



Suzanne Steab <suzannesteab@utah.gov>

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## Wildcat, Approval of Coal Fines Report, Task ID #4257

1 message

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**Suzanne Steab** <suzannesteab@utah.gov>

Tue, Mar 12, 2013 at 11:17 AM

To: "Hess, Pete" <petehess@utah.gov>, tompaluso@preciscom.net

Please see attached. Thank you.

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Suzanne Steab, Engineering Technician II  
Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Salt Lake City, Utah 84114-5801



**Approval Package.pdf**

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GARY R. HERBERT  
Governor

GREG BELL  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

March 12, 2013

Kit Pappas, Manager of Environmental and Engineering Services  
America West Resources  
3266 South 125 West  
Price, Utah 84501

Subject: Approval of Coal Fines Report, Task ID #4257, Intermountain Power Agency, Wildcat Loadout, C/007/0033

Dear Mr. Pappas:

The above-referenced amendment is approved effective March 12, 2013. This modification does not necessitate an update to the Technical Analysis. A stamped incorporated copy is enclosed for your copy of the Mining and Reclamation Plan.

If you have any questions, please feel free to call me at (801) 538-5325.

Sincerely,

Daron R. Haddock  
Coal Program Manager

DRH/sqs

Enclosure

cc: Tom Paluso  
Price Field Office

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# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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March 12, 2013

TO: Internal File

THRU: Steve Christensen, Env Scientist III, Reclamation Hydrologist / Task Manager  
Daron Haddock, Title V Coal Program Manager *DOZ*

FROM: Peter Hess, Environmental Scientist III, Engineering Review *PHH km  
SBS*

SUBJECT: COAL FINES REPORT, Intermountain Power Agency, America West Resources, LLC, Wildcat Loadout, C/007/0033, Task ID #4257

### SUMMARY :

The Division issued Order DO-04 to Andalex Resources, Inc. in 2004. The Order was issued because coal fines had been allowed to leave the disturbed area and accumulate on land from which the topsoil had not been recovered.

In 2006, the ownership and the State issued permit for the Wildcat loadout facility was transferred to UtahAmerican Energy, Inc., a subsidiary of Murray Energy Corporation. In October of 2010, UtahAmerican recovered coal fines from 5.43 acres of land east of primary road PR-5 and the main coal stockpile area. This was done as a condition of the remedial action required to abate DO-04 and was completed to appease the potential permittee, the Intermountain Power Agency.

Transfer of ownership of the Wildcat Loadout from Andalex Resources, Inc. / Utah American Energy to the Intermountain Power Agency occurred prior to June 27, 2011. On that date, the Utah Division of Oil, Gas and Mining completed the transfer of C/007/0033 to Intermountain Power Agency.

Intermountain Power Agency completed an agreement with Hidden Splendor Resources, Inc. / America West Resources, LLC to act as operator of the Wildcat facility at approximately the same time.

## **OPERATION PLAN**

### **SOIL STABILIZATION**

Regulatory Reference: R645-301-244; 30 CFR 817.22; R645-301-244.100

### **AIR POLLUTION CONTROL PLAN**

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420

### **PLAN FOR FUGITIVE DUST CONTROL PRACTICES**

Regulatory Reference: R645-301-423.200, R645-301-424

#### **Analysis:**

The State of Utah Division of Oil, Gas and Mining completed transfer of the mining permit to the Intermountain Power Agency on June 27, 2011. The facility started receiving and stock piling coal in July, 2011 from the Hidden Splendor Mine (owned and operated by America West Resources, Inc.). At that time, only one radial stacker at the Wildcat Loadout was being used for storage purposes. 105 car IPA unit trains were being loaded and shipped as soon as adequate tonnages were determined as being available. Stockpile heights were observed as never reaching the heights once obtained when Andalex Resources Mines (Crandall Canyon, Centennial and West Ridge) were all shipping coal to the facility. Since the volume of the stockpile was seldom allowed to exceed 10,500 tons (1 unit train), the height of the stockpile during the months of July, August and September (Third Quarter of 2011) of 2011 never got to elevations which would allow westerly prevailing winds to erode and transport these fines outside the east permit boundary.

Fines have also been noted as having been transported to the permit boundary by water, yet they were retained at the permit boundary by straw bale dikes. This area is the channel which runs SSW of sediment pond "B" (treatment area is known as ASCA #3, See PLATE 2 in the MRP).

Appendix "P" of the Response to Division Order DO-04, Wind-Blown Fines Accumulations in the Wildcat mining and reclamation plan briefly discusses Requirement # 7 which is to Conduct future monitoring of wind-blown fines. As per the currently approved plan (incorporated on October 18, 2010), *"the general approach of monitoring (depth assessment and location on a map) will be stated in the Annual Report"*.

As is noted above, America West Resources became the operator of the Wildcat Loadout through agreement with the Permittee, Intermountain Power Agency on June 27, 2011 (just prior to the first month of the third quarter of 2011). Coal fines monitoring was conducted by Mr. J.T. Paluso, (Utah registered professional engineer) for the third and fourth quarters of 2011.

The third quarter 2011 monitoring was conducted on August 18, 2011, and this report contained two pictures. The first photo showed a horizontal view of the vegetation east of Pond "B". The second photo showed the vegetation on the south bank of pond "B". This report did not show any data for coal fine depth in the required monitoring area, although the two locations are easily found within the Wildcat disturbed area.

The fourth quarter 2011 report (monitoring conducted on November 11, 2011) contained four photos. Photo #1 showed primary road PR-5 just south of pond "B" and the "snow fence" plastic mesh material intended to knock down airborne coal fines traveling off the main coal stockpile pad.

Photo #2 shows the vegetation looking SSW immediately east of the snow fence toward the train loading tower. Photo 2 does show coal fines accumulations, and this area is within the monitoring area (mechanical cleaning area). A small 834 rubber tired dozer was used to blade off the fines. The area was then disced, seeded and straw mulch was hand applied in October of 2010. No data relative to coal fine depth, or location was submitted as part of this fourth quarter report.

Although both the third and fourth quarter 2011 reports were P.E. certified by Mr. Paluso, the Division felt that the Permittee had not established an adequate monitoring protocol to cover the 5.43 acres of disturbance.

