Reference No.: 71
Smokey Mountain Smelters
EPA ID No. TND098071061

SMOKEY MOUNTAIN SMELTERS

REAC IV-B-0199

If Found, Please Return To:

Name: Ken Woodruff

LOCKHEED-MARTIN/REAC
2890 Woodbridge Avenue
Edison, NJ 08837-3679
Phone: (732) 321-4200

COC & Sample Shipping Procedures

Peer review COC record Remove pink copy for the Task Leader Place original COC in a plastic bag, seal, and secure to the lid inside the cooler. Tape and seal the cooler.	Call Sample Receiving Hotline at (732) 494-4077 or SRT's Cell Phone (609) 865-9306. Give -FedEx tracking # -Chain of Custody Record #s -# of Coolers -# of samples and matrices -Analyses requested -Subcontract lab info Fax COC record to (732) 494-4020 (REAC analyses or subcontract analyses). Follow-up to confirm sample receipt.

CONTENTS

404 - 562 - 8747 office

PAGE K. Ruarki - 404 - 229 - 9516 cell DATE

B. Williams cell

513 ~~[illegible]~~ - 205 - 6088

office 513 569 - 7213

accu - test for wet chem.

Gordon Shields: 609 - 937 - 9127 cell

Larry Martini cell 609 - 865 - 9306

- Burl Maugin 865 - 310 - 5479 cell
office 865 - 594 - 5479

Miller Drilling 931 - 762 - 7548
Shane Hughes
Driller Don Jerome
cell 931 242 5174

Fed EX: 309819209

Reference Page Index

Fed EX: 10601 Murdock Dr.

147 Error codes, Hazardous classifications, Container types
148 Sampling guidelines (Liquids)
149 Sampling guidelines (Solids)
150 Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
151 PVC Pipe casing tables
152 Soil Classification
153 Soil Classification
154 Conversions (Length, Weight, Volume, Temp, etc...)
155 Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
156 Maximum Concentration of Contaminants for the Toxicity Characteristic

2

Location _____ Date _____

Project / Client _____

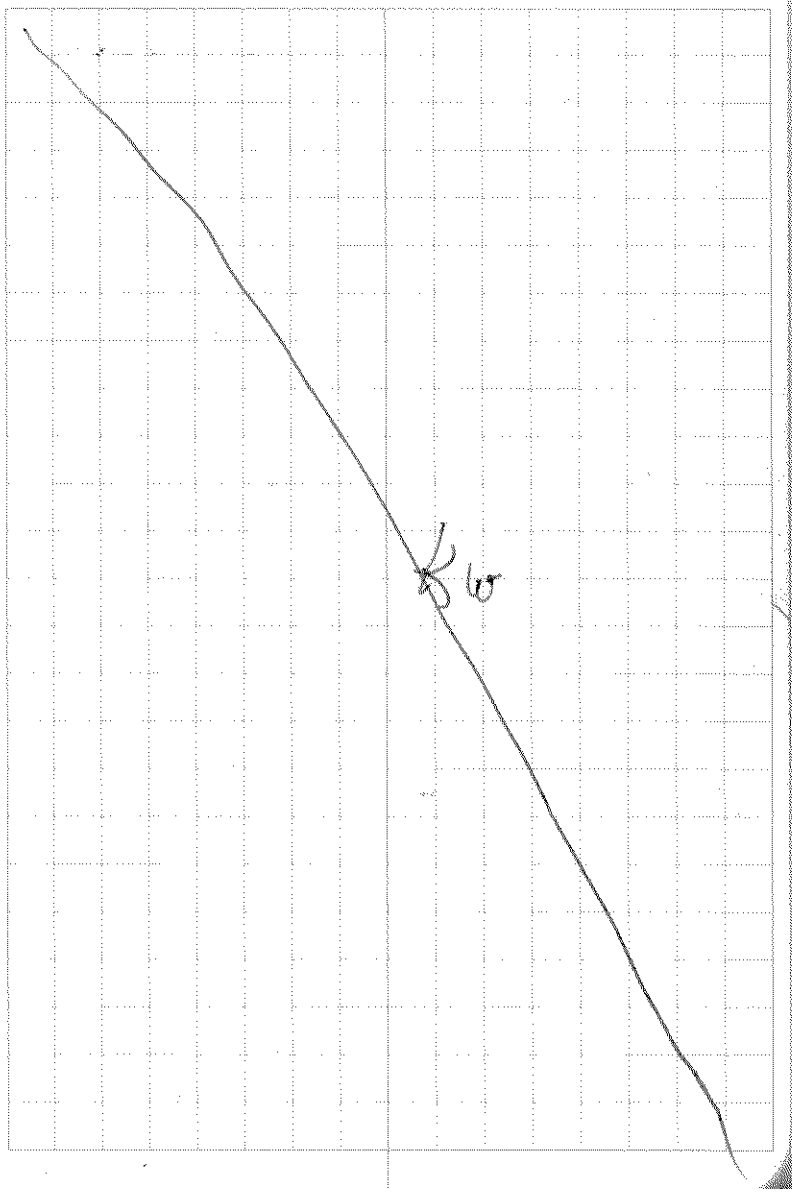
Benchmark 865-692-4090 - Surveyor
Phil Roberts
Jeff 10:30

