 3940 | J | 4650 | J | 3950 | |
| Manganese | 1.4 | K | 4.6 | J | 3.5 | K | | | | | | | | | 2.8 | B | 5.1 | | 2.5 | J | 3.2 | B | 4.5 | J | 5 | K |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | 1.8 | B | | | | | | | | | 8.8 | B | | | | | | | | | | | | |
| Potassium | 574 | J | 1160 | J | 894 | J | 881 | J | 1800 | | 1140 | | 1220 | J | 1730 | | 1760 | | 1590 | J | 1820 | J | 1790 | J | 1090 | JJ |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | 1.1 | B | | | | | | | | | | | | | | | | | 1.4 | B |
| Sodium | 9500 | | 6950 | J | 7190 | | 7920 | J | 3450 | | 3470 | | 3720 | J | 3100 | | 3110 | | 7880 | | 6980 | | 6060 | | 5520 | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | 2.3 | B | | | | | | | | | | | | | | | | | | |
| Zinc | 188 | | 169 | J | 65.3 | | 20.8 | B | 168 | | 106 | | 94.2 | | 278 | | 310 | | 29.6 | B | 69.4 | | 28 | B | 59.8 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | | | | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | | | | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | | | | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | 3 | B | 0.6 | B | | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | ug/L | | ug/L | | | | | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichlorobenzene | NA | | | | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | NA | | NA | | 9.9 | | 13.6 | | 12 | | NA | | NA | | | | NA | | | | NA | |
| 1,2-Dichloroethene (Total) | | | NA | | | | | | NA | | NA | | NA | | 13 | J | 13 | J | NA | | | | NA | | | |
| 1,2-Dichloroethene (trans) | NA | | | | NA | | NA | | 0.2 | J | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,3-Dichlorobenzene | NA | | | | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | |
| 1,4-Dichlorobenzene | NA | | | | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | |
| 2-Butanone | | | NA | | | | | | | | | | NA | | | | 14 | J | NA | | | | NA | | | |
| 2-Hexanone | | | | | | | | | | | | | NA | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | 2 | J | | | NA | | | | | | NA | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

AR301184

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW157-05 | | RW158-04 | | RW158-05 | | RW159-05 | | RW16-01 | | RW16-02 | | RW16-04 | | RW16-05 | | RW16-05-D | | RW161-04 | | RW161-05 | | RW162-04 | | RW162-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | RW16-05-D | | RW16-05 | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | DUP | | DUP | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | | | ug/L | | ug/L | | | | | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | 0.4 | J | 0.4 | J | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 31 | B | | | 20 | B | 3 | B | | | | | | | 55 | B | 240 | B | | | 11 | B | | | 21 | B |
| N-Butylbenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | 5.9 | | 8.2 | | 7 | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 3 | R | | | | | | | 374 | | 610 | J | 740 | | 840 | | 800 | | | | | | | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | 4 | J | 5.8 | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Xylene (Total) | | | | | | | | | NA | | NA | | | | | | | | | | | | | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301185

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW163-04 | | RW163-05 | | RW164-04 | | RW164-05 | | RW165-04 | | RW165-05 | | RW166-05 | | RW167-05 | | RW169-05 | | RW17-02 | | RW17-04 | | RW17-05 | | RW171 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | |
| Aluminum | 5.5 | B | 49.5 | B | 17.7 | B | 32 | B | | | | | | | 57.3 | B | 21 | B | | | 41 | B | 24.5 | B | NA | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Arsenic | | | | | | | | | | | | | 2.5 | | | | | | | | | | | | NA | |
| Barium | 26 | J | 1.5 | | 20.3 | J | 17.9 | J | | | 8.2 | J | 21.8 | | 37 | | 4.6 | | 21.6 | | 22.3 | J | 20.8 | | NA | |
| Beryllium | | | | | | | | | | | | | 0.1 | B | | | | | | | | | | | NA | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Calcium | 8890 | | 1420 | | 14100 | | 12000 | J | 21.2 | B | 6910 | J | 5620 | | 6520 | | 12200 | | 25700 | | 28400 | | 25900 | | NA | |
| Chromium | | | | | | | | | | | | | | | | | | | | | 1.7 | B | | | NA | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Copper | 130 | | 44.5 | | 3.3 | J | 263 | J | 34.9 | | 8.9 | B | 595 | | 170 | | 137 | | 20.7 | B | 21.8 | B | 252 | | NA | |
| Cyanide | NA | | NA | | NA | | | | NA | | | | NA | | | | | | NA | | NA | | | | NA | |
| Iron | 16.1 | B | 60.1 | | 29.2 | B | 50.1 | B | | | 90.5 | B | 133 | B | 6980 | | | | 89.4 | B | 65.1 | B | 60.5 | B | NA | |
| Lead | 1.8 | J | | | | | 4.3 | K | 1 | J | | | 9.8 | | 15.4 | | 4.7 | | 4.7 | | 14.9 | | 21.2 | | NA | |
| Magnesium | 2530 | J | 229 | | 6060 | | 5410 | J | 9.7 | B | 2100 | J | 2140 | | 2540 | | 6470 | | 15600 | | 16500 | | 16200 | | NA | |
| Manganese | | | | | 1.2 | J | 0.84 | B | | | 2.1 | B | 26 | | 12.6 | | 4.9 | | 0.95 | | | | 2 | B | NA | |
| Mercury | | | | | | | 0.11 | | | | | | | | | | | | | | | | | | NA | |
| Nickel | | | | | | | | | | | | | 3.5 | | | | | | | | 2.6 | B | 2.9 | | NA | |
| Potassium | 1020 | J | 181 | | 1630 | J | 1800 | J | 53.8 | B | 978 | J | 1100 | J | 1570 | | 1120 | | 1100 | | 1110 | J | 1820 | | NA | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Sodium | 8770 | | 22300 | J | 9390 | | 8710 | | 25000 | | 4190 | | 4990 | | 5500 | | 4280 | | 2510 | | 2600 | J | 2100 | B | NA | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | 3.4 | K | NA | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | | NA | |
| Zinc | 18.3 | B | 213 | | 33.9 | B | 32.6 | K | 14.1 | B | 5.8 | B | 72.6 | | 196 | | 12.9 | B | 4.2 | B | 9.5 | B | 245 | | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | 2 | B | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 0.7 | J | | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | 0.4 | J | 0.5 | J | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | | | NA | | | | | | | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | | |
| 2-Butanone | NA | | | | NA | | | | NA | | | | | | | | 22 | | | | NA | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | NA | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | NA | | | | NA | | | | | | | | 64 | B | | | NA | | 22 | B | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

AR301186

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW163-04 | | RW163-05 | | RW164-04 | | RW164-05 | | RW165-04 | | RW165-05 | | RW166-05 | | RW167-05 | | RW169-05 | | RW17-02 | | RW17-04 | | RW17-05 | | RW171 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | 0.2 | J | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Methylene Chloride | | | | | | | 11 | B | | | 10 | B | 19 | B | 19 | B | 21 | B | | | | | 43 | B | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | 7 | | 6 | | 5 | B | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | 360 | J | 340 | | 250 | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 4 | J | NA | | NA | | | |
| Xylene (Total) | | | | | | | | | | | | | NA | | | | | | NA | | | | | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |

AR301187

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW172-05 | | RW173-05 | | RW174-05 | | RW175-05 | | RW18-02 | | RW18-04 | | RW18-05 | | RW19-01 | | RW19-02 | | RW19-04 | | RW19-05 | | RW19-D-01 | | RW19D-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | RW19D-04 | | | | | | RW19-04 | |
| Sacode | | | | | | | | | | | | | | | | | | | DUP | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | 30.3 | B | 35.6 | B | | | | | 8 | B | 41.1 | B | 59.2 | B | | | | | 23.7 | B | | | | | 27 | B |
| Antimony | | | | | | | | | | | 4.3 | B | | | | | | | 4.7 | B | | | | | 5.4 | B |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | 4.4 | | 2.6 | | 16.2 | | 2.2 | B | 42.9 | | 47.9 | J | 49.3 | | | | 90.7 | | 99.5 | J | 89.8 | | | | 102 | J |
| Beryllium | | | | | | | 0.1 | B | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | 0.4 | B | | | | | | | | | | | | | | | | | | |
| Calcium | 22200 | | 25600 | | 14800 | | 29900 | | 885 | | 1400 | J | 1040 | B | 3480 | | 2930 | | 3400 | J | 3190 | | 3220 | | 3480 | J |
| Chromium | | | | | 0.6 | B | 1.4 | B | | | | | | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | 110 | | 173 | | 60 | | 70.3 | | 64 | | 141 | | 308 | | 37 | | 47.6 | K | 38.3 | | 224 | | 32 | | 38.4 | |
| Cyanide | | | | | NA | | NA | | NA | | NA | | | | | | NA | | NA | | | | | | NA | |
| Iron | 295 | B | 444 | | 65.2 | B | 257 | B | 248 | | 951 | | 1400 | | 1760 | | 1010 | | 5160 | | 552 | | 1850 | | 4570 | |
| Lead | 26.5 | | 164 | | 18.6 | | 4 | B | 9 | | 20.4 | | 189 | | 5 | | 5.1 | | 1.8 | J | | | 3 | | 1.8 | J |
| Magnesium | 3580 | | 5630 | | 8000 | | 4890 | | 423 | | 611 | J | 492 | | 1220 | | 1070 | | 1360 | J | 1180 | | 1240 | | 1400 | J |
| Manganese | 11.5 | | 13.2 | | | | 7.4 | | 9.4 | | 62.9 | | 14.2 | | 87 | | 30.7 | | 12.5 | | 9.9 | | 87 | | 12.4 | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | 3.7 | | | | | | | | | | | | | | | | | | 9.7 | | | | | |
| Potassium | 1320 | | 1650 | | 752 | J | 1240 | J | 1250 | | 1810 | J | 1930 | | 1890 | | | | 1350 | J | 1280 | | 1780 | | 1370 | J |
| Selenium | | | 2.8 | K | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | 2.2 | | | | | |
| Sodium | 5030 | | 6940 | | 3330 | | 7840 | | 2140 | | 2570 | J | 1970 | B | 3340 | | 3280 | | 3630 | J | 2720 | | 3380 | | 3710 | J |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Zinc | 42.7 | | 122 | | | | | | 7.8 | B | 24.9 | B | 20.4 | B | | | 17.3 | | 10.2 | B | 136 | | | | 25.4 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| Acenaphthene | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | | | 3 | J | NA | | | | 1 | J | | | NA | | | | | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | | | | | NA | | 2 | B | 1 | J | | | NA | | 1 | B | | |
| ***VOLATILES*** | ug/L | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | 0.3 | J | | | | | | | 0.2 | J | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| 1,2-Dichlorobenzene | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | NA | | NA | | NA | | 20.8 | | 18 | | NA | | 22.6 | | 19.8 | | 16 | | NA | | 17.6 | | | |
| 1,2-Dichloroethene (Total) | | | | | | | | | NA | | NA | | 18 | J | NA | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | NA | | NA | | NA | | NA | | 0.6 | J | 0.5 | J | NA | | | | 0.5 | J | | | NA | | | | | |
| 1,3-Dichlorobenzene | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | NA | | NA | | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| 2-Butanone | | | | | | | | | | | NA | | 430 | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | 8 | B | | | | | | | | | NA | | 1700 | J | | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | 0.07 | J | | |

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Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW172-05 | | RW173-05 | | RW174-05 | | RW175-05 | | RW18-02 | | RW18-04 | | RW18-05 | | RW19-01 | | RW19-02 | | RW19-04 | | RW19-05 | | RW19-D-01 | | RW19D-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | RW19D-04 | | | | | | RW19-04 | |
| Sacode | | | | | | | | | | | | | | | | | | | DUP | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | 0.5 | J | 0.7 | J | 0.5 | J | | | 0.2 | J | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | 0.7 | J | 0.6 | B | | | 0.6 | J | 0.8 | J | 0.6 | B | | | 0.5 | J | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | 7.4 | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 18 | B | 19 | B | 17 | B | 12 | B | | | | | 190 | B | | | | | | | 310 | B | | | | |
| N-Butylbenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | 13.7 | | 12 | | | | 53.5 | | 80.2 | | 82 | J | 45 | B | 22.3 | | 92 | J |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | 840 | J | 740 | | 1200 | | 477 | J | 1690 | J | 2500 | | 1600 | | 1320 | C | 2900 | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | 9.6 | | NA | | NA | | 19.8 | | 27.8 | | NA | | NA | | 9.3 | | NA | |
| Xylene (Total) | | | | | NA | | NA | | NA | | | | | | NA | | NA | | | | | | NA | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | |

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Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW2-02 | | RW2-02-D | | RW2-04 | | RW2-04-D | | RW20-02 | | RW20-04 | | RW20-05 | | RW20-05-D | | RW21-02 | | RW21-04 | | RW21-05 | | RW22-02 | | RW22-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | RW2-02-D | | RW2-02 | | RW2-04-D | | RW2-04 | | | | | | RW20-05-D | | RW20-05 | | | | | | | | | | | |
| Sacode | DUP | | DUP | | DUP | | DUP | | | | | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | |
| Aluminum | | | | | 59.1 | B | 61.4 | B | | | 28.8 | B | 49.8 | B | 45.4 | B | NA | | 67.2 | B | 49.5 | B | 9.9 | B | 64.3 | B |
| Antimony | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Barium | 74.3 | | 75.4 | | 55.5 | J | 53.6 | J | 42.2 | | 44.7 | J | 41 | | 46.7 | | NA | | 5.8 | B | 4.2 | | 44.1 | | 42.3 | J |
| Beryllium | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Calcium | 9670 | | 10500 | | 5040 | B | 4780 | B | 17600 | | 20100 | | 18300 | | 20900 | | NA | | 22900 | | 30400 | | 2370 | | 3250 | B |
| Chromium | | | | | 10 | B | 12.1 | B | | | 3.3 | B | | | | | NA | | 14.3 | B | | | | | 11.9 | B |
| Cobalt | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Copper | 192 | | 193 | | 65.6 | B | 68.6 | B | 33.6 | B | 33.4 | B | 103 | | 101 | | NA | | 73.6 | B | 51.5 | | 33.6 | B | 97 | B |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 4.6 | B | 8 | B | 758 | B | 784 | B | 30.3 | B | 63.5 | B | 123 | | 123 | | NA | | 194 | B | 90 | | 21.2 | B | 179 | B |
| Lead | 11.8 | | 10.3 | | 13.7 | | 13.5 | | 3.4 | B | 11 | | 24.1 | | 23.5 | | NA | | | | | | 6.1 | | 10.4 | |
| Magnesium | 2870 | | 3070 | | 1850 | J | 1810 | J | 7750 | | 8360 | | 7440 | | 8530 | | NA | | 8120 | | 9200 | | 1560 | | 1370 | B |
| Manganese | 12.4 | | 13.7 | | 3.4 | B | 3.1 | B | 1.2 | | | | 3.5 | K | 3.4 | K | NA | | | | 1.8 | K | 1.9 | | 2.2 | B |
| Mercury | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Nickel | | | | | 9 | B | 10.8 | B | | | 4.6 | B | 3.3 | K | 2.8 | K | NA | | 11 | B | | | | | 10.4 | B |
| Potassium | 526 | | 1290 | | 931 | J | 915 | J | 761 | | 962 | J | 900 | J | 1060 | J | NA | | 673 | J | 755 | J | 874 | | 699 | J |
| Selenium | | | | | | | | | 1.3 | | | | | | | | NA | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Sodium | 5670 | | 5900 | | 4620 | J | 4430 | J | 8250 | | 8000 | | 8160 | | 9290 | | NA | | 4350 | J | 5370 | | 2000 | | 1910 | B |
| Thallium | | | 0.2 | B | | | | | | | | | | | | | NA | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | NA | | | | | | | | | |
| Zinc | 35.5 | | 39.8 | | 19.2 | B | 16.3 | B | 13.2 | | 11.9 | B | 66.8 | | 59.2 | | NA | | 21.5 | B | 66.4 | | 15 | | 21 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | | | | | | | | | | | | | NA | | NA | | NA | | NA | | NA | | | | | |
| Acenaphthene | | | | | | | | | | | | | NA | | NA | | NA | | NA | | NA | | 0.3 | J | | |
| Bis(2-ethylhexyl)phthalate | | | | | | | | | | | | | NA | | NA | | NA | | NA | | NA | | | | | |
| Di-n-butylphthalate | 0.7 | J | 1 | J | | | | | 0.6 | B | | | NA | | NA | | NA | | NA | | NA | | 1.7 | B | | |
| **VOLATILES** | | | | | | | | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | 0.9 | J | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | 2 | J | 2 | J | 2 | | 2 | | 250 | J | 270 | | NA | | NA | | | | | | NA | | 1 | J | 1 | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | NA | | 240 | L | 250 | L | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | | | | | 3 | J | 4 | | NA | | NA | | | | | | NA | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 2-Butanone | | | | | NA | | NA | | | | NA | | | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | | | NA | | NA | | | | NA | | | | | | | | NA | | | | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | 10 | | | | | |
| Acetone | | | | | NA | | NA | | | | NA | | | | | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW2-02 | | RW2-02-D | | RW2-04 | | RW2-04-D | | RW20-02 | | RW20-04 | | RW20-05 | | RW20-05-D | | RW21-02 | | RW21-04 | | RW21-05 | | RW22-02 | | RW22-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | RW2-02-D | | RW2-02 | | RW2-04-D | | RW2-04 | | | | | | RW20-05-D | | RW20-05 | | | | | | | | | | | |
| Sacode: | DUP | | DUP | | DUP | | DUP | | | | | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | | | | | | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | 0.4 | J | 0.5 | J | | | | | | | | | | | | | | |
| Chloroform | | | 0.2 | J | | | | | 1 | J | 0.8 | B | | | | | | | | | | | 0.4 | J | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | | | | | | | | | 35 | B | 32 | B | | | | | 12 | B | | | | |
| N-Butylbenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | 3 | J | 3 | J | 2 | | 2 | | 37.6 | | 35 | | 40 | L | 41 | L | | | | | | | 39.5 | | 49 | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 131 | | 138 | | 170 | | 170 | | 1410 | J | 1600 | | 1800 | L | 1900 | L | | | | | | | 950 | J | 1800 | |
| Trichlorofluoromethane | 1 | J | 1 | J | NA | | NA | | 149 | | NA | | NA | | NA | | | | NA | | NA | | 9.1 | | NA | |
| Xylene (Total) | NA | | NA | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDE | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDT | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aldrin | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-BHC | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-Chlordane | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1016 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1221 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1232 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1242 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1248 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1254 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1260 | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Beta-BHC | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Delta-BHC | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Dieldrin | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan I | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan II | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan Sulfate | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Aldehyde | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Ketone | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-Chlordane | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor Epoxide | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Methoxychlor | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Toxaphene | NA | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | |

AR301191

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW22-05 | | RW22-05-D | | RW23-02 | | RW23-04 | | RW23-05 | | RW24-02 | | RW24-04 | | RW24-05 | | RW24-05-D | | RW25-01 | | RW25-02 | | RW26-02 | | RW26-04 | | RW26-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | RW22-05-D | | RW22-05 | | | | | | | | | | | | RW24-05-D | | RW24-05 | | | | | | | | | | | |
| Sacode: | DUP | | DUP | | | | | | | | | | | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | ug/L | | ug/L | | | | | | ug/L | | ug/L | | ug/L | | | | | | ug/L | | ug/L | |
| Aluminum | | | 26.9 | B | NA | | 36.5 | B | | | NA | | 50.4 | B | 49.1 | B | 18.6 | B | | | NA | | NA | | 32.1 | B | 37.8 | B |
| Antimony | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Arsenic | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Barium | 41 | J | 43.9 | J | NA | | 21 | J | 25.2 | | NA | | 23.1 | J | 23.4 | J | 24.1 | J | | | NA | | NA | | 82.6 | J | 76.8 | |
| Beryllium | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Cadmium | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Calcium | 2000 | B | 2140 | B | NA | | 8330 | | 8560 | | NA | | 37400 | | 33300 | J | 35200 | J | 12000 | | NA | | NA | | 21000 | | 18900 | |
| Chromium | | | | | NA | | 2.2 | B | 0.4 | B | NA | | 7.5 | B | | | | | | | NA | | NA | | 1.9 | B | | |
| Cobalt | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Copper | 78.4 | J | 64.4 | J | NA | | 16.9 | B | 16.8 | | NA | | 52.2 | B | 23.6 | J | 11.6 | B | 51 | | NA | | NA | | 24 | B | 32.8 | |
| Cyanide | | | | | NA | | NA | | NA | | NA | | NA | | | | | | | | NA | | NA | | NA | | NA | |
| Iron | 54.6 | B | | | NA | | 350 | B | 381 | | NA | | 92.1 | B | | | 38.5 | B | | | NA | | NA | | 49.6 | B | 67.2 | |
| Lead | 10 | | 12.3 | | NA | | | | 1.5 | K | NA | | | | 3 | K | | | | | NA | | NA | | | | 3.7 | L |
| Magnesium | 1250 | J | 1310 | J | NA | | 2730 | J | 3040 | | NA | | 20500 | | 20200 | J | 21300 | J | 5090 | | NA | | NA | | 13800 | | 12100 | |
| Manganese | 2 | B | 2 | B | NA | | 6.7 | B | 6.2 | | NA | | | | 0.74 | B | 0.65 | B | | | NA | | NA | | | | 1.9 | |
| Mercury | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Nickel | 2.7 | | | | NA | | 3.4 | B | 0.9 | B | NA | | 7 | B | | | | | | | NA | | NA | | 3.5 | B | | |
| Potassium | 1210 | J | 1330 | J | NA | | 913 | J | 1670 | J | NA | | 1610 | J | 2190 | J | 2300 | J | 1030 | | NA | | NA | | 7940 | | 8780 | |
| Selenium | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Silver | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Sodium | 1870 | B | 1900 | B | NA | | 5060 | | 6190 | | NA | | 3820 | J | 3050 | | 3250 | | 4790 | | NA | | NA | | 4760 | J | 5540 | J |
| Thallium | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Vanadium | | | | | NA | | | | | | NA | | | | | | | | | | NA | | NA | | | | | |
| Zinc | 18 | B | 12.1 | B | NA | | 147 | | 46.5 | | NA | | 15.4 | B | 16 | B | 5.4 | B | 16 | | NA | | NA | | 304 | | 144 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | 0.7 | B | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | ug/L | | | | | | ug/L | | | | | | ug/L | | ug/L | | | | | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | 0.1 | J | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | | | | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| 1,2-Dichlorobenzene | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 1,2-Dichloroethene (Total) | 1 | J | 1 | J | NA | | NA | | | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 1,3-Dichlorobenzene | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 1,4-Dichlorobenzene | NA | | NA | | | | | | NA | | | | | | NA | | NA | | | | | | | | | | NA | |
| 2-Butanone | | | | | | | NA | | | | | | NA | | | | | | | | | | | | NA | | | |
| 2-Hexanone | | | | | | | NA | | | | | | NA | | | | | | | | | | | | NA | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | NA | | | |
| Acetone | | | | | | | NA | | | | | | NA | | | | | | | | | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | 0.5 | J | | | | | | | | |

AR301192

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW22-05 | | RW22-05-D | | RW23-02 | | RW23-04 | | RW23-05 | | RW24-02 | | RW24-04 | | RW24-05 | | RW24-05-D | | RW25-01 | | RW25-02 | | RW26-02 | | RW26-04 | | RW26-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | RW22-05-D | | RW22-05 | | | | | | | | | | | | RW24-05-D | | RW24-05 | | | | | | | | | | | |
| Sacode | DUP | | DUP | | | | | | | | | | | | DUP | | DUP | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | ug/L | | | | | | ug/L | | | | | | ug/L | | ug/L | | | | | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | 1 | J | 1.7 | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| M-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Methylene Chloride | 13 | B | 13 | B | | | | | 5 | B | | | | | 17 | B | 19 | B | | | | | | | | | 2 | B |
| N-Butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Naphthalene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| O-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Tetrachloroethene | 56 | | 58 | | 0.9 | J | | | | | 4 | J | 3 | | 4 | B | 3 | B | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 1400 | | 1000 | | 38 | J | 23 | B | 30 | | 200 | | 210 | | 220 | | 220 | | 0.5 | J | | | 0.5 | B | 9 | B | 6 | J |
| Trichlorofluoromethane | NA | | NA | | 0.3 | J | NA | | NA | | 2 | J | NA | | NA | | NA | | | | | | | | NA | | NA | |
| Xylene (Total) | NA | | NA | | NA | | | | NA | | NA | | | | | | | | NA | | NA | | NA | | | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

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Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW29-02 | | RW29-04 | | RW29-05 | | RW3-02 | | RW3-04 | | RW3-05 | | RW30-02 | | RW30-05 | | RW31-02 | | RW31-04 | | RW31-05 | | RW32-02 | | RW32-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| Aluminum | 34.2 | B | 29.8 | B | 57.6 | B | NA | | 31.2 | B | | | 11.4 | B | | | NA | | 66.9 | B | 44.4 | B | NA | | 71.4 | B |
| Antimony | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Arsenic | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Barium | 12.3 | | 11 | B | 15.4 | | NA | | 58.4 | J | 47.3 | J | 9.3 | | 10 | B | NA | | 21.7 | J | 134 | | NA | | 146 | J |
| Beryllium | | | | | | | NA | | | | | | | | | | NA | | | | 0.6 | | NA | | 1.2 | J |
| Cadmium | | | | | | | NA | | | | | | | | | | NA | | | | 0.6 | B | NA | | | |
| Calcium | 13600 | | 14800 | | 13700 | | NA | | 5500 | B | 2770 | J | 16000 | | 16600 | | NA | | 19600 | | 13000 | | NA | | 16400 | |
| Chromium | | | 1.7 | B | | | NA | | 2.1 | B | | | | | 0.8 | B | NA | | 14.4 | B | 2 | B | NA | | 12.4 | B |
| Cobalt | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Copper | 10 | B | 22.2 | B | 33.5 | | NA | | 67.4 | B | 169 | J | 16.8 | B | 14 | B | NA | | 106 | B | 7.2 | B | NA | | 76.6 | B |
| Cyanide | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 595 | | 901 | | 4750 | | NA | | 891 | | 315 | B | 53.9 | B | 216 | B | NA | | 218 | B | 638 | | NA | | 11200 | |
| Lead | 0.7 | | 15.3 | | 3.4 | | NA | | 5.7 | K | 8.2 | | 8.1 | | 4.2 | K | NA | | | | 5.1 | K | NA | | 16.7 | |
| Magnesium | 7150 | | 7610 | | 6630 | | NA | | 3960 | J | 1800 | J | 7720 | | 8100 | | NA | | 5760 | | 5650 | | NA | | 6890 | |
| Manganese | 8.8 | | 4.4 | B | 45.9 | | NA | | 15.7 | | 18.6 | | | | | | NA | | 4.5 | B | 8.5 | | NA | | 73.5 | |
| Mercury | | | | | | | NA | | | | 0.1 | | | | | | NA | | | | | | NA | | | |
| Nickel | | | 4.4 | B | | | NA | | 3.6 | B | 3.9 | | | | 0.7 | B | NA | | 17.7 | B | 54.6 | | NA | | 15.1 | B |
| Potassium | 603 | | 1080 | J | 1580 | | NA | | 1130 | J | 1320 | J | 518 | | 1030 | J | NA | | 848 | J | 2380 | J | NA | | 2050 | J |
| Selenium | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Silver | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Sodium | 2130 | | 2130 | B | 1810 | B | NA | | 8720 | | 4710 | | 6530 | | 6610 | | NA | | 6410 | | 7740 | | NA | | 8800 | |
| Thallium | | | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Vanadium | | | | | | | NA | | | | | | | | 0.8 | | NA | | | | | | NA | | | |
| Zinc | 21 | | 139 | | 59.4 | | NA | | 15 | B | 39.9 | | 18.7 | | | | NA | | 20 | B | 990 | | NA | | 4890 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | | | | | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | | | 2 | B | NA | | NA | | | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | 0.3 | B | | | NA | | NA | | | | NA | | 1.4 | B | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | NA | | NA | | | | NA | | | | | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | 6.6 | | 10 | | NA | | 0.08 | J | | | NA | | | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | 65 | J | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| 2-Butanone | | | NA | | 230 | | | | NA | | | | | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | NA | | | | | | NA | | | | | | | | | | | | | | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | 620 | B | | | NA | | 5 | B | | | 3 | B | | | NA | | 6 | B | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | | | |

