11-2
Linwood mining / materials
IAD980852297
1.2
E+E
11/89

ecology and environment, inc.

International Specialists in the Environment

Job Number FT1307

Linwood Quarry / Umthun Trucking
F-07-8809-008
FIA0236SA

Activity # DSX04

30815323
Superfund

E & E Job Number FT13Ø7

Telephone Code Number 319-324-1931

Site Name Linwood Quarry / Unthun Trucking

State/City Buffalo, Iowa

TDD F-Ø7-88Ø9-ØØ8

PAN FIAØ236SA

~~SSID~~ Sample Table p. 4Ø

Start/Finish Date 11/30/89, same

Book 1 of 1

E & E Emergency Response Center: (716) 684-8940

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FIA 023658 Buffalo / IA

Load up equipment 1130 - 1230
Depart E + E garage ~ 1230

Field Team:
Wesley McCall - Team Leader
Ladd Hastings - Safety Officer

Sunny + cool, ~45° F

Arrive Davenport ~19:30

Wesley McCall
11/29/89

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FIA0236SB Buffalo, IA

Clear, sunny ~ 25°F @ 0700

Safety Meeting: topics:

- Work in confined space in the mine chamber
- Particulate hazard from fine ash in mine chamber
- Potential SO_2 / NO_x in ambient air, initial monitoring with Drager tubes
- Heavy equipment, trucks, tractors etc., may be working in sampling areas
- wear hard hats at all times

Wesley McCall Wesley McCall 11/30/89

Ladd Hastings Ladd Hastings 11/30/89

Wesley McCall
11/30/89

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09:00 Meet with Gaillard Krewer and Bob Niemala (mine mgr) at office.

Krewer said that they had begun moving ash out of entrance way two days earlier. He said that he + Bob had walked back into the area but that the temperature was high (~160°F) and they couldn't go far because of the heat and ash. They had taken a boat as a safety precaution + would stand in the boat to protect their feet from the hot ash.

Krewer escorted FIT team to entrance of the mine vent chamber.

Have a man running front end loader hauling ash out of mine entrance way

Marty McCall
11/30/89

and dumping the ash at the edge of the quarry pond. Ash is effectively being dumped into the edge of the quarry pond.

Photographs of Front end loader hauling out ash and dumping over edge of old quarry pit.
time 0930
photos 11, 12, 13 of loader dumping ash.
Ash is ~~h~~ warm + steaming as it is brought out of mine chamber.

Loader operator takes break at 10:00.

FIT crew drives truck into chamber entrance to use head lights.

[signature]
11/30/89

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FIA Ø236 SB Buffalo, IA

for visual inspection.

Large fan blowing in fresh air.

O_2-meter gives normal reading at truck.

Mini Ram gives particulate readings from 0.3 to 1.1. Team decides to upgrade to modified level-C for further work. Will make further safety determinations after other ambient air monitoring completed

Calibrate HNu
56 ppm
Span 7.02
with 10.2 EV

[signature] 11/30/89

Linwood / Umtun
FIA Ø236 SB

11/30/89

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Suit up with tyvek, booties, gloves + APR (GMA-C) and walk down road into area where frontend loader has been working.

Dust / ash is very soft + powdery, 3 to 4 inches deep + deeper in some areas. Walk down tractor tracks to avoid deep areas. Some of the ash is wet and muddy.

Mini Ram gives readings of 0.5 to 6+.

HNu readings varying between 100 - 150 ppm.

We reach end of area where loader has been working. Ash is muddy on floor.

Wesley M. Fall
11/30/89

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Buffalo, IA

With gloved hand brush some ash from wall, its dry + very powdery. Ash ~~app~~ is damp underneath top surface and shows distinct layering, warm.

From where we are, ~ 25 ft from end of where loader working, the ash appears to be 24 to 36 inches deep.

We decide to withdraw from area to reconsider safety level. Not sure why HNu giving readings of up to 150 ppm. Not sure whether dust or humidity in the warm air could be affecting readings.

[illegible]
11/30/89

Return to truck and withdraw from mine chamber entrance to outside. Speak briefly with loader operator and dump truck driver. They are wearing simple dust masks and are concerned about the dust exposure. They ask us if their dust masks are adequate for their work. I told them I did not feel that the masks were sufficient.

Speak briefly with Bob Niemala and tell him we want to come back at lunch time or later in day and sample in area + take further

Marty McCall
11/30/89

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Buffalo, IA

air monitoring measurements. I said it may take us an hour or more to complete our work.

Drive to cafe in Buffalo for coffee & to discuss safety precautions.