The monitoring requirements were not established in the 2010 Annual Report, although some criteria to address DO-04 were approved and incorporated into the Wildcat mining and reclamation plan on October 18, 2010.

The lack of data and established monitoring locations prompted the Division to discuss the monitoring regime with Environmental Industrial Services through Mr. Kit Pappas of America West Resources.

In a letter dated November 23, 2013, the Division required the Permittee / Operator to install stakes (wooden lathe) in the mechanical cleanup area (3.84 acres) as well as the 1.59 acres known as the "vacuum cleaning area". Eleven stakes were established in the North area (1.39 acres), and fourteen were installed in the South area. The points were designated N1, N2...S1, S2, etc. These were installed prior to conducting the 3<sup>rd</sup> Quarter 2012 monitoring

conducted on August 11, 2012. Photographs at each stake (25 locations) were taken and the depth of fines was measured and reported.

Upon reviewing the 3<sup>rd</sup> Quarter 2012 report, three members of the Division's technical staff compiled six additional criteria which the Permittee was required to implement as part of the fines monitoring regime. These are as follows:

- 1) In reporting the depth of coal fines at each stake, the report did not specify the area evaluated about the stake / monitoring point. The monitoring regime was required to report the coal fine depth at each stake, as well as the area about the stake. The Division suggested that a 3 foot X 3 foot square be constructed and laid down about each monitoring stake to give a consistent area for evaluation purposes. The nine square foot area was then sub-divided into 225 squares and fines depths were recorded by depth and percentile of cover for each 25 square area (25 squares for each of 9 areas).
- 2)
- 3) Each stake was located using a Trimble GeoExplorer 3 GPS unit (per the 3<sup>rd</sup> Quarter monitoring report). The Division required that the GPS locations for each of the twenty-five monitoring stakes be submitted should the located lathes be destroyed by weathering. The GPS location for each stake was submitted in the Fourth Quarter Coal Fines Monitoring Report.
- 4) The Division recommended that SIX additional monitoring points be installed; four would be east of N4, N5, N6, N8 and N9, and one would be installed east of N1. These six additional monitoring points were installed, GPS located and monitored during the 4<sup>th</sup> Quarter 2012. **The locations are however, not where the Division wanted them.** They should be located in the land triangle north of S11.
- 5) The Division required that ground cover percentiles for rock cover, soil cover, vegetation, and the percentage of cover by coal fines (trace or measurable depth) be evaluated. The fines monitoring vendor requested that the requirement to evaluate percentage of rock cover only be necessary once a year due to the time involved to conduct this evaluation. **The Division does not agree that the monitoring once a year for rock cover is adequate.** Therefore, during all four monitoring quarters per year, the percentile of rock cover will be included along with the percentile of soil cover, the percentile of vegetative cover and the amount of soil surface covered by coal fines must be reported (each quarter will provide these percentiles).
- 6) The Permittee was required to set up a spreadsheet to track the amount of coal fines at each location / grid area in order to track the volume of fines increase / quarter. This was done in the fourth quarter 2012 monitoring report. The permit condition to

- submit all monitoring information as part of the Annual Report for the site remains in effect, (i.e., four quarters of data are required to be submitted with each annual report submitted).
- 7) The Division required that the Permittee / Operator update Appendix "P" Item #7 in the Wildcat mining and reclamation plan to include the new monitoring parameters. This was done in a revised page 8 in Appendix "P" to reference the document identified as "WILDCAT COAL FINES ISSUE DIVISION ORDER -04 (WIND BLOWN FINES) ANNUAL MONITORING" dated November 29, 2012, and P.E. certified by Mr. J.T. Paluso. This document will be included in the incorporation phase of the mining and reclamation plan following Division approval.

Page 2 of WILDCAT COAL FINES ISSUE, DIVISION ORDER-04 (WIND BLOWN FINES) ANNUAL MONITORING contains a conflict which must be addressed. It is:

- 1) The requirement that "*ground cover calculations (or percentiles of area) procedures will only be conducted during one quarter of the year*". "*During the other three quarters the method listed in item (2) will be followed.*"

In the 4<sup>th</sup> Quarter of 2012, Wildcat Coal Fines Issue, Division Order-04 (Wind Blown Fines) Annual Monitoring (document dated November 29, 2012), the Permittee's monitoring vendor states (See CONCLUSION, Page 2) that "*the rock ground cover was very low(northern section .14%, southern section .37%). Because of the low rock ground cover, it is suggested that in the future this parameter should be dropped from the total ground cover measurements. Rock cover (the percentile) will be included in the soil cover percentage.*"

The Division feels that if the percentile of rock cover remains low (< 2.5 %), and if the exposed rock surface is not collecting coal fines in any depressions which it may have, it may be reported (rock cover percentile) with the soil cover percentile.

### **Findings:**

The Permittee / Operator has complied with the required changes to the coal fines monitoring regime listed in the Division letter dated November 23, 2012. Adequate monitoring protocol has been established and same will be incorporated in the MRP (Appendix "P") by reference to the aforementioned document, WILDCAT COAL FINES ISSUE, DIVISION ORDER-04 (WIND BLOWN FINES) ANNUAL MONITORING.

Approval of the revised Appendix "P" is recommended.

Incorporation of the 4<sup>th</sup> Quarter 2012 monitoring report (WILDCAT COAL FINES ISSUE, DIVISION ORDER-04 (WIND BLOWN FINES) ANNUAL MONITORING) WILDCAT COAL FINES ISSUE, DIVISION ORDER-04 (WIND BLOWN FINES) ANNUAL MONITORING is required as it is needed to compliment and support Appendix "P" of the MRP.

**RECOMMENDATION:**

Approval of the added monitoring requirements to the coal fines monitoring regime (Task ID #4257) at the Wildcat Loadout is recommended.