AR301194

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW29-02 | | RW29-04 | | RW29-05 | | RW3-02 | | RW3-04 | | RW3-05 | | RW30-02 | | RW30-05 | | RW31-02 | | RW31-04 | | RW31-05 | | RW32-02 | | RW32-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | | | ug/L | | | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | 0.3 | J | | | | | 0.06 | J | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | 150 | B | | | | | 19 | B | | | 18 | B | | | | | 11 | B | | | | |
| N-Butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | 5.4 | | 7 | | | | 0.7 | J | 1 | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 580 | J | 680 | | 940 | | 38 | J | 64 | | 38 | | 0.2 | | | | | | | | | | | | | |
| Trichlorofluoromethane | 8.4 | | NA | | NA | | 0.3 | J | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Xylene (Total) | NA | | | | | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301195

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW32-05 | | RW33-02 | | RW34-02 | | RW34-04 | | RW34-05 | | RW35-02 | | RW35-04 | | RW35-05 | | RW36-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | |
| Aluminum | | | NA | | NA | | 26.6 | B | 24.8 | B | NA | | 72.6 | B | 61.3 | B | NA | |
| Antimony | | | NA | | NA | | | | 5.3 | B | NA | | | | | | NA | |
| Arsenic | | | NA | | NA | | | | | | NA | | | | | | NA | |
| Barium | 21.2 | | NA | | NA | | 7.2 | B | 6.9 | | NA | | 132 | J | 158 | | NA | |
| Beryllium | 0.1 | B | NA | | NA | | | | | | NA | | | | | | NA | |
| Cadmium | 0.4 | B | NA | | NA | | | | | | NA | | | | | | NA | |
| Calcium | 20600 | | NA | | NA | | 30300 | | 27900 | | NA | | 31900 | | 37400 | | NA | |
| Chromium | | | NA | | NA | | | | | | NA | | 14.2 | B | | | NA | |
| Cobalt | | | NA | | NA | | | | | | NA | | | | | | NA | |
| Copper | 639 | | NA | | NA | | 13.2 | B | 70.5 | | NA | | 339 | | 74.7 | | NA | |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | | | NA | | NA | | | | 40.7 | | NA | | 188 | B | 84.8 | | NA | |
| Lead | 1.3 | K | NA | | NA | | | | | | NA | | 51.2 | | 15 | | NA | |
| Magnesium | 6310 | | NA | | NA | | 16800 | | 15200 | | NA | | 10900 | | 13200 | | NA | |
| Manganese | | | NA | | NA | | | | | | NA | | 2.5 | B | 3.9 | K | NA | |
| Mercury | | | NA | | NA | | | | | | NA | | | | | | NA | |
| Nickel | 2.3 | B | NA | | NA | | 2.7 | B | | | NA | | 12.9 | B | 2.4 | K | NA | |
| Potassium | 1210 | J | NA | | NA | | 687 | J | 762 | | NA | | 2310 | J | 2310 | J | NA | |
| Selenium | 1.8 | | NA | | NA | | | | | | NA | | | | | | NA | |
| Silver | | | NA | | NA | | | | | | NA | | | | | | NA | |
| Sodium | 6540 | | NA | | NA | | 3900 | J | 4300 | J | NA | | 21400 | | 22800 | | NA | |
| Thallium | 2.7 | | NA | | NA | | | | | | NA | | | | | | NA | |
| Vanadium | 1 | | NA | | NA | | | | | | NA | | | | | | NA | |
| Zinc | 17.4 | B | NA | | NA | | 93.6 | | 118 | | NA | | 234 | | 47.6 | | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | | | NA | | 0.3 | J | | | NA | | | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | | | | | NA | | | | | | NA | | | |
| 2-Butanone | | | | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | | | | | | | NA | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| Acetone | 5 | B | | | | | NA | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |

AR301196

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW32-05 | | RW33-02 | | RW34-02 | | RW34-04 | | RW34-05 | | RW35-02 | | RW35-04 | | RW35-05 | | RW36-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | |
| Chloroform | | | 0.3 | J | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Methylene Chloride | 17 | B | | | | | | | 29 | B | | | | | 4 | B | | |
| N-Butylbenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | 0.3 | J | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | 0.7 | J | | | | | | |
| Trichlorofluoromethane | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Xylene (Total) | NA | | NA | | NA | | | | | | NA | | | | | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301197

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW36-04 | | RW36-05 | | RW37-02 | | RW37-03 | | RW37-04 | | RW37-05 | | RW37-05-D | | RW38-02 | | RW38-04 | | RW38-05 | | RW4-02 | | RW4-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | RW37-05-D | | RW37-05 | | | | | | | | RW4D-02 | | | |
| Sacode | | | | | | | | | | | DUP | | DUP | | | | | | | | DUP | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | |
| Aluminum | 36.4 | B | 36.6 | B | NA | | NA | | 42.9 | B | 48.8 | B | 50.6 | B | NA | | 34.8 | B | 27.2 | B | NA | | 85 | B |
| Antimony | | | 5.4 | B | NA | | NA | | | | | | | | NA | | | | 7.2 | | NA | | | |
| Arsenic | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Barium | 7.1 | B | 6.5 | | NA | | NA | | 12.4 | J | 17.8 | | 12.4 | | NA | | 57.8 | J | 2.7 | | NA | | 28.7 | J |
| Beryllium | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Cadmium | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Calcium | 25800 | | 23000 | | NA | | NA | | 12300 | | 11400 | | 11800 | | NA | | 9510 | | 1590 | | NA | | 2540 | B |
| Chromium | 2.4 | B | | | NA | | NA | | 1.8 | B | | | | | NA | | 4.3 | B | | | NA | | 1.8 | B |
| Cobalt | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Copper | 75.7 | B | 72.6 | | NA | | NA | | 107 | B | 325 | | 141 | | NA | | 58.2 | B | 66.1 | | NA | | 83.6 | B |
| Cyanide | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 46.1 | B | 56.6 | | NA | | NA | | 408 | B | 239 | | 240 | | NA | | 2300 | | 292 | | NA | | 213 | B |
| Lead | 3.7 | K | 9.8 | | NA | | NA | | 9.6 | | 27.8 | | 20.1 | | NA | | 4.8 | K | | | NA | | 45.9 | |
| *Magnesium* | *7080* | | *6400* | | NA | | NA | | 7430 | | 6740 | | 6890 | | NA | | 2810 | J | 276 | | NA | | 1360 | B |
| Manganese | 1.1 | B | | | NA | | NA | | 28.5 | | 20.6 | K | 21.1 | K | NA | | 16.2 | | | | NA | | 17.8 | |
| Mercury | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Nickel | 4.7 | B | | | NA | | NA | | 4.3 | B | | | | | NA | | 3.5 | B | | | NA | | 3.9 | B |
| Potassium | 1070 | J | 1200 | | NA | | NA | | 745 | J | 723 | J | 755 | J | NA | | 699 | J | 153 | | NA | | 438 | J |
| Selenium | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Silver | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Sodium | 8440 | | 8210 | J | NA | | NA | | 6450 | | 6690 | | 7000 | | NA | | 6440 | | 28900 | J | NA | | 1180 | B |
| Thallium | | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| Vanadium | | | | | NA | | NA | | | | | | | | NA | | 1.9 | L | | | NA | | | |
| Zinc | 20.1 | B | 35.2 | | NA | | NA | | 26.8 | B | 57.5 | | 49.7 | | NA | | 14 | B | 25.7 | | NA | | 30.5 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | 1 | R | | | NA | | NA | | | | NA | | NA | | | | | |
| 1,2-Dichlorobenzene | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,3-Dichlorobenzene | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | | | NA | | | | | | | | NA | | NA | | | | | | NA | | | | | |
| 2-Butanone | NA | | | | | | | | NA | | | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | | | | | 1 | R | | | | | | | | | NA | | | | | | NA | |
| *4-Methyl-2-pentanone* | | | | | | | | | | | | | | | | | NA | | | | | | | |
| Acetone | NA | | | | | | | | NA | | | | | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301198

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW36-04 | | RW36-05 | | RW37-02 | | RW37-03 | | RW37-04 | | RW37-05 | | RW37-05-D | | RW38-02 | | RW38-04 | | RW38-05 | | RW4-02 | | RW4-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | RW37-05-D | | RW37-05 | | | | | | | | RW4D-02 | | | |
| Sacode | | | | | | | | | | | DUP | | DUP | | | | | | | | DUP | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | ug/L | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | 14 | B | | | | | | | 14 | B | 14 | B | | | | | 3 | B | | | | |
| N-Butylbenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | NA | | NA | | 1 8 | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| *O-chlorotoluene* | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 3 | B | | | | | | | 2 | B | | | | | | | | | | | 1.8 | | 6 | B |
| Trichlorofluoromethane | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Xylene (Total) | | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| *Endrin Ketone* | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301199

Analytical Results for Potable Source Groundwater Samples
*Crossley Farm Site, Pennsylvania*

| Sample ID | RW4-05 | | RW40-02 | | RW40-04 | | RW40-05 | | RW40-05-D | | RW40D-04 | | RW41-02 | | RW41-04 | | RW42-02 | | RW42-04 | | RW42-05 | | RW43-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | RW40D-04 | | RW40-05-D | | RW40-05 | | RW40-04 | | | | | | | | | | | | | |
| Sacode | | | | | DUP | | DUP | | DUP | | DUP | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | | | | | ug/L | | | |
| Aluminum | 217 | | NA | | 37.5 | B | 53.9 | B | 45.3 | B | 138 | B | NA | | 37.1 | B | NA | | 13.5 | B | 35.1 | B | NA | |
| Antimony | | | NA | | | | | | | | 3.4 | J | NA | | 3.3 | B | NA | | 9.3 | B | | | NA | |
| Arsenic | | | NA | | | | | | | | | | NA | | | | NA | | 3.4 | J | | | NA | |
| Barium | 30.9 | | NA | | 110 | J | 134 | | 138 | | 109 | J | NA | | 84.7 | J | NA | | 16.2 | J | 14.9 | | NA | |
| Beryllium | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| Cadmium | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| Calcium | 3600 | | NA | | 25800 | | 31400 | | 32300 | | 25800 | | NA | | 45500 | | NA | | 20200 | | 19800 | | NA | |
| Chromium | | | NA | | 1.9 | B | | | | | 910 | | NA | | | | NA | | 1.4 | J | | | NA | |
| Cobalt | | | NA | | | | | | | | 7.4 | J | NA | | | | NA | | | | | | NA | |
| Copper | 112 | | NA | | 580 | | 399 | | 404 | | 392 | | NA | | 22.9 | J | NA | | 29.8 | | 22.9 | | NA | |
| Cyanide | NA | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 3470 | | NA | | 95.1 | B | 141 | | 127 | | 4020 | | NA | | 32.5 | B | NA | | 72.4 | B | 89.1 | | NA | |
| Lead | 61.6 | | NA | | 6.7 | | 6.1 | | 6.9 | | 8.2 | | NA | | 3.9 | K | NA | | 32.9 | | 4.9 | L | NA | |
| Magnesium | 1400 | | NA | | 10600 | | 13100 | | 13400 | | 10600 | | NA | | 26700 | | NA | | 10600 | | 10200 | | NA | |
| Manganese | 77 | | NA | | 3.1 | B | 4.9 | K | 4.6 | K | 53 | | NA | | 3.2 | J | NA | | 1.6 | J | 2 | | NA | |
| Mercury | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| Nickel | | | NA | | 3.7 | B | 2.5 | K | | | 466 | | NA | | | | NA | | 1.8 | B | | | NA | |
| Potassium | 532 | J | NA | | 1900 | J | 2170 | J | 2250 | J | 1970 | J | NA | | 5450 | J | NA | | 876 | J | 697 | | NA | |
| Selenium | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| Silver | | | NA | | | | | | | | 1.1 | B | NA | | | | NA | | | | | | NA | |
| Sodium | 2010 | | NA | | 24500 | | 25900 | | 26600 | | 24700 | | NA | | 14400 | | NA | | 3570 | J | 3880 | J | NA | |
| Thallium | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| Vanadium | | | NA | | | | | | | | 1.9 | K | NA | | | | NA | | | | | | NA | |
| Zinc | 61.1 | | NA | | 37.9 | B | 68.9 | | 53.7 | | 68.2 | | NA | | 13.7 | B | NA | | 89.8 | J | 26.7 | | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | ug/L | | ug/L | | | | | | | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | 0.2 | J | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | 1 | J | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | NA | | | | | | NA | | NA | | | | | | | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | | | | | NA | | NA | | | | | | NA | | | | NA | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | | | NA | | NA | | | | | | | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | 0.8 | J | 0.6 | J | NA | | NA | | 0.6 | J | | | | | | | | | NA | | | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | | | | | NA | | NA | | NA | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | | | NA | | NA | | | | | | | | | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | | | NA | | NA | | | | | | | | | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | | | NA | | NA | | | | | | | | | | | | NA | | | |
| 2-Butanone | | | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | | | NA | | | | NA | | 2 | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301200

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW4-05 | | RW40-02 | | RW40-04 | | RW40-05 | | RW40-05-D | | RW40D-04 | | RW41-02 | | RW41-04 | | RW42-02 | | RW42-04 | | RW42-05 | | RW43-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | RW40D-04 | | RW40-05-D | | RW40-05 | | RW40-04 | | | | | | | | | | | | | |
| Sacode: | | | | | DUP | | DUP | | DUP | | DUP | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | ug/L | | ug/L | | | | | | | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hexachlorobutadiene* | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Methylene Chloride | 29 | B | | | | | 18 | B | 3 | B | | | | | | | | | | | 20 | B | | |
| N-Butylbenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | 0.9 | J | 0.5 | J | | | | | 0.5 | J | | | | | 0.8 | J | 0.9 | J | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | 1.2 | | 2 | B | | | | | 1 | B | | | | | 46 | J | 69 | | 64 | | 0.4 | J |
| Trichlorofluoromethane | NA | | 0.06 | J | NA | | NA | | NA | | NA | | | | NA | | 0.4 | J | NA | | NA | | | |
| Xylene (Total) | | | NA | | | | | | | | | | NA | | | | NA | | | | | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| *Aroclor-1221* | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301201

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW43-04 | | RW43-05 | | RW44-04 | | RW44-05 | | RW45-02 | | RW45-05 | | RW46-02 | | RW46-04 | | RW46-05 | | RW47-02 | | RW47-04 | | RW47-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | |
| Aluminum | | | 22.6 | B | 7.7 | B | | | NA | | 63 | B | NA | | 32.5 | B | 35.5 | B | NA | | 52.8 | B | 47.8 | B |
| Antimony | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Arsenic | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Barium | 6.3 | J | 4.3 | | 4.8 | J | 4.4 | B | NA | | 4.4 | | NA | | 7.9 | B | 7.5 | | NA | | 6.2 | B | 5.3 | |
| Beryllium | | | | | | | 0.1 | B | NA | | | | NA | | | | | | NA | | | | | |
| Cadmium | | | | | | | 0.4 | B | NA | | | | NA | | | | | | NA | | | | | |
| Calcium | 16500 | | 17200 | | 23600 | | 26200 | | NA | | 18300 | | NA | | 8170 | | 6810 | | NA | | 31400 | | 29200 | |
| Chromium | | | | | 1 | J | 1.4 | B | NA | | | | NA | | 2.7 | B | | | NA | | 1.1 | B | | |
| Cobalt | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Copper | 36.7 | | 160 | J | 39.9 | | 64.6 | | NA | | 39.9 | | NA | | 9.4 | B | 11 | B | NA | | 6.8 | B | 18.4 | |
| Cyanide | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Iron | 29.2 | B | 73.4 | | 14.1 | B | 31.8 | B | NA | | 162 | | NA | | 56.9 | B | | | NA | | 3650 | | 2360 | |
| Lead | | | | | | | 3.4 | K | NA | | | | NA | | | | | | NA | | | | | |
| Magnesium | 6840 | | 6520 | | 2850 | J | 3140 | | NA | | 5350 | | NA | | 2820 | J | 2620 | | NA | | 6070 | | 5710 | |
| Manganese | 1.1 | J | 1.8 | K | | | | | NA | | 2.5 | | NA | | | | | | NA | | 271 | | 133 | |
| Mercury | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Nickel | 2 | B | | | 2 | B | 0.7 | B | NA | | 3.5 | | NA | | 3.9 | B | | | NA | | 2.5 | B | | |
| Potassium | 855 | J | 662 | J | 712 | J | 867 | J | NA | | 598 | | NA | | 611 | J | 981 | | NA | | 844 | J | 893 | |
| Selenium | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Silver | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Sodium | 7500 | J | 7060 | J | 5190 | J | 5010 | | NA | | 5860 | J | NA | | 5250 | | 5150 | | NA | | 6910 | | 7730 | J |
| Thallium | | | | | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Vanadium | | | 2.5 | B | | | | | NA | | | | NA | | | | | | NA | | | | | |
| Zinc | 13.4 | B | 19.8 | B | 86 | J | 98.6 | | NA | | 33 | | NA | | 9.3 | B | 3.7 | B | NA | | 44.9 | B | 56 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | NA | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| 2-Butanone | NA | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| 2-Hexanone | | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | NA | | | | | | | | | | NA | | | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | 2 | B | | | | | | | | |

AR301202

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW43-04 | | RW43-05 | | RW44-04 | | RW44-05 | | RW45-02 | | RW45-05 | | RW46-02 | | RW46-04 | | RW46-05 | | RW47-02 | | RW47-04 | | RW47-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | ug/L | | | | ug/L | | | | | | ug/L | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Methylene Chloride | | | 2 | B | | | 14 | B | | | | | | | | | 23 | B | | | | | 13 | B |
| N-Butylbenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Naphthalene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-xylene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | NA | | NA | | NA | | 0.1 | J | NA | | | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301203

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW48-02 | | RW48-04 | | RW48-05 | | RW48D-02 | | RW49-02 | | RW49-04 | | RW4D-02 | | RW5-01 | | RW5-05 | | RW50-02 | | RW50-04 | | RW50-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | RW48D-02 | | | | | | RW48-02 | | | | | | RW4-02 | | | | | | | | RW50D-04 | | | |
| Sacode | DUP | | | | | | DUP | | | | | | DUP | | | | | | | | DUP | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | ug/L | | ug/L | | | | | | ug/L | | | | | | ug/L | | | | ug/L | | ug/L | |
| Aluminum | NA | | 68 | B | 22.8 | B | NA | | NA | | 35.2 | B | NA | | | | | | NA | | | | 60.3 | B |
| Antimony | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | 6.2 | B |
| Arsenic | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Barium | NA | | 9.9 | B | 8.7 | | NA | | NA | | 2.8 | B | NA | | | | 25.8 | | NA | | 37.7 | J | 33.5 | |
| Beryllium | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Cadmium | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Calcium | NA | | 26300 | | 23800 | | NA | | NA | | 31900 | | NA | | 10200 | | 28300 | | NA | | 22600 | | 22300 | |
| Chromium | NA | | 10.8 | B | | | NA | | NA | | 1.5 | B | NA | | | | 0.8 | B | NA | | | | | |
| Cobalt | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Copper | NA | | 28.1 | B | 10.3 | | NA | | NA | | 27.8 | B | NA | | | | 3.8 | B | NA | | 11 | J | 20.6 | |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Iron | NA | | 4270 | | 4370 | | NA | | NA | | 202 | B | NA | | | | 114 | B | NA | | 28.6 | B | 53.5 | |
| Lead | NA | | 4.3 | K | | | NA | | NA | | | | NA | | | | 3 | K | NA | | | | | |
| Magnesium | NA | | 5600 | | 5060 | | NA | | NA | | 4980 | J | NA | | 4130 | | 17000 | | NA | | 13500 | | 12100 | |
| Manganese | NA | | 85.8 | | 83.9 | | NA | | NA | | 2.4 | B | NA | | | | 3.6 | B | NA | | | | | |
| Mercury | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Nickel | NA | | 12.3 | B | | | NA | | NA | | 2.9 | B | NA | | | | 2.2 | B | NA | | | | | |
| Potassium | NA | | 898 | J | 971 | | NA | | NA | | 991 | J | NA | | 1900 | | 2100 | J | NA | | 1120 | J | 916 | |
| Selenium | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Silver | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Sodium | NA | | 5490 | | 5570 | J | NA | | NA | | 7970 | | NA | | 5620 | | 2990 | | NA | | 2260 | J | 2390 | J |
| Thallium | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Vanadium | NA | | | | | | NA | | NA | | | | NA | | | | | | NA | | | | | |
| Zinc | NA | | 37 | B | 21.4 | B | NA | | NA | | 112 | | NA | | | | 262 | | NA | | 10.2 | B | 25.4 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 1 | B | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | ug/L | | | | | | | | | | | | ug/L | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | 2 | J | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | | | | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | | | NA | | | | | | | | | | | | NA | | | | NA | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | | | | | | | NA | | | | | | NA | |
| *1,2-Dichloroethane* | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | | | | | | | | | NA | | 0.1 | J | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | | | | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | | | | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | | | | | | | NA | | | | | | NA | |
| 2-Butanone | | | NA | | | | | | | | NA | | | | | | | | | | NA | | | |
| 2-Hexanone | | | | | | | | | | | NA | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | | | NA | | | | | | | | | | 8 | B | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | 0.3 | J | | | | | | | | |

AR301204

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW48-02 | | RW48-04 | | RW48-05 | | RW48D-02 | | RW49-02 | | RW49-04 | | RW4D-02 | | RW5-01 | | RW5-05 | | RW50-02 | | RW50-04 | | RW50-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | RW48D-02 | | | | | | RW48-02 | | | | | | RW4-02 | | | | | | | | RW50D-04 | | | |
| Sacode | DUP | | | | | | DUP | | | | | | DUP | | | | | | | | DUP | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | ug/L | | | | | | | | | | | | ug/L | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| M-xylene | | | NA | | NA | | | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Methylene Chloride | | | | | 19 | B | | | | | | | | | | | 6 | B | | | | | 20 | B |
| N-Butylbenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Naphthalene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| O-xylene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | 0.1 | J | | | 8 | J | 0.06 | J | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | 2.8 | | | | 520 | | 1.2 | | 1 | | | |
| Trichlorofluoromethane | | | NA | | NA | | | | | | NA | | | | | | NA | | | | NA | | NA | |
| Xylene (Total) | NA | | | | | | NA | | NA | | | | NA | | NA | | NA | | NA | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301205

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW50D-04 | | RW52-02 | | RW52-04 | | RW52-05 | | RW53-02 | | RW53-04 | | RW54-02 | | RW55-05 | | RW56-02 | | RW56-04 | | RW56-05 | | RW58-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | RW50-04 | | | | | | | | | | | | | | | | | | | | | | RW58D-02 | |
| Sacode | DUP | | | | | | | | | | | | | | | | | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | | |
| Aluminum | | | NA | | | | 51.5 | B | NA | | 60.2 | B | NA | | | | NA | | 27.8 | B | | | NA | |
| Antimony | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Arsenic | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Barium | 35 | J | NA | | 29.5 | J | 26.9 | | NA | | 12.1 | J | NA | | 36 | | NA | | 5.9 | B | 6.9 | B | NA | |
| Beryllium | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Cadmium | | | NA | | | | | | NA | | | | NA | | | | NA | | | | 0.4 | B | NA | |
| Calcium | 21200 | | NA | | 27100 | | 27200 | | NA | | 25800 | | NA | | 31200 | | NA | | 21900 | | 22700 | | NA | |
| Chromium | 8.9 | J | NA | | | | | | NA | | 2.7 | B | NA | | 0.8 | B | NA | | 1.1 | B | 0.4 | B | NA | |
| Cobalt | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Copper | 11.6 | J | NA | | 21.6 | J | 51.1 | | NA | | 156 | | NA | | 14.4 | | NA | | 58.5 | B | 109 | | NA | |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 50.6 | B | NA | | 197 | | 168 | | NA | | 71 | B | NA | | 63.9 | B | NA | | 70.9 | B | 85.3 | B | NA | |
| Lead | | | NA | | 1 | | 9.2 | | NA | | 4 | K | NA | | | | NA | | 15 | | 17.5 | | NA | |
| Magnesium | 12400 | | NA | | 15700 | | 14900 | | NA | | 9800 | | NA | | 20000 | | NA | | 4710 | J | 5260 | | NA | |
| Manganese | 10.6 | J | NA | | 1.4 | J | 1.9 | K | NA | | 2.8 | B | NA | | | | NA | | | | | | NA | |
| Mercury | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Nickel | 107 | | NA | | | | | | NA | | 5.4 | B | NA | | 2 | B | NA | | 2.7 | B | | | NA | |
| Potassium | 1050 | J | NA | | 950 | J | 871 | J | NA | | 774 | J | NA | | 1770 | J | NA | | 505 | J | 850 | J | NA | |
| Selenium | | | NA | | 4 | R | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Silver | | | NA | | | | 1 | B | NA | | | | NA | | | | NA | | | | | | NA | |
| Sodium | 2120 | J | NA | | 3690 | J | 4420 | | NA | | 10500 | | NA | | 3250 | | NA | | 4860 | J | 5580 | | NA | |
| Thallium | | | NA | | | | | | NA | | | | NA | | | | NA | | | | | | NA | |
| Vanadium | | | NA | | | | | | NA | | | | NA | | | | NA | | 1.3 | L | 1.4 | | NA | |
| Zinc | 19 | B | NA | | 13.7 | B | 47.9 | | NA | | 24.4 | B | NA | | | | NA | | 29.4 | B | 54.9 | | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichlorobenzene | | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | | | NA | | | | | | | | NA | | | | | | NA | | 0.2 | J |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | | | | | NA | | | | | | | | NA | | | | | | NA | | | |
| 2-Butanone | NA | | | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| 2-Hexanone | | | | | | | | | | | NA | | | | | | | | NA | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | 2.6 | | NA | | | | | | NA | | | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301206

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW50D-04 | | RW52-02 | | RW52-04 | | RW52-05 | | RW53-02 | | RW53-04 | | RW54-02 | | RW55-05 | | RW56-02 | | RW56-04 | | RW56-05 | | RW58-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | RW50-04 | | | | | | | | | | | | | | | | | | | | | | RW58D-02 | |
| Sacode | DUP | | | | | | | | | | | | | | | | | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | ug/L | | | | | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | 5.3 | | 0.8 | B | | | | | | | | | | | 0.1 | J |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Methylene Chloride | | | | | | | 30 | B | | | | | | | 5 | B | | | | | 18 | B | | |
| N-Butylbenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | 2 | B | | | | | | | 3.3 | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 1 | | 2.8 | | 10 | | 9 | J | | | | | | | 1 | B | | | | | | | 236 | C |
| Trichlorofluoromethane | NA | | 0.02 | J | NA | | NA | | | | NA | | | | NA | | | | NA | | NA | | 1.7 | |
| Xylene (Total) | | | NA | | | | | | NA | | | | NA | | | | NA | | | | NA | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301207