Fax 865-692-4091 - Benchmark
TN. coordinate

Driller - M&W - Mike Sturdevant
Cell 865-323-3653

Location _____ Date _____

Project / Client _____



Location ..... Date .....

Project / Client .....

Asbestos Lab 856-858-1253
EMSL Attn Charly Lacerra
107 Haddon Ave
Westmont, NJ 08108

Rad Lab 865-481-0683
Tro. U, Po, Th, Mike McDougall
Eberline Serrrer
601 Scarboro Rd, Oak Ridge
TN 37830

Inorganic Lab 732-329-0200
Al, Cl, Cr, TDS, Fl
NO_3/NO_2, PO_4
Accutest
Tammy McCloskey
Fresh Pond Corp.
Village Bld B
2235 Rt 130
Dayton, NJ
08810

~~Dioxin Lab~~

Dioxin
SGS
5500 Business Dr
Wilmington, NC 28405
Contact Chris Cornwall
Lab 910-350 1903

Location ..... Date 10 Oct 06

Project / Client .....

Left Scranton 0630 hrs
1300 hrs —
arrived on site with Gordon Shields
laying out grid for radiation
survey.

Direction to Rad Lab - Eberline
140 to Bethel Valley - right at light
in Oak Ridge

KW

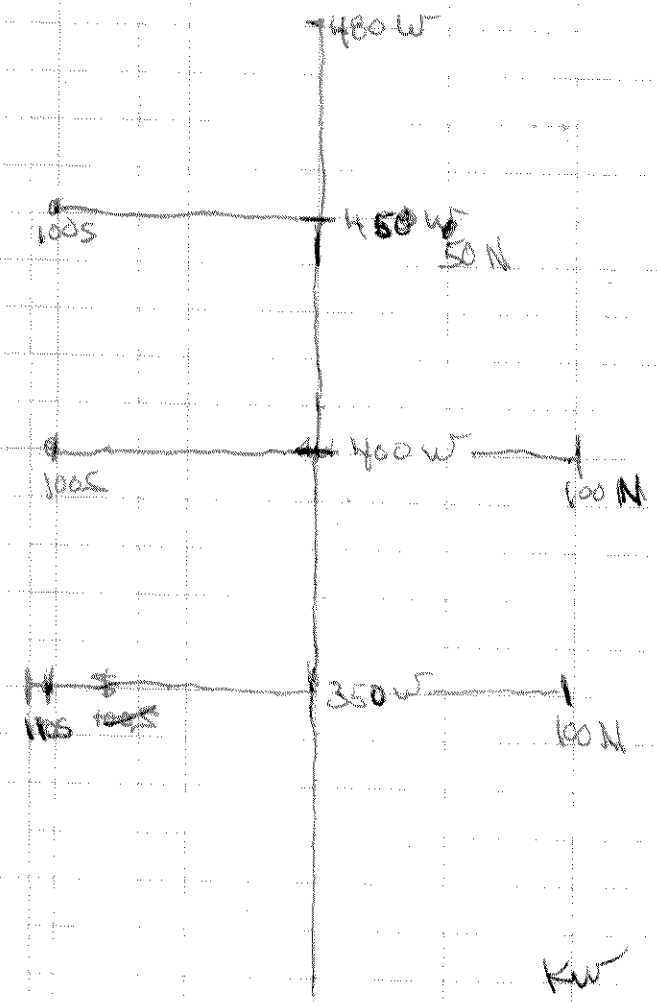
Location

Date 10/8/06 (KW)