Check calibration of HNu and appears OK. Gives reading on Span gas of ~ 58 ppm, reset Span to 7.35 to get reading of 56 ppm.

Background at Cafe area ~ 0.2 ppm, cars & trucks on road.

Wesley M Pall
11/30/89

Ladd called Dave Tyson (RSC) about the HNu readings. Dave said that the readings may have been due to the high moisture content and warm air conditions in the mine chamber.

~~During~~ After coordination with Dave we decide to go in and collect samples while in level-C. Will use Draeger tubes for Sulfuric acid and Nitrous oxides.

lunch break 11:30 – 1200

Wesley Mitchell
11/30/89

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11/30/89
Buffalo, IA

Return to site and organize to collect samples and to monitor mine chamber air with Dragger tubes.

Sample # ØØ1
Collected from ash which is being dumped over cliff into edge of the discharge pond.

Monitor the ash piles with the HNu and Rad-mini. Windy conditions. HNu gave no reading above background. Rad-mini did not give above background readings either.

Wesley McFell
11/30/89

1300 - Suit up in level-C and enter mine chamber to collect sample and complete air monitoring with Draeger tubes. Drive Suburban just inside entrance to use headlights for lighting.

Ladd begins monitoring with Draeger tubes, I check ambient air with HNu again.

Again the HNu gives readings between 100 ppm to 150 ppm then stabilizes between 50 + 60 ppm at chest level. Readings increase to ~100 ppm when HNu probe held ~ 1/2 inch from wet muddy ash on ground surface.

Wesley McCall
11/30/89

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After ~10 minutes HNu readings drop off to 2 to 3 ppm.
When HNu probe tip held near ~~ash~~ dry ash layers at chest height reading increases to ~~40~~ 4 to 5 ppm.
Still not sure if heat + moisture affecting HNu readings.

Sample # ØØ2 13:35 hrs
Ash sample collected from area where HNu readings taken. Ash damp and warm.

Red Coals seen glowing just below surface of ash where loader has cut thru layers of ash. along side of drift.

Wesley McCall
11/30/89

Bob Niemala comes in to observe us for a short time and ask how long it will take to finish our work.

Ambient temperature where we are working is ~ 85° to 90° F

Sample #2 collected ~ 150 ft down road from where our truck is parked near end of area where loader ~~is~~ was working. Ambient monitoring conducted in this area also.

Ceiling in mine is ~25 ft. Ash in some areas is most of way to ceiling, ∴ ~ 15 - 18 feet deep in some areas visible to us.

11/30/89

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Dräger tube Results:

Sulfuric Acid:
No detectable color change
No detectable H_2SO_4

Sulfur Dioxide: 0.5/a
0.5 to 25 ppm range
No detectable (visible) color change
No detectable SO_2

Nitrous fumes: $NO + NO_2$ / 0.5/a
range 0.5 to 10 ppm range
Detectable color change:
blue-grey color change of white matrix indicating 0.5 ppm of Nitrous fumes.

Wesley McPell
11/30/89

Photographs:

2 additional photos showing where ash is being dumped into edge of discharge pond in abondoned quarry.
facing east

2 photos showing entrance to mine chamber where ash has been vented
facing ~ south

1 photo of kiln area showing large duct work to mine vent chamber.
facing ~ east

1 photo of kiln area
facing ~ west

Wesley M. Odell
11/30/89

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11/30/89
Buffalo, IA

After sampling completed in the mine chamber (p 15) spoke briefly with Bob Niemala. I informed Bob that we had recorded relatively high readings on our HNμ.