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW58-04 | | RW58-05 | | RW58D-02 | | RW59-01 | | RW59-02 | | RW59-04 | | RW59-05 | | RW6-02 | | RW6-04 | | RW61-02 | | RW61-05 | | RW62-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | RW58-02 | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | | |
| Aluminum | | | | | NA | | | | 8.7 | B | 64 | B | 46.8 | B | NA | | 73.6 | B | 12.7 | B | 25.1 | B | NA | |
| Antimony | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Arsenic | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Barium | 35.4 | J | 36.2 | | NA | | | | 64.2 | | 55.3 | J | 60.1 | | NA | | 30.5 | J | 20 | | 24.8 | | NA | |
| Beryllium | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Cadmium | | | | | NA | | | | | | | | 3 | K | NA | | | | 3 | K | | | NA | |
| Calcium | 28900 | | 28700 | | NA | | 4780 | | 5160 | | 5570 | B | 5970 | | NA | | 2380 | B | 9850 | | 24600 | | NA | |
| Chromium | | | 1.2 | B | NA | | | | | | 11.9 | B | | | NA | | 10.5 | B | | | | | NA | |
| Cobalt | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Copper | 8.2 | J | 259 | | NA | | 140 | | 168 | | 146 | B | 257 | | NA | | 289 | | 29.6 | B | 27.9 | | NA | |
| Cyanide | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | |
| Iron | | | 177 | B | NA | | 515 | | 1940 | | 331 | B | 332 | | NA | | 194 | B | 1230 | | 150 | B | NA | |
| Lead | 4.1 | | 73.1 | | NA | | 15 | | 3.7 | | 5.9 | | 79 | | NA | | 5.5 | K | 3.5 | B | 5.2 | | NA | |
| Magnesium | 16700 | | 16800 | | NA | | 2090 | | 2340 | | 2050 | J | 2220 | | NA | | 2970 | J | 5630 | | 14400 | | NA | |
| Manganese | | | 4.5 | | NA | | | | 86.4 | | 5 | B | 4.2 | K | NA | | 9.2 | J | 28.7 | | 1.4 | B | NA | |
| Mercury | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Nickel | | | 1.5 | B | NA | | | | | | 10.8 | B | | | NA | | 11.7 | B | | | 8.9 | | NA | |
| Potassium | 1460 | J | 1800 | J | NA | | 1770 | | 1340 | | 1030 | J | 1030 | J | NA | | 1390 | J | 869 | B | 1570 | | NA | |
| Selenium | 4 | R | | | NA | | | | 1.7 | B | | | | | NA | | | | | | | | NA | |
| Silver | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Sodium | 3960 | J | 3830 | | NA | | 3600 | | 3930 | | 3460 | J | 4230 | | NA | | 2580 | B | 3840 | | 3070 | | NA | |
| Thallium | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Vanadium | | | | | NA | | | | | | | | | | NA | | | | | | | | NA | |
| Zinc | 7.4 | B | 250 | | NA | | | | 10.6 | B | 23 | B | 77 | | NA | | 56.6 | B | 262 | | 28.7 | B | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | | | NA | | NA | | | | | | | | NA | | NA | | NA | | | | NA | | NA | |
| Acenaphthene | | | NA | | NA | | | | | | | | NA | | NA | | NA | | | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | 9 | J | NA | | NA | | | | | | | | NA | | NA | | NA | | | | NA | | NA | |
| Di-n-butylphthalate | | | NA | | NA | | 1 | B | | | | | NA | | NA | | NA | | | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | | | | | | | ug/L | | | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2,4-Trichlorobenzene | | | NA | | | | | | | | | | NA | | | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | | | | | | | NA | | | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | 0.3 | J | 6.9 | | 18.1 | | 7 | | NA | | | | | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | NA | | NA | | NA | | 2 | J | NA | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | | | | | 0.9 | J | NA | | | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | | | | | | | NA | | | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | | | | | | | NA | | | | | | | | NA | | | |
| 2-Butanone | NA | | | | | | | | | | NA | | | | | | NA | | | | | | | |
| 2-Hexanone | | | | | | | | | | | NA | | | | | | NA | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | NA | | | | | | | |
| Acetone | NA | | | | | | | | | | NA | | | | 1.1 | | NA | | | | 43 | B | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301208

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW58-04 | | RW58-05 | | RW58D-02 | | RW59-01 | | RW59-02 | | RW59-04 | | RW59-05 | | RW6-02 | | RW6-04 | | RW61-02 | | RW61-05 | | RW62-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | RW58-02 | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | | | | | ug/L | | | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | 0.1 | J | | | 0.2 | J | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| M-xylene | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | | | | NA | | | |
| Methylene Chloride | | | 7 | B | | | | | | | | | 4 | B | | | | | | | 99 | B | | |
| N-Butylbenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| N-Propylbenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| Naphthalene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| O-chlorotoluene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| O-xylene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| P-chlorotoluene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| P-isopropyltoluene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| Sec-butylbenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | | | | | NA | | NA | | | | NA | | | | NA | | | |
| Tetrachloroethene | 3 | | 4 | B | 3.6 | | 19.5 | | 37.5 | | 17 | | 20 | | | | | | 0.9 | J | 8 | B | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 190 | | 200 | | 224 | C | 384 | C | 710 | J | 440 | | 510 | | | | | | 21.9 | | 450 | | | |
| Trichlorofluoromethane | NA | | NA | | 1.9 | | 6 | | 12 | | NA | | NA | | | | NA | | 0.08 | J | NA | | | |
| Xylene (Total) | | | | | NA | | NA | | NA | | | | | | NA | | | | NA | | | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301209

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW62-04 | | RW62-05 | | RW63-01 | | RW63-02 | | RW63-04 | | RW63-05 | | RW68-02 | | RW68-04 | | RW68-05 | | RW69-02 | | RW69-04 | | RW69-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| ***INORGANICS*** | *ug/L* | | *ug/L* | | | | | | *ug/L* | | *ug/L* | | | | *ug/L* | | *ug/L* | | | | *ug/L* | | *ug/L* | |
| Aluminum | 45.8 | B | 54.2 | B | | | NA | | 55.3 | B | 51.4 | B | NA | | 60.5 | B | 39.5 | B | NA | | 40 | B | 49 | B |
| Antimony | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Arsenic | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Barium | 135 | J | 105 | | | | NA | | 53 | J | 61.6 | | NA | | 8.1 | B | 5.9 | | NA | | 11.4 | B | 11.5 | |
| Beryllium | | | | | | | NA | | | | 0.2 | B | NA | | | | | | NA | | | | | |
| Cadmium | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Calcium | 4830 | B | 5000 | | 14600 | | NA | | 9990 | | 9320 | | NA | | 24300 | | 20900 | | NA | | 12300 | | 11900 | |
| Chromium | 5.5 | B | | | | | NA | | 14.4 | B | 0.9 | B | NA | | 13.9 | B | | | NA | | 2.5 | B | | |
| Cobalt | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Copper | 118 | B | 89.1 | | | | NA | | 36.9 | B | | | NA | | 30.6 | B | 43.8 | | NA | | 25.7 | B | 8.8 | |
| Cyanide | NA | | | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | 86 | B | 95.1 | B | | | NA | | 158 | B | 43.4 | B | NA | | 198 | B | 98.4 | | NA | | 87.9 | B | 52.4 | |
| Lead | 2.2 | K | | | | | NA | | | | | | NA | | 2.2 | K | 3 | L | NA | | | | | |
| Magnesium | 1470 | J | 1410 | | 4220 | | NA | | 3600 | J | 3790 | | NA | | 7530 | | 6500 | | NA | | 4010 | J | 3730 | |
| Manganese | 6.3 | B | 7.5 | | | | NA | | 6.2 | B | 6.4 | | NA | | 12.9 | J | 33.6 | | NA | | 1.7 | B | 2.3 | |
| Mercury | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Nickel | 5.7 | B | | | | | NA | | 12.5 | B | | | NA | | 12.4 | B | | | NA | | 5.5 | B | | |
| Potassium | 868 | J | 1490 | | 2180 | | NA | | 991 | J | 1610 | J | NA | | 903 | J | 860 | | NA | | 630 | J | 666 | |
| Selenium | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Silver | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Sodium | 5260 | | 4420 | | 5620 | | NA | | 4880 | J | 5410 | | NA | | 6790 | | 8310 | J | NA | | 4740 | J | 5140 | J |
| *Thallium* | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Vanadium | | | | | | | NA | | | | | | NA | | | | | | NA | | | | | |
| Zinc | 54.1 | B | 39.6 | K | 73 | | NA | | 13.9 | B | | | NA | | 47.3 | B | 73 | | NA | | 14.9 | B | 20 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | 1 | B | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | *ug/L* | | | | | | | | *ug/L* | | | | | | *ug/L* | | | | | | *ug/L* | |
| 1,1,1-Trichloroethane | | | | | 2 | J | 2.4 | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| *1,1,2-Trichloroethane* | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | | | NA | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichlorobenzene | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| *1,2-Dichloroethene (trans)* | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | | | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | |
| 2-Butanone | NA | | | | | | | | NA | | | | | | NA | | | | | | NA | | | |
| 2-Hexanone | NA | | | | | | | | NA | | | | | | NA | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | | | | | NA | | 6 | B | | | NA | | | | | | NA | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | 0.2 | J | | | | | | | | | | | | | | | | | | |

AR301210

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW62-04 | | RW62-05 | | RW63-01 | | RW63-02 | | RW63-04 | | RW63-05 | | RW68-02 | | RW68-04 | | RW68-05 | | RW69-02 | | RW69-04 | | RW69-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | | | ug/L | | | | | | ug/L | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| M-xylene | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Methylene Chloride | | | 23 | B | | | | | | | 12 | B | | | | | 21 | B | | | | | 22 | B |
| N-Butylbenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| N-Propylbenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Naphthalene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-chlorotoluene | NA | | NA | | 0.2 | J | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-xylene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-chlorotoluene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-isopropyltoluene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Sec-butylbenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | 2 | J | | | | | | |
| Trichlorofluoromethane | NA | | NA | | | | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | | | | | NA | | NA | | | | | | NA | | | | | | NA | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301211

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW7-02 | | RW7-03 | | RW7-04 | | RW70-02 | | RW70-04 | | RW70-05 | | RW71-02 | | RW71-03 | | RW71-04 | | RW71-D-03 | | RW72-02 | | RW72-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | RW71-D-03 | | | | RW71-03 | | RW72D-02 | | RW72D-04 | |
| Sacode | | | | | | | | | | | | | | | DUP | | | | DUP | | DUP | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | | | ug/L | | | | ug/L | | ug/L | | | | | | ug/L | | | | | | ug/L | |
| Aluminum | NA | | NA | | 9.7 | B | NA | | | | 33.6 | B | NA | | NA | | 165 | B | NA | | NA | | 51.7 | B |
| Antimony | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Arsenic | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Barium | NA | | NA | | 38.1 | J | NA | | 1.7 | J | 2.4 | | NA | | NA | | 15.9 | J | NA | | NA | | 76.7 | J |
| Beryllium | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Cadmium | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Calcium | NA | | NA | | 4870 | J | NA | | 20500 | | 22100 | | NA | | NA | | 5350 | B | NA | | NA | | 15400 | |
| Chromium | NA | | NA | | | | NA | | | | | | NA | | NA | | 3 | B | NA | | NA | | 3.8 | B |
| Cobalt | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Copper | NA | | NA | | 552 | | NA | | 3.1 | J | 17.8 | K | NA | | NA | | 49.9 | B | NA | | NA | | 91.4 | B |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | NA | | NA | | 58.9 | B | NA | | 28.1 | B | 133 | | NA | | NA | | 207 | B | NA | | NA | | 94 | B |
| Lead | NA | | NA | | 11.2 | | NA | | | | | | NA | | NA | | 2.5 | K | NA | | NA | | | |
| Magnesium | NA | | NA | | 1450 | J | NA | | 4760 | J | 4910 | | NA | | NA | | 2050 | J | NA | | NA | | 6430 | |
| Manganese | NA | | NA | | 5.4 | J | NA | | | | 1.8 | K | NA | | NA | | 10.8 | J | NA | | NA | | 1.9 | B |
| Mercury | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Nickel | NA | | NA | | | | NA | | | | | | NA | | NA | | 2.4 | B | NA | | NA | | 5.1 | B |
| Potassium | NA | | NA | | 1070 | J | NA | | 754 | J | 762 | J | NA | | NA | | 632 | J | NA | | NA | | 2750 | J |
| Selenium | NA | | NA | | | | NA | | 4 | R | | | NA | | NA | | | | NA | | NA | | | |
| Silver | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Sodium | NA | | NA | | 5010 | | NA | | 6070 | | 6840 | | NA | | NA | | 4370 | J | NA | | NA | | 11400 | |
| Thallium | NA | | NA | | | | NA | | | | | | NA | | NA | | | | NA | | NA | | | |
| Vanadium | NA | | NA | | | | NA | | 1.2 | J | | | NA | | NA | | | | NA | | NA | | | |
| Zinc | NA | | NA | | 49.7 | B | NA | | 4 | B | 29.1 | K | NA | | NA | | 22.1 | B | NA | | NA | | 24.4 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | | | | | | | | | | | ug/L | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.08 | J | NA | | NA | | | | NA | | NA | | 2.3 | | NA | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | NA | | 1.1 | | | | | | | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | NA | | NA | | 0.07 | J | NA | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | 1 | R | NA | | | | NA | | NA | | | | 1 | R | | | 1 | R | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | NA | | 0.4 | J | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | | | | | | | NA | | | | | | | | | | | | | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | | NA | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | | | | | | | NA | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | NA | | 0.2 | J | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | NA | | 0.3 | J | | | | | | | | | | |
| 2-Butanone | | | | | NA | | | | NA | | | | | | | | NA | | | | | | NA | |
| 2-Hexanone | | | 1 | R | | | | | | | | | | | 1 | R | NA | | 1 | R | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | NA | | | | | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | NA | | NA | | 0.1 | J | NA | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | 0.1 | J | | | | | | | | | 12 | | | | | | | |

AR301212

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW7-02 | | RW7-03 | | RW7-04 | | RW70-02 | | RW70-04 | | RW70-05 | | RW71-02 | | RW71-03 | | RW71-04 | | RW71-D-03 | | RW72-02 | | RW72-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | RW71-D-03 | | | | RW71-03 | | RW72D-02 | | RW72D-04 | |
| Sacode | | | | | | | | | | | | | | | DUP | | | | DUP | | DUP | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | | | | | ug/L | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | 0.07 | J | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | NA | | NA | | 0.2 | J | NA | | NA | | NA | | | | NA | |
| M-xylene | | | NA | | NA | | | | NA | | NA | | 0.1 | J | NA | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | | | | | | | 4 | B | | | | | | | | | | | | |
| N-Butylbenzene | | | NA | | NA | | | | NA | | NA | | 0.2 | J | NA | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | NA | | NA | | 0.09 | J | NA | | NA | | NA | | | | NA | |
| Naphthalene | 2.6 | | NA | | NA | | | | NA | | NA | | 23.1 | | NA | | NA | | NA | | | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | NA | | NA | | 0.1 | J | NA | | NA | | NA | | | | NA | |
| O-xylene | | | NA | | NA | | | | NA | | NA | | 0.2 | J | NA | | NA | | NA | | | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | NA | | NA | | 0.2 | J | NA | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | NA | | NA | | 0.06 | J | NA | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | NA | | NA | | 0.1 | J | NA | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | 0.4 | J | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | NA | | NA | | 0.2 | J | NA | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | 0.3 | B | 1 | | | | | | | | | | | | 2.7 | | 5 | B |
| Trichlorofluoromethane | | | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | | | | NA | |
| Xylene (Total) | NA | | | | | | NA | | | | | | NA | | | | | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301213

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW72-05 | | RW72D-02 | | RW72D-04 | | RW73-02 | | RW73-04 | | RW74-02 | | RW74-04 | | RW74-05 | | RW76-02 | | RW76-04 | | RW76-05 | | RW78-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | RW72-02 | | RW72-04 | | | | | | | | | | | | | | | | | | | |
| Sacode | | | DUP | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | ug/L | | | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | | |
| Aluminum | 13.8 | B | NA | | 45.5 | B | NA | | 14 | B | NA | | 1050 | | 320 | | NA | | 24.4 | B | 68.7 | B | NA | |
| Antimony | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Arsenic | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Barium | 65.5 | | NA | | 75.5 | J | NA | | 28.5 | J | NA | | 50.3 | J | 39.4 | | NA | | 140 | J | 134 | | NA | |
| Beryllium | | | NA | | | | NA | | | | NA | | 1.2 | J | | | NA | | | | | | NA | |
| Cadmium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Calcium | 12000 | | NA | | 15100 | | NA | | 10100 | | NA | | 1870 | J | 2300 | | NA | | 3360 | J | 4930 | | NA | |
| Chromium | | | NA | | 2.7 | B | NA | | 2.7 | J | NA | | 7.5 | J | 8.5 | J | NA | | | | | | NA | |
| Cobalt | | | NA | | | | NA | | | | NA | | 4.6 | J | | | NA | | | | | | NA | |
| Copper | 239 | | NA | | 80.7 | B | NA | | 11.5 | J | NA | | 74.6 | | 44.3 | K | NA | | 529 | | 495 | | NA | |
| Cyanide | | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Iron | | | NA | | 67.4 | B | NA | | 206 | | NA | | 25400 | | 11600 | | NA | | 1540 | | 446 | | NA | |
| Lead | 16 | | NA | | | | NA | | 12.3 | | NA | | 7.3 | | 3 | L | NA | | 15.5 | | 12.2 | | NA | |
| Magnesium | 5420 | | NA | | 6310 | | NA | | 5580 | | NA | | 839 | J | 915 | | NA | | 2290 | J | 2450 | | NA | |
| Manganese | | | NA | | 1.3 | B | NA | | 2.9 | J | NA | | 215 | | 84.8 | | NA | | 58.8 | | 41.2 | | NA | |
| Mercury | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Nickel | | | NA | | 4.6 | B | NA | | | | NA | | 23.3 | J | 6.9 | K | NA | | 1.8 | B | 2.6 | K | NA | |
| Potassium | 3050 | | NA | | 2690 | J | NA | | 658 | J | NA | | 2960 | J | 2050 | J | NA | | 2500 | J | 2130 | J | NA | |
| Selenium | | | NA | | | | NA | | | | NA | | 4 | R | | | NA | | 4 | R | | | NA | |
| Silver | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Sodium | 13000 | | NA | | 11100 | | NA | | 3190 | J | NA | | 2990 | J | 2090 | | NA | | 7850 | | 8450 | | NA | |
| Thallium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| Vanadium | | | NA | | | | NA | | | | NA | | 12.8 | J | | | NA | | | | | | NA | |
| Zinc | 30.5 | B | NA | | 21 | B | NA | | 4.3 | B | NA | | 120 | | 43.1 | | NA | | | | 36.9 | K | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | | | | | | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | | | | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | | | |
| 2-Butanone | | | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | | | | | NA | | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | 12 | B | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | | | |

AR301214

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW72-05 | | RW72D-02 | | RW72D-04 | | RW73-02 | | RW73-04 | | RW74-02 | | RW74-04 | | RW74-05 | | RW76-02 | | RW76-04 | | RW76-05 | | RW78-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | RW72-02 | | RW72-04 | | | | | | | | | | | | | | | | | | | |
| Sacode | | | DUP | | DUP | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/L | | | | | | | | | | | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloromethane | | | | | | | | | | | | | 0.5 | B | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | | | NA | | 0.1 | J | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Methylene Chloride | 22 | B | | | | | | | | | | | | | 4 | B | | | | | 4 | B | | |
| N-Butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | 0.3 | J | | | | | | | | | | | | | | | | |
| Trichloroethene | 9 | B | 2.7 | | 5 | B | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | | NA | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301215

*Analytical Results for Potable Source Groundwater Samples*
Crossley Farm Site, Pennsylvania

| Sample ID | RW78-04 | | RW78-05 | | RW79-02 | | RW79-04 | | RW79-05 | | RW8-02 | | RW8-04 | | RW8-05 | | RW81-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | | |
| Aluminum | 42.2 | B | 130 | B | NA | | 15.3 | B | 58 | B | 8.8 | B | 71.4 | B | 60.8 | B | NA | |
| Antimony | | | | | NA | | | | | | | | | | | | NA | |
| Arsenic | | | | | NA | | | | | | 0.5 | B | | | | | NA | |
| Barium | 48.9 | J | 69.4 | J | NA | | 64.2 | J | 72.4 | | 50 | | 45.3 | J | 47.5 | | NA | |
| Beryllium | | | | | NA | | | | | | | | | | | | NA | |
| Cadmium | | | | | NA | | | | | | | | | | | | NA | |
| Calcium | 3790 | B | 2370 | B | NA | | 2480 | J | 3990 | | 4790 | | 5760 | B | 4580 | | NA | |
| Chromium | 2.5 | B | 1.3 | B | NA | | | | 1.3 | J | | | 11.7 | B | | | NA | |
| Cobalt | | | | | NA | | | | | | | | | | | | NA | |
| Copper | 264 | | 271 | J | NA | | 601 | | 788 | | 27 | B | 76.1 | B | 66.3 | | NA | |
| Cyanide | NA | | | | NA | | NA | | NA | | NA | | NA | | | | NA | |
| Iron | 506 | B | 1910 | | NA | | 56.4 | B | 275 | | 247 | | 301 | B | | | NA | |
| Lead | 3.4 | K | 9.4 | | NA | | 181 | | 222 | | 9.3 | | 9.4 | | 20.1 | | NA | |
| Magnesium | 1730 | J | 1680 | J | NA | | 1510 | J | 1860 | | 2830 | | 2690 | J | 2710 | | NA | |
| Manganese | 11.3 | J | 51.1 | | NA | | 12.5 | J | 24.7 | K | 3.5 | | 2.3 | B | 2.9 | B | NA | |
| Mercury | | | | | NA | | 0.14 | K | | | | | | | | | NA | |
| Nickel | 5.1 | B | 4.7 | | NA | | 3.6 | B | 3.6 | K | | | 6.6 | B | | | NA | |
| Potassium | 1370 | J | 2840 | J | NA | | 1760 | J | 1380 | J | 1230 | | 1110 | J | 1920 | | NA | |
| Selenium | | | | | NA | | | | | | | | | | | | NA | |
| Silver | | | | | NA | | | | 1 | B | | | | | | | NA | |
| Sodium | 3910 | J | 34500 | | NA | | 3640 | J | 3700 | | 2140 | | 2280 | B | 1930 | B | NA | |
| Thallium | | | | | NA | | | | | | | | | | | | NA | |
| Vanadium | | | | | NA | | | | | | | | | | | | NA | |
| Zinc | 24.1 | B | 51.2 | | NA | | 217 | J | 279 | | 13.2 | | 20.4 | B | 17.4 | B | NA | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | | | | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | 0.6 | B | | | NA | | NA | |
| **VOLATILES** | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | | | NA | | | | NA | | NA | | | | | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | | | NA | | 0.3 | J | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 2-Butanone | NA | | | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | NA | | | | | | | | | | | | NA | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | | | NA | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |

AR301216

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW78-04 | | RW78-05 | | RW79-02 | | RW79-04 | | RW79-05 | | RW8-02 | | RW8-04 | | RW8-05 | | RW81-02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | 0.2 | J | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Methylene Chloride | | | 11 | B | | | | | 13 | B | | | | | 46 | B | | |
| N-Butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | 11.2 | | 20 | | 13 | B | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | 420 | J | 810 | | 620 | | | |
| Trichlorofluoromethane | NA | | NA | | | | NA | | NA | | 3 | J | NA | | NA | | | |
| Xylene (Total) | | | | | NA | | | | | | NA | | | | | | NA | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | |

AR301217

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW81-04 | | RW81-05 | | RW82-02 | | RW82-04 | | RW82-05 | | RW83-02 | | RW83-04 | | RW83-05 | | RW85-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | ug/L | | | | ug/L | | ug/L | | | | ug/L | | ug/L | | ug/L | |
| Aluminum | 84.3 | B | 64.9 | B | NA | | 23.2 | B | 81.4 | | NA | | 63.5 | B | 71 | B | | |
| Antimony | | | | | NA | | | | | | NA | | | | | | | |
| Arsenic | | | | | NA | | | | | | NA | | | | | | | |
| Barium | 5.2 | J | 4.2 | | NA | | 128 | J | 118 | | NA | | 92.3 | J | 75.3 | | | |
| Beryllium | | | | | NA | | | | | | NA | | | | | | | |
| Cadmium | | | | | NA | | | | | | NA | | | | | | | |
| Calcium | 437 | B | 1920 | | NA | | 8230 | | 9390 | | NA | | 5790 | | 5400 | | 14400 | |
| Chromium | | | | | NA | | | | | | NA | | | | | | | |
| Cobalt | | | | | NA | | 1 | J | | | NA | | 1.2 | J | | | | |
| Copper | 50.2 | | 59.2 | | NA | | 110 | | 86.9 | | NA | | 286 | | 111 | | | |
| Cyanide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Iron | 612 | | 926 | | NA | | 234 | | 563 | | NA | | 6740 | | 5040 | | | |
| Lead | 8.4 | | 9.7 | | NA | | 5.1 | | 7.9 | | NA | | 4.7 | | 9.7 | | | |
| Magnesium | 190 | J | 378 | | NA | | 4080 | J | 4030 | | NA | | 1740 | J | 1590 | | 5970 | |
| Manganese | 20.7 | | 23.3 | K | NA | | 30.7 | | 25.1 | | NA | | 211 | | 390 | | | |
| Mercury | | | | | NA | | | | | | NA | | | | | | | |
| Nickel | 1.1 | B | | | NA | | 2.2 | B | | | NA | | 26.1 | J | | | | |
| Potassium | 380 | B | 258 | J | NA | | 3050 | J | 2520 | | NA | | 1720 | J | 1950 | | | |
| Selenium | 4 | R | | | NA | | 4 | R | | | NA | | | | | | | |
| Silver | | | | | NA | | | | | | NA | | | | | | | |
| Sodium | 870 | B | 1350 | | NA | | 3910 | J | 4830 | J | NA | | 8170 | J | 5960 | | 6600 | |
| Thallium | | | | | NA | | | | | | NA | | | | | | | |
| Vanadium | | | | | NA | | | | | | NA | | | | | | | |
| Zinc | 23.2 | B | 51.3 | | NA | | 34 | B | 50.8 | | NA | | 61.4 | B | 43.5 | | | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | |
| *3,3'-Dichlorobenzidine* | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 2 | B |
| **VOLATILES** | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2,4-Trichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,2,4-Trimethylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dibromo-3-chloropropane | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,2-Dichloroethene (Total) | NA | | | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichloroethene (trans) | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,3-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 1,4-Dichlorobenzene | | | NA | | | | | | NA | | | | | | NA | | | |
| 2-Butanone | NA | | | | | | NA | | | | | | NA | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| Acetone | NA | | | | | | NA | | | | | | NA | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Bromoform | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |

AR301218

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID | RW81-04 | | RW81-05 | | RW82-02 | | RW82-04 | | RW82-05 | | RW83-02 | | RW83-04 | | RW83-05 | | RW85-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | ug/L | | | | | | ug/L | | | | | | ug/L | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | 0.02 | J | | | | | 0.1 | J | | | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| M-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | NA | |
| Methylene Chloride | | | 4 | B | | | | | 2 | B | | | | | 20 | B | | |
| N-Butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| N-Propylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Naphthalene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| O-xylene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-chlorotoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| P-isopropyltoluene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Sec-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Styrene | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Tetrachloroethene | | | | | | | | | | | 0.2 | J | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | NA | | | | NA | | NA | | | | NA | | NA | | | |
| Xylene (Total) | | | | | NA | | | | | | NA | | | | | | NA | |
| | | | | | | | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301219