Project / Client

Site Gridding KW & GS

Site Grid continued

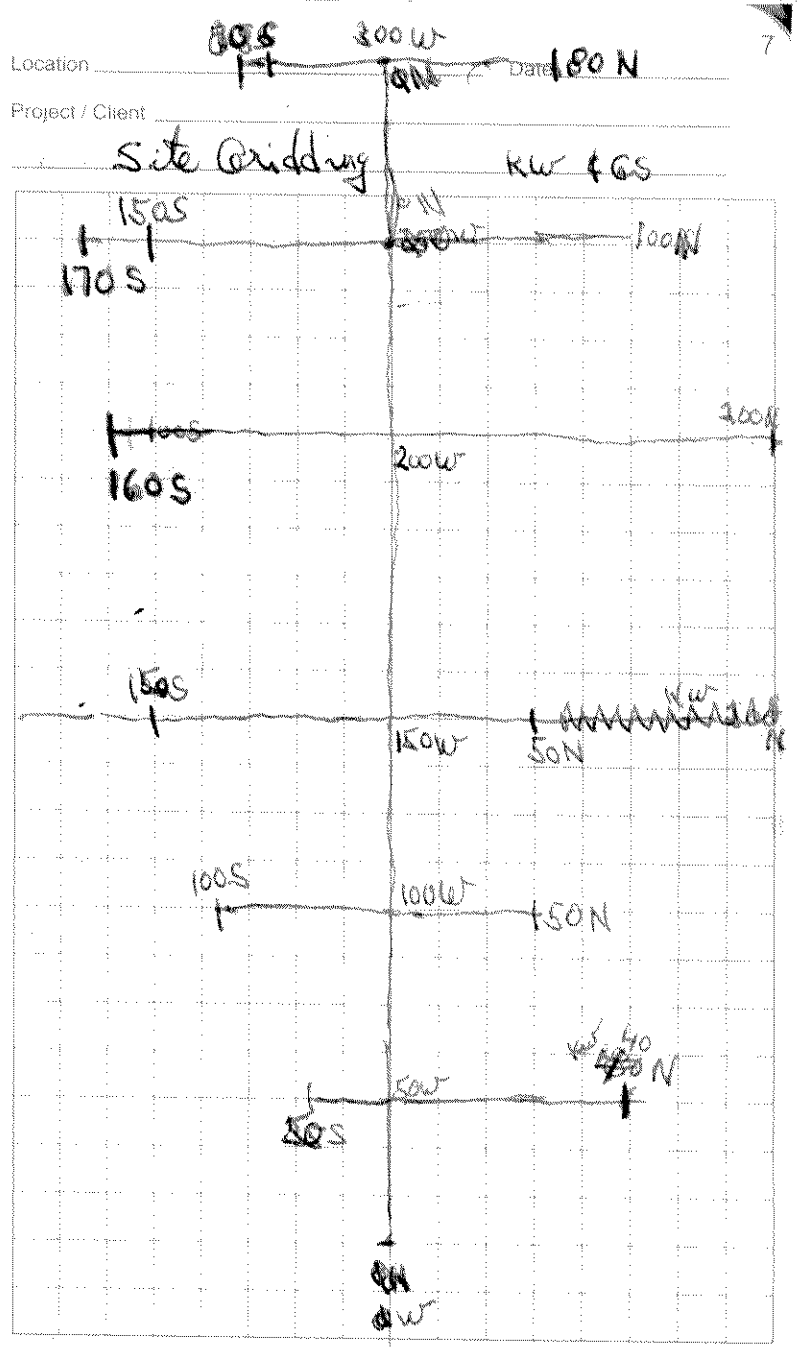


Location

Date

Project / Client

Site Gridding KW & GS



Location Smoky Mtn Smelter Date 10/10/06

Project / Client

Radiation Survey KW & GS

Line 0N

5-6	UR/hr	0W to ~100W
3-5		100W - 240W
5		240 - 420W
5-7		420W - 280W

γ survey with Ludlum model 19
~ 1.5' above gnd surface

B Eberline E-600, measuring peak over 60 secs,
B probe ~ 1' above gnd. SN 630 of SNP 270
units: UR/hr

~~B survey~~ (KW)