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# APPENDIX P

## RESPONSE TO DIVISION ORDER DO-04 WIND-BLOWN FINES ACCUMULATIONS

### CONTENTS:

- 1) NARRATIVE
- 2) FIGURE 1, COAL FINES ACCUMULATION MAP
- 3) FIGURE 2, CLEANUP PROJECT AREA
- 4) FIGURE 3, INTERIM SEED MIX
- 5) FIGURE 4, SEDIMENT POND G DESIGN DETAIL
- 5) EXHIBIT 5, SOILS REPORT, JAMES NYENHUIS

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**Div. of Oil, Gas & Mining**

## APPENDIX P

### RESPONSE TO DIVISION ORDER DO-04

#### WIND-BLOWN FINES ACCUMULATIONS

In 2004, the Division issued an Order DO-04 for wind-blown fines which had accumulated outside the disturbed area, primarily in the area southwest of the main coal storage pile below sediment Pond B. The primary source of these coal-fines is from proximity to the main coal storage pile, and from truck traffic on the perimeter road between the coal storage area and existing Sediment Pond B. The accumulation area is directly down-wind and down-gradient from these sources, and over the past 30 years of operations has experienced an obvious accumulation of coal fines. Although the coal-fines accumulation is generally contained within the existing permit area, there is concern for the underlying topsoil in the area, and additional concern that some of the accumulation is down-drainage from Pond B, and therefore is not being properly contained and treated from a hydrologic standpoint. To address the concerns raised by this Order, Permittee proposes the following plan of action:

1) Remove the deeper coal fines in the area of greatest accumulations around and below Pond B (denoted as "Mechanical Cleanup Area" on Plate 1A) by utilizing heavy equipment,

2) Salvage topsoil from the Pond B - Potential Pond G drainage area to prevent future soil contamination at such time as is necessary, additionally this area was disced and seeded in October 2010, and,

3) At such time as becomes necessary due to the inability to contain fines from potentially larger coal stockpiles, eliminate Pond B, and replace it by constructing a new Pond G located approximately 450' southeast of (i.e., down-drainage and down-wind from) Pond B.

4) Remove the shallow coal fines in the adjacent area, north of Pond B (denoted as "Vacuum Cleanup Area" on Plate 1A), by

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utilizing truck-mounted vacuum equipment,

5) Access road PR-5 will be graveled prior to coal trucks accessing the main stockpile loading area from the East side of the property, (i.e., by Primary Road PR-5).

6) Conduct future monitoring to assess the wind-blown fines situation at such time as becomes necessary.

7) Review of reclamation costs and bonding annually.

These items are discussed in greater detail in the following narrative:

1) Remove deeper coal fines: The area of greatest coal fines accumulations is generally shown on Plate 1A and is labeled "Mechanical Cleanup Area". Also, Figure 1 attached to this appendix shows the nature of the aerial extent of the accumulations. This exhibit was prepared by Environmental Industrial Services (E.I.S.) based upon on-site measurements. Prior to beginning any construction or clean-up activities in this area, "disturbed area" perimeter markers will be installed around the proposed construction site. The general area of interest is shown on Figure 2 of this appendix.

Prior to beginning any construction or clean-up activities in this area, "disturbed area" perimeter markers will be installed. Temporary sediment control measures will then be installed below the construction site. This will consist of installing a row of excelsior logs (filter logs) laid along the contour northwest side of the Trestle Road. The purpose of these filter logs is to prevent any sediment or coal fines from getting off the permit area while the area is being cleaned up, topsoil is being salvaged, and Pond G is being constructed.

Accumulated coal fines will be scraped up using an assortment of mechanical equipment such as a vacuum truck, grader, back-hoe and/or front end loader, down to the native soil. The equipment to be used will be selected so that the coal fines can be gathered up in a manner that minimizes the disturbance to the underlying topsoil. The coal-fines will then be hauled off to the main coal pile to be blended back into the coal sales

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product, or will be hauled to the mine refuse pile located on the west side of the loadout facility. The choice of where to dispose of the coal fines will be made by the loadout operators and will be made based on the quality of the collected material.

2) Salvage and stockpile topsoil: In July, 2003, a soils survey of the immediate area was conducted by James Nyenhuis. This report was incorporated into the MRP in May, 2006, appearing as a supplement to Appendix D. This report gives a complete description of the soils in this area, and is included in this appendix for ease of reference, as Exhibit 5.

After the coal fines have been cleaned up and removed from the site topsoil will be salvaged from the "mechanical cleanup area", as shown on Plate 1A. Care will be taken to avoid damage to the existing larger vegetation in this area (juniper-pinyon trees, barrel cactus clusters, etc.) during topsoil salvage. A minimum of 6" of topsoil will be salvaged and stockpiled nearby as an extension of existing Topsoil Pile A. Topsoil will be salvaged in this area to allow for the construction of new Sediment Pond G, and to provide a measure of protection of the topsoil resource in the future in the likely event that this area sees additional deposits of wind and/or water-borne coal fines. The mechanical cleanup area involves approximately 3.84 acres. At a 6" salvage depth it is estimated that approximately 3097 cubic yards of topsoil will be gathered up. This will be stored as an extension of Topsoil Pile A. Pile A presently has an estimated volume of 440 cu. yds. Therefore, the expanded pile should have a total storage volume of about 3500 cu. yds. The new pile will be kept at the pre-existing height of about 6', and is estimated to be about 250' long x 70' wide when completed. There will be no topsoil removed in the area directly underneath the extended topsoil pile.

After the topsoil is salvaged from the "mechanical cleaning area" the area will then be roughened. The purpose of this roughening is to help minimize erosion, and also to help capture any additional wind-blown fines and prevent them from migrating down-gradient. This area was disced and seeded in October 2010.

3) If and when it becomes necessary to replace Pond B with Pond G due to the inability to contain windblown coal fines due to potentially larger coal stockpiles: After the coal fines have been cleaned up and the topsoil salvaged from the mechanical cleanup area a new sediment pond will be constructed . This new pond is to be called Pond G. Pond G will be located within the existing permit area immediately northwest of the Trestle Road, and down-drainage from the existing Pond B, as shown on Plates 1A and 2A. Pond G will essentially be a replacement for Pond B but will also treat the expanded cleanup area, based on a 10 year-24 hour precipitation event. The design details for Pond G are included in Appendix R (Sedimentation and Drainage Control Plan) and also on Plate 3G. This plate is also presented as Figure 4 of this appendix for ease of reference.

The embankment for Pond G will be constructed using native material, compacted in 18" lifts. It will have a 20'wide crest with a 3H-1V outslope and a 2H-1V in slope. The Pond will include a 24" CMP primary spillway equipped with an inverted oil skimmer, and a 24" CMP emergency spillway. After construction, the crest and outslopes of the pond embankment will be re-seeded for interim reclamation. A row of excelsior filter logs will be installed around the perimeter (toe) of the outslope of the dam for interim sediment control.