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW86-02 | | RW86-04 | | RW86-05 | | RW88-02 | | RW88-04 | | RW89-02 | | RW89-04 | | RW89-05 | | RW9-02 | | RW9-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | | | ug/L | | | | | | | | | | ug/L | | | | | |
| Aluminum | NA | | | | 18.4 | B | NA | | | | NA | | 36.5 | B | 21.3 | B | | | 29.8 | B |
| Antimony | NA | | | | | | NA | | | | NA | | 4.2 | B | | | | | | |
| Arsenic | NA | | 3.4 | J | | | NA | | | | NA | | | | | | | | | |
| Barium | NA | | 32.1 | J | 30.4 | | NA | | 27.5 | J | NA | | 4.8 | J | 4.4 | | 26.1 | | 24.8 | J |
| Beryllium | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Cadmium | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Calcium | NA | | 15500 | | 15900 | | NA | | 11100 | | NA | | 25500 | | 27000 | | 28800 | B | 30300 | |
| Chromium | NA | | | | | | NA | | | | NA | | | | | | | | 2.3 | B |
| Cobalt | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Copper | NA | | 6.9 | J | 12 | K | NA | | | | NA | | 8.8 | J | 103 | | 16.8 | B | 19.6 | B |
| Cyanide | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| Iron | NA | | 12.7 | B | | | NA | | | | NA | | 18.1 | B | 27 | | 58.6 | B | | |
| Lead | NA | | | | | | NA | | | | NA | | 2 | J | 5.1 | K | 1.9 | B | | |
| Magnesium | NA | | 3920 | J | 3940 | | NA | | 2900 | J | NA | | 4580 | J | 4770 | | 17000 | | 17200 | |
| Manganese | NA | | 1.2 | J | | | NA | | 1.4 | J | NA | | | | 1.2 | K | | | | |
| Mercury | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Nickel | NA | | | | | | NA | | | | NA | | | | | | | | 4.5 | B |
| Potassium | NA | | 916 | J | 894 | J | NA | | 842 | J | NA | | 1140 | B | 960 | J | 1390 | | 1290 | J |
| Selenium | NA | | 4 | R | | | NA | | 4 | R | NA | | | | | | 1.1 | | | |
| Silver | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Sodium | NA | | 6800 | | 6990 | | NA | | 5470 | | NA | | 7300 | | 7560 | | 3090 | | 3080 | J |
| Thallium | NA | | | | | | NA | | | | NA | | | | | | 0.2 | B | | |
| Vanadium | NA | | | | | | NA | | | | NA | | | | | | | | | |
| Zinc | NA | | 103 | | 219 | | NA | | 19.8 | B | NA | | 47.5 | B | 160 | | 7.2 | B | 10.6 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | 2 | B |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 0.3 | J | | |
| **VOLATILES** | | | | | ug/L | | | | | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | | | | | NA | | | | | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dichlorobenzene | | | | | NA | | | | | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | | | | | NA | | | | | | | | | | NA | | 0.6 | J | 0.7 | J |
| 1,2-Dichloroethene (Total) | NA | | NA | | | | NA | | NA | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | NA | | | | | | | | | | NA | | | | | |
| 1,3-Dichlorobenzene | | | | | NA | | | | | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | | | | | NA | | | | | | | | | | NA | | | | | |
| 2-Butanone | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | | NA | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | NA | | | | | | NA | | | | NA | | | | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | 0.2 | J | | | | | | | | |

AR301220

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW86-02 | | RW86-04 | | RW86-05 | | RW88-02 | | RW88-04 | | RW89-02 | | RW89-04 | | RW89-05 | | RW9-02 | | RW9-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | ug/L | | | | | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | 0.2 | J | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | 30 | B | | | | | | | | | 29 | B | | | | |
| N-Butylbenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | | | 9.4 | | 8 | |
| Toluene | | | | | | | | | | | 0.07 | J | | | | | | | | |
| Trichloroethene | | | | | 2 | J | | | | | | | | | 4 | R | 450 | J | 350 | |
| Trichlorofluoromethane | | | NA | | NA | | | | NA | | | | NA | | NA | | 4 | J | NA | |
| Xylene (Total) | NA | | | | | | NA | | | | NA | | | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |

AR301221

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW9-05 | | RW90-02 | | RW90-04 | | RW91-02 | | RW91-04 | | RW92-02 | | RW92-04 | | RW92-05 | | RW93-02 | | RW93-04 | | RW93-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | ug/L | | | | | | | | | | | | | | ug/L | | | | | | ug/L | |
| Aluminum | 53.6 | B | NA | | 258 | | NA | | 34.6 | B | NA | | 47 | B | 37.2 | B | NA | | | | | |
| Antimony | | | NA | | | | NA | | 5.3 | B | NA | | | | | | NA | | | | | |
| Arsenic | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| *Barium* | *26.5* | | *NA* | | *58.2* | *J* | *NA* | | *28.1* | *J* | *NA* | | *6.8* | *B* | *6.2* | | *NA* | | *20.6* | *J* | *22.1* | |
| Beryllium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Cadmium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | 0.4 | B |
| Calcium | 29400 | | NA | | 23700 | | NA | | 16200 | | NA | | 29500 | | 29900 | | NA | | 9140 | | 9300 | |
| Chromium | | | NA | | | | NA | | | | NA | | 1.8 | B | | | NA | | | | 0.5 | B |
| Cobalt | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Copper | 70.3 | | NA | | 178 | | NA | | 15.2 | J | NA | | 38.9 | B | 75.6 | J | NA | | 95.5 | | 83.6 | |
| Cyanide | | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | NA | |
| Iron | 102 | B | NA | | 441 | | NA | | 22.8 | B | NA | | 41.2 | B | | | NA | | 16.5 | B | 95 | B |
| Lead | 5.1 | K | NA | | 218 | | NA | | 1.3 | J | NA | | | | 8.2 | | NA | | | | 2.2 | K |
| Magnesium | 17400 | | NA | | 9330 | | NA | | 7460 | | NA | | 17100 | | 18000 | | NA | | 3980 | J | 4010 | |
| Manganese | 3.8 | B | NA | | 2.4 | J | NA | | 1.2 | J | NA | | 1.1 | B | | | NA | | | | | |
| Mercury | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Nickel | | | NA | | 1.6 | B | NA | | | | NA | | 4.4 | B | | | NA | | | | 0.9 | B |
| Potassium | 1840 | | NA | | 1500 | J | NA | | 1170 | J | NA | | 832 | J | 841 | J | NA | | 881 | J | 1320 | J |
| Selenium | | | NA | | 4 | R | NA | | | | NA | | | | | | NA | | 4 | R | | |
| Silver | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Sodium | 2830 | | NA | | 24200 | | NA | | 7060 | | NA | | 6640 | | 7680 | J | NA | | 6140 | | 6670 | |
| Thallium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Vanadium | | | NA | | | | NA | | | | NA | | | | | | NA | | | | | |
| Zinc | 17.9 | B | NA | | 46 | B | NA | | 90.2 | | NA | | 14.3 | B | 22 | K | NA | | 14.1 | B | 37 | |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/L | | | | | | | | | | | | | | ug/L | | | | | | ug/L | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | 0.1 | J | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2,4-Trichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 1,2,4-Trimethylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | | NA | |
| 1,2-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethene (cis) | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 1,2-Dichloroethene (Total) | | | NA | | NA | | NA | | NA | | NA | | NA | | | | NA | | NA | | | |
| 1,2-Dichloroethene (trans) | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 1,3-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 1,4-Dichlorobenzene | NA | | | | | | | | | | | | | | NA | | | | | | NA | |
| 2-Butanone | | | | | NA | | | | NA | | | | NA | | | | | | NA | | | |
| 2-Hexanone | | | | | | | | | | | | | NA | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | NA | | | | NA | | | | | | NA | | 4 | B |
| Benzene | | | | | | | | | | | | | | | | | | | | | | |
| Bromobenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | | | | | |

AR301222

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW9-05 | | RW90-02 | | RW90-04 | | RW91-02 | | RW91-04 | | RW92-02 | | RW92-04 | | RW92-05 | | RW93-02 | | RW93-04 | | RW93-05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| VOLATILES | ug/L | | | | | | | | | | | | | | ug/L | | | | | | ug/L | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | | | 0.04 | J | | | | |
| Chloromethane | | | | | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| M-xylene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Methylene Chloride | 26 | B | | | | | | | | | | | | | 2 | B | | | | | 16 | B |
| N-Butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| N-Propylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Naphthalene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-chlorotoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| O-xylene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-chlorotoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| P-isopropyltoluene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Sec-butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Styrene | | | | | | | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Tetrachloroethene | 7 | B | | | | | | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | | | | | |
| Trichloroethene | 370 | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | NA | | | | NA | | | | NA | | | | NA | | NA | | | | NA | | NA | |
| Xylene (Total) | | | NA | | | | NA | | | | NA | | | | | | NA | | | | NA | |
| PESTICIDES/PCBS | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | |

AR301223

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW96-02 | | RW96-03 | | RW96-04 | | RW96-05 | | RW98-02 | | RW98-04 | | RW98-05 | | RW99-02 | | RW99-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | | | | | ug/L | | | | | | ug/L | | | | | |
| Aluminum | NA | | NA | | 45.1 | B | 18.1 | B | NA | | 58.5 | B | 15.5 | B | 8.8 | B | 36.4 | B |
| Antimony | NA | | NA | | | | | | NA | | | | | | | | | |
| Arsenic | NA | | NA | | | | | | NA | | | | | | | | | |
| Barium | NA | | NA | | 28.5 | J | 27.6 | J | NA | | 56.9 | J | 56.7 | J | 58.6 | | 62.5 | J |
| Beryllium | NA | | NA | | 1.6 | K | 0.67 | | NA | | | | | | | | | |
| Cadmium | NA | | NA | | | | | | NA | | | | | | | | | |
| Calcium | NA | | NA | | 6920 | B | 5450 | J | NA | | 42300 | | 40400 | J | 1840 | | 3350 | B |
| Chromium | NA | | NA | | 1.6 | B | | | NA | | 10.7 | B | | | | | 2.8 | B |
| Cobalt | NA | | NA | | | | | | NA | | | | | | | | | |
| Copper | NA | | NA | | 1170 | | 4170 | J | NA | | 49.8 | B | 46.2 | J | 10.5 | B | 52.1 | B |
| Cyanide | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| Iron | NA | | NA | | 83.7 | B | 63.9 | B | NA | | 155 | B | | | 61.6 | B | 150 | B |
| Lead | NA | | NA | | 5.7 | K | 5.8 | L | NA | | | | 3.6 | K | 2.9 | B | 16.4 | |
| Magnesium | NA | | NA | | 2200 | J | 1800 | J | NA | | 23700 | | 24200 | J | 1000 | | 1290 | B |
| Manganese | NA | | NA | | 5.1 | B | 3.3 | B | NA | | 3.1 | B | 13.9 | K | 4.7 | | 8.6 | J |
| Mercury | NA | | NA | | | | | | NA | | | | | | | | | |
| Nickel | NA | | NA | | 4.4 | B | 3.2 | | NA | | 9.4 | B | | | | | 5 | B |
| Potassium | NA | | NA | | 854 | J | 1160 | J | NA | | 4250 | J | 4870 | J | 975 | | 843 | J |
| Selenium | NA | | NA | | | | | | NA | | | | | | | | | |
| Silver | NA | | NA | | | | | | NA | | | | | | | | | |
| Sodium | NA | | NA | | 4090 | J | 3020 | | NA | | 21500 | | 19700 | | 2940 | | 3110 | |
| Thallium | NA | | NA | | | | | | NA | | | | | | | | | |
| Vanadium | NA | | NA | | | | | | NA | | | | | | | | | |
| Zinc | NA | | NA | | 122 | | 214 | | NA | | 20 | B | 12.2 | B | 4.2 | B | 15.2 | B |
| **SEMIVOLATILES** | | | | | | | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Acenaphthene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Bis(2-ethylhexyl)phthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| Di-n-butylphthalate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | | | |
| **VOLATILES** | | | | | | | ug/L | | | | | | ug/L | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | 0.7 | J | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2,4-Trichlorobenzene | 0.1 | J | | | | | NA | | | | | | NA | | | | | |
| 1,2,4-Trimethylbenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| 1,2-Dibromo-3-chloropropane | | | 1 | R | | | NA | | | | | | NA | | | | | |
| 1,2-Dichlorobenzene | 0.07 | J | | | | | NA | | | | | | NA | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | 0.2 | J | | |
| 1,2-Dichloroethene (cis) | | | | | | | NA | | | | | | NA | | 4.7 | | 4 | |
| 1,2-Dichloroethene (Total) | NA | | NA | | NA | | | | NA | | NA | | | | NA | | NA | |
| 1,2-Dichloroethene (trans) | | | | | | | NA | | | | | | NA | | 0.4 | J | | |
| 1,3-Dichlorobenzene | 0.05 | J | | | | | NA | | | | | | NA | | | | | |
| 1,4-Dichlorobenzene | 0.07 | J | | | | | NA | | | | | | NA | | | | | |
| 2-Butanone | | | | | NA | | | | | | NA | | 17 | | | | NA | |
| 2-Hexanone | | | 1 | R | NA | | | | | | | | | | | | | |
| 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | NA | | | | | | NA | | 55 | B | | | NA | |
| Benzene | | | | | | | | | | | | | | | | | | |
| Bromobenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Bromoform | | | | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |

AR301224

Analytical Results for Potable Source Groundwater Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | RW96-02 | | RW96-03 | | RW96-04 | | RW96-05 | | RW98-02 | | RW98-04 | | RW98-05 | | RW99-02 | | RW99-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | | | | | | | ug/L | | | | | | ug/L | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | 1.2 | | 0.7 | J |
| Chlorobenzene | | | | | | | | | | | | | | | 0.2 | J | | |
| Chloroform | | | | | | | | | | | | | | | 1.5 | | 0.9 | B |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | 0.05 | J | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | 0.1 | J | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| M-xylene | 0.1 | J | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Methylene Chloride | | | | | | | 12 | B | | | | | 11 | B | | | | |
| N-Butylbenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| N-Propylbenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Naphthalene | 8 | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-chlorotoluene | 0.07 | J | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| O-xylene | 0.1 | J | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-chlorotoluene | 0.06 | J | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| P-isopropyltoluene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Sec-butylbenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Styrene | 0.05 | J | | | | | | | | | | | | | | | | |
| Tert-butylbenzene | | | NA | | NA | | NA | | | | NA | | NA | | | | NA | |
| Tetrachloroethene | | | | | | | | | | | | | | | 150 | J | 130 | |
| Toluene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | 1100 | J | 3800 | |
| Trichlorofluoromethane | | | NA | | NA | | NA | | | | NA | | NA | | 30 | J | NA | |
| Xylene (Total) | NA | | | | | | | | NA | | | | | | NA | | | |
| **PESTICIDES/PCBS** | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDE | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| 4,4'-DDT | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Alpha-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1016 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1221 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1232 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1242 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1248 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1254 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Aroclor-1260 | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Beta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Delta-BHC | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Dieldrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan I | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan II | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endosulfan Sulfate | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Aldehyde | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Endrin Ketone | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-BHC (Lindane) | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Gamma-Chlordane | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Heptachlor Epoxide | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Methoxychlor | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |
| Toxaphene | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | | |

AR301225

Data Qualifiers:
B – Positive result is considered to be an artifact of blank contamination, and should not be considered present.
C
J – Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
JJ
K – Positive result is considered biased high due to exceedance of technical quality control criteria.
L – Positive result is considered biased low due to exceedance of technical quality control criteria.
R – Positive result is considered unusable due to exceedance of technical quality control criteria.
(Blank value) – Result is non-detected. Detection limits are omitted for clarity.
NA – No result is available/applicable for this parameter in this sample.

Database source file: D:\AASTRSK\STATINDA\CR__GW.DBF data retrieved on: 07/20/00

AR301226

Analytical Results for Surface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | S10 | | S9 | | SB102 | | SB202 | | SB302 | | SB402 | | SB502 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | | |
| Sacode: | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | | |
| Aluminum | 18600 | | 8360 | | 35400 | | 10800 | | 15300 | | 13900 | | NA | |
| Antimony | | | 0.94 | B | | | | | 1.7 | B | | | NA | |
| Arsenic | 6.2 | | 3 | K | 9.1 | | 3 | K | 6.2 | | 3.6 | K | NA | |
| Barium | 114 | | 41.8 | | 261 | | 57.6 | | 80.5 | | 48.3 | | NA | |
| Beryllium | 1 | | | | 2.2 | | 0.7 | | 0.83 | | 0.93 | | NA | |
| Cadmium | | | | | | | | | | | | | NA | |
| Calcium | 799 | | 350 | | 6520 | | 982 | | 1010 | | 807 | | NA | |
| Chromium | 18.7 | | 6.3 | | 41 | | 12.8 | | 37.8 | | 19.6 | | NA | |
| Cobalt | 5.8 | | 1.4 | | 26.8 | | 5.6 | | 16.5 | | 7.7 | | NA | |
| Copper | 9.9 | | 7.1 | | 47.4 | | 6 | | 9.4 | | 9.2 | | NA | |
| Iron | 22700 | | 7540 | | 53500 | | 27300 | | 33500 | | 37800 | | NA | |
| Lead | 39.4 | | 34.3 | | 21.6 | | 11.8 | | 13.5 | | 12.4 | | NA | |
| Magnesium | 2980 | | 304 | | 5180 | | 1290 | | 1770 | | 2140 | | NA | |
| Manganese | 563 | | 108 | | 1500 | | 354 | | 699 | | 248 | | NA | |
| Mercury | | | | | | | | | | | | | NA | |
| Nickel | 10.5 | | 3.6 | | 26.9 | | 4.4 | | 9.7 | | 6.2 | | NA | |
| Potassium | 861 | J | 183 | J | 1660 | J | 731 | J | 446 | | 1260 | J | NA | |
| Selenium | | | | | 1.1 | L | | | | | | | NA | |
| Silver | 1.2 | | | | | | | | | | | | NA | |
| Sodium | 86.8 | | 63.4 | | 173 | | 82.4 | | 88.4 | | 79.7 | | NA | |
| Thallium | 1.1 | | | | 1.8 | L | | | 1.2 | B | | | NA | |
| Vanadium | 28.2 | | 11.6 | | 105 | | 29.6 | | 64.9 | | 39.8 | | NA | |
| Zinc | 70.8 | | 33.2 | | 143 | | 37.1 | | 49 | | 45.9 | | NA | |
| **SEMIVOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 2-Methylphenol | | | 39 | J | | | | | | | | | | |
| Benzo(g,h,i)perylene | | | | | | | 30 | J | | | | | | |
| Bis(2-ethylhexyl)phthalate | 230 | B | 170 | B | 52 | B | 22 | B | 170 | B | 53 | B | 73 | B |
| Butylbenzylphthalate | | | | | 23 | B | 21 | B | | | | | 38 | B |
| Di-n-butylphthalate | | | 31 | J | | | | | | | | | | |
| Di-n-octylphthalate | 60 | B | 74 | B | 46 | B | 22 | B | 180 | B | 22 | B | 65 | B |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| Acetone | | | | | 6 | B | | | | | 14 | B | | |
| Benzene | | | | | | | | | | | | | | |
| Chloroform | 2 | B | 4 | B | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | |
| Methylene Chloride | 3 | B | 4 | B | 23 | B | 20 | B | 15 | B | 12 | B | 13 | B |
| Tetrachloroethene | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | |
| Xylene (Total) | 5 | B | | | | | | | | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4,4'-DDE | 3.4 | J | | | | | | | | | | | | |
| 4,4'-DDT | 1.6 | J | | | | | | | | | | | | |
| Alpha-BHC | 3.4 | J | | | | | | | | | | | | |
| Aroclor-1260 | | | 260 | | | | | | | | | | 40 | J |
| Delta-BHC | 3.4 | | | | | | | | | | | | | |
| Dieldrin | 0.87 | J | | | 0.73 | J | | | 0.3 | J | | | | |
| Endrin | | | | | 0.71 | J | | | | | | | | |
| Gamma-BHC (Lindane) | 3.1 | | | | | | | | | | | | | |
| Heptachlor | | | | | 0.92 | B | 1.3 | B | 0.79 | B | 1.1 | B | 1.3 | B |
| Heptachlor Epoxide | | | | | 0.52 | J | | | | | | | | |

AR301228

Analytical Results for Surface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SB602 | | SB702 | | SB802 | | BG1-01 | | BG1-02 | | BG2-01 | | BG2-02 | | BG2-02-DUP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate: | | | | | | | | | | | | | BG2-02-DUP | | BG2-02 | |
| Sacode: | | | | | | | | | | | | | | | DUP | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | |
| Aluminum | 19100 | | 19500 | | 27700 | | 16000 | | 13700 | | 16000 | | 20100 | | 18300 | |
| Antimony | | | | | | | | | | | | | | | 1.2 | B |
| Arsenic | 6.1 | | 2.5 | K | 6.4 | | 5.1 | | 2.4 | K | 6.7 | | 4.7 | K | 6 | |
| Barium | 142 | | 79 | | 90.1 | | 88.2 | | 82.6 | | 89.8 | | 95.9 | | 103 | |
| Beryllium | 1.3 | | 0.78 | | 1.6 | | | | | | | | | | | |
| Cadmium | 0.32 | | | | | | | | | | | | | | | |
| Calcium | 1690 | | 638 | | 595 | | 729 | | 1020 | | 1170 | | 1120 | | 1210 | |
| Chromium | 16.4 | | 25.5 | | 45.6 | | 18.9 | | 15.9 | | 13 | | 21.2 | | 19.4 | |
| Cobalt | 8.4 | | 6.5 | | 20 | | 7.7 | | 8.5 | | 7.8 | | 7.9 | | 9.4 | |
| Copper | 12.7 | | 6.2 | | 4.3 | | 12.6 | J | 14.7 | J | 13.7 | J | 16.5 | J | 15.2 | J |
| Iron | 20600 | | 16200 | | 31800 | | 25000 | | 22700 | | 20000 | | 30000 | | 25800 | |
| Lead | 18.3 | | 6.2 | | 16.6 | | 9 | | 8.1 | | 13.4 | | 8.9 | | 12.5 | |
| Magnesium | 2660 | | 3780 | | 11900 | | 2290 | | 2720 | | 2000 | | 2730 | | 2610 | |
| Manganese | 836 | | 126 | | 520 | | 222 | | 212 | | 493 | | 238 | | 466 | |
| Mercury | | | | | | | | | | | 0.1 | L | | | | |
| Nickel | 9.8 | | 9.4 | | 19.1 | | 8.3 | | 7.3 | | 6.5 | | 8.8 | | 8.3 | |
| Potassium | 811 | | 2030 | | 7800 | | 638 | J | 1050 | J | 488 | J | 928 | J | 794 | |
| Selenium | | | | | | | 1 | | | | | | | | 1 | |
| Silver | | | | | | | | | 0.3 | K | | | | | | |
| Sodium | 89.2 | | 144 | | 99.6 | | 113 | | 140 | | 132 | | 133 | | 134 | |
| Thallium | 1.2 | B | 1.5 | B | 2.5 | B | | | | | 2.2 | K | 3.1 | K | 2.1 | K |
| Vanadium | 27.5 | | 16.7 | | 43.1 | | 35.4 | | 33.7 | | 28.4 | | 44.8 | | 39.2 | |
| Zinc | 116 | | 60.5 | | 159 | | 41.7 | | 38.1 | | 45.7 | | 41.6 | | 48.9 | |
| **SEMIVOLATILES** | ug/kg | | ug/kg | | ug/kg | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Benzo(g,h,i)perylene | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | 33 | B | 89 | B | | | NA | | NA | | NA | | NA | | NA | |
| Butylbenzylphthalate | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Di-n-butylphthalate | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Di-n-octylphthalate | | | 82 | B | 65 | B | NA | | NA | | NA | | NA | | NA | |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | | | | | | | | | | |
| Acetone | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Benzene | 2 | B | | | | | NA | | NA | | NA | | NA | | NA | |
| Chloroform | 7 | B | | | | | NA | | NA | | NA | | NA | | NA | |
| Ethylbenzene | 15 | J | | | | | NA | | NA | | NA | | NA | | NA | |
| Methylene Chloride | 16 | B | 17 | B | 13 | B | NA | | NA | | NA | | NA | | NA | |
| Tetrachloroethene | | | | | 10 | J | NA | | NA | | NA | | NA | | NA | |
| Toluene | 13 | B | | | | | NA | | NA | | NA | | NA | | NA | |
| Trichloroethene | 4 | J | | | 22 | J | NA | | NA | | NA | | NA | | NA | |
| Xylene (Total) | 99 | J | | | | | NA | | NA | | NA | | NA | | NA | |
| **PESTICIDES/PCBS** | ug/kg | | ug/kg | | ug/kg | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | NA | | NA | | NA | | NA | | NA | |
| 4,4'-DDT | 0.44 | J | | | | | NA | | NA | | NA | | NA | | NA | |
| Alpha-BHC | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Aroclor-1260 | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Delta-BHC | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Dieldrin | 0.22 | J | | | | | NA | | NA | | NA | | NA | | NA | |
| Endrin | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Gamma-BHC (Lindane) | | | | | | | NA | | NA | | NA | | NA | | NA | |
| Heptachlor | 0.48 | B | 0.5 | B | 0.73 | B | NA | | NA | | NA | | NA | | NA | |
| Heptachlor Epoxide | | | | | | | NA | | NA | | NA | | NA | | NA | |

AR301229

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: D:\AASTRSK\STATINDA\CR_SS.DBF data retrieved on: 10/31/00

AR301230

Analytical Results for Subsurface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | SB124 | | SB146 | | SB168 | | SB1810 | | SB21214 | | SB224 | | SB246 | | SB2612 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | | | mg/kg | | | | mg/kg | | mg/kg | | | | | |
| Aluminum | 27600 | | NA | | 34500 | | NA | | 10600 | | 14000 | | NA | | NA | |
| Antimony | | | NA | | | | NA | | | | | | NA | | NA | |
| Arsenic | 0.98 | K | NA | | | | NA | | 3.7 | K | 4.9 | K | NA | | NA | |
| Barium | 125 | | NA | | 180 | | NA | | 83.4 | | 53.2 | | NA | | NA | |
| Beryllium | 1.1 | | NA | | 1.6 | | NA | | 0.79 | | 3.1 | | NA | | NA | |
| Cadmium | | | NA | | | | NA | | | | | | NA | | NA | |
| Calcium | 1440 | | NA | | 1630 | | NA | | 1070 | | 343 | | NA | | NA | |
| Chromium | 44.3 | | NA | | 18.2 | | NA | | 11.3 | | 10.9 | | NA | | NA | |
| Cobalt | 19 | | NA | | 15.9 | | NA | | 4.2 | | 13.2 | | NA | | NA | |
| Copper | 17.1 | | NA | | 31.8 | | NA | | 5.4 | | 51.1 | | NA | | NA | |
| Iron | 35300 | | NA | | 33400 | | NA | | 16700 | | 49200 | | NA | | NA | |
| Lead | 2.6 | | NA | | 3.3 | | NA | | 14.3 | | 5.3 | | NA | | NA | |
| Magnesium | 3910 | | NA | | 5400 | | NA | | 758 | | 1080 | | NA | | NA | |
| Manganese | 415 | | NA | | 378 | | NA | | 305 | | 321 | | NA | | NA | |
| Mercury | | | NA | | | | NA | | | | | | NA | | NA | |
| Nickel | 14.9 | | NA | | 14.4 | | NA | | 5.8 | | 1.7 | | NA | | NA | |
| Potassium | 2120 | J | NA | | 1450 | J | NA | | 307 | J | 1350 | J | NA | | NA | |
| Silver | | | NA | | | | NA | | | | | | NA | | NA | |
| Sodium | 178 | | NA | | 194 | | NA | | 76.5 | | 233 | | NA | | NA | |
| Thallium | 0.92 | L | NA | | 1.7 | L | NA | | | | | | NA | | NA | |
| Vanadium | 53 | | NA | | 79 | | NA | | 21.7 | | 14.7 | | NA | | NA | |
| Zinc | 64.8 | | NA | | 73.9 | | NA | | 35.4 | | 58.8 | | NA | | NA | |
| **SEMIVOLATILES** | | | ug/kg | | | | ug/kg | | ug/kg | | | | ug/kg | | ug/kg | |
| Acenaphthene | NA | | | | NA | | 47 | J | | | NA | | | | | |
| Acenaphthylene | NA | | | | NA | | 310 | J | | | NA | | | | | |
| Anthracene | NA | | | | NA | | 900 | | | | NA | | | | | |
| Benz(a)anthracene | NA | | | | NA | | 760 | | | | NA | | | | | |
| Benzo(a)pyrene | NA | | | | NA | | 940 | | | | NA | | | | | |
| Benzo(b)fluoranthene | NA | | | | NA | | 440 | | | | NA | | | | | |
| Benzo(g,h,i)perylene | NA | | | | NA | | 370 | J | | | NA | | | | | |
| Benzo(k)fluoranthene | NA | | | | NA | | 660 | | | | NA | | | | | |
| Bis(2-ethylhexyl)phthalate | NA | | 59 | B | NA | | 38 | B | 25 | B | NA | | 44 | B | 30 | B |
| Butylbenzylphthalate | NA | | | | NA | | | | | | NA | | | | 20 | B |
| Chrysene | NA | | | | NA | | 760 | | | | NA | | | | | |
| Di-n-octylphthalate | NA | | 20 | B | NA | | | | 27 | B | NA | | | | | |
| Dibenz(a,h)anthracene | NA | | | | NA | | 130 | J | | | NA | | | | | |
| Diethylphthalate | NA | | | | NA | | | | | | NA | | | | | |
| Fluoranthene | NA | | | | NA | | 2100 | | | | NA | | | | | |
| Fluorene | NA | | | | NA | | 380 | | | | NA | | | | | |
| Indeno(1,2,3-cd)pyrene | NA | | | | NA | | 460 | | | | NA | | | | | |
| Naphthalene | NA | | | | NA | | 22 | J | | | NA | | | | | |
| Phenanthrene | NA | | | | NA | | 4000 | | | | NA | | | | | |
| Pyrene | NA | | | | NA | | 3000 | | | | NA | | | | | |
| **VOLATILES** | | | ug/kg | | | | ug/kg | | ug/kg | | | | ug/kg | | ug/kg | |
| Acetone | NA | | | | NA | | | | | | NA | | | | | |
| Carbon Disulfide | NA | | | | NA | | | | | | NA | | 2 | B | 3 | B |
| Methylene Chloride | NA | | 22 | B | NA | | 21 | B | 12 | B | NA | | 18 | B | 20 | B |
| Styrene | NA | | | | NA | | | | | | NA | | | | | |
| Toluene | NA | | | | NA | | | | | | NA | | | | | |
| Trichloroethene | NA | | | | NA | | | | | | NA | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | | | ug/kg | | | | ug/kg | | ug/kg | | | | | |
| Beta-BHC | | | NA | | | | NA | | | | | | NA | | NA | |
| Heptachlor | 1.3 | B | NA | | 1.5 | B | NA | | 1.2 | B | 1.3 | B | NA | | NA | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | | | NA | | NA | |
| Methoxychlor | | | NA | | | | NA | | | | | | NA | | NA | |