		0'	20'	30'	35'
B Peak Line 35S, 0W	18 UR/hr,		29	28	31
γ survey	5 UR/hr,		5	5	5

		10'	20'	30'	40'	50
B	80N, 0W	21	31	22	26	23
γ		5	6	6	5	5

	60'	70'	80
B	12	26	32
γ	5	6	6

KW

Location Smoky Mtn Smelter Date 10/10/06

Project / Client

Radiation Survey HW & GS

Line 50W,	0S,	10S	20S	30S	40S	50S	60S
peak B	21	33	17	21	23	14	28
γ	5	6	6	5	5	5	5

	70S	80S	90S
B	33	24	32
γ	5	5	5

Line 50W	10N	20N	30N	40N
peak B	26	21	21	32
γ	6	6	6	6

Line 100W	0S	10S	20S	30S	40S	50S
peak B	27	28	26	25	30	24
γ	6	6	5	5	6	5

	60S	70S	80S	90S	100S
peak B	17	42	21	29	33
γ	5	5	5	4	4

Line 100W	10N	20N	30N	40	50
peak B	41	27	22	31	18
γ	4	4	5	5	5

Project / Client 10/11/06

Radiation Surveys

Left site 1845 hrs 10/10/06
hrs = 12

11 October 06 rainy, 70°F
on site 0815 hrs

checking bkgd with radiation meters

bag filter pile max γ = 15 uR/hr at pile of black residue and material on floor, β = 69 uR/hr. (Location M1)