~~Bob had told me that~~

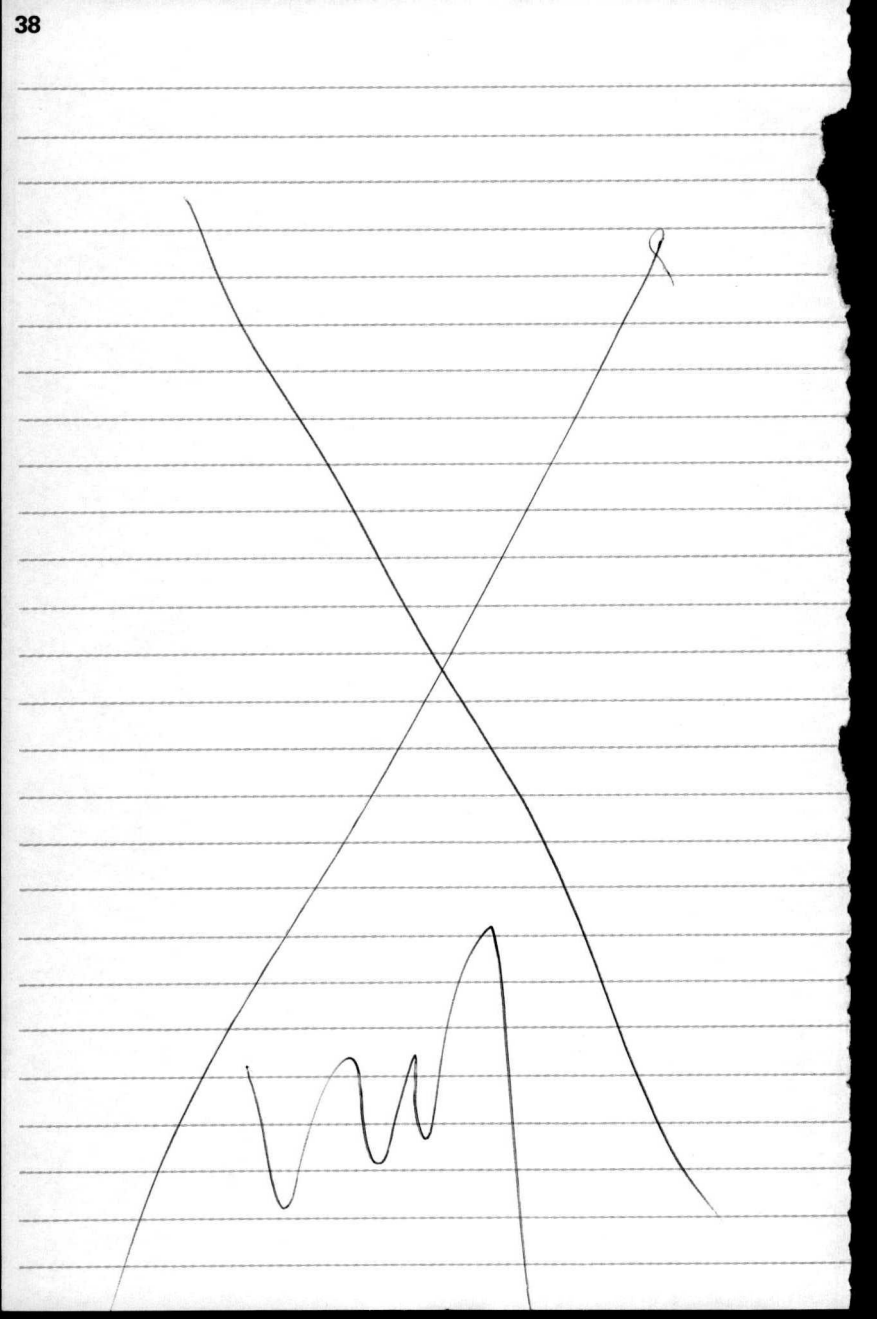
Bob had discussed with us earlier that the hot glowing coals were probably due to the incomplete combustion of the coal, and the ash had accumulated in the mine chamber.

I told Bob that the HNμ readings could possibly indicate the presence of PAH compounds (poly nuclear aromatic hydrocarbons) or other products of incomplete combustion.

Marty M Fall
11/30/89

I said that the PAHs were carcinogenic. I also told him that the humidity may have caused some interference with the HNu readings.