#### 4) Re-seeding:

After construction, the topsoil pile will be roughened and re-seeded with an approved interim reclamation seed mix as specified in Chapter 2 and Chapter 3. A copy of this seed mix is also included with this appendix as Figure 3 for ease of reference. The company will endeavor to utilize locally acquired seeds if possible. A retention berm and ditch will be constructed around the perimeter of the pile to prevent soil loss, and a row of excelsior filter logs will be installed around the perimeter to provide siltation control. The pile will also be equipped with an identification sign.

Establishment of vegetation on the topsoil piles at this site has

previously required two seedings. Therefore, stabilization of the new expanded topsoil pile A will include the application of wood fiber hydromulch after or with seeding. Wood fiber mulch and tackifier application is an accepted practice that will protect the topsoil pile from slopes and will protect the soil from erosion during seed establishment.

The areas associated with and including the sediment pond G and the coal fines removal as shown on Plates 1A and 1B will be broadcast seeded using the interim seed mix described in Figure 3. Seeding will occur in the fall or as recommended by a DOGM biologist. The area immediately around the extended topsoil pile will not have topsoil removed, nor any coal fines removed, but this area will be disturbed simply by the movement of heavy equipment involved in constructing the topsoil pile. Therefore, after the pile is constructed, this area will be roughened and re-seeded in the approved manner similar to the topsoil pile and the coal fines removal area (a.k.a., "mechanical cleanup area").

According to the approved reclamation plan gouging is described as 18" deep x 2'-3' wide, spaced 6'-10' apart (Section R645-301-240). On such gentle slope, the gouges will serve less to control erosion and more to provide for water collection. The problems with creating gouges in this manner are that the gouges will be deeper than the replaced topsoil and the topsoil that is removed from the gouge becomes a mound adjacent to the gouge, with steep slopes that will not retain seed, and the gouge may expose compacted fill soil. Gouging will be used during operations to promote vegetation growth in the drop zone and to collect coal fines. This method will be alternated with ripping of the surface to a depth of 12" and both measures can be qualitatively evaluated for success at final reclamation. Andalex commits to using the most effective roughening technique (either ripping or gouging) at final reclamation.

**5) Remove shallow coal fines:** Immediately to the north of the area of heaviest accumulations is another area targeted for cleanup. The coal fines accumulations are less in this area and it is felt that this area can adequately be cleaned up by utilizing a truck mounted vacuum system. This area is shown on Plate 1A (and also Figure 2) and is denoted as the "Vacuum

Cleanup Area". It occupies approximately 1.59 acres. The area depicted is the general area proposed for cleaning, although the company will seek concurrence from the Division regarding the final area.

There are a number of juniper-pinyon trees growing in this area, and the use of vacuum equipment will allow this area to be cleaned without adversely affecting these trees. To the extent practicable, the vacuum truck will utilize the existing adjacent roadway and use a long extension hose for the cleanup so as to minimize the on-ground disturbance. Because the accumulations are less in this area there are no plans to remove or salvage any topsoil after the coal fines have been cleaned up. Coal cleanup material vacuumed up from this area will be taken to the main coal storage area for re-sale, or will be taken to the coal refuse pile, depending on quality.

Input from Division representatives will be requested to make certain that the area targeted for vacuum cleanup is concurred with. Prior to doing any cleaning in this area, "disturbed area" perimeter markers will be installed around the proposed cleanup area. Although the area will not technically be considered "disturbed" for the purpose of sedimentation and drainage control or final reclamation, it will nevertheless be somewhat disturbed by the vacuum operation.

6) Gravel a portion of access road PR-5 at such time as the construction of Pond G becomes necessary: Access road PR-5 runs between the main coal storage pile area and the coal-fines accumulation area, as shown on Plate 1A and Figure 2. PR-5 was originally constructed as a low volume road to provide thru-access around the base of the coal storage pad. As such it was constructed on the native Mancos Shale material existing in the area, and was never graveled. Subsequently, new sales contracts required that semi-trucks utilize this road to gain access to the coal storage pad where they could then be loaded with a front-end loader. This heavier truck traffic on this road has contributed to the wind-blown fines situation. Therefore, the company proposes to gravel a 570' segment of this road, including the ramp up onto the coal storage pile, at such time as it becomes necessary to utilize this road for additional coal storage, which is utilized by the larger trucks needing access the coal pad.

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The segment of road to be graveled is shown on Plate 1A. Once the graveled road is in operation, it will be watered as needed in the future to control fugitive dust emissions.

**7) Conduct future monitoring of wind-blown fines:** After the cleanup is completed and the construction is finished, the company will continue with an operational monitoring plan for the area. This will consist quarterly inspection of the area to assess the amounts of future coal-fines accumulation, augmented by digital photography. Monitoring results are included in the annual report. The general approach of monitoring (depth assessment and location on a map) will be stated in the annual report. Refer to Document "Wildcat Coal Fines Issue - Division Order-04 Wind Blown Fines) Annual Monitoring", dated November 29, 2012. This detailed study will be performed one Quarter of each year.

**8) Bonding:** At present (July, 2010) the Wildcat reclamation bond is posted in the amount of \$1,144,000. This bond was re-adjusted in December 2007. Under the DO-04 cleanup plan there will be no additional demolition cost during final reclamation. The earthwork regrading costs will cancel out because Pond B is being replaced by Pond G. There will be slightly higher topsoiling costs and re-vegetation costs due to the additional disturbed acreage associated the cleanup plan. The existing disturbed area is 66.91 acres; the estimated disturbed area after implementation of the plan will be 73.26 acres, or an increase of 6.35 acres. Using the presently approved reclamation costs, the additional costs are computed as follows:

1) Topsoil:  $\$15,013/66.91 \text{ ac} = \$224/\text{acre}$

$\$224/\text{acre} \times 6.35 \text{ acres} = \$1422$

2) Reveg:  $\$359,746/66.91 \text{ ac} = \$5377/\text{acre}$

$\$5377/\text{acre} \times 6.35 \text{ acres} = \$34,141$

Total reclamation cost increase =  $\$1422 + \$34,141 = \$35,563$

Percent increase  $(\$1,144,000 + \$34,141)/\$1,144,000 = 1.028$

Therefore, implementation of the cleanup plan is estimated to increase the reclamation costs by less than 3% of the posted bond.