(1) Background γ outside west side of bldg on gravel west of platform

β = ~~103~~ 47
γ = 8

Line 150W	0S	10S	20S	30S
β uR/hr	45	73	56	47
γ uR/hr	5	5	5	5

	40S	50S	60S	70S
β	45	48	33	47
γ	5	5	5	6

Project / Client

Line 150W Radiation Surveys

	80S	90S	100S	110S	off pile
β	69	59	41	30	
γ	6	6	5	5	

	120S	130S	140S	150S
β	45	37	38	53
γ	5	6	6	7

off pile

Line 150 W	10N	20N	30N	40N
β	40	56	55	59
γ	6	6	5	7

off pile

	50N
β	64
γ	7

Line 200 W	0S	10S	20S	30S	40S
β	50	45	62	48	71
γ	5	5	5	5	5

	50S	60S	70S	80S
β	38	39	50	59
γ	5	5	5	5

K. Wondrup

Location

Date 12/11/06

Project / Client

Radiation Surveys ✓ KW & GS

edge of pile

Line 200W	90S	100S	110S	
B uR/hr	57	29	86	70 repeat
γ uR/hr	5	5	5	

	120S	130S	140S	150S	160S
B	38	35	59	59	48
γ	5	6	7	7	7

edge of pile

Line 250W	170S	160S	150S	140S
B	32	66	47	60
γ	9	8	7	7

	130S	120S	110S	100S
B	49	34	54	36
γ	5	6	5	5

	90S	80S	70S	60S	50S	40S
B	52	56	52	39	49	40
γ	6	6	6	7	6	6

	30S	20S	10S	0S
B	57	47	48	41
γ	7	7	6	6

Location Smoky Mtn

Date 10/11/06

Project / Client

KW & GS

Radiation Surveys

pile edge

Line 200W	10N	20N	30N	40N	50N
B	43	53	48	38	39
γ	5	5	5	6	6

	60N	70N	80N	90N	100N
B	33	45	60	49	48
γ	6	6	6	7	8

Line 250W	0N	10N	20N	30N	40N
B	48	49	68	42	36
γ	6	5	6	6	6

	50N	60N	70N	80N	90N	100N
B	41	47	35	52	59	47
γ	6	6	6	7	7	7

B in rate meter mode between stations walking slowly

Line 300W	80N	70N	60N	50N
B	39	58	59	56
γ	6	6	6	6

KW

10/11/06

Radiation Surveys HW & GS

Line 300W	40N	30N	20N	10N	0N
B	40	36	47	52	40
γ	6	6	6	5	5

B probe - 1 ft above gnd
γ probe - 2 ft above gnd

Line 300W	10S	20S	30S	40S	50S
B	52	31	[illegible]	41	36
γ	6	8	6	5	5

	60S	70S	80S
B	65	51	60
γ	7	6	6

1130 hrs

Line 350W	0S	10S	20S	30S	40S
B	30	45	41	42	69/59 repeat
γ	5	5	5	5	5

	50S	60S	70S	80S	90S	100S
B	45	47	60	37	39	59
γ	5	5	5	5	5	5

	110S
B	32
γ	5

10/11/06

Cloudy, breezy

Line 400W	100S	90S	80S	70S
B	62	39	32	23
γ	4	5	5	5

	60S	50S	40S	30S	20S	10S
B	38	39	53	73/55	27	81/44
γ	5	5	5	6	6	5

	0S
B	14/43/60
γ	5

Line 350W	10N (1130 hrs)	20N	30N (1430 hrs)	40N
B	56	34	72/50	44
γ	5	6	5	6

1445 hrs Furnace - east end of lower bldg
γ = 50 ur/h
B = 100 peak, 46 over 1 min
(Location M2)

KW

Location _____ Date 10/11/06 (Wed)

Project / Client _____

Radiation Survey KW & GS

Bag house area (Location M3)

γ - Background

β

Line 350 W	50 N	60 N	70 N	80 N
γ	47	61	49	26
β	6	6	7	7

	90 N	100 N
γ	26	20
β	7	6

Line 400 W	10 N	20 N	30 N	40 N
γ	32	49	39	24
β	6	7	6	7

	50 N	60 N	70 N	80 N	90 N	100 N
β	48	38/49	54	50	50	34
γ	7	7/6	5	6	8	7

Line 450 W	50 N	40 N	30 N	20 N	10 N	0 N
β	55	32	57	39	43	35
γ	8	7	7	7	6	6

Location _____ Date 10/11/06

Project / Client _____ 10/12/06

Line 450 W	10 S	20 S	30 S	40 S
β	41	43	34	79/65
γ	5	6	6	6/6

	50 S	60 S	70 S	80 S	90 S	100 S
β	71/49	48	40	31	43	38
γ	6/6	6	6	5	6	7

(2) Background: north side Bldg
~300 N, 200 ~~[illegible]~~ west of NE corner (KW)

Bldg
β = 70/63 (repeat) Scaler = 10/1 min
γ = 10/9

hours = 9

Thurs - Oct 12 Sunny, 70°F
on site 0800 KW and GS

sampling for asbestos & Rad.
sample ASB-1, 100 W, 30 N
ASB-2, 280 W ~ 60 S

(KW)

Location _____ Date 10/12/06

Project / Client _____

Sampling

Radiation Sample RAD 1 : 150 W, 80 S
RAD 2 : 200 W, 40 S
RAD 3 : 200 W, 110 S
RAD 4 : 450 W, 40 S
RAD 5, Furnace "Old Smokey"

Dioxin Sample DIOX-1 Baghouse bag
DIOX-2 Furnace "Old Smokey"
DIOX-3 Bldg - upper level - base of pile

α ✓ reading in "Old Smokey" furnace door = peak 60-80 cpm, probably from brick, brick read ~ 50 cpm
peak / background floor of bldg ≈ 18 cpm

α ✓ at pile of bag filters on floor
~~NW~~ E (KW) corner upper level = 24-26 cpm peak hold

1000 hrs

Rad. Sample RAD 6 taken here

(KW)

Location _____ Date 10/12/06

Project / Client _____

Sampling KW

α readings 150 W, 80 S Sample pt
peak = 20 cpm

✓ 200 W, 40 S sample pt.
α peak = 18 cpm

✓ 200 W, 110 S
α peak = 19 cpm

✓ 450 W, 40 S
α peak = 19 cpm

Sample DIOX 4 - Easternmost
old smoke stack on ground

DIOX 5 - Westernmost
old smoke stack on ground

BNA-1 at location of DIOX-1
west bag house

BNA-2 - ~~west~~ east baghouse

delete ~~ASB-3 - furnace #1 air?~~
~~feed pipe~~ - ~~[illegible]~~ rust

(KW)

Location _____ Date 10/13/06

Project / Client _____

Sampling KW

ASB-4 "Old Smokey" in trough ~~[illegible]~~ (KW)

BNA-3 - waste bin in lower part of bldg.

1600 hr ASB-5 - gray corrugated sheeting - siding
ASB-6 - green " "
ASB-7 - "Old Smokey" - end of trough

Paint chip sample from yellow paint around furnace #1 for lead = sample PC-1

PC-2 paint off "Old Smokey" for lead analysis

ASB-8 "cement board (?)"