Wesley M. Schell
11/30/89



 Linwood / Umthun 11/30/89

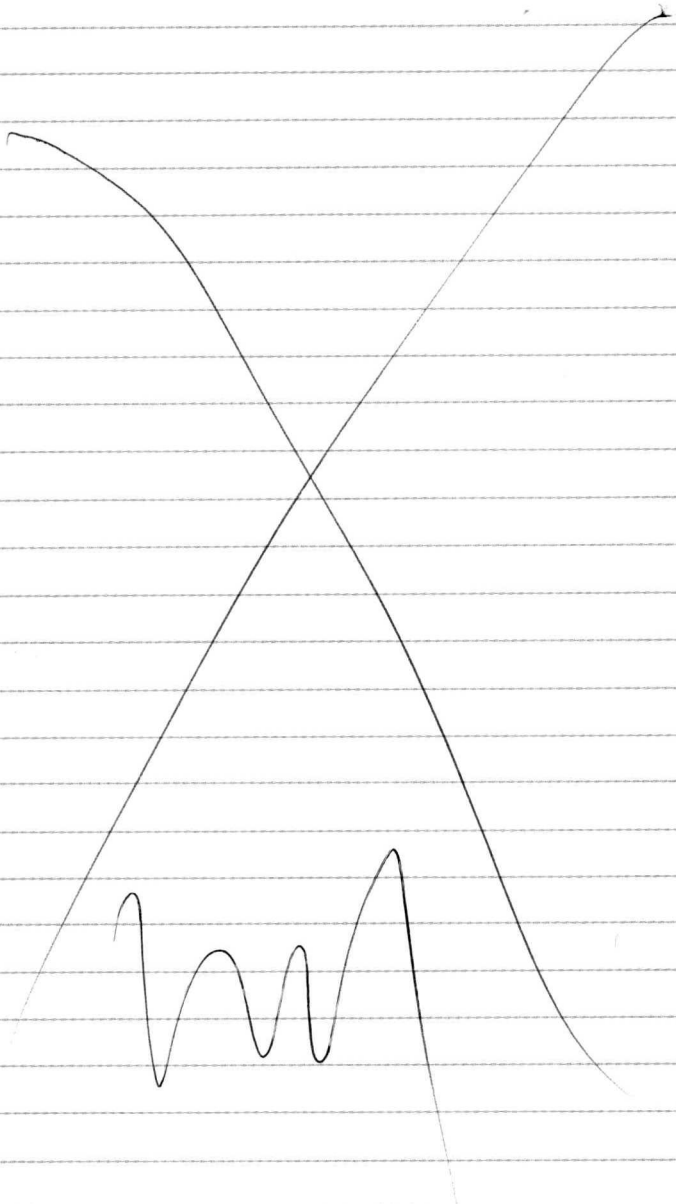
FIA Ø236 6B

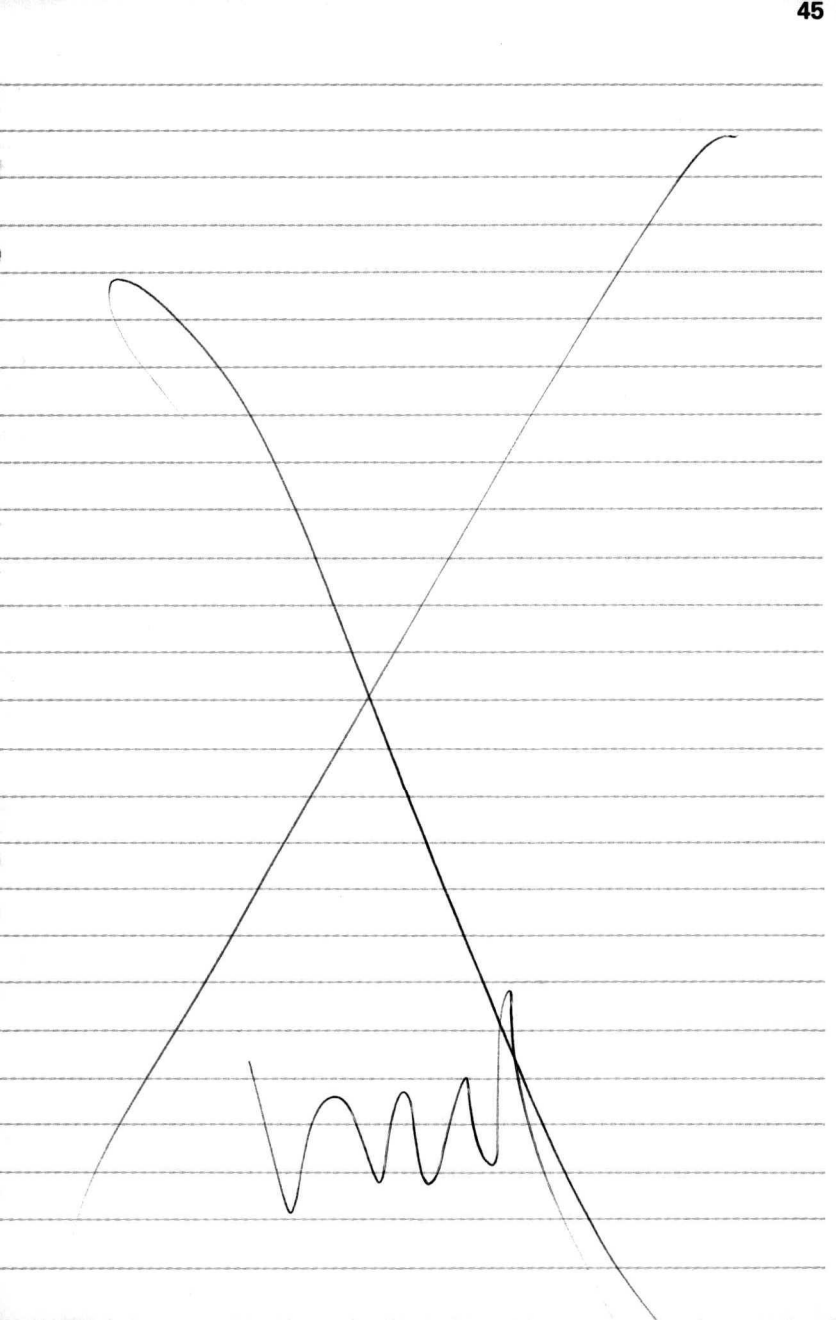
Ash Samples
Umthun Trucking / Linwood Quarry
Buffalo, Iowa
Sample Series DSXØ4