AR301231

Analytical Results for Subsurface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID: | SB31012 | | SB31214 | | SB324 | | SB346 | | SB368 | | SB3810 | | SB41012 | | SB41214 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | | | mg/kg | | | | mg/kg | | | | | | | |
| Aluminum | 9890 | | NA | | 15300 | | NA | | 12800 | | NA | | NA | | NA | |
| Antimony | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Arsenic | 3.9 | | NA | | 4.4 | | NA | | 3 | | NA | | NA | | NA | |
| Barium | 49.1 | | NA | | 55.5 | | NA | | 55.4 | | NA | | NA | | NA | |
| Beryllium | 0.52 | | NA | | 0.71 | | NA | | 0.41 | | NA | | NA | | NA | |
| Cadmium | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Calcium | 335 | | NA | | 679 | | NA | | 403 | | NA | | NA | | NA | |
| Chromium | 8.2 | | NA | | 34.8 | | NA | | 23.2 | | NA | | NA | | NA | |
| Cobalt | 3.8 | | NA | | 21.2 | | NA | | 1.2 | | NA | | NA | | NA | |
| Copper | 10 | | NA | | 10.5 | | NA | | 9.6 | | NA | | NA | | NA | |
| Iron | 23100 | | NA | | 37100 | | NA | | 24500 | | NA | | NA | | NA | |
| Lead | 6.2 | | NA | | 10.8 | | NA | | 6.5 | | NA | | NA | | NA | |
| Magnesium | 464 | | NA | | 1070 | | NA | | 394 | | NA | | NA | | NA | |
| Manganese | 84.7 | | NA | | 550 | | NA | | 29.6 | | NA | | NA | | NA | |
| Mercury | | | NA | | | | NA | | 0.21 | K | NA | | NA | | NA | |
| Nickel | 2.6 | | NA | | 6.7 | | NA | | 3.2 | | NA | | NA | | NA | |
| Potassium | 474 | | NA | | 568 | | NA | | 406 | | NA | | NA | | NA | |
| Silver | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Sodium | 154 | | NA | | 84.2 | | NA | | 66.5 | | NA | | NA | | NA | |
| Thallium | 0.83 | B | NA | | 1.3 | B | NA | | | | NA | | NA | | NA | |
| Vanadium | 28.4 | | NA | | 61 | | NA | | 34.4 | | NA | | NA | | NA | |
| Zinc | 24.1 | | NA | | 36.2 | | NA | | 20.8 | | NA | | NA | | NA | |
| **SEMIVOLATILES** | | | ug/kg | | | | ug/kg | | | | ug/kg | | ug/kg | | ug/kg | |
| Acenaphthene | NA | | | | NA | | | | NA | | | | | | | |
| Acenaphthylene | NA | | | | NA | | | | NA | | | | | | | |
| Anthracene | NA | | | | NA | | | | NA | | | | | | | |
| Benz(a)anthracene | NA | | | | NA | | | | NA | | | | | | | |
| Benzo(a)pyrene | NA | | | | NA | | | | NA | | | | | | | |
| Benzo(b)fluoranthene | NA | | | | NA | | | | NA | | | | | | | |
| Benzo(g,h,i)perylene | NA | | | | NA | | | | NA | | | | | | | |
| Benzo(k)fluoranthene | NA | | | | NA | | | | NA | | | | | | | |
| Bis(2-ethylhexyl)phthalate | NA | | 130 | B | NA | | 120 | B | NA | | 210 | B | 200 | B | 270 | B |
| Butylbenzylphthalate | NA | | | | NA | | | | NA | | | | | | | |
| Chrysene | NA | | | | NA | | | | NA | | | | | | | |
| Di-n-octylphthalate | NA | | 130 | B | NA | | 110 | B | NA | | 230 | B | 200 | B | 270 | B |
| Dibenz(a,h)anthracene | NA | | | | NA | | | | NA | | | | | | | |
| Diethylphthalate | NA | | 27 | J | NA | | | | NA | | | | | | | |
| Fluoranthene | NA | | | | NA | | | | NA | | | | | | | |
| Fluorene | NA | | | | NA | | | | NA | | | | | | | |
| Indeno(1,2,3-cd)pyrene | NA | | | | NA | | | | NA | | | | | | | |
| Naphthalene | NA | | | | NA | | | | NA | | | | | | | |
| Phenanthrene | NA | | | | NA | | | | NA | | | | | | | |
| Pyrene | NA | | | | NA | | | | NA | | | | | | | |
| **VOLATILES** | | | ug/kg | | | | ug/kg | | | | ug/kg | | ug/kg | | ug/kg | |
| Acetone | NA | | 4 | B | NA | | | | NA | | | | 2 | B | 2 | B |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | | | | | |
| Methylene Chloride | NA | | 5 | B | NA | | 16 | B | NA | | 20 | B | 18 | B | 24 | B |
| Styrene | NA | | | | NA | | 2 | J | NA | | | | | | | |
| Toluene | NA | | 1 | B | NA | | | | NA | | | | | | | |
| Trichloroethene | NA | | | | NA | | | | NA | | | | | | | |
| **PESTICIDES/PCBS** | ug/kg | | | | ug/kg | | | | ug/kg | | | | | | | |
| Beta-BHC | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Heptachlor | 1.1 | B | NA | | | | NA | | 1.1 | B | NA | | NA | | NA | |
| Heptachlor Epoxide | | | NA | | | | NA | | | | NA | | NA | | NA | |
| Methoxychlor | | | NA | | 0.81 | J | NA | | | | NA | | NA | | NA | |

AR301232

Analytical Results for Subsurface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | SB424 | | SB446 | | SB468 | | SB4810 | | SB51012 | | SB51214 | | SB5810 | | SB61012 | | SB624 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | | | mg/kg | | mg/kg | | mg/kg | | | | mg/kg | | mg/kg | | mg/kg | |
| Aluminum | 10200 | | NA | | 8720 | | 8230 | | 7130 | | NA | | 13200 | | 27100 | | 9560 | |
| Antimony | | | NA | | | | | | | | NA | | | | 1.1 | B | | |
| Arsenic | 4 | K | NA | | 1.7 | K | 7.7 | | 2.9 | | NA | | 2.5 | | 3.6 | | 2.7 | |
| Barium | 61.2 | | NA | | 46.5 | | 117 | | 35.3 | | NA | | 50.1 | | 294 | | 30.8 | |
| Beryllium | 0.72 | | NA | | 0.82 | | 6.3 | | 0.41 | | NA | | 1.1 | | 1.8 | | 0.69 | |
| Cadmium | | | NA | | | | | | | | NA | | | | 0.27 | | | |
| Calcium | 621 | | NA | | 456 | | 502 | | 119 | | NA | | 180 | | 361 | | 517 | |
| Chromium | 12.8 | | NA | | 12.1 | | 13.8 | | 1.3 | | NA | | 14.5 | | 51.6 | | 6.5 | |
| Cobalt | 9.8 | | NA | | 6.4 | | 23.4 | | 3.2 | | NA | | 5.1 | | 11 | | 4.4 | |
| Copper | 5.9 | | NA | | 14.8 | | 26.5 | | 2.9 | | NA | | 9.4 | | 37.4 | | 5.3 | |
| Iron | 18800 | | NA | | 15900 | | 76200 | | 8110 | | NA | | 20500 | | 40600 | | 13900 | |
| Lead | 12.8 | | NA | | 12.3 | | 27.9 | | 3.3 | | NA | | 3.6 | | 6.1 | | 5.2 | |
| Magnesium | 923 | | NA | | 1120 | | 502 | | 272 | | NA | | 4720 | | 16000 | | 1440 | |
| Manganese | 690 | | NA | | 127 | | 1640 | | 96.8 | | NA | | 140 | | 376 | | 103 | |
| Mercury | | | NA | | | | 0.21 | K | | | NA | | | | | | | |
| Nickel | 5.4 | | NA | | 10.3 | | 27.7 | | 2 | | NA | | 7.5 | | 40.1 | | 3.9 | |
| Potassium | 349 | J | NA | | 401 | J | 377 | J | 345 | | NA | | 3760 | | 11500 | | 767 | |
| Silver | | | NA | | | | | | | | NA | | | | 0.51 | | | |
| Sodium | 73.3 | | NA | | 52.8 | | 54.3 | | 48.3 | | NA | | 83 | | 93.2 | | 75.8 | |
| Thallium | | | NA | | | | 1.5 | L | | | NA | | | | 3.2 | B | | |
| Vanadium | 30.1 | | NA | | 29.9 | | 39.9 | | 2.3 | | NA | | 23.4 | | 36.9 | | 12.4 | |
| Zinc | 31 | | NA | | 47.1 | | 206 | | 14 | | NA | | 70.1 | | 213 | | 28.6 | |
| **SEMIVOLATILES** | | | ug/kg | | | | | | ug/kg | | ug/kg | | ug/kg | | | | | |
| Acenaphthene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Acenaphthylene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Anthracene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Benz(a)anthracene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Benzo(a)pyrene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Benzo(b)fluoranthene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Benzo(g,h,i)perylene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Benzo(k)fluoranthene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Bis(2-ethylhexyl)phthalate | NA | | 260 | B | NA | | NA | | 220 | B | 46 | B | 140 | B | NA | | NA | |
| Butylbenzylphthalate | NA | | 28 | B | NA | | NA | | | | 21 | B | 22 | B | NA | | NA | |
| Chrysene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Di-n-octylphthalate | NA | | 300 | B | NA | | NA | | 290 | B | | | 170 | B | NA | | NA | |
| Dibenz(a,h)anthracene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Diethylphthalate | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Fluoranthene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Fluorene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Indeno(1,2,3-cd)pyrene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Naphthalene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Phenanthrene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Pyrene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| **VOLATILES** | | | ug/kg | | | | | | ug/kg | | ug/kg | | ug/kg | | | | | |
| Acetone | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Carbon Disulfide | NA | | | | NA | | NA | | 1 | B | | | | | NA | | NA | |
| Methylene Chloride | NA | | 9 | B | NA | | NA | | 30 | B | 28 | B | 10 | B | NA | | NA | |
| Styrene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Toluene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| Trichloroethene | NA | | | | NA | | NA | | | | | | | | NA | | NA | |
| **PESTICIDES/PCBS** | ug/kg | | | | ug/kg | | ug/kg | | ug/kg | | | | ug/kg | | ug/kg | | ug/kg | |
| Beta-BHC | | | NA | | | | | | | | NA | | 0.48 | J | | | | |
| Heptachlor | 1.1 | B | NA | | 1.5 | B | 1.8 | J | 0.87 | B | NA | | 1.4 | B | 0.77 | B | 0.8 | B |
| Heptachlor Epoxide | | | NA | | | | | | | | NA | | | | | | | |
| Methoxychlor | | | NA | | | | | | | | NA | | | | | | 1.6 | J |

AR301233

Analytical Results for Subsurface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | SB646 | | SB668 | | SB6810 | | SB724 | | SB746 | | SB768 | | SB7810 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | | | mg/kg | | | | mg/kg | | | | mg/kg | | | |
| *Aluminum* | NA | | 7540 | | NA | | 14200 | | NA | | 11200 | | NA | |
| Antimony | NA | | 1.7 | B | NA | | | | NA | | | | NA | |
| Arsenic | NA | | 1.5 | | NA | | 2 | K | NA | | 1.4 | K | NA | |
| Barium | NA | | 26.7 | | NA | | 88.2 | | NA | | 16.7 | | NA | |
| Beryllium | NA | | 0.76 | | NA | | 0.44 | | NA | | 0.28 | | NA | |
| Cadmium | NA | | | | NA | | | | NA | | | | NA | |
| Calcium | NA | | 302 | | NA | | 351 | | NA | | 195 | | NA | |
| Chromium | NA | | 4.5 | | NA | | 4.8 | | NA | | 1.1 | | NA | |
| Cobalt | NA | | 12 | | NA | | 6.1 | | NA | | 10.7 | | NA | |
| Copper | NA | | 4.1 | | NA | | 5.5 | | NA | | 2.5 | | NA | |
| Iron | NA | | 13000 | | NA | | 6700 | | NA | | 4220 | | NA | |
| *Lead* | NA | | 4.6 | | NA | | 12 | | NA | | 7.3 | | NA | |
| Magnesium | NA | | 1790 | | NA | | 1080 | | NA | | 284 | | NA | |
| Manganese | NA | | 163 | | NA | | 137 | | NA | | 98.5 | | NA | |
| Mercury | NA | | | | NA | | | | NA | | | | NA | |
| Nickel | NA | | 4.7 | | NA | | 3 | | NA | | 0.52 | | NA | |
| Potassium | NA | | 1280 | | NA | | 715 | | NA | | 276 | | NA | |
| Silver | NA | | | | NA | | | | NA | | | | NA | |
| Sodium | NA | | 54.3 | | NA | | 66.9 | | NA | | 54.2 | | NA | |
| Thallium | NA | | | | NA | | | | NA | | | | NA | |
| *Vanadium* | NA | | 14.9 | | NA | | 4.8 | | NA | | 1.3 | | NA | |
| Zinc | NA | | 27.6 | | NA | | 31.2 | | NA | | 13.3 | | NA | |
| **SEMIVOLATILES** | ug/kg | | | | ug/kg | | | | ug/kg | | | | ug/kg | |
| Acenaphthene | | | NA | | | | NA | | | | NA | | | |
| Acenaphthylene | | | NA | | | | NA | | | | NA | | | |
| Anthracene | | | NA | | | | NA | | | | NA | | | |
| Benz(a)anthracene | | | NA | | | | NA | | | | NA | | | |
| Benzo(a)pyrene | | | NA | | | | NA | | | | NA | | | |
| Benzo(b)fluoranthene | | | NA | | | | NA | | | | NA | | | |
| *Benzo(g,h,i)perylene* | | | NA | | | | NA | | | | NA | | | |
| Benzo(k)fluoranthene | | | NA | | | | NA | | | | NA | | | |
| *Bis(2-ethylhexyl)phthalate* | 39 | B | NA | | 88 | B | NA | | | | NA | | 220 | B |
| Butylbenzylphthalate | | | NA | | | | NA | | | | NA | | | |
| Chrysene | | | NA | | | | NA | | | | NA | | | |
| Di-n-octylphthalate | | | NA | | 60 | B | NA | | 100 | B | NA | | 160 | B |
| Dibenz(a,h)anthracene | | | NA | | | | NA | | | | NA | | | |
| Diethylphthalate | | | NA | | | | NA | | 22 | J | NA | | | |
| Fluoranthene | | | NA | | | | NA | | | | NA | | | |
| Fluorene | | | NA | | | | NA | | | | NA | | | |
| Indeno(1,2,3-cd)pyrene | | | NA | | | | NA | | | | NA | | | |
| *Naphthalene* | | | NA | | | | NA | | | | NA | | | |
| Phenanthrene | | | NA | | | | NA | | | | NA | | | |
| Pyrene | | | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | ug/kg | | | | ug/kg | | | | ug/kg | | | | ug/kg | |
| Acetone | | | NA | | | | NA | | | | NA | | 4 | B |
| Carbon Disulfide | | | NA | | | | NA | | | | NA | | | |
| Methylene Chloride | 16 | B | NA | | 6 | B | NA | | 16 | B | NA | | 12 | B |
| Styrene | | | NA | | | | NA | | | | NA | | | |
| Toluene | 1 | B | NA | | | | NA | | | | NA | | | |
| Trichloroethene | | | NA | | | | NA | | | | NA | | | |
| **PESTICIDES/PCBS** | | | ug/kg | | | | ug/kg | | | | ug/kg | | | |
| *Beta-BHC* | NA | | | | NA | | | | NA | | | | NA | |
| Heptachlor | NA | | 0.66 | B | NA | | 0.47 | B | NA | | 0.7 | B | NA | |
| Heptachlor Epoxide | NA | | | | NA | | | | NA | | | | NA | |
| Methoxychlor | NA | | 0.45 | J | NA | | | | NA | | | | NA | |

AR301234

Analytical Results for Subsurface Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | SB81012 | | SB81214 | | SB824 | | SB846 | | SB868 | | SB8810 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | | | | | | | | | | |
| Sacode | | | | | | | | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | | | mg/kg | | | | mg/kg | | | |
| Aluminum | 9950 | | NA | | 13500 | | NA | | 12400 | | NA | |
| Antimony | | | NA | | | | NA | | | | NA | |
| Arsenic | 2.1 | | NA | | 3.3 | | NA | | 2.5 | | NA | |
| Barium | 66.6 | | NA | | 60 | | NA | | 57.8 | | NA | |
| Beryllium | 0.48 | | NA | | 0.5 | | NA | | 0.5 | | NA | |
| Cadmium | | | NA | | | | NA | | | | NA | |
| Calcium | 135 | | NA | | 221 | | NA | | 186 | | NA | |
| Chromium | 1.6 | | NA | | 1.7 | | NA | | 1.1 | | NA | |
| Cobalt | 4.7 | | NA | | 4 | | NA | | 1.8 | | NA | |
| Copper | 2.5 | | NA | | 3.5 | | NA | | 3.6 | | NA | |
| Iron | 8150 | | NA | | 9980 | | NA | | 6610 | | NA | |
| Lead | 7.9 | | NA | | 10.8 | | NA | | 3.8 | | NA | |
| Magnesium | 143 | | NA | | 358 | | NA | | 204 | | NA | |
| Manganese | 63 | | NA | | 88.2 | | NA | | 47.2 | | NA | |
| Mercury | | | NA | | | | NA | | | | NA | |
| Nickel | 0.85 | | NA | | 1.5 | | NA | | 1 | | NA | |
| Potassium | 364 | | NA | | 554 | | NA | | 371 | | NA | |
| Silver | | | NA | | | | NA | | | | NA | |
| Sodium | 59.4 | | NA | | 65.9 | | NA | | 72.7 | | NA | |
| Thallium | | | NA | | | | NA | | | | NA | |
| Vanadium | 2.2 | | NA | | 3.4 | | NA | | 2.4 | | NA | |
| Zinc | 16.4 | | NA | | 25.7 | | NA | | 19.1 | | NA | |
| **SEMIVOLATILES** | | | ug/kg | | | | ug/kg | | | | ug/kg | |
| Acenaphthene | NA | | | | NA | | | | NA | | | |
| Acenaphthylene | NA | | | | NA | | | | NA | | | |
| Anthracene | NA | | | | NA | | | | NA | | | |
| Benz(a)anthracene | NA | | | | NA | | | | NA | | | |
| Benzo(a)pyrene | NA | | | | NA | | | | NA | | | |
| Benzo(b)fluoranthene | NA | | | | NA | | | | NA | | | |
| Benzo(g,h,i)perylene | NA | | | | NA | | | | NA | | | |
| Benzo(k)fluoranthene | NA | | | | NA | | | | NA | | | |
| Bis(2-ethylhexyl)phthalate | NA | | 57 | B | NA | | 120 | B | NA | | 110 | B |
| Butylbenzylphthalate | NA | | | | NA | | | | NA | | | |
| Chrysene | NA | | | | NA | | | | NA | | | |
| Di-n-octylphthalate | NA | | | | NA | | 90 | B | NA | | 79 | B |
| Dibenz(a,h)anthracene | NA | | | | NA | | | | NA | | | |
| Diethylphthalate | NA | | 26 | J | NA | | | | NA | | | |
| Fluoranthene | NA | | | | NA | | | | NA | | | |
| Fluorene | NA | | | | NA | | | | NA | | | |
| Indeno(1,2,3-cd)pyrene | NA | | | | NA | | | | NA | | | |
| Naphthalene | NA | | | | NA | | | | NA | | | |
| Phenanthrene | NA | | | | NA | | | | NA | | | |
| Pyrene | NA | | | | NA | | | | NA | | | |
| **VOLATILES** | | | ug/kg | | | | ug/kg | | | | ug/kg | |
| Acetone | NA | | 5 | B | NA | | | | NA | | | |
| Carbon Disulfide | NA | | | | NA | | | | NA | | | |
| Methylene Chloride | NA | | 13 | B | NA | | 14 | B | NA | | 27 | B |
| Styrene | NA | | | | NA | | | | NA | | | |
| Toluene | NA | | | | NA | | | | NA | | | |
| Trichloroethene | NA | | | | NA | | 4 | J | NA | | | |
| **PESTICIDES/PCBS** | ug/kg | | | | ug/kg | | | | ug/kg | | | |
| Beta-BHC | | | NA | | | | NA | | | | NA | |
| Heptachlor | 0.98 | B | NA | | 0.7 | B | NA | | 0.27 | B | NA | |
| Heptachlor Epoxide | 0.25 | J | NA | | | | NA | | 0.14 | J | NA | |
| Methoxychlor | | | NA | | | | NA | | | | NA | |

AR301235

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: D:\AASTRSK\STATINDA\STSB.DBF data retrieved on: 10/31/00

AR301236

Analytical Results for Test Pit Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | TP1A | | TP1B | | TP1BD | | TP1C | | TP2A | | TP2AD | | TP2B | | TP2C | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | TP1BD | | TP1B | | | | TP2AD | | TP2A | | | | | |
| Sacode | | | DUP | | DUP | | | | DUP | | DUP | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **INORGANICS** | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | | mg/kg | |
| Aluminum | 18200 | | 13700 | | 13200 | | 16900 | | 27700 | | 31400 | | 18100 | | 31700 | |
| Antimony | 3.9 | B | | | 0.84 | B | | | 1 | B | 0.8 | B | | | | |
| Arsenic | 7.9 | | 7.8 | | 7.7 | | 7.2 | | 5.8 | | 5.6 | | 10.4 | | 4.8 | L |
| Barium | 239 | | 151 | | 279 | | 134 | | 181 | | 184 | | 129 | | 207 | |
| Beryllium | 0.99 | | 1.1 | | 1.1 | | 1 | | 0.89 | | 0.97 | | 1 | | 0.75 | |
| Cadmium | 3.6 | | 0.79 | | 0.92 | | 0.73 | | | | | | | | | |
| Calcium | 5180 | | 4170 | | 4120 | | 4120 | | 2230 | | 2120 | | 3010 | | 1580 | |
| Chromium | 30.4 | | 20.8 | | 23.7 | | 24 | | 68 | | 85.5 | | 45.3 | | 88.4 | |
| Cobalt | 12.9 | | 10.1 | | 9.5 | | 10.8 | | 25.7 | | 27.9 | | 19.2 | | 34.7 | |
| Copper | 276 | | 28.2 | | 30.3 | | 31.1 | | 28.4 | | 36.3 | | 26.2 | | 42.8 | |
| Iron | 32300 | | 20200 | | 23000 | | 23600 | | 43600 | | 52100 | | 33100 | | 53800 | |
| Lead | 370 | | 86.4 | | 118 | | 79.9 | | 52.3 | | 17 | | 50.5 | | 14.7 | |
| Magnesium | 2860 | | 2090 | | 2680 | | 2490 | | 7190 | | 8930 | | 4770 | | 8180 | |
| Manganese | 1070 | | 976 | | 801 | | 834 | | 650 | | 649 | | 1050 | | 632 | |
| Nickel | 37.9 | | 16.1 | | 18.3 | | 17.5 | | 33.2 | | 38.3 | | 21.1 | | 45.4 | |
| Potassium | 870 | J | 737 | | 1330 | | 864 | | 1900 | J | 2380 | J | 1350 | | 3090 | |
| Selenium | 1.7 | L | | | | | | | | | 1.2 | L | | | | |
| Silver | 1.7 | | | | | | | | 2.1 | | 2.5 | | 1 | | 2 | |
| Sodium | 188 | | 298 | | 231 | | 165 | | 189 | | 191 | | 145 | | 165 | |
| Thallium | 1.9 | | 1.5 | B | | | | | 3.1 | | 3.8 | | 2.6 | K | 4.5 | K |
| Vanadium | 40.1 | | 31.9 | | 36.1 | | 37.1 | | 111 | | 127 | | 71 | | 164 | |
| Zinc | 469 | | 186 | | 174 | | 152 | | 116 | | 118 | | 129 | | 125 | |
| **SEMIVOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 2,4-Dimethylphenol | | | 31 | J | | | | | | | | | | | | |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | 160 | J | | |
| 2-Methylnaphthalene | 28 | J | 120 | J | | | | | | | | | | | | |
| 2-Methylphenol | | | 40 | J | | | | | | | | | | | | |
| 4-Methylphenol | | | 120 | J | | | | | | | | | | | | |
| Acenaphthene | | | 130 | J | | | | | | | | | | | | |
| Acenaphthylene | | | 110 | J | | | | | | | | | | | | |
| Anthracene | | | 420 | | 27 | J | | | | | | | | | | |
| Benz(a)anthracene | 110 | J | 2600 | | 210 | J | 100 | J | | | | | 32 | J | | |
| Benzo(a)pyrene | | | 2600 | | 280 | J | 130 | J | | | | | | | | |
| Benzo(b)fluoranthene | 200 | J | 3300 | | 310 | J | 140 | J | | | | | 45 | J | | |
| Benzo(g,h,i)perylene | | | 710 | | 160 | J | | | | | | | | | | |
| Benzo(k)fluoranthene | 170 | J | 3100 | | 280 | J | 110 | J | | | | | 46 | J | | |
| Bis(2-ethylhexyl)phthalate | 260 | B | 88 | B | 90 | B | 110 | B | 100 | B | 110 | B | 370 | B | 92 | B |
| Butylbenzylphthalate | 120 | B | | | | | 27 | B | | | | | | | | |
| Carbazole | | | 880 | | 29 | J | | | | | | | | | | |
| Chrysene | 180 | J | 3100 | | 310 | J | 140 | J | | | 22 | J | 54 | J | | |
| Di-n-butylphthalate | 55 | J | | | | | | | | | 36 | J | | | | |
| Di-n-octylphthalate | | | | | | | | | 96 | B | 110 | B | 280 | B | 91 | B |
| Dibenz(a,h)anthracene | | | 790 | | 60 | J | | | | | | | | | | |
| Dibenzofuran | | | 290 | J | | | | | | | | | | | | |
| Diethylphthalate | | | | | 25 | J | | | | | | | 26 | J | | |
| Fluoranthene | 140 | J | 4400 | | 370 | J | 140 | J | | | 22 | J | 68 | J | | |
| Fluorene | | | 240 | J | | | | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | 89 | J | 1400 | | 180 | J | 74 | J | | | | | | | | |
| N-Nitrosodiphenylamine (1) | | | | | | | | | | | 56 | J | 42 | J | | |
| Naphthalene | 22 | J | 180 | J | | | | | | | | | | | | |
| Phenanthrene | 66 | J | 3900 | | 200 | J | 66 | J | | | | | 28 | J | | |
| Pyrene | 200 | J | 4400 | | 460 | | 160 | J | | | 22 | J | 77 | J | | |