1700 hr Channel, labeled samples for separate lab.
hours = 11

(KW)

Location _____ Date 10/13/06

Project / Client _____

Sampling

13 Oct 06 Sunny, 40°F

0800 on site
sampling stream background at
0830 Mt Olive Rd

0850 sampling spring - Mayo property

1000 Sampling stream
~ 1015 Sampling Leachate spring
1030 Sampling pond
1100 " Spring 2

packed - dropped "RAD" samples at Eberline Lab in Oak Ridge TN, 1500 hr KW and GS

Dropped off rest of samples at Field HX for outside lab.

hours = 8.5

KW

Location

Date 10/14/06

Project / Client

14 Oct

Left for airport 0530 hrs
arrived home 1400 hrs

hours = 8.5

KU Board - Utilities
Gary Underwood
865-524-2911
Knox Chapman District
865-577-4497
1/4, 1/2, 1 mile radius - search for wells

Similar actions for -
other sites - pull documents
together - for secondary
aluminum smelter
Paul Corneaux - contact
303-854-2036 -

KW

Location

Date

Project / Client Land Clearing by Contractor
Tues Feb 6, 2007

WA-182 Smoky Mnt. Smelter
Maryville Dr. Vestal TN
T. Macalo. 30° cloudy

8:00 Arrive onsite ADVSCO
onsite Dead to clear Brush
Jeff from Bunch Mark
Arrive onsite will survey
site + locate SB + MW
- Read H&S / Tail Gate mtg
9:15 call Burl McGinn Left msg
2:00 Burl McGinn onsite
5:30 Leave site Lock gate

Wed. Feb 7, 2007 30° clear
7:15 am Arrive onsite Advisco onsite
- Spoke w/ K. Woolcott Re: no need
to clear slopes to ponds, only
clear as much as surveyor need
- Burl McGee onsite
4:45 Leave site Lock gate

Tm

Location Vestal, TN Date

Project / Client Smoky MT Smelter

Thurs Feb 8, 2007 30° clear

7:15 Arrive onsite Avisco onsite

2:00 Burl McGee onsite

2:30 Burb William onsite

3:30 Spoke w/ K. Woodruff Re.
Topo survey would have to
extend beyond prop. boundary

4:15 Leave site

Fri Feb 9 2007

8:30 onsite Arrive onsite to
clear from Remain Alerts.
- Burl McGee + chris ? onsite

10:30 Left site

Location Date 4/22/09

Project / Client Sampling soil

1045 On site with C French & B. Pullman
and Tetra-Tech. Sunny, Hot

1230 Sampling soil at old SB-008
SMS-01-WA
3 Encores @ 1225 SMS-01WA
2-8 oz jars

~~1415~~ (RW) Sampling soil at old SB-007
SMS-02-WA
3 encores + 2-8 oz jars

1415 Sampling at Housing complex
SMS-02-SF

1430 Sampling at Housing complex
SMS-~~03~~-03-SF (RW)

1445 Sampling at Housing complex
SMS-04-SF

1645 Sampling at SMS-04-WA
(rag soil)

* Woodruff

Location _____ Date 4/27/09

Project / Client _____

sampling at old SB-21 location
at near seep
SMS-03-WA ~~no GPS~~
~~reception at this location~~ (KW)

0630 quit for day
picked up sand for soil
blanks + distilled H_2O for
Tetra-Tech blanks.
Sample management by
Tetra Tech

28 April 09 sunny, warm

on site 0745, D. Bussey here,
Tetra-Tech here
0900 Sampling at SMS-03-SD
0930 " at " 04-SD write dupe

1 Backhoe working on opening piles
in interior of building
1020 Sampling top of lower pile
for 1/3 of composite - pile 1

Location Interior Pile Sampling Date 4/28/09

Project / Client _____

NH_4 on meter = 20+ ppm - middle of pile
ammonia smell on pile
pile "snaps" when opened
write backhoe; reaction? write air?

1055 Sampling middle of lower pile
for 1st middle composite;
strong NH_4 odor, "snapping"
pile 1 when getting sample.
meter reads 40-60 in pile
cavities in middle of pile
1-2 ppm in breathing zone.