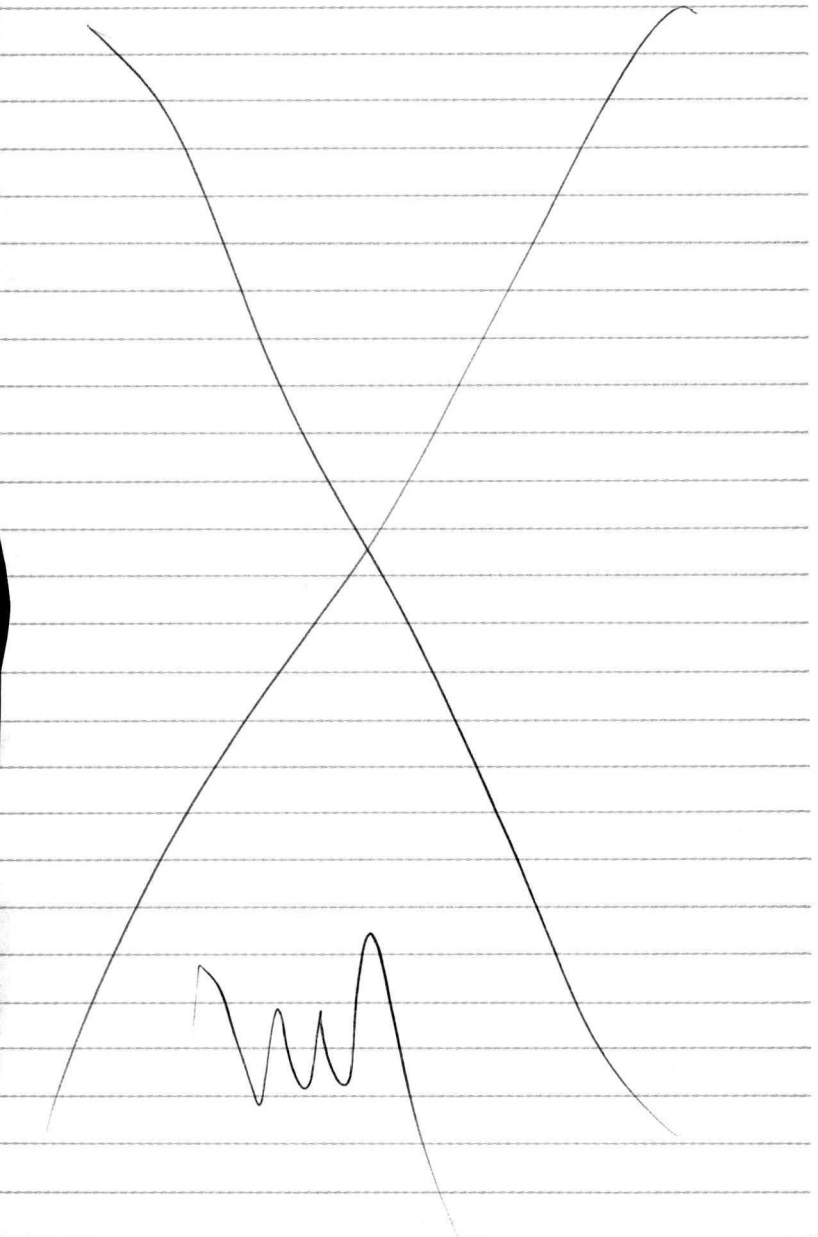
Smpl #	descript	location	time
ØØ1	kiln ash	ash being dumped into edge of Pond in old quarry pit	12:35
ØØ2	kiln ash	ash collected from edge of area where loader was removing ash inside of mine chamber. Collected from 6-12 inches below surface of ash ~ 6 feet above floor at this point.	13:40

Samples Collected by Wes McCall + Ladd Hastings

THE END







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