AR301237

Analytical Results for Test Pit Soil Samples
Crossley Farm Site, Pennsylvania

| Sample ID | TP1A | | TP1B | | TP1BD | | TP1C | | TP2A | | TP2AD | | TP2B | | TP2C | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | | | TP1BD | | TP1B | | | | TP2AD | | TP2A | | | | | |
| Sacode | | | DUP | | DUP | | | | DUP | | DUP | | | | | |
| | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL | RESULT | QUAL |
| **VOLATILES** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 1,1,1-Trichloroethane | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| 1,1,2-Trichloroethane | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,1-Dichloroethane | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,1-Dichloroethene | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,2-Dichloroethane | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,2-Dichloroethene (Total) | 13 | R | | | | | 13 | R | | | | | | | | |
| 1,2-Dichloropropane | 13 | R | | | | | 13 | R | | | | | | | | |
| 2-Butanone | 13 | R | | | | | 13 | R | | | | | | | | |
| 2-Hexanone | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| 4-Methyl-2-pentanone | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| Acetone | 13 | R | | | | | 13 | R | | | | | | | | |
| Benzene | 13 | R | | | | | 13 | R | | | | | | | | |
| Bromodichloromethane | 13 | R | | | | | 13 | R | | | | | | | | |
| Bromoform | 13 | R | | | | | 13 | R | | | | | | | | |
| Bromomethane | 13 | R | | | | | 13 | R | | | | | | | | |
| Carbon Disulfide | 13 | R | | | | | 13 | R | | | | | | | | |
| Carbon Tetrachloride | 13 | R | | | | | 13 | R | | | | | | | | |
| Chlorobenzene | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| Chloroethane | 13 | R | | | | | 13 | R | | | | | | | | |
| Chloroform | 13 | R | 20 | J | 4 | B | 13 | R | 6 | B | 6 | B | 10 | B | 7 | B |
| Chloromethane | 13 | R | | | | | 13 | R | | | | | | | | |
| cis-1,3-Dichloropropene | 13 | R | | | | | 13 | R | | | | | | | | |
| Dibromochloromethane | 13 | R | | | | | 13 | R | | | | | | | | |
| Ethylbenzene | 13 | R | 13 | R | 4 | B | 13 | R | 4 | B | 2 | B | | | 2 | B |
| Methylene Chloride | 54 | B | 22 | B | 12 | B | 16 | B | 31 | B | 20 | B | 18 | B | 15 | B |
| Styrene | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| Tetrachloroethene | 13 | R | 13 | R | | | 13 | R | | | | | | | | |
| Toluene | 13 | R | 2 | B | | | 13 | R | 3 | B | 2 | B | | | 3 | B |
| trans-1,3-Dichloropropene | 13 | R | | | | | 13 | R | | | | | | | | |
| Trichloroethene | 13 | R | 18 | J | | | 13 | R | | | | | | | | |
| Vinyl Chloride | 13 | R | | | | | 13 | R | | | | | | | | |
| Xylene (Total) | 13 | R | 65 | J | 51 | J | 13 | R | 20 | B | 9 | B | | | 13 | B |
| ***PESTICIDES/PCBS*** | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| 4,4'-DDD | | | 5.3 | J | 3.8 | J | | | | | | | | | | |
| 4,4'-DDE | | | 6.4 | J | 12 | J | | | 0.78 | J | 0.88 | J | 2.2 | J | 0.34 | J |
| 4,4'-DDT | | | 7 | J | 4.8 | J | | | 0.86 | J | 1.1 | J | 8.5 | | 0.63 | J |
| Alpha-Chlordane | | | 10 | J | 12 | | | | 0.31 | J | 0.34 | J | 1.4 | J | | |
| Aroclor-1260 | 1000 | | | | | | | | | | | | | | | |
| Dieldrin | | | 14 | J | 13 | J | | | 0.21 | J | | | 0.64 | J | 0.23 | J |
| Endrin | | | | | | | 2.7 | J | | | | | | | | |
| Endrin Ketone | | | | | | | 44 | | | | | | | | | |
| Gamma-Chlordane | | | 12 | | 15 | | 14 | | 0.13 | J | 0.19 | J | 0.87 | J | | |
| Heptachlor | | | 1.6 | B | 1.2 | B | 5.4 | B | 0.5 | B | 0.7 | B | | | | |
| Heptachlor Epoxide | 3.8 | J | 2.4 | J | 3.3 | J | 9.5 | J | | | | | 0.46 | J | | |
| Methoxychlor | | | | | | | | | | | | | | | 1.1 | J |

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Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
(Blank value) -- Result is non-detected. Detection limits are omitted for clarity.

Database source file: D:\AASTRSK\STATINDA\CR_TP.DBF data retrieved on: 10/31/00

AR301239

PENNSTATE

(814) 863-0841 Fax (814) 863-4540

Agricultural Analytical Services Laboratory
The Pennsylvania State University
University Park PA 16802

Upper Montgomery Joint Authority
1100 Mensch Dam Rd - P O Box 6
Pennsburg PA 18073

**Lab Sample ID:** 611-93
**Date Received:** September 24, 1993
**Date Sampled:** September 22,1993
**County:** Montgomery
**Customer Sample ID:** Digester B

# Analysis Report for Use of Biosolids on Cropland

October 1, 1993

**RESULTS**

| pH | Solids | Volatile | Tot-N | Org-N | $NH_4N$ | P | K | Mg | Ca | Na | Fe | Al |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % dry weight basis | | | | | | | | | | | |
| 6.5 | 1.80 | 49.73 | 3.74 | 3.70 | .04 | 3.15 | 0.27 | 0.42 | 2.69 | 0.66 | 12.90 | 2.01 |

| Mn | As | Cd | Cr | Cu | Pb | Hg | Mo | Ni | Se | Zn | PCB | Reactive CN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mg/kg dry weight basis | | | | | | | | | | | | |
| 1278.1 | 18.8 | 3.9 | 659.5 | 728.3 | 243.8 | 4.13 | 24.6 | 87.6 | 6.6 | 971 | < 1 | < 1 |

NR-Not Requested

One dry ton of this material is equivalent to 13290 gallons of wet material or 55.4 tons of wet material

**PRIMARY NUTRIENT CONTENT**

| | Level | % on Dry Weight Basis<br>0- - - - - - - -2- - - - - - - -4- - - - - - - -6- - - - - - - -8 |
|---|---|---|
| Total N | 3.74 | ********** |
| $P_2O_5$ | 7.21 | ********** |
| $K_2O$ | 0.33 | * |

It will take 1.59 dry tons of this biosolid to supply 100 lbs of phosphorus.

It will take 1.34 dry tons of this biosolid to supply 100 lbs of total nitrogen.

**COMMENTS:**



AR301240

Lab Sample ID: 611-93

## PA DER REGULATIONS FOR LAND APPLICATION of BIOSOLIDS

| | mg/kg | Acceptable | Maximum | Exceeds Maximum |
|---|---|---|---|---|
| Cd | 3.9 | 0 ****** | 25 | |
| Cr | 659.5 | 0 ********** | 1000 | 2000 |
| Cu | 728.3 | 0 ********** | 1000 | 2000 |
| Pb | 243.8 | 0 ********** | 1000 | 2000 |
| Hg | 4.13 | 0 ********** | 10 | 20 |
| Ni | 87.6 | 0 ********** | 200 | 400 |
| Zn | 971 | 0 ********** | 2500 | 5000 |
| PCB | < 1 | 0 * | 3 | 6 |

## EPA REGULATIONS FOR LAND APPLICATION OF BIOSOLIDS (40 CFR Part 503)

| | mg/kg | Acceptable | Pollutant Limit- EPA Table 3 | Acceptable- increased monitoring | Ceiling Limit- EPA Table 1 | Exceeds ceiling limit |
|---|---|---|---|---|---|---|
| As | 18.8 | 0 ********** | 41 | 75 | | |
| Cd | 3.9 | 0 ** | 39 | 85 | | |
| Cr | 659.5 | 0 ********** | 1200 | 3000 | | |
| Cu | 728.3 | 0 ********** | 1500 | 4300 | | |
| Pb | 243.8 | 0 ********** | 300 | 840 | | |
| Hg | 4.13 | 0 ******* | 17 | 57 | | |
| Mo | 24.6 | 0 ********** | 18 | 75 | | |
| Ni | 87.6 | 0 ****** | 420 | | | |
| Se | 6.6 | 0 ***** | 36 | 100 | | |
| Zn | 971 | 0 ********** | 2800 | 7500 | | |

AR301241

# METHODS OF DETERMINATION - BIOSOLIDS

Dry Weight: oven dried overnight at 105° C

Cd, Cr, Ni, Mo, Pb, Cu, Zn, Fe, Al, Mn, Ca, Mg, Na, K, P:
Dry ashed followed by $HNO_3$-HCl acid digestion; elements measured by inductively coupled plasma (ICP).

As, Se:
Dry ashed followed by $HNO_3$ acid digestion; elements determined by atomic absorption spectrometer/graphite furnace.

Hg: EPA Test Methods for Evaluating Solid Waste, Volume 1: Method 7470

Cyanide: EPA Test Methods for Evaluating Solid Waste, Proposed Update Package Chap. 7, 7.3.3.2

PCB: EPA Test Methods for Evaluating Solid Waste, Volume 1: Method 8080
(Performed at Centre Analytical Laboratory, State College, PA)

Nitrogen (N):
total-N: micro-Kjeldahl digestion; N measured with Technicon autoanalyzer
ammonium ($NH_4$-N): gas electrode; potentiometer
organic (Org-N): (total N) minus ($NH_4$-N)

Results: expressed in parts per million (ppm) and/or percent (%) on a dry weight basis

Conversions: ppm is equivalent to ug/g and mg/kg
ppm x $10^{-4}$=percent (%)
% x $10^4$=ppm
% K x 1.2 = % $K_2O$
% P x 2.3 = %$P_2O_5$

Procedures:
Manual of Methods, Soil and Environmental Chemistry Laboratory, The Pennsylvania State University, Information Report 121, W. T. Doty, M. C. Amacher and D. E. Baker, Oct. 1982

## DISCLAIMER STATEMENT

"Biosolid results from The Pennsylvania State University are an educational part of an ongoing Research/Extension program on the safe and beneficial use of biosolids for crop production. There are other non-analyzed components which at some future time may be found harmful to crops, the food chain, or the environment. While the results and recommendations represent the current state of technology, neither project personnel nor The Pennsylvania State University will assume responsibility for detrimental effects caused by the use of biosolids on land."

## FORM 43 ANALYTICAL PARAMETERS
## INITIAL SUBMITTAL AND RECERTIFICATION

**TCLP ANALYSIS**

pH
Phenolics
Antimony
Arsenic
Barium
Cadmium
Chromium
Hexavalent Chromium
Lead
Mercury
Nickel
Selenium
Silver
Copper
Molybdenum
Zinc
Benzene
Benzo(a)pyrene
Bis(2EH)Phthalate
Chlordane
DDT
DDD
DDE
Dimethylnitrosamine
Lindane
Methylene Chloride
MEK
Phenanthrene
Toxaphene
Trichloroethylene
Carbon Tetrachloride
Chlorobenzene
Chloroform
Cresol
2,4 D
1,4 Dichlorobenzene
1,2 Dichloroethane
1,1 Dichloroethylene
2,4 Dinitrotoluene
Endrin
Heptachlor
Hexachlorobenzene
Hexachlorobutadiene
Hexachloroethane
Methoxychlor
Nitrobenzene
Pentachlorophenol
Pyridine
Tetrachloroethylene
2,4,5 Trichlorophenol
2,4,6 Trichlorophenol
2,4,5 TP Silvex
Vinyl Chloride
Boron

**TOTAL ANALYSIS**

Total Residue
Volatile Residue
PCB
pH
Cyanide
Oil & Grease
Ammonia-Nitrogen
Phenolics
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Nickel
Selenium
Silver
Copper
Molybdenum
Zinc
Benzene
Benzo(a)Phthalate
Bis(2ethylhexyl)Phthalate
Chlordane
DDT
DDD
DDE
Dimethylnitrosamine
Lindane
Methylene Chloride
MEK
Phenanthrene
Toxaphene
Trichloroethylene
Reactivity
Ignitability
Corrosivity
Paint Filter

**ASTM ANALYSIS**

Oil & Grease
Ammonia Nitrogen
Cyanide
TOX
COD
TOC
pH
Total Volatile Residue
Total Filterable Residue

# CERTIFICATE OF ANALYSIS

RMC Analytics

Upper Montgomery Joint Authority
P.O. BOX 6
Pennsburg, PA 18073

Report No. : 932351
Sample Date: 06/30/93
Sampled By : N/A
Received : 06/30/93
Reported : 07/15/93
P.O. Number: VERBAL

RMC Number : 7906
Sample Description: UMJA SLUDGE

| Repl | Parameter | Result | RCRA LIMITS | Date Anl Completed | Ana-lyst | Method |
|---|---|---|---|---|---|---|
| 1 | ANTIMONY,TOTAL (TCLP) | <0.100 MG/L | | 07/07/93 | KWC | EPA 6010 |
| 1 | ARSENIC, TOTAL | 1.52 MG/KG | | 07/09/93 | BAK | EPA 7060 |
| 1 | ARSENIC, TOTAL (TCLP) | <0.100 MG/L | 5.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | BARIUM, TOTAL | 297 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | BARIUM, TOTAL (TCLP) | 0.559 MG/L | 100.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | BORON (TCLP) | 0.352 MG/L | | 07/07/93 | KWC | EPA 6010 |
| 1 | CADMIUM, TOTAL | <1.00 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | CADMIUM, TOTAL (TCLP) | <0.050 MG/L | 1.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | CHROMIUM, HEXAVALENT, TOTAL (TCLP) | <0.002 MG/L | | 07/13/93 | BAK | EPA 218.4 |
| 1 | CHROMIUM, TOTAL | 98.4 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | CHROMIUM, TOTAL (TCLP) | <0.050 MG/L | 5.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | COPPER, TOTAL | 214 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | COPPER, TOTAL (TCLP) | <0.050 MG/L | | 07/07/93 | KWC | EPA 6010 |
| 1 | LEAD, TOTAL | 50.0 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | LEAD, TOTAL (TCLP) | <0.100 MG/L | 5.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | MERCURY, TOTAL | 1.3 MG/KG | | 07/01/93 | JNO | EPA 7470, 7471 |
| 1 | MERCURY, TOTAL (TCLP) | <0.0002 MG/L | 0.2 MG/L | 07/08/93 | JNO | EPA 7470 |
| 1 | MOLYBDENUM, TOTAL | <10.0 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | MOLYBDENUM,TOTAL (TCLP) | <0.500 MG/L | | 07/07/93 | KWC | EPA 200.7 |
| 1 | NICKEL, TOTAL | 31.0 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | NICKEL, TOTAL (TCLP) | 0.255 MG/L | | 07/07/93 | KWC | EPA 6010 |
| 1 | SELENIUM, TOTAL | 0.844 MG/KG | | 07/12/93 | BAK | EPA 7740 |
| 1 | SELENIUM, TOTAL (TCLP) | <0.100 MG/L | 1.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | SILVER, TOTAL | 5.89 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | SILVER, TOTAL (TCLP) | <0.050 MG/L | 5.0 MG/L | 07/07/93 | KWC | EPA 6010 |
| 1 | ZINC, TOTAL | 205 MG/KG | | 07/07/93 | KWC | EPA 6010 |
| 1 | ZINC, TOTAL (TCLP) | 1.26 MG/L | | 07/07/93 | KWC | EPA 6010 |
| 1 | AMMONIA (SOLID-DIST.) | 340 MG/KG | | 07/06/93 | ABB | EPA 350.1 (MOD) |
| 1 | AMMONIA-NITROGEN(WATER LEACH) | 2.6 MG/L | | 07/06/93 | ABB | EPA 350.1 |
| 1 | CHEMICAL OXYGEN DEMAND(WATER LEACH) | 38 MG/L | | 07/06/93 | LAC | EPA 410.4 |

Approved By:

Twila E. Dixon
Laboratory Manager



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AR301244

# CERTIFICATE OF ANALYSIS

RMC Analytics

Upper Montgomery Joint Authority
P.O. BOX 6
Pennsburg, PA 18073

Report No. : 932351
Sample Date: 06/30/93
Sampled By : N/A
Received : 06/30/93
Reported : 07/15/93
P.O. Number: VERBAL

RMC Number : 7906
Sample Description: UMJA SLUDGE

| Repl | Parameter | Result | RCRA LIMITS | Date Anl Completed | Ana-lyst | Method |
|---|---|---|---|---|---|---|
| 1 | CYANIDE, TOTAL (MACRO DIST.) | 3.71 MG/KG | | 07/06/93 | BLB | EPA 9012 |
| 1 | CYANIDE, TOTAL (WATER LEACH) | <0.005 MG/L | | 07/06/93 | BLB | EPA 9012 |
| 1 | PHENOLICS (MACRO DIST.) | 1.9 MG/KG | | 07/09/93 | ABB | EPA 9066 |
| 1 | PHENOLICS (TCLP) | <0.05 MG/L | | 07/06/93 | ABB | EPA 9066 |
| 1 | FORM 43 PEST & PCB (SOLID) | SEE PEST. ATTACHMENT | | 07/08/93 | JAI | EPA 8080 |
| 1 | FORM 43 PEST & PCB (TCLP) | SEE PEST. ATTACHMENT | | 07/07/93 | JAI | EPA 8080 |
| 1 | HERBICIDE: 2,4,5-TP (TCLP) | <100 UG/L | 1.0 MG/L | 07/09/93 | SDF | EPA 8150 |
| 1 | HERBICIDE: 2,4-D (TCLP) | <1000 UG/L | 10.0 MG/L | 07/09/93 | SDF | EPA 8150 |
| 1 | FORM 43 SEMI-VOLATILES (SOLID) | SEE SEMI-VOL. ATTACHMENT | | 07/08/93 | JVG | EPA 8270 |
| 1 | FORM 43 SEMI-VOLATILES (TCLP) | SEE SEMI-VOL. ATTACHMENT | | 07/08/93 | JVG | EPA 8270 |
| 1 | FORM 43 VOLATILES (SOLID) | SEE VOL. ATTACHMENT | | 07/02/93 | DEM | EPA 8240 |
| 1 | FORM 43 VOLATILES (TCLP) | SEE VOL. ATTACHMENT | | 07/07/93 | SDW | EPA 8240 |
| 1 | PH (SOLID) | 7.50 | | 07/01/93 | LAC | EPA 9045 |
| 1 | PH(WATER LEACHATE) | 7.59 | | 07/02/93 | JNO | EPA 150.1 |
| 1 | PH (TCLP - NON-VOLATILE) | 5.16 | | 07/02/93 | JNO | EPA 150.1 |
| 1 | PH (TCLP - ZERO HEADSPACE) | 5.19 | | 07/02/93 | JNO | EPA 150.1 |
| 1 | TCLP SETUP - NON-VOLATILES | COMPLETED | | 07/02/93 | JNO | EPA 1311 |
| 1 | TCLP SETUP - VOLATILES | COMPLETED | | 07/02/93 | JNO | EPA 1311 |
| 1 | OIL + GREASE (SOLID) | 320 MG/KG | | 07/09/93 | KAJ | EPA 9070,9071,413.2 |
| 1 | OIL + GREASE(WATER LEACH) | <0.25 MG/L | | 07/09/93 | KAJ | EPA 413.2 |
| 1 | CARBON, TOTAL ORGANIC (WATER LEACH) | 15.6 MG/L | | 07/07/93 | SPK | EPA 9060 |
| 1 | CORROSIVITY | NOT CORROSIVE (7.50) | 2-12.5 | 07/01/93 | LAC | SW-846, SEC 7.2.1A |
| 1 | IGNITABILITY (SOLID) | NOT IGNITABLE | | 07/02/93 | JNO | ASTM D-4982-89A |
| 1 | PAINT FILTER TEST | NO FREE LIQUIDS | | 07/01/93 | LAC | EPA 9095 |
| 1 | REACTIVITY | NOT REACTIVE | | 07/02/93 | JNO | SW-846, SEC. 7.3 |
| 1 | REACTIVITY: CYANIDE | <1 MG/KG | 250 MG/KG | 07/01/93 | ABB | SW846, SEC 7.3 |
| 1 | REACTIVITY: SULFIDE | <50 MG/KG | 500 MG/KG | 07/01/93 | BLB | SW-846, SEC. 7.3 |
| 1 | TOTAL DISSOLVED SOLIDS(WATER LEACH) | 181 MG/L | | 07/06/93 | LMS | EPA 160.1 |
| 1 | TOTAL ORGANIC HALOGENS(WATER LEACH) | 54 UG/L | | 07/08/93 | SPK | EPA 9020 |
| 1 | TOTAL SOLIDS | 252000 MG/KG | | 07/01/93 | LMS | EPA 160.3 |

Approved By:

Twila E. Dixon
Laboratory Manager



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# CERTIFICATE OF ANALYSIS

RMC Analytics

Upper Montgomery Joint Authority
P.O. BOX 6
Pennsburg, PA 18073

Report No. : 932351
Sample Date: 06/30/93
Sampled By : N/A
Received : 06/30/93
Reported : 07/15/93
P.O. Number: VERBAL

RMC Number : 7906
Sample Description: UMJA SLUDGE

| Repl | Parameter | Result | RCRA LIMITS | Date Anl Completed | Ana-lyst | Method |
|---|---|---|---|---|---|---|
| 1 | TOTAL VOLATILE SOLIDS | 509000 MG/KG | | 07/01/93 | LMS | EPA 160.4 |
| 1 | TOTAL VOLATILE SOLIDS (WATER LEACH) | 29 MG/L | | 07/06/93 | LMS | EPA 160.4 |
| 1 | WATER LEACHATE SET UP | COMPLETED | | 07/02/93 | JNO | ASTM D3987-85 |

Approved By:

Twila E. Dixon
Laboratory Manager



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# CERTIFICATE OF ANALYSIS

RMC Analytics

CLIENT I.D. : UMJA SLUDGE
RMC I.D. : 7906

DATE ANALYZED: Jul 8, 1993
ANALYZED BY: JAI

Pesticides

| | ug/Kg | | ug/Kg |
|---|---|---|---|
| a-BHC | <8.00 | 4,4'-DDD | <16.0 |
| g-BHC | <8.00 | endrin aldehyde | <16.0 |
| b-BHC | <8.00 | endosulfan sulfate | <16.0 |
| d-BHC | <8.00 | 4,4'-DDT | <16.0 |
| heptachlor | <8.00 | chlordane | <80.0 |
| aldrin | <8.00 | toxaphene | <160 |
| heptachlor epoxide | <8.00 | PCB-1016 | <80.0 |
| endosulfan I | <8.00 | PCB-1221 | <80.0 |
| 4,4'-DDE | <16.0 | PCB-1232 | <80.0 |
| dieldrin | <16.0 | PCB-1242 | <80.0 |
| endrin | <16.0 | PCB-1248 | <80.0 |
| endosulfan II | <16.0 | PCB-1254 | <160 |
| | | PCB-1260 | <160 |

<X=Not detected;value indicates minimum quantifiable limit.

Approved By:

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# CERTIFICATE OF ANALYSIS

RMC Analytics

Summary of Toxicity Characteristic Leaching Procedure

CLIENT I.D.: UMJA SLUDGE
RMC I.D.: 7906

DATE ANALYZED: Jul 7, 1993
ANALYZED BY: JAI

Pesticides

| | ug/L | | ug/L |
|---|---|---|---|
| g-BHC (Lindane) | <40 | methoxychlor | <1000 |
| heptachlor | <0.8 | 4,4'-DDT | <2.0 |
| heptachlor epoxide | <0.8 | chlordane | <3.0 |
| 4,4'-DDE | <2.0 | toxaphene | <50 |
| endrin | <2.0 | 4,4'-DDD | <2.0 |

<X=Not detected;value indicates minimum quantifiable limit.