Paul Ruesch 312-617-7212
312-886-7898
ruesch.paul@epa.gov
Region 5

1140 Sampling base of lower
pile - strong NH_4 odor
"snapping" pile 1

K. Woodruff

Location: Sampling Inside Bldg Date: 4/28/09

1145 Additional sample from middle of lower pile in section containing blue-green crystals(?) formed on waste - Sample WA-1

Backhoe moving to upper pile - east end

Sampling lower pile (1) for VOCs and pest/PCBs, cyanide

1215 Sampling pile 2 east end (upper) for composite sample - Top and Middle. NH_4 odor in middle sample

1400 Sampling Pile 2 - bottom for composite

1415 Sampling Pile 3 Top, middle, and bottom for composite

1420 Sampling Pile 2 for VOCs & pesticides/PCBs, cyanide

Location: Sampling Inside Bldg Date: 4/28/09

1440 Sampling Pile 3 for VOCs & pesticides, PCBs, cyanide

1630 hr Sampling Background soil 0-2 ft SMS-01-SMS-01SB

outside Pile test pit 0-4' no NH_4 hits

Large Pile (1) waist
1 ft deep - fresh hole 32 ppm NH_4
2" " " " 140 ppm NH_4

Small Piles 2 & 3
Shovel - 38 & 25 ppm
waist high in hole 37 ppm NH_4
bottom of fresh hole 84 ppm "
2nd fresh hole bottom 127 ppm "

~~0210 Stopped at 1914 JC White~~
~~No one home - No sample~~ (Kiv)

~~0215 1732 Mt. Olive Rd~~
~~pump on 1416~~ (Kiv)

K. Woodruff

Location Domestic Well Sampling 4/29/09

Project Client

0800 meet at site
Sampling Team Pullen, French
Woodruff, Burl (TDEC)

Sampling background at 5012 Smith
Evans Rd - Ashley Jones
Start 0930 ; on, outside tap, by treatment pass
VOCs, chloride, Pesticides/PCBs
Sample at 0940

1017 Sampling at 5609 Dyer Lane - in well house
Sample at ~~0[illegible]~~ 1037 hrs - No NH_4

Sampling at ~~5705507 Dyler~~
5507 Dyer Lane - outside faucet
Pump on 1047 - pump pressure
switch not working properly -
cycles on & off, pressure gage not working
NH_4 = 0 (ND)
~~pump~~ Sample at 1057 hrs

Sampling at 1500 Mount Olive Rd
pump on 1128 hrs

Domestic Well Sampling 4/29/09

50-55 gal tank, sampling in well house
NH_4 = ND Well serves 4 houses
Sample at 1143 hrs

1700 Mt Olive Rd - Sampling
pump on 1157 outside faucet
direct from well, No NH_4 detected
Sample at 1207 hrs

0210 Stopped at J.C. White - 1916 hrs
No one home

0215 Sampling at 1732 Mt. Olive
Rd. (No one home) pump on at
1416 hrs - faucet outside of well
house, 15-20 gal. pressure tank
NH_4 = ND
Sample at 1427 hrs
Faucet remains leaking - could not
shut completely off