9) Construction Schedule: Construction will not begin until it is determined to be necessary.

**WILDCAT COAL FINES ISSUE  
DIVISION ORDER-04(WIND BLOWN FINES)  
ANNUAL MONITORING**

**NOVEMBER 29, 2012**

**Prepared for:**

**AMERICAN WEST RESOURCES**



**Prepared by:**

**EIS ENVIRONMENTAL & ENGINEERING CONSULTING  
31 NORTH MAIN  
HELPER, UTAH**

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**MAR 12 2013**

**Div. of Oil, Gas & Mining**

## INTRODUCTION

The purpose of this report is to provide annual monitoring of coal fines accumulation at the Wildcat Loadout as described in Appendix P, Response to Division Order DO-04 (Wind Blown Fines), Page 7, "Conduct future monitoring of wind-blown fines".

## PROCEDURE

Previous reports monitoring coal fines accumulation were completed on August 26, 2011, November 14, 2011, March 15, 2012, June 15, 2012, and October 31, 2012. In a letter from Mr. Peter Hess dated November 23, 2012, a new procedure was outlined for the monitoring of coal fines. This new procedure addresses the concerns outlined in this November 23, 2012 letter. The changes made to the coal fines monitoring procedure follows item 2) R645-301-423.200, R645-301-424, Plan for Fugitive Dust Control Practices on page 2 of this letter. Comments from DOGM are italicized and listed as follows:

*1) Please designate an area about each stake to be evaluated each year for the percent cover as described in item 4.*

A 3' x 3' jig (incremented in tenths of feet) was constructed for the monitoring of ground cover. This jig was moved from site to site and was used to determine ground cover percentages. The field data sheets are located in Appendix 2 of this report.

*2) Please provide the GPS co-ordinates for each monitoring point, so data can be coordinated with future monitoring.*

Each coal fine monitoring point was located with a Trimble Geo XM 2005 Series GPS. The UTM measurements were taken in NAD 1983 Conus). The coordinates for each point is in the Appendix 1.

*3) The Division recommends that five additional monitoring points be installed in the area west of the eastern DOGM permit boundary (four, east of monitoring points N6, N8, N5, N4, and N9, and one additional point east of N1).*

Five (5) additional random points were installed as outlined above. These points along with existing points are shown on Figure 1.

*4) The Division requests that each area being monitored (represented by stake, with documented GPS location information) be evaluated for percent cover in four ways;*

- a. the percentage of rock cover on the surface;*
- b. the percentage of soil cover making up the surface;*
- c. the percentage of vegetation;*
- d. the percentage covered by coal fines, either in trace amounts or other observed volumes.*

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The cover information along with coal fines comments are shown in Appendix 2 under Ground Cover Information Spreadsheet.

*5) The permittee should develop a spreadsheet to track the amount of coal fines at each location for each quarter monitoring. Yearly information is required by the commitment in the mining and reclamation plan as part of the Annual Report (See MRP, Appendix P, Item 7). This would facilitate comparisons of data.*

As per a conversation with Mr. Pete Hess DOGM, on January 16, 2013:

1. Ground cover calculations procedures will only be conducted during one quarter of the year. During the other three quarters the method listed in item (2) will be followed.
2. The 3' x 3' jig will be used each quarter during the coal fines evaluation process. The depth of coal fines will be recorded at various locations inside of the jig. Five readings will be taken at each staked location. One measurement will be taken inside each corner of the jig and the fifth measurement will be taken in front of the stake in the center of the jig.

*6) The Permittee must update the monitoring protocol in the mining and reclamation plan, Appendix P, item 7 to include the newly established monitoring points with GPS locations and other criteria described above.*

The results and new monitoring procedures will be updated in Appendix P as described above.

### CONCLUSION

This new procedure of using the 3' x 3' jig will make future coal fines measurements more consistent and reliable. This modified procedure will be used on future coal fines measurement activities.

The Ground Cover Information Spreadsheet in Appendix 2 indicates that the average coal fines cover is higher in the northern section (70.38%) as compared to the southern section (16.71%). Also the depth of coal fines is consistently higher in the northern section.