Approved By: John C Pallad

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# CERTIFICATE OF ANALYSIS

RMC Analytics

Semivolatile Analysis Data

CLIENT I.D. : UMJA SLUDGE
RMC I.D. : 932351-7906

Date Analyzed : 07/08/93
Analyzed By : JVG

| COMPOUND | UG/KG | QL | COMPOUND | UG/KG | QL |
|---|---|---|---|---|---|
| N-Nitrosodimethylamine | U | 330 | 4-Nitrophenol | U | 1700 |
| bis(2-Chloroethyl)Ether | U | 330 | Fluorene | U | 330 |
| Phenol | U | 330 | Diethylphthalate | U | 330 |
| 2-Chlorophenol | U | 330 | 4-Chlorophenyl-phenylether | U | 330 |
| 1,3-Dichlorobenzene | U | 330 | 4,6-Dinitro-2-methylphenol | U | 1700 |
| 1,4-Dichlorobenzene | 120 JB | 330 | N-Nitrosodiphenylamine | U | 330 |
| 1,2-Dichlorobenzene | U | 330 | 1,2-Diphenyl Hydrazine | U | 330 |
| bis(2-chloroisopropyl)ether | U | 330 | 4-Bromophenyl-phenylether | U | 330 |
| Hexachloroethane | U | 330 | Hexachlorobenzene | U | 330 |
| N-Nitroso-Di-n-propylamine | U | 330 | Pentachlorophenol | U | 1700 |
| Nitrobenzene | U | 330 | Phenanthrene | U | 330 |
| Isophorone | U | 330 | Anthracene | U | 330 |
| 2-Nitrophenol | U | 330 | Di-n-butylphthalate | U | 330 |
| 2,4-Dimethylphenol | U | 330 | Fluoranthene | U | 330 |
| bis(2-Chloroethoxy)methane | U | 330 | Pyrene | U | 330 |
| 2,4-Dichlorophenol | U | 330 | Benzidine | U | 2600 |
| 1,2,4-Trichlorobenzene | U | 330 | Butylbenzylphthalate | U | 330 |
| Naphthalene | U | 330 | Benzo(a)anthracene | U | 330 |
| Hexachlorobutadiene | U | 330 | 3,3'-Dichlorobenzidine | U | 660 |
| 4-Chloro-3-methylphenol | U | 330 | Chrysene | U | 330 |
| Hexachlorocyclopentadiene | U | 330 | bis(2-Ethylhexyl)phthalate | 2000 | 330 |
| 2,4,6-Trichlorophenol | U | 330 | Di-n-octylphthalate | U | 330 |
| 2-Chloronaphthalene | U | 330 | Benzo(b)fluoranthene | U | 330 |
| Acenaphthylene | U | 330 | Benzo(k)fluoranthene | U | 330 |
| Dimethylphthalate | U | 330 | Benzo(a)pyrene | U | 330 |
| 2,6-Dinitrotoluene | U | 330 | Indeno(1,2,3-cd)pyrene | U | 330 |
| Acenaphthene | U | 330 | Dibenzo(a,h)anthracene | U | 330 |
| 2,4-Dinitrophenol | U | 1700 | Benzo(g,h,i)perylene | U | 330 |
| 2,4-Dinitrotoluene | U | 330 | | | |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 2-Fluorophenol | 77 % |
| Phenol-d5 | 79 % |
| Nitrobenzene-d5 | 84 % |
| 2-Fluorobiphenyl | 104 % |
| 2,4,6-Tribromophenol | 103 % |
| Terphenyl-d14 | 92 % |

Percent Solid of 100. is used for all Target compounds.
QL = Sample specific quantitation limit

Qualifiers

(J) Indicates an estimated value
(B) Indicates compound found in blank
(U) Indicates compound not detected
(D) Indicates surrogates have been diluted out

Approved By _____

# CERTIFICATE OF ANALYSIS

RMC Analytics

Semivolatile Analysis Data

Client I.D. : UMJA SLUDGE
RMC I.D. : 932351-7906 TCLP

Date Analyzed : 07/08/93
Analyst : JVG

| Compound | uG/L | QL | Compound | uG/L | QL |
|---|---|---|---|---|---|
| Pyridine | U | 100 | 2,4,5-Trichlorophenol | U | 500 |
| N-Nitrosodimethylamine | U | 100 | 2,4-Dinitrotoluene | U | 100 |
| 2-Methylphenol | U | 100 | Hexachlorobenzene | U | 100 |
| Hexachloroethane | U | 100 | Pentachlorophenol | U | 500 |
| 3- & 4-Methylphenol | U | 100 | Phenanthrene | U | 100 |
| Nitrobenzene | U | 100 | bis(2-Ethylhexyl)phthalate | U | 100 |
| Hexachlorobutadiene | U | 100 | Benzo(a)pyrene | U | 100 |
| 2,4,6-Trichlorophenol | U | 100 | | | |

| Surrogate Compounds | Recovery |
|---|---|
| 2-Fluorophenol | 16 % |
| Phenol-d5 | 19 % |
| Nitrobenzene-d5 | 96 % |
| 2-Fluorobiphenyl | 88 % |
| 2,4,6-Tribromophenol | 13 % |
| Terphenyl-d14 | 99 % |

Percent solid of 100. is used for all Target compounds.
QL = Sample specific quantitation limit.
Qualifiers: ( J ) Indicates an estimated value. ( U ) Indicates compound not detected.
( B ) Indicates compound found in blank. ( D ) Indicates surrogates have been diluted out.

Approved by

TRI-COUNTY BUSINESS CAMPUS • 88 ROBINSON STREET • POTTSTOWN, PA 19464 • 215-327-4850 • FAX 215-327-4852
CO: NA • CT: PH-0667 • DE: REC-PA • MD: 150 • MA: PA060 • MI: REC-PA • NH: 25391-A • NJ: 77434 • PA: 46-253 • VA: 00298 • WI: 999902530

# CERTIFICATE OF ANALYSIS

RMC Analytics

RMC Environmental Chemistry Laboratory
Volatile Organic Analysis Data

CLIENT I.D. : UMJA SLUDGE
RMC I.D. : 932351-7906

Date Analyzed : 07/02/93
Analyzed By : DEM

| COMPOUND | UG/KG | | QL | COMPOUND | UG/KG | QL |
|---|---|---|---|---|---|---|
| Chloromethane | U | | 50 | 1,2-Dichloropropane | U | 25 |
| Bromomethane | U | | 50 | cis-1,3-Dichloropropene | U | 25 |
| Vinyl Chloride | U | | 50 | Trichloroethene | U | 25 |
| Chloroethane | U | | 50 | Benzene | U | 25 |
| Methylene Chloride | 70 | B | 25 | Dibromochloromethane | U | 25 |
| Trichlorofluoromethane | U | | 25 | 1,1,2-Trichloroethane | U | 25 |
| 1,1-Dichloroethene | U | | 25 | trans-1,3-Dichloropropene | U | 25 |
| 1,1-Dichloroethane | U | | 25 | Bromoform | U | 25 |
| 1,2-Dichloroethene (total) | U | | 25 | Tetrachloroethene | U | 25 |
| Chloroform | U | | 25 | 1,1,2,2-Tetrachloroethane | U | 25 |
| 1,2-Dichloroethane | U | | 25 | Toluene | U | 25 |
| 2-Butanone | U | | 50 | Chlorobenzene | U | 25 |
| 1,1,1-Trichloroethane | U | | 25 | Ethylbenzene | U | 25 |
| Carbon Tetrachloride | U | | 25 | 1,3-Dichlorobenzene | U | 25 |
| Bromodichloromethane | U | | 25 | 1,2 & 1,4-Dichlorobenzene | U | 25 |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 1,2-Dichloroethane-d4 | 109 % |
| Toluene-d8 | 119 % |
| Bromofluorobenzene | 111 % |

QL = Sample specific quantitation limit

Qualifiers
(J) Indicates an estimated value
(U) Indicates compound not detected
(D) Indicates surrogates have been diluted out
(B) Indicates compound found in blank

Percent Solid of 100. is used for all Target compounds.

Approved By _____

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# CERTIFICATE OF ANALYSIS

RMC Analytics

RMC Environmental Chemistry Laboratory
Volatile Organic Analysis Data

CLIENT I.D. : UMJA SLUDGE
RMC I.D. : 932351-7906 TCLP

Date Analyzed : 07/07/93
Analyzed By : SDW

| COMPOUND | UG/L | QL | COMPOUND | UG/L | QL |
|---|---|---|---|---|---|
| Vinyl Chloride | U | 100 | Carbon Tetrachloride | U | 50 |
| Methylene Chloride | 120 B | 50 | Trichloroethene | U | 50 |
| 1,1-Dichloroethene | U | 50 | Benzene | U | 50 |
| Chloroform | 23 JB | 50 | Tetrachloroethene | U | 50 |
| 1,2-Dichloroethane | U | 50 | Chlorobenzene | U | 50 |
| 2-Butanone | U | 100 | 1,2 & 1,4-Dichlorobenzene | 23 JB | 50 |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 1,2-Dichloroethane-d4 | 101 % |
| Toluene-d8 | 103 % |
| Bromofluorobenzene | 98 % |

QL = Sample specific quantitation limit

Qualifiers
(J) Indicates an estimated value
(U) Indicates compound not detected
(D) Indicates surrogates have been diluted out
(B) Indicates compound found in blank

Approved By _____

TRI-COUNTY BUSINESS CAMPUS • 88 ROBINSON STREET • POTTSTOWN, PA 19464 • 215-327-4850 • FAX 215-327-4852
CO: NA • CT: PH-0667 • DE: REC-PA • MD: 150 • MA: PA060 • MI: REC-PA • NH: 25391-A • NJ: 77434 • PA: 46-253 • VA: 00298 • WI: 999902530

# CERTIFICATE OF ANALYSIS

RMC Analytics

Semivolatile Analysis Data

CLIENT I.D. : >C0495 METHOD BLANK
RMC I.D. : METHOD BLANK

Date Analyzed : 07/08/93
Analyzed By : JVG

| COMPOUND | UG/KG | QL | COMPOUND | UG/KG | QL |
|---|---|---|---|---|---|
| N-Nitrosodimethylamine | U | 330 | 4-Nitrophenol | U | 1700 |
| bis(2-Chloroethyl)Ether | U | 330 | Fluorene | U | 330 |
| Phenol | U | 330 | Diethylphthalate | U | 330 |
| 2-Chlorophenol | U | 330 | 4-Chlorophenyl-phenylether | U | 330 |
| 1,3-Dichlorobenzene | U | 330 | 4,6-Dinitro-2-methylphenol | U | 1700 |
| 1,4-Dichlorobenzene | 75 J | 330 | N-Nitrosodiphenylamine | U | 330 |
| 1,2-Dichlorobenzene | U | 330 | 1,2-Diphenyl Hydrazine | U | 330 |
| bis(2-chloroisopropyl)ether | U | 330 | 4-Bromophenyl-phenylether | U | 330 |
| Hexachloroethane | U | 330 | Hexachlorobenzene | U | 330 |
| N-Nitroso-Di-n-propylamine | U | 330 | Pentachlorophenol | U | 1700 |
| Nitrobenzene | U | 330 | Phenanthrene | U | 330 |
| Isophorone | U | 330 | Anthracene | U | 330 |
| 2-Nitrophenol | U | 330 | Di-n-butylphthalate | U | 330 |
| 2,4-Dimethylphenol | U | 330 | Fluoranthene | U | 330 |
| bis(2-Chloroethoxy)methane | U | 330 | Pyrene | U | 330 |
| 2,4-Dichlorophenol | U | 330 | Benzidine | U | 2600 |
| 1,2,4-Trichlorobenzene | U | 330 | Butylbenzylphthalate | U | 330 |
| Naphthalene | U | 330 | Benzo(a)anthracene | U | 330 |
| Hexachlorobutadiene | U | 330 | 3,3'-Dichlorobenzidine | U | 660 |
| 4-Chloro-3-methylphenol | U | 330 | Chrysene | U | 330 |
| Hexachlorocyclopentadiene | U | 330 | bis(2-Ethylhexyl)phthalate | U | 330 |
| 2,4,6-Trichlorophenol | U | 330 | Di-n-octylphthalate | U | 330 |
| 2-Chloronaphthalene | U | 330 | Benzo(b)fluoranthene | U | 330 |
| Acenaphthylene | U | 330 | Benzo(k)fluoranthene | U | 330 |
| Dimethylphthalate | U | 330 | Benzo(a)pyrene | U | 330 |
| 2,6-Dinitrotoluene | U | 330 | Indeno(1,2,3-cd)pyrene | U | 330 |
| Acenaphthene | U | 330 | Dibenzo(a,h)anthracene | U | 330 |
| 2,4-Dinitrophenol | U | 1700 | Benzo(g,h,i)perylene | U | 330 |
| 2,4-Dinitrotoluene | U | 330 | | | |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 2-Fluorophenol | 72 % |
| Phenol-d5 | 67 % |
| Nitrobenzene-d5 | 64 % |
| 2-Fluorobiphenyl | 75 % |
| 2,4,6-Tribromophenol | 80 % |
| Terphenyl-d14 | 78 % |

Percent Solid of 100. is used for all Target compounds.
QL = Sample specific quantitation limit

Qualifiers

(J) Indicates an estimated value
(U) Indicates compound not detected
(B) Indicates compound found in blank
(D) Indicates surrogates have been diluted out

Approved By _____

TRI-COUNTY BUSINESS CAMPUS · 88 ROBINSON STREET · POTTSTOWN, PA 19464 · 215-327-4850 · FAX 215-327-4852
CO: NA · CT: PH-0667 · DE: REC-PA · MD: 150 · MA: PA060 · MI: REC-PA · NH: 25391-A · NJ: 77434 · PA: 46-253 · VA: 00298 · WI: 999902530

# CERTIFICATE OF ANALYSIS

RMC Analytics

Semivolatile Analysis Data

Client I.D. : E2986 METHOD BLANK
RMC I.D. : METHOD BLANK

Date Analyzed : 07/08/93
Analyst : JVG

| Compound | uG/L | QL | Compound | uG/L | QL |
|---|---|---|---|---|---|
| Pyridine | U | 100 | 2,4,5-Trichlorophenol | U | 500 |
| N-Nitrosodimethylamine | U | 100 | 2,4-Dinitrotoluene | U | 100 |
| 2-Methylphenol | U | 100 | Hexachlorobenzene | U | 100 |
| Hexachloroethane | U | 100 | Pentachlorophenol | U | 500 |
| 3- & 4-Methylphenol | U | 100 | Phenanthrene | U | 100 |
| Nitrobenzene | U | 100 | bis(2-Ethylhexyl)phthalate | U | 100 |
| Hexachlorobutadiene | U | 100 | Benzo(a)pyrene | U | 100 |
| 2,4,6-Trichlorophenol | U | 100 | | | |

| Surrogate Compounds | Recovery |
|---|---|
| 2-Fluorophenol | 79 % |
| Phenol-d5 | 65 % |
| Nitrobenzene-d5 | 89 % |
| 2-Fluorobiphenyl | 87 % |
| 2,4,6-Tribromophenol | 76 % |
| Terphenyl-d14 | 93 % |

Percent solid of 100. is used for all Target compounds.
QL = *Sample specific quantitation limit.*

Qualifiers: ( J ) Indicates an estimated value.
( B ) Indicates compound found in blank.
( U ) Indicates compound not detected.
( D ) Indicates surrogates have been diluted out.

Approved by

TRI-COUNTY BUSINESS CAMPUS • 88 ROBINSON STREET • POTTSTOWN, PA 19464 • 215-327-4850 • FAX 215-327-4852
CO: NA • CT: PH-0667 • DE: REC-PA • MD: 150 • MA: PA060 • MI: REC-PA • NH: 25391-A • NJ: 77434 • PA: 46-253 • VA: 00298 • WI: 999902530

# CERTIFICATE OF ANALYSIS

RMC Analytics

RMC Environmental Chemistry Laboratory
Volatile Organic Analysis Data

CLIENT I.D. : >B4528 METHOD BLANK
RMC I.D. : METHOD BLANK

Date Analyzed : 07/01/93
Analyzed By : DEM

| COMPOUND | UG/L | QL | COMPOUND | UG/L | QL |
|---|---|---|---|---|---|
| Chloromethane | U | 10 | 1,2-Dichloropropane | U | 5 |
| Bromomethane | U | 10 | cis-1,3-Dichloropropene | U | 5 |
| Vinyl Chloride | U | 10 | Trichloroethene | U | 5 |
| Chloroethane | U | 10 | Benzene | U | 5 |
| Methylene Chloride | 8 | 5 | Dibromochloromethane | U | 5 |
| Trichlorofluoromethane | U | 5 | 1,1,2-Trichloroethane | U | 5 |
| 1,1-Dichloroethene | U | 5 | trans-1,3-Dichloropropene | U | 5 |
| 1,1-Dichloroethane | U | 5 | Bromoform | U | 5 |
| 1,2-Dichloroethene (total) | U | 5 | Tetrachloroethene | U | 5 |
| Chloroform | U | 5 | 1,1,2,2-Tetrachloroethane | U | 5 |
| 1,2-Dichloroethane | U | 5 | Toluene | U | 5 |
| 2-Butanone | U | 10 | Chlorobenzene | U | 5 |
| 1,1,1-Trichloroethane | U | 5 | Ethylbenzene | U | 5 |
| Carbon Tetrachloride | U | 5 | 1,3-Dichlorobenzene | U | 5 |
| Bromodichloromethane | U | 5 | 1,2 & 1,4-Dichlorobenzene | U | 5 |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 1,2-Dichloroethane-d4 | 102 % |
| Toluene-d8 | 100 % |
| Bromofluorobenzene | 99 % |

QL = Sample specific quantitation limit

Qualifiers
(J) Indicates an estimated value
(U) Indicates compound not detected
(D) Indicates surrogates have been diluted out
(B) Indicates compound found in blank

Approved By _____

TRI-COUNTY BUSINESS CAMPUS • 88 ROBINSON STREET • POTTSTOWN, PA 19464 • 215-327-4850 • FAX 215-327-4852
CO: NA • CT: PH-0667 • DE: REC-PA • MD: 150 • MA: PA060 • MI: REC-PA • NH: 25391-A • NJ: 77434 • PA: 46-253 • VA: 00298 • WI: 999902530

# CERTIFICATE OF ANALYSIS

RMC Analytics

RMC Environmental Chemistry Laboratory
Volatile Organic Analysis Data

CLIENT I.D. : >B4565 METHOD BLANK
RMC I.D. : METHOD BLANK

Date Analyzed : 07/07/93
Analyzed By : SDW

| COMPOUND | UG/L | QL | COMPOUND | UG/L | QL |
|---|---|---|---|---|---|
| Vinyl Chloride | U | 10 | Carbon Tetrachloride | U | 5 |
| Methylene Chloride | 11 | 5 | Trichloroethene | U | 5 |
| 1,1-Dichloroethene | U | 5 | Benzene | U | 5 |
| Chloroform | 1 J | 5 | Tetrachloroethene | U | 5 |
| 1,2-Dichloroethane | U | 5 | Chlorobenzene | U | 5 |
| 2-Butanone | U | 10 | 1,2 & 1,4-Dichlorobenzene | 2 J | 5 |

| SURROGATE COMPOUNDS | RECOVERY |
|---|---|
| 1,2-Dichloroethane-d4 | 99 % |
| Toluene-d8 | 98 % |
| Bromofluorobenzene | 95 % |

QL = Sample specific quantitation limit

Qualifiers
(J) Indicates an estimated value
(U) Indicates compound not detected
(D) Indicates surrogates have been diluted out
(B) Indicates compound found in blank

Approved By _____

CHAIN OF CUSTODY

RMC Analytics
A Division of RMC Environmental Services, Inc.
88 Robinson Street
Pottstown, Pa. 19464
(215) 327-4850

Client: Upper Montgomery Joint Authority
VIP #:
Address: 1100 Mensch Dam Road, PO Box 6
Pennsburg PA 18073
Phone: 679-5133
Samplers:
Job No.:

Lab Contact:
Sales Order No.:
P.O. Number:

| Turnaround Time | Normal [ ] | Rush [ ] |
|---|---|---|
| *Sample* | Return to Client | [X] |
| *Disposal* | Disposal by Lab | [ ] |

| RMC USE ONLY |
|---|
| 932351 |

| No. Container/Size | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis Requested | | | | | ORGANICS | | | | | | | INORGANICS | | | | | | |
| RMC only Lab ID | Sample Identification | Matrix Code * | Sample Date | Sample Time | VOA | BNA | Pest/PCB | Herb | | | | Metals | Cn | NH3 | Wet Chem | | | |
| 7906 | UMJA sludge | SL | 6/30/93 | | | | | | | | | | | | | | | |

**Potential Hazard Identification:**
Non-Hazard [ ] Flammable [ ] Unknown [ ]
Skin-irritant [ ] Poison [ ]

**QA/QC Reporting Requirements** (Circle one)
None Standard Tier II CLP
Other (specify):

| Relinquished By: | Received By: | Time: | Date: | Relinquished By: | Received By: | Time: | Date: |
|---|---|---|---|---|---|---|---|
| B. Bowle | [illegible] | 0910 | 6/30/93 | | | | |

**Special Instructions:**

* Matrix Codes:

| | |
|---|---|
| S - soil | WW- waste water |
| SE - sediment | PW - potable water |
| SO - solid | SW - surface water |
| WS - solid waste | GW - ground water |
| DS - drum solids | DL - drum liquids |
| SL - sludge | ST - stormwater |
| O - oil | A - air |
| WI - wipe | F - fish |
| BI - biological | X - other |

RMC Use Only

Samples were:
1. Shipped or Hand-delivered — Notes:
2. Chilled or Ambient — Notes:
3. Received broken/leaking — Yes No
4. Properly preserved — Yes No
5. Received within holding times — Yes No

Smk 6/30/93

COC Tape Was:
1. Present on outer package — Yes No
2. Unbroken on outer package — Yes No
3. Present on sample — Yes No
4. Unbroken on sample — Yes No
5. Discrepancies between sample labels and COC record? — Yes No

CHAIN OF CUSTODY

AR301257

## GENERATOR'S WASTE PROFILE SHEET
## INSTRUCTIONS

Information on this form, is used to determine if the waste may be transported, treated, stored or disposed in a legal, safe, and environmentally sound manner. This information will be maintained in strict confidence. Answers must be provided for all sections of this form, and must be printed in ink or typed. A response of "NONE," or "NA" (not applicable) can be made, if appropriate. If additional space is needed, indicate on the form that additional information is attached, and attach the information to the Generator's Waste Profile Sheet. Shaded areas of the attached form are for Contractor's use only. If you have questions concerning this form, please contact Contractor's sales representative.

**PART A. WASTE GENERATOR INFORMATION**

1. GENERATOR NAME – Enter the name of the facility where the waste is generated.
2. SIC CODE – Enter the 4-digit Standard Industrial Classification Code for the facility where the waste is generated.
3. FACILITY ADDRESS – Enter the street address (not P.O. Box) of the facility where the waste is generated.
4. GENERATOR CITY, STATE/PROVINCE – Enter the city and state or province where the waste is generated.
5. ZIP/POSTAL CODE – Enter the generating facility's zip or postal code.
6. GENERATOR USEPA/CANADIAN FEDERAL ID – Enter the identification number issued by the USEPA or CANADIAN FEDERAL AGENCY to the facility generating the waste (if applicable).
7. GENERATOR STATE/PROVINCE ID – Enter the identification number issued by the state or province to the facility generating the waste (if applicable).
8. TECHNICAL CONTACT – Enter the name of the person who can answer technical questions about the waste.
9. PHONE – Enter technical contact's telephone number.

**PART B. WASTE STREAM INFORMATION**

1. NAME OF WASTE – Enter a name generally descriptive of this waste (e.g., paint sludge, contaminated soil, incinerator ash, untreated medical waste, friable asbestos, fluorescent bulbs).
2. PROCESS GENERATING WASTE – List the specific process/operation or source that generates the waste (e.g., paint spray booth, spill clean up, incineration of municipal refuse, asbestos removal, building maintenance).
3. ANNUAL AMOUNT/UNITS – Enter the amount of waste that will be generated and transported annually. Use appropriate units to describe this volume (e.g., cubic yards, gallons, kilograms, pounds).
4. WASTE TYPE – Based upon reading the Contractor's Definition of Special Waste that is included in section B.5 of these instructions, determine whether your waste is a "Type A Special Waste" or a "Type B Special Waste." Indicate the proper response in the space provided.
5. SPECIAL HANDLING INSTRUCTIONS/SUPPLEMENTAL INFORMATION – For all wastes, describe any special handling requirements and any additional information that you feel would assist in determining the proper method(s) for transportation, treatment, storage, and disposal of the waste. For Type B Special Waste, provide the "supplemental information" requested after each applicable definition.

### CONTRACTOR'S DEFINITION OF SPECIAL WASTE

a. **"Special Waste"** means Type A or Type B Special Wastes as defined below.

b. **"Type A Special Waste"** means any **waste from a commercial or industrial activity** meeting any of the following descriptions:
   i. A waste from an industrial process.
   ii. A waste from a pollution control process.
   iii. A waste containing free liquids.
   iv. Residue and debris from the cleanup of a spill of a chemical substance or commercial product or a waste listed in i.–iii., or v.–vii. of this definition.
   v. Contaminated residuals, or articles from the cleanup of a facility generating, storing, treating, recycling, or disposing chemical substances, commercial products, or wastes listed in i.–iv., vi., or vii. of this definition.
   vi. Any waste which is non-hazardous as a result of treatment pursuant to Subtitle C of the Resource Conservation and Recovery Act (RCRA).
   vii. Chemical-containing equipment removed from service, in which the chemical composition and concentration are unknown.

v. **Residue/sludges from septic tanks, food service grease traps, or washwaters and wastewaters from commercial laundries, laundromats, and car washes, unless these wastes are managed at commercial or public treatment works.**

**Supplemental Information** – Indicate the physical state of the waste (e.g., liquid, sludge, solid). List the specific source(s) (e.g., septic tank pumpings from hotel) of the waste and indicate whether there are any industrial discharges incorporated into the waste. Indicate whether or not a commercial laundry cleans clothing that may be contaminated with chemicals from an industrial facility. List the types of vehicles cleaned at car washes. Include a statement that indicates whether the interiors of any truck, or the exteriors of bulk chemical or waste tank trucks are washed.

vi. **Chemical-containing equipment removed from service, in which the chemical composition and concentration are known (e.g., acetylene tanks, cathode ray tubes, lab equipment, fluorescent light tubes, etc.).**

**Supplemental Information** – List the specific equipment removed from service and any additional information pertaining to the chemical contained in that equipment, including type, concentration and volume.

vii. **Waste produced from the demolition or dismantling of industrial process equipment or facilities contaminated with chemicals from the industrial process.** Chemicals or residues removed or drained from such equipment or facilities are "Type A Special Wastes".

**Supplemental Information** – List the waste type(s) (e.g., piping, pumps, tanks) and the process type(s) from which they came. Indicate whether there are residuals contained in the process equipment. Describe the process used to decontaminate the equipment and list any chemicals or mixtures of chemicals that were used in the cleaning process. Attach a copy of the most current Material Safety Data Sheets for each of the chemicals used in the original process, the end product of the process, and the chemicals or mixtures of chemicals used in the cleaning process. Indicate whether this waste is contaminated with asbestos or asbestos insulation.

viii. **Incinerator ash generated at a Resource Recovery Facility that burned only non-hazardous household, commercial, or industrial waste and qualifies for the hazardous waste exclusion in 40 CFR 261.4(b).** If the regulatory authority does not recognize the household hazardous waste exclusion, then the ash is a "Type A Special Waste".

**Supplemental Information** – If the ash is wetted during storage or transportation, list the wetting agent(s) used and include its chemical composition or provide a current Material Safety Data Sheet.

6. INCIDENTAL AMOUNTS OF SPECIAL WASTE – The Contractor recognizes that many customers will produce some "Special Waste," as defined above. Incidental quantities of special waste (i.e., quantities that do not materially change the physical or chemical identity of the load or make it hazardous waste), do not require the customer to sign a Generator's Waste Profile Sheet. However, the customer must identify the type and amount of special wastes which will be provided to the Contractor in incidental amounts.

**PART C. TRANSPORTATION INFORMATION**

1. METHOD OF SHIPMENT – Indicate the anticipated method of shipment by checking the appropriate box.
2. SUPPLEMENTAL SHIPPING INFORMATION – Enter any additional shipping information.
3. INDICATE IF THIS WASTE IS A USDOT (see 49 CFR 171) OR CANADIAN FEDERAL HAZARDOUS MATERIAL. If so, answer Questions 4, 5, and 6 below.
4. HAZARD CLASS/ID – Enter the proper USDOT or Canadian Federal hazard class/enter the proper USDOT (see 49 CFR 172) or Canadian Federal Identification Number.
5. REPORTABLE QUANTITY (RQ)/Units (lb/kg) – Enter the RQ established by 40 CFR 302.4 or equivalent Canadian regulation for this waste. Indicate the appropriate units of the RQ.
6. SHIPPING NAME – Enter the proper USDOT or Canadian Federal shipping name for this waste.

**PART D. TECHINCAL MANAGER DECISION** – To be completed by Contractor's representative only.

**PART E. MANAGEMENT FACILITY INFORMATION/DECISION** – To be completed by Contractor's representative only.

**PART F. PHYSICAL CHARACTERISTICS OF WASTE** – <u>If Part B.4 was checked "Type B", go directly to Part J.</u>

1. COLOR – Describe the color of the waste (e.g., blue, transparent, varies).
2. ODOR – **DO NOT SMELL THE WASTE!** If the waste has a known incidental odor, then describe it (e.g., acrid, pungent, solvent, sweet).

L

# APPENDIX L

## SITE PHOTOGRAPHS
## JULY 9, 1998

Photo 1: Drum Excavation Area, surrounded by agricultural land.

Photo 2: Mesic Hardwood Forest, approximately 1,000 feet south of Drum Excavation Area

Photo 3: Talus Slope, with Oak-Hickory Forest in background (approximately 1,000 feet southwest of Drum Excavation Area.

Photo 4: Cleared fields located immediately south of Blackhead Hill, with alternating patches of Successional Hardwood Forest and Old Field Perennial Vegetation (approximately 1,300 feet south of Drum Excavation Area).