1909 Mt Olive - no outside faucet -
No one home 1430 hrs
Well head at gnd level in yard.
K. Woodruff

Location Domestic Well Sampling Date 4/29/09

Project / Client

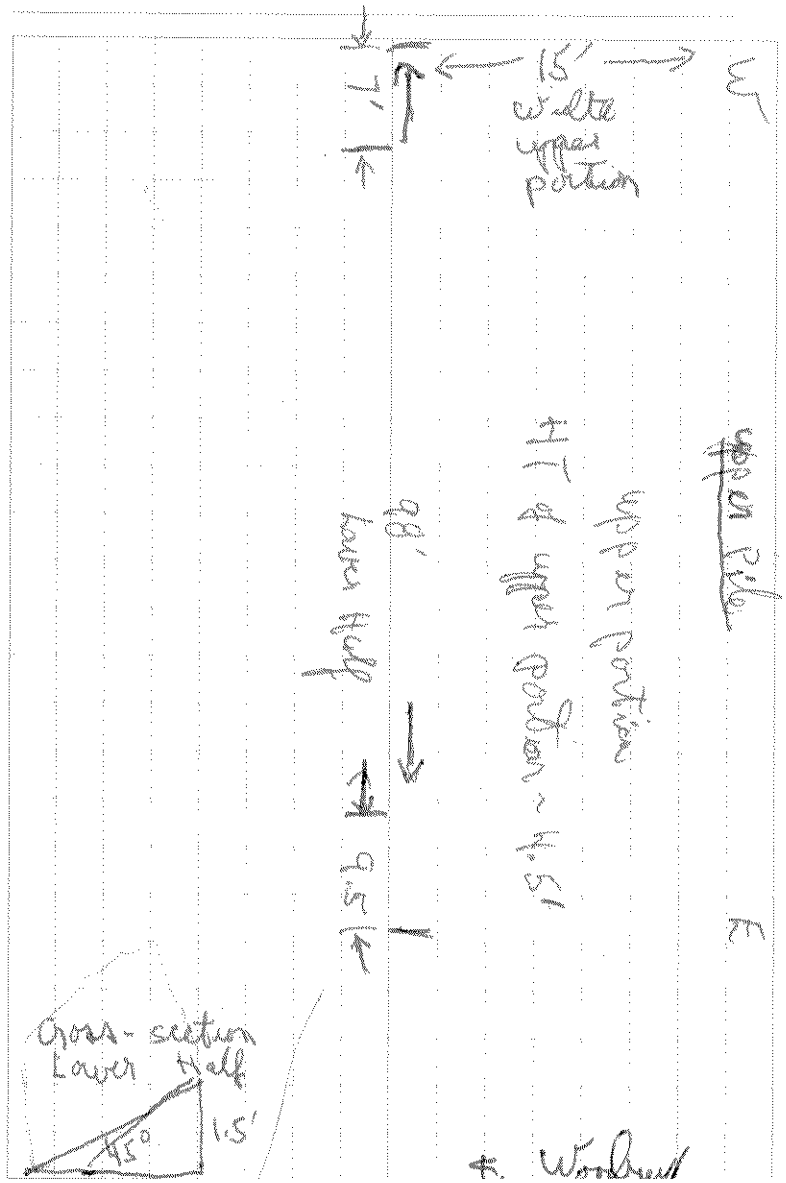
1911 Mt. Olive Rd - Sampling -
Pump on 1443 hr.
sampling from hose on outside faucet;
well head at gnd surface in
side yard
Sample at 1453 hrs

1725 Mt. Olive Rd - Sampling -
Pump on 1525, well ~ 470' deep
outside faucet -
Sampling at 1530

1615 Sampling at 1909 Mt. Olive
Sample from kitchen sink -
Two wells on property
one apparently dry but both
systems connected. Outside
faucets ran dry
No treatment system

Location Inside Pile measurements Date 4/30/09

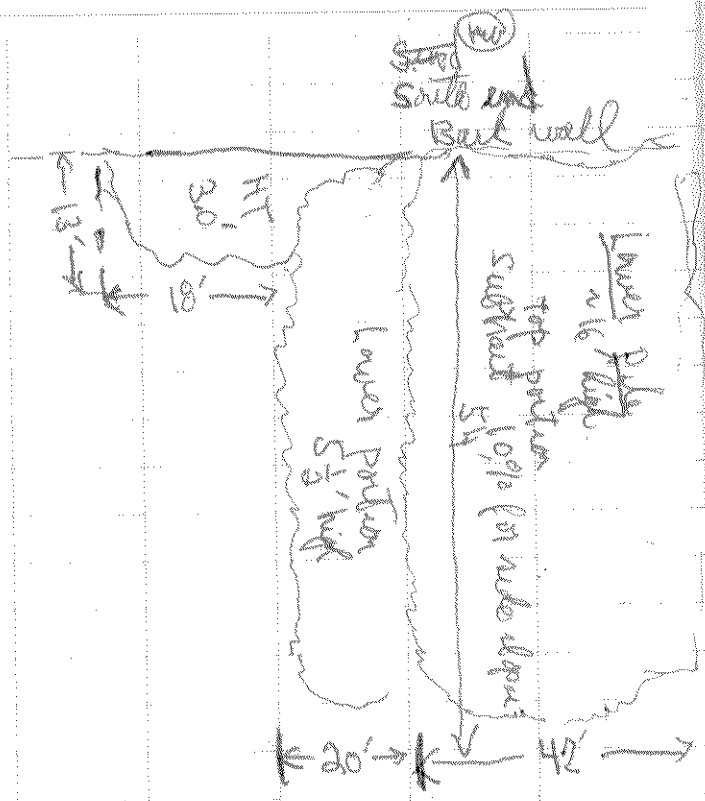
Project / Client



T. Woodruff

Location Inside Pile Measurements 4/30/09

Project / Client



K Woodruff

Location

Date

Project / Client