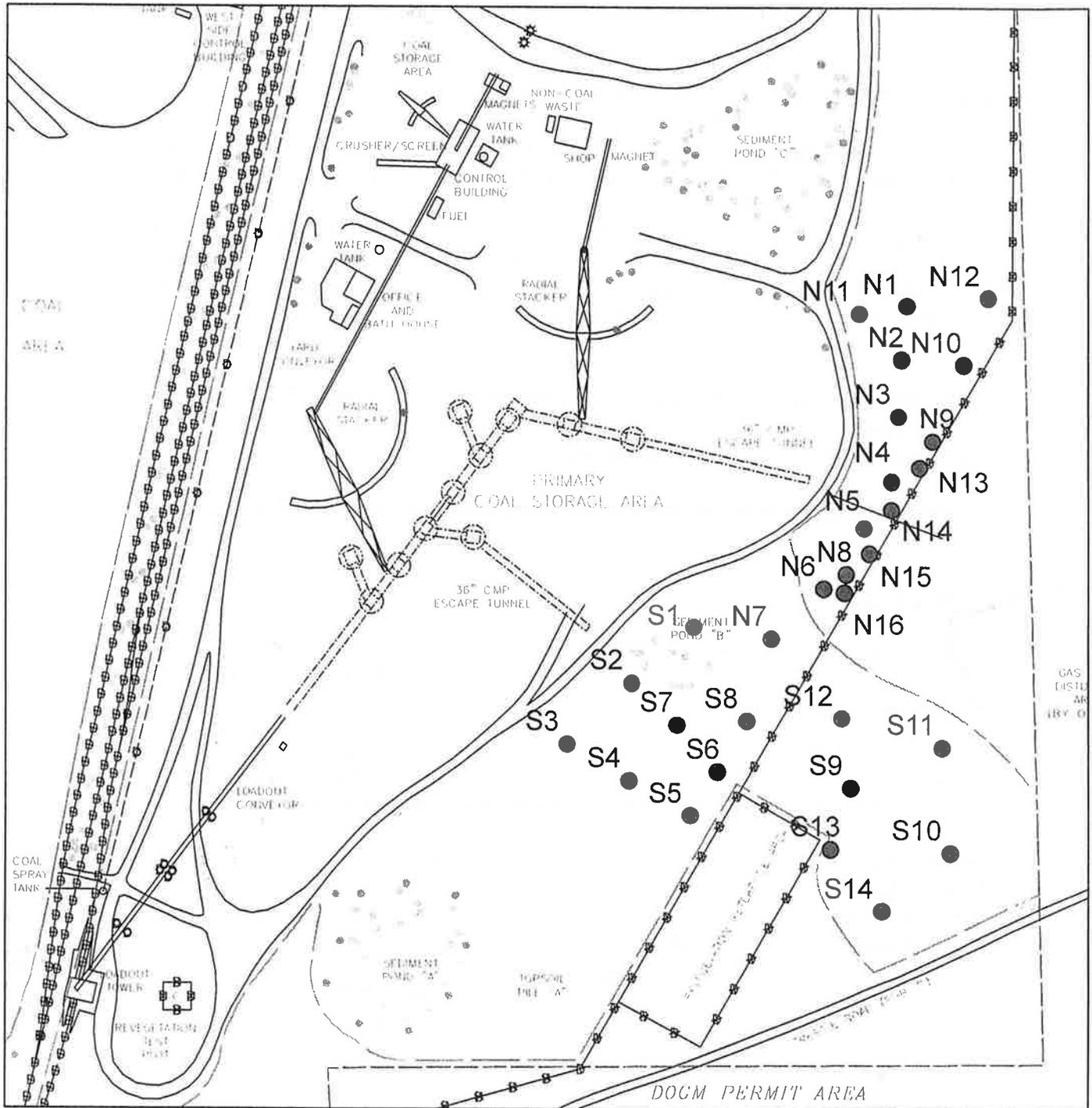
The rock ground cover was very low (northern section .14%, southern section .37%). Because of the low rock ground cover, it is suggested that in the future this parameter should be dropped from the total ground cover measurements. Rock cover will be included in the soil cover percentage.

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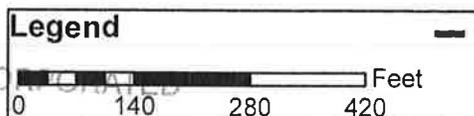
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# WILDCAT LOADOUT COAL FINES CLEAN-UP AREA RESPONSE TO D0-04 RANDOM PHOTOGRAPH SITES




**Environmental Industrial Services**  
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**FIGURE 1**

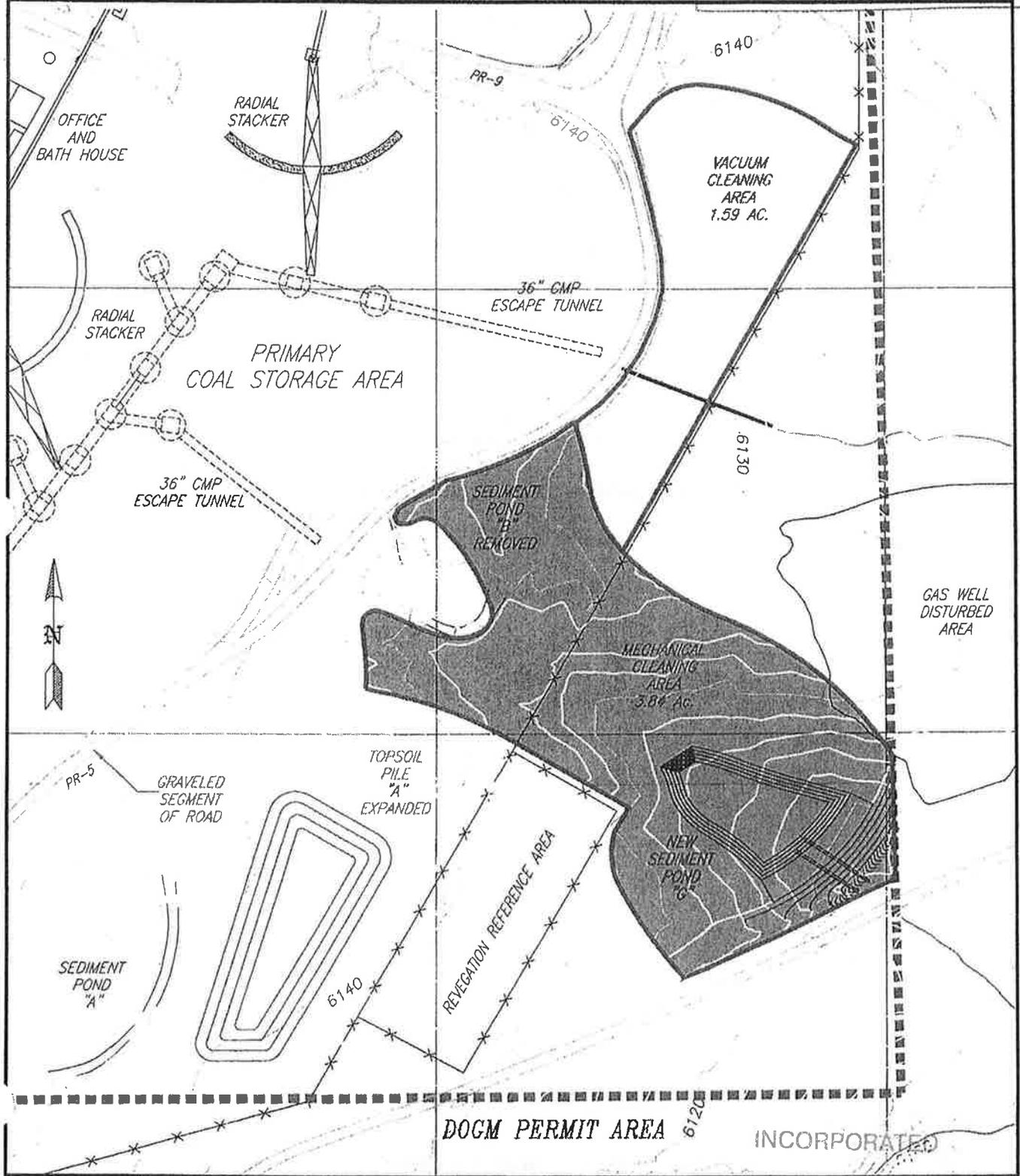
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EFFECTIVE:

OCT 18 2010

WILDCAT LOADOUT  
COAL FINES CLEAN-UP AREA  
RESPONSE TO DO-04  
FIGURE 2

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PRICE FIELD OFFICE



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**APPENDIX 1**  
**GPS COORDINATE LOCATION**

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**3**

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Sites	Northing	Easting
N1	4388881.053	507250.773
N2	4388855.546	507248.357
N3	4388828.670	507246.924
N4	4388798.066	507243.858
N5	4388776.525	507230.731
N6	4388748.246	507212.055
N7	4388724.731	507187.675
N8	4388755.111	507222.642
N9	4388817.190	507263.082
N10	4388853.051	507277.344
N11	4388877.659	507228.612
N12	4388885.034	507288.809
N13	4388804.920	507258.880
N14	4388784.888	507248.743
N15	4388764.867	507237.517
N16	4388745.479	507223.774
S1	4388730.197	507148.488
S2	4388703.933	507121.763
S3	4388675.136	507091.473
S4	4388657.906	507120.464
S5	4388641.241	507149.536
S6	4388662.058	507162.426
S7	4388684.104	507143.486
S8	4388686.032	507175.900
S9	4388654.465	507224.755
S10	4388623.652	507270.843
S11	4388673.547	507267.177
S12	4388687.237	507220.312
S13	4388625.264	507215.195
S14	4388596.345	507239.016

UTMs in NAD 1983 (Conus)

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**APPENDIX 2**

**GROUND COVER INFORMATION SPREADSHEET & FIELD WORK SHEETS**

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GROUND COVER INFORMATION SPREADSHEET										
LOCATION	VEGETATION SQUARES	VEGETATION (COVER %)	ROCK SQUARES	ROCK (COVER %)	COAL FINES SQUARES	COAL FINES (COVER %)	SOIL SQUARES	SOIL (COVER %)	COAL FINES AT STAKE	COMMENTS
N1	45.5	20.22	2	0.89	98.5	43.78	79	35.11	0"	Trace over most of the area
N2	27	12.00	0	0.00	109.5	48.67	88.5	39.33	0"	Trace over most of the area
N3	31.2	13.87	0	0.00	166.5	74.00	27.3	12.13	1/4"	Trace amount over remainder of area
N4	16	7.11	0	0.00	134.1	59.60	74.9	33.29	0"	Trace amount over remainder of area
N5	42.3	18.80	0	0.00	179.2	79.64	3.5	1.56	1/2"	Majority of area covered with coal fines
N6	17.75	7.89	0	0.00	155.25	69.00	52	23.11	1/4"	Trace in SE corner
N7	7	3.11	0	0.00	211.25	93.89	6.75	3.00	Trace	1/4"-3/8" rest of area
N8	101.75	45.22	0	0.00	123.25	54.78	0	0.00	4"	2"-4" rest of area
N9	42.75	19.00	0	0.00	159.75	71.00	22.5	10.00	Trace	Trace to 1/4" whole area
N10	54.25	24.11	0	0.00	122.25	54.33	48.5	21.56	0"	0" to trace whole area
N11	29	12.89	1	0.44	113	50.22	82	36.44	1/4"	1/2" in SE corner
N12	3.75	1.67	2	0.89	219.25	97.44	0	0.00	Trace	0" to trace whole area
N13	16.5	7.33	0	0.00	208.5	92.67	0	0.00	1 1/2"	1" SE corner
N14	87.75	39.00	0	0.00	137.25	61.00	0	0.00	1 1/2"	1" -2" rest of area, 2" SE corner
N15	17.5	7.78	0	0.00	194	86.22	13.5	6.00	Trace	Trace over most of the area
N16	23	10.22	0	0.00	202	89.78	0	0.00	2"	Trace in SE corner
AVERAGE		15.64		0.14		70.38		13.85		
S1	2	0.89	0	0.00	223	99.11	0	0.00	2"	Coal fines cover total area
S2	11.75	5.22	0	0.00	0	0.00	213.25	94.78	Trace	Trace over total area
S3	13.5	6.00	0	0.00	0	0.00	211.5	94.00	Trace	Signs of flowing water in the past, traces of fines
S4	8	3.56	0	0.00	0	0.00	217	96.44	Trace	0" to trace whole area
S5	7.25	3.22	3.25	1.44	0	0.00	214.5	95.33	0"	0" to trace whole area
S6	15.25	6.78	0	0.00	0	0.00	209.75	93.22	Trace	Trace over total area, straw cover over large portion
S7	23.75	10.56	0	0.00	191.5	85.11	9.75	4.33	1/4"	Trace to 1/4" most of the area
S8	95	42.22	0	0.00	112	49.78	18	8.00	Trace	Trace to 1/4" most of the area
S9	99.25	44.11	0	0.00	0	0.00	125.75	55.89	Trace	Trace over total area
S10	72	32.00	0	0.00	0	0.00	153	68.00	Trace	Trace over total area
S11	0	0.00	6.25	2.78	0	0.00	218.75	97.22	0"	No coal in area
S12	6.25	2.78	2	0.89	0	0.00	216.75	96.33	0"	0" to trace whole area
S13	21.75	9.67	0	0.00	0	0.00	203.25	90.33	Trace	0" to trace whole area
S14	0	0.00	0	0.00	0	0.00	225	100.00	0"	No coal in area
AVERAGE		11.93		0.37		16.71		70.99		

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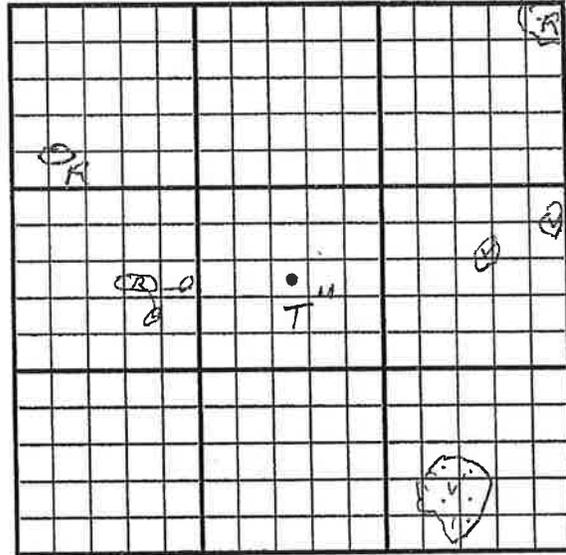




WILDCAT LOADOUT  
Coal Fines Monitoring

Site: N/2  
Date: 11/29/12

Scale: 1"=1'



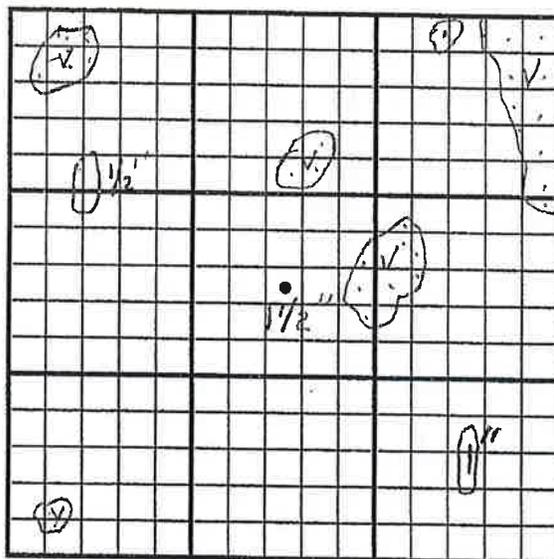
Notes: <u>O-T WHOLE AREA</u>
<u>VEGETATION: 3.75 = 3.75 SQ</u>
<u>ROCK: ~2 SQ</u>
<u>SOIL: 0</u>

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**WILDCAT LOADOUT**  
Coal Fines Monitoring

Site: N 13  
Date: 11/29/12

Scale: 1"=1'



Notes: 1/2" - 1 1/2" WHOLE AREA

VEGETATION: 4.25, 2.5, 1.75, .5, 7.5 = 16.5 SQ

COAL REST OF THE AREA

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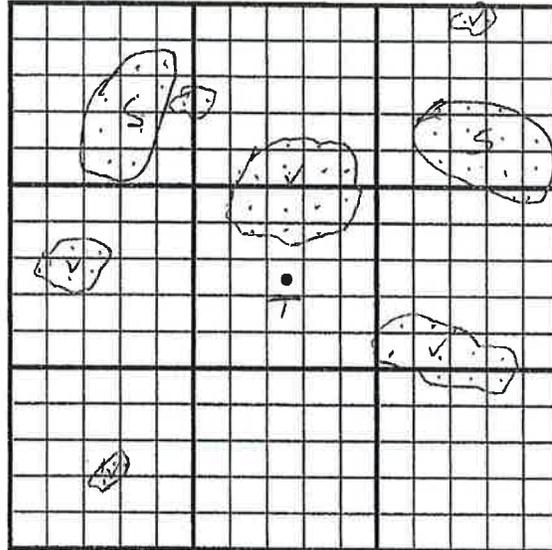
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WILDCAT LOADOUT  
Coal Fines Monitoring

Site: N 15  
Date: 11/29/12

Scale: 1"=1'



Notes: T WHOLE AREA
VEGETATION: 8, 7.5, 2, 5.25, 7.5, .75 = 17.5 SQ
SOIL: 6, 7.5 = 13.5 SQ

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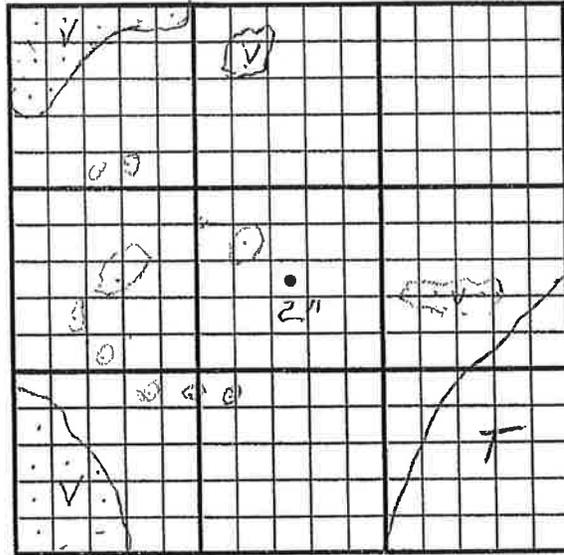
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WILDCAT LOADOUT  
Coal Fines Monitoring

Site: N 16  
Date: 11/29/12

Scale: 1"=1'



Notes: T UP TO 2' REMAINING

VEGETATION: 6.5, 10, 1.5, 1, 2, 2 = 23 SQ

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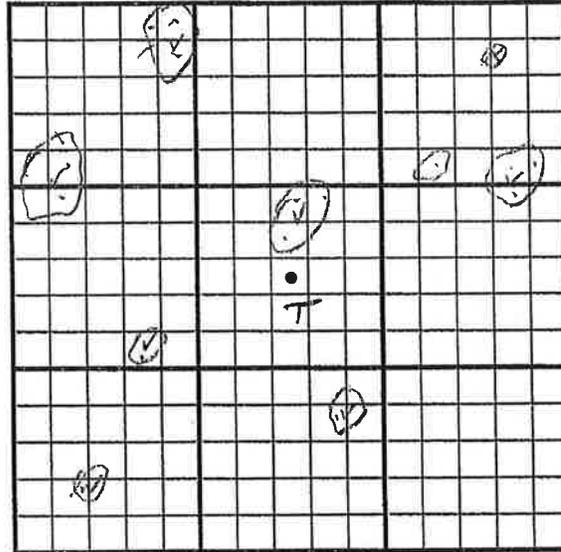
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WILDCAT LOADOUT  
Coal Fines Monitoring

Site: 52  
Date: 11/29/12

Scale: 1"=1'



Notes: T WHOLE AREA

VEGETATION: .5, 1, .5, 3.5, 2, 2, .5, .25, 1.5 = 11.75 SQ