Photo 5: Emergent Wetland Vegetation approximately 300 feet south (downslope) from Spring No. 179, and approximately 1,200 feet south of Drum Excavation Area). Dominated by rice cutgrass and false nettle. Palustrine Emergent Wetland, Persistent (PEM1).

Photo 6: Emergent Wetland Vegetation approximately 200 feet west (downslope) of Spring No. 101, and approximately 1,000 feet west of Drum Excavation Area. Dominated by jewelweed and skunk cabbage. Palustrine Emergent Wetland, Persistent (PEM1).

Photo 7: Successional Hardwood Forest on Abandoned Quarry, approximately 800 feet southwest of Drum Excavation Area. Dominated by bigtooth aspen and black birch.

Photo 8: West Branch Perkiomen Creek at Airport Road, approximately 0.75 mile south of Drum Excavation Area. Note sharply defined channel with alternating riffles and pools.

M

# DATA POINT #1
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 1
# 1987 MANUAL

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 1 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Other Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| ACER RUBRUM | C | FAC | | | |
| ACER RUBRUM | SA | FAC | | | |
| LINDERA BENZOIN | SH | FACW- | | | |
| ROSA MULTIFLORUM | SH | FACU | | | |
| IMPATIENS CAPENSIS | H | FACW | | | |
| POLYGONUM SP. | H | FACW | | | |
| | | | | | |
| | | | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 83

Remarks: HYDROPHYTIC VEGETATION PRESENT. CANOPIES FROM TREES ON ADJOINING UPLANDS SHADE MOST OF THIS DATA POINT. ONLY THOSE PLANTS ACTUALLY GROWING WITHIN THE WETLAND ARE COUNTED ABOVE.

## HYDROLOGY

Recorded Data (Described in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other
- ___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: NONE (in.)
- Depth to Free Water in Pit: NONE (in.)
- Depth in Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: MID-SUMMER DELINEATION DURING DRY SEASON. CHANNEL APPEARS TO CARRY WATER FROM UPHILL SPRINGS DURING WETTER SEASONS. EVIDENCE OF WETLAND HYDROLOGY MARGINAL.

# DATA POINT #1
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| 0-2 | ALLUVIUM | 10YR 3/2 | NONE | N/A | SANDY CLAY LOAM |
| 2-8 | B | 10YR 5/6 | NONE | N/A | SANDY CLAY LOAM |
| 8 | | AUGUR REFUSAL | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: EVIDENCE OF HYDRIC SOIL MARGINAL.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: ALTHOUGH REGULATORY STATUS AS A WETLAND IS MARGINAL, AREA WILL BE ASSUMED TO BE A WETLAND FOR PURPOSES OF REMEDIAL INVESTIGATION.

Classification: PALUSTRINE FORESTED WETLAND, BROAD-LEAVED DECIDUOUS (PFO1)

**DATA POINT #2**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| *Do Normal Circumstances exist on the site?:* | *Yes* | *No* | *Community ID:* | *MHF* |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 2 |

**VEGETATION**

| *Dominant Plant Species* | *Stratum* | *Indicator* | *Dominant Plant Species* | *Stratum* | *Indicator* |
|---|---|---|---|---|---|
| BETULA LENTA | C | FACU | LINDERA BENZOIN | H | FACW- |
| POPULUS GRANDIDENTA | C | FACU- | VIBURNUM ACERIFOLIUM | H | UPL |
| SASSAFRAS ALBIDUM | SA | FACU- | PARTHENOC. QUINQUEFOLIA | H | FACU |
| CORNUS FLORIDA | SA | FACU- | Other Plant Species | | |
| ACER RUBRUM | SA | FAC | VIBURNUM ACERIFOLIUM | SH | UPL |
| RUBUS OCCIDENTALIS | H | UNK | ARISAEMA TRIPHYLLUM | H | FACW- |
| TOXICODEN. RADICANS | H | FAC | SASSAFRAS ALBIDUM | H | FACU |
| BOEHMERIA CYLINDRICA | H | FACW+ | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40

Remarks: NO EVIDENCE OF HYDROPHYTIC VEGETATION

**HYDROLOGY**

Recorded Data (Described in Remarks):
- ____ Stream, Lake, or Tide Gauge
- X *Aerial Photographs*
- ____ Other
- ____ *No Recorded Data Available*

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | NONE | (in.) |
| Depth to Free Water in Pit: | NONE | (in.) |
| Depth in Saturated Soil: | NONE | (in.) |

Wetland Hydrology Indicators:

Primary Indicators:
- ____ *Inundated*
- ____ Saturated in Upper 12 inches
- ____ *Water Marks*
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ *Other (Explain in Remarks)*

Remarks: NO EVIDENCE OF WETLAND HYDROLOGY.

# DATA POINT #2
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

***Soil***

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth *(inches)* | Horizon | Matrix Color *(Munsell Moist)* | Mottle Colors *(Munsell Moist)* | Mottle *Abundance/Contrast* | Texture Concretions, *Structure, etc,* |
|---|---|---|---|---|---|
| 0-1.5 | A | 10YR 3/2 | NONE | N/A | LOAM |
| 1.5-15 | B | 10YR 6/6 | NONE | N/A | SANDY CLAY LOAM |
| 15-20+ | B | 10YR 6/6 | NONE | N/A | CLAY LOAM |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: NO EVIDENCE OF HYDRIC SOILS

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| *Hydric Soils Present?* | Yes | No | | | |

Remarks: UPLAND

Classification: UPLAND (U)

**DATA POINT #3**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | PEWV |
| *Is the site significantly disturbed (Atypical Situation)?:* | *Yes* | *No* | *Transect ID:* | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | *Plot ID:* | 3 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| LINDERA BENZOIN | SH | FACW- | SOLANUM NIGRUM | H | FACU- |
| LEERSIA ORYZOIDES | H | OBL | BOEHMERIA CYLINDRICA | H | FACW+ |
| SASSAFRAS ALBIDUM | SA | FACU- | PONTEDERIA CORDATA | H | OBL |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks: HYDROPHYTIC VEGETATION

## HYDROLOGY

| | |
|---|---|
| ____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| ____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | ____ Inundated |
| ____ Other | X Saturated in Upper 12 inches |
| ____ *No Recorded Data Available* | ____ *Water Marks* |
| Field Observations: | ____ Drift Lines |
| Depth of Surface Water: 0 (in.) | X Sediment Deposits |
| Depth to Free Water in Pit: 0 (in.) | ____ Drainage Patterns in Wetlands |
| Depth in Saturated Soil: 0 (in.) | Secondary Indicators (2 or more required): |
| | ____ Oxidized Root Channels in Upper 12 inches |
| | ____ Water-Stained Leaves |
| | ____ *Local Soil Survey Data* |
| | X FAC-Neutral Test |
| | ____ Other (Explain in Remarks) |

Remarks: APPEARS TO BE SEASONALLY INUNDATED BY UPGRADIENT SPRINGS.

# DATA POINT #3
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (*Series and Phase*): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| 0-12+ | A | 10YR 5/2 | 10YR 5/6 | 10%/DISTINCT | SILTY CLAY LOAM |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: HYDRIC SOIL

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| *Hydrophytic Vegetation Present?* | Yes | No | *Is this Sampling Point Within a Wetland?* | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

*Remarks: ALL THREE PARAMETERS CLEARLY MET*

Classification: PALUSTRINE EMERGENT WETLAND, PERSISTENT (PEM1)

**DATA POINT #4**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 4 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| BETULA LENTA | C | FACU | LIRIODENDRON TULIPIFERA | C | FACU |
| ACER RUBRUM | C | FAC | IMPATIENS CAPENSIS | H | FACW |
| FRAXINUS PENNSYLVANICA | SA | FACW | ONOCLEA SENSIBILIS | H | FACW |
| LINDERA BENZOIN | SH | FACW- | | | |
| SAMBUCUS CANADENSIS | SH | FACW- | | | |
| POLYGONUM SP. | H | VAR | | | |
| LEERSIA ORYZOIDES | H | OBL | | | |

*Percent of Dominant Species that are OBL, FACW or FAC* (excluding FAC-). 83

Remarks: HYDROPHYTIC VEGETATION

## HYDROLOGY

Recorded Data (Described in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other
- ___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth in Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: APPEARS TO BE SEASONALLY INUNDATED BY UPGRADIENT SPRINGS.

# DATA POINT #4
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER CHANNERY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| 0-12+ | B | 10YR 4/3 & 5/3 | 10YR 5/6 | 2%/DISTINCT | SANDY CLAY LOAM |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- X Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: MARGINAL EVIDENCE OF HYDRIC SOIL (EVIDENCED ONLY BY MANGANESE CONCRETIONS AND A FEW MOTTLES)

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: VEGETATION AND HYDROLOGY PARAMETERS CLEARLY MET, MARGINAL EVIDENCE OF HYDRIC SOIL.

Classification: PALUSTRINE FORESTED WETLAND, BROADLEAVED DECIDUOUS (PFO1)

**DATA POINT #5**
***CROSSLEY FARM SITE***
**WETLAND DELINEATION DATA FORM, PAGE 1**
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| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 5 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| LIRIODENDRON TULIPIFERA | C | FACU | BETULA LENTA | SA | FACU |
| NYSSA SYLVATICA | C | FAC | FRAXINUS PENNSYLVANICA | SA | FACW |
| HAMAMELIS VIRGINIANA | SA | FAC- | TOXICODENDRON RADICANS | H | FAC |
| LINDERA BENZOIN | SH | FACW- | ARISAEMA TRIPHYLLUM | H | FACW- |
| HAMAMELIS VIRGINIANA | SH | FAC- | IMPATIENS CAPENSIS | H | FACW |
| FRAXINUS PENNSYLVANICA | SH | FACW | | | |
| PARTHENOC. QUINQUEFOLIA | H | FACU | | | |
| OSMUNDA CINNAMOMEA | H | FACW | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50

Remarks: *EVIDENCE OF HYDROPHYTIC VEGETATION IS MARGINAL. ROUGH TALUS-LIKE SOILS APPEAR TO PROVIDE MINIATURE* HUMMOCKS THAT ACCOMMODATE UPLAND PLANTS, WHILE WETLAND PLANTS (ESPECIALLY CINNAMON FERN, *OSMUNDA CINNAMOMEA*) GROW IN THE INTERSTICES.

## HYDROLOGY

| | |
|---|---|
| _____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| _____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | _____ Inundated |
| _____ Other | _____ Saturated in Upper 12 inches |
| _____ No Recorded Data Available | _____ Water Marks |
| | _____ Drift Lines |
| Field Observations: | _____ Sediment Deposits |
| Depth of Surface Water: NONE (in.) | X Drainage Patterns in Wetlands |
| Depth to Free Water in Pit: NO DATA (in.) | Secondary Indicators (2 or more required): |
| Depth in Saturated Soil: NO DATA (in.) | _____ Oxidized Root Channels in Upper 12 inches |
| | _____ Water-Stained Leaves |
| | _____ Local Soil Survey Data |
| | _____ FAC-Neutral Test |
| | _____ Other (Explain in Remarks) |

Remarks: COULD NOT AUGUR SOIL BORING INTO ROCKY TALUS-LIKE SURFACE. APPEARS TO CARRY SEEPAGE AMID THE TALUS-LIKE ROCKS. *EVIDENCE OF WETLAND HYDROLOGY MARGINAL.*

# DATA POINT #5
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

***Soil***

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER CHANNERY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| SURFACE | | | | | ROCKY TALUS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: SURFACE SOIL LIMITED TO SHALLOW POCKETS OF TOPSOIL AMID COBBLE-SIZED ROCKY TALUS.

## WETLAND DETERMINATION

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: REGULATORY STATUS AS A WETLAND IS UNCERTAIN. AREA FUNCTIONS AS A WETLAND DURING PERIODS OF HIGH SEEPAGE RATE FROM UNDER THE ROCKY TALUS. FOR PURPOSES OF THE REMEDIAL INVESTIGATION, THIS AREA WILL BE TREATED AS A WETLAND.

Classification: PALUSTRINE FORESTED WETLAND, BROADLEAVED DECIDUOUS (PFO1)

**DATA POINT #6**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | MHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 179 SYSTEM |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 5 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| FRAXINUS PENNSYLVANICA | C | FACW | ARISAEMA TRIPHYLLUM | H | FACW- |
| SAMBUCUS CANADENSIS | SH | FACW- | BOEMERIA CYLINDRICA | H | FACW+ |
| IMPATIENS CAPENSIS | H | FACW | VITIS SP. | H | VAR |

*Percent of Dominant Species that are OBL, FACW or FAC* (excluding FAC-). 100

Remarks: HYDROPHYTIC VEGETATION IN DITCH. DITCH IS SHADED BY UPLAND TREES GROWING OUTSIDE OF THE DITCH. ONLY THOSE PLANTS GROWING DIRECTLY IN THE DITCH ARE LISTED ABOVE.

## HYDROLOGY

| | |
|---|---|
| ____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| ____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | ____ *Inundated* |
| ____ Other | ____ Saturated in Upper 12 inches |
| ____ No Recorded Data Available | ____ Water Marks |
| | ____ Drift Lines |
| Field Observations: | ____ Sediment Deposits |
| Depth of Surface Water: NONE (in.) | ____ Drainage Patterns in Wetlands |
| *Depth to Free Water in Pit:* NONE (in.) | *Secondary Indicators (2 or more required):* |
| Depth in Saturated Soil: NONE (in.) | ____ Oxidized Root Channels in Upper 12 inches |
| | ____ Water-Stained Leaves |
| | ____ Local Soil Survey Data |
| | X FAC-Neutral Test |
| | ____ Other (Explain in Remarks) |

Remarks: SCOUR IN DITCH SUGGESTS THAT IT PERIODICALLY CARRIES RUNOFF AND OVERFLOW FROM THE BASS POND.

# DATA POINT #6
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc. |
|---|---|---|---|---|---|
| SURFACE | | | | | COBBLE SURFACE |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: COBBLY SURFACE COULD NOT BE AUGURED. PLANTS GROW IN SMALL SEDIMENT POCKETS AMID THE COBBLES. THIS INTERMITTENT STREAM BOTTOM IS ASSUMED TO BE HYDRIC.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: APPEARS TO BE AN INTERMITTENT STREAM BED. ALTHOUGH THE EVIDENCE DOES NOT CONCLUSIVELY DEMONSTRATE WETLAND HYDROLOGY THAT MEETS REGULATORY CRITERIA, THE DITCH WILL BE ASSUMED TO BE A WETLAND FOR PURPOSES OF REMEDIAL INVESTIGATION.

Classification: RIVERINE INTERMITTENT STREAMBED (R4SB)

**DATA POINT #7**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 101 |
| Is the area a potential Problem Area?: (If needed, explain on reverse) | Yes | No | Plot ID: | 7 |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| SAMBUCUS CANADENSIS | SH | FACW- | ATHYRIUM FELIX-FEMINA | H | FAC |
| LINDERA BENZOIN | SH | FACW- | SMILAX ROTUNDIFOLIA | H | FAC |
| IMPATIENS CAPENSIS | H | FACW | SOLIDAGO SP. | H | VAR |
| GLYCERIA STRIATA | H | OBL | POLYGONUM SP. | H | VAR |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks: HYDROPHYTIC VEGETATION. PART OF THIS NARROW AREA IS SHADED BY TREES GROWING ON THE ADJOINING UPLANDS. THE LISTED VEGETATION INCLUDES ONLY THAT GROWING DIRECTLY IN THE WET AREA.

## HYDROLOGY

| | |
|---|---|
| ____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| ____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | X Inundated |
| ____ Other | X Saturated in Upper 12 inches |
| ____ No Recorded Data Available | ____ Water Marks |
| | ____ Drift Lines |
| *Field Observations:* | X *Sediment Deposits* |
| Depth of Surface Water: 0-1 (in.) | X Drainage Patterns in Wetlands |
| Depth to Free Water in Pit: 0 (in.) | Secondary Indicators (2 or more required): |
| Depth in Saturated Soil: 0 (in.) | ____ Oxidized Root Channels in Upper 12 inches |
| | ____ Water-Stained Leaves |
| | ____ Local Soil Survey Data |
| | X FAC-Neutral Test |
| | Other (Explain in Remarks) |

Remarks: WETLAND HYDROLOGY PRESENT. AREA IMMEDIATELY DOWNHILL FROM SEEPAGE AT SPRING No. 101.

# DATA POINT #7
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
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**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| 0-3 | A | 10YR 4/2 | 10YR 4/6 | 15%/DISTINCT | ORGANIC LOAM |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: AUGUR REFUSAL AT 3 INCHES. AREA IS COBBLY, WITH A VERY SHALLOW ACCUMULATION OF SOIL HIGH IN ORGANIC MATTER.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: ALL THREE PARAMETERS CLEARLY MET.

Classification: PALUSTRINE SCRUB-SHRUB WETLAND, BROAD-LEAVED DECIDUOUS (PSS1)

**DATA POINT #8**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
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| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 101 |
| Is the area a potential Problem Area?: | Yes | No | Plot ID: | 8 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| FRAXINUS PENNSYLVANICA | SH | FACW | ATHYRIUM FELIX-FEMINA | H | FAC |
| LINDERA BENZOIN | SH | FACW- | VITIS SP. | H | VAR |
| IMPATIENS CAPENSIS | H | FACW | RUMEX CRISPUS | H | FACU |
| SYMPLOCARPUS FOETIDUS | H | OBL | RUBUS ALLEGHENIENSIS | H | FACU- |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks: HYDROPHYTIC VEGETATION. GLADE-LIKE WETLAND CLEARING SURROUNDED BY UPLAND FOREST.

## HYDROLOGY

| | |
|---|---|
| ____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| ____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | X Inundated |
| ____ Other | X Saturated in Upper 12 inches |
| ____ No Recorded Data Available | ____ Water Marks |
| | ____ Drift Lines |
| Field Observations: | X Sediment Deposits |
| Depth of Surface Water: 0-2 (in.) | X Drainage Patterns in Wetlands |
| Depth to Free Water in Pit: 0 (in.) | Secondary Indicators (2 or more required): |
| *Depth in Saturated Soil: 0 (in.)* | ____ *Oxidized Root Channels in Upper 12 inches* |
| | ____ Water-Stained Leaves |
| | ____ Local Soil Survey Data |
| | X FAC-Neutral Test |
| | ____ Other (Explain in Remarks) |

Remarks: WETLAND HYDROLOGY PRESENT. AREA APPEARS TO ACCUMULATE FLOW FROM SEEPAGE AT SPRING No. 101.

# DATA POINT #8
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | CHESTER VERY STONY SILT LOAM | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| 0-3 | A | 10YR 4/1 | 10YR 4/6 | 5%/DISTINCT | SANDY CLAY LOAM |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- X Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: AUGUR REFUSAL AT 3 INCHES. AREA IS COBBLY, WITH A VERY SHALLOW ACCUMULATION OF SOIL HIGH IN ORGANIC MATTER.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: ALL THREE PARAMETERS CLEARLY MET.

Classification: PALUSTRINE SCRUB-SHRUB WETLAND, BROAD-LEAVED DECIDUOUS (PSS1)

**DATA POINT #9**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | WHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 101 |
| Is the area a potential Problem Area?: | Yes | No | Plot ID: | 9 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Other Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| ACER PLATANOIDES | C | UPL | FRAXINUS PENNSYLVANICA | C | FACW |
| LIRIODENDRON TULIPIFERA | C | FACU | LIRIODENDRON TULIPIFERA | SA | FACU |
| ACER PLATANOIDES | SA | UPL | LINDERA BENZOIN | H | FACW- |
| FRAXINUS PENNSYLVANICA | SA | FACW | OSMUNDA CINNAMOMEA | H | FACW |
| LINDERA BENZOIN | SH | FACW- | ARISAEMA TRIPHYLLUM | H | FACW- |
| IMPATIENS CAPENSIS | H | FACW | PARTHENOC. QUINQUEFOLIA | H | FACW |
| SYMPLOCARPUS FOETIDUS | H | OBL | TOXICODENDRON RADICANS | H | FAC |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 57

Remarks: HYDROPHYTIC VEGETATION. MOST UPLAND PLANTS APPEAR TO GROW ON SMALL COBBLY HUMMOCKS, WHILE MOST WETLAND PLANTS APPEAR TO GROW IN SMALL INTERSTICES.

## HYDROLOGY

____ Recorded Data (Described in Remarks):
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ *No Recorded Data Available*

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | NONE | (in.) |
| Depth to Free Water in Pit: | NO DATA | (in.) |
| Depth in Saturated Soil: | NO DATA | (in.) |

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: THIS APPEARS TO BE A RECHARGE AREA WHERE FLOW FROM SPRING No. 101 INFILTRATES BACK DOWN TO THE GROUNDWATER. AREA CLEARLY FUNCTIONS AS A WETLAND DURING TIMES OF HIGH FLOW FROM THE SPRING, BUT IT IS UNCERTAIN WHETHER THIS AREA MEETS THE REGULATORY CRITERIA FOR WETLAND HYDROLOGY.

# DATA POINT #9
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | Chester Very Stony Silt Loam | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| SURFACE | | | | | ROCKY TALUS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: COBBLY SURFACE COULD NOT BE AUGURED. HYDRIC STATUS OF SOIL IS UNCERTAIN.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: REGULATORY STATUS AS A WETLAND IS UNCERTAIN. AREA LIKELY FUNCTIONS AS A WETLAND DURING PERIODS OF HIGH FLOW FROM UPHILL SEEPAGE. FOR PURPOSES OF THE REMEDIAL INVESTIGATION, THIS AREA WILL BE TREATED AS A WETLAND.

Classification: PALUSTRINE SCRUB-SHRUB WETLAND, BROAD-LEAVED DECIDUOUS (PSS1)

**DATA POINT #10**
**CROSSLEY FARM SITE**
**WETLAND DELINEATION DATA FORM, PAGE 1**
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | MHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 101 |
| Is the area a potential Problem Area?: | Yes | No | Plot ID: | 10 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Other Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| LIRIODENDRON TULIPIFERA | C | FACU | ATHYRIUM FELIX-FEMINA | H | FAC |
| LIRIODENDRON TULIPIFERA | C | FACU | BOEMERIA CYLINDRICA | H | FACW+ |
| ACER PLATANOIDES | SA | UPL | CAREX SP. | H | VAR |
| LINDERA BENZOIN | SH | FACW- | | | |
| SYMPLOCARPUS FOETIDUS | H | OBL | | | |
| IMPATIENS CAPENSIS | H | FACW | | | |
| OSMUNDA CINNAMOMEA | H | FACW | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 57

Remarks: HYDROPHYTIC VEGETATION. MOST UPLAND PLANTS APPEAR TO GROW ON SMALL COBBLY HUMMOCKS, WHILE MOST WETLAND PLANTS APPEAR TO GROW IN SMALL INTERSTICES.

## HYDROLOGY

| | |
|---|---|
| ____ Recorded Data (Described in Remarks): | Wetland Hydrology Indicators: |
| ____ Stream, Lake, or Tide Gauge | Primary Indicators: |
| X Aerial Photographs | ____ Inundated |
| ____ Other | ____ Saturated in Upper 12 inches |
| ____ No Recorded Data Available | ____ Water Marks |
| | ____ Drift Lines |
| Field Observations: | ____ Sediment Deposits |
| Depth of Surface Water: NONE (in.) | X Drainage Patterns in Wetlands |
| Depth to Free Water in Pit: NO DATA (in.) | Secondary Indicators (2 or more required): |
| Depth in Saturated Soil: NO DATA (in.) | ____ Oxidized Root Channels in Upper 12 inches |
| | ____ Water-Stained Leaves |
| | ____ Local Soil Survey Data |
| | X FAC-Neutral Test |
| | Other (Explain in Remarks) |

Remarks: THIS APPEARS TO BE A WEAK SIDE-SEEPAGE THAT FLOWS INTO THE MAIN WETLAND ASSOCIATED WITH SPRING No. 101. WETLAND HYDROLOGY UNCERTAIN. AREA MAY FUNCTION AS A WETLAND DURING TIMES OF HIGH SEEPAGE. IT IS UNCERTAIN WHETHER THIS AREA MEETS THE REGULATORY CRITERIA FOR WETLAND HYDROLOGY.

# DATA POINT #10
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | Chester Very Stony Silt Loam | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| SURFACE | | | | | ROCKY TALUS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: COBBLY SURFACE COULD NOT BE AUGURED. HYDRIC STATUS OF SOIL IS UNCERTAIN.

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: REGULATORY STATUS AS A WETLAND IS UNCERTAIN. AREA MAY FUNCTION AS A WETLAND DURING PERIODS OF HIGH FLOW FROM UPHILL SEEPAGE. FOR PURPOSES OF THE REMEDIAL INVESTIGATION, THIS AREA WILL BE TREATED AS A WETLAND.

Classification: PALUSTRINE FORESTED WETLAND, BROAD-LEAVED DECIDUOUS (PFO1)

**DATA POINT #11**
**CROSSLEY FARM SITE**
***WETLAND DELINEATION DATA FORM, PAGE 1***
**1987 MANUAL**

| | | | |
|---|---|---|---|
| Project/Site: | CROSSLEY FARM | Date: | 7/9/98 |
| Applicant: | ENVIRONMENTAL PROTECTION AGENCY | County: | BERKS |
| Investigators: | J. PEYTON DOUB, PWS | State: | PENNSYLVANIA |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site?: | Yes | No | Community ID: | MHF |
| Is the site significantly disturbed (Atypical Situation)?: | Yes | No | Transect ID: | SPRING No. 101 |
| Is the area a potential Problem Area?: | Yes | No | Plot ID: | 11 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| LIRIODENDRON TULIPIFERA | C | FACU | PARTHENOC. QUINQUEFOLIA | H | FACU |
| *FRAXINUS AMERICANA* | C | FACU | *Other Plant Species* | H | FACW+ |
| ACER PLATANOIDES | C | UPL | RUBUS PHOENICOLASIUS | H | UPL |
| LIRIODENDRON TULIPIFERA | SA | FACU | | | |
| CASTANEA SP. | SA | UPL | | | |
| LINDERA BENZOIN | SH | FACW- | | | |
| *POLYGONUM SP.* | H | VAR | | | |
| SYMPLOCARPUS FOETIDUS | H | OBL | | | |
| ROSA MULTIFLORA | H | FACU | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 22

Remarks: NO EVIDENCE OF HYDROPHYTIC VEGETATION. THOSE WETLAND PLANTS THAT DO OCCUR (SUCH AS *SYMPLOCARPUS FOETIDUS*) APPEAR TO GROW IN SMALL INTERSTICES AMID THE COBBLES.

## HYDROLOGY

____ Recorded Data (Described in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | NONE | (in.) |
| Depth to Free Water in Pit: | NO DATA | (in.) |
| Depth in Saturated Soil: | NO DATA | (in.) |

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
____ Local Soil Survey Data
X FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: NO EVIDENCE OF WETLAND HYDROLOGY

# DATA POINT #11
# CROSSLEY FARM SITE
# WETLAND DELINEATION DATA FORM, PAGE 2
# 1987 MANUAL

**Soil**

| | | | |
|---|---|---|---|
| Map Unit Name (Series and Phase): | Chester Very Stony Silt Loam | Drainage Class: | WELL DRAINED |
| Taxonomy (subgroup): | | Field Observations Confirmed Mapped Type? | Yes No |

Profile Description:

| Depth (inches) | Horizon | Matrix Color (Munsell Moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture Concretions, Structure, etc, |
|---|---|---|---|---|---|
| SURFACE | | | | | ROCKY TALUS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: NO EVIDENCE OF HYDRIC SOIL

**WETLAND DETERMINATION**

| | (Circle) | | | (Circle) | |
|---|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No | Is this Sampling Point Within a Wetland? | Yes | No |
| Wetland Hydrology Present? | Yes | No | | | |
| Hydric Soils Present? | Yes | No | | | |

Remarks: NOT A WETLAND

Classification: UPLAND (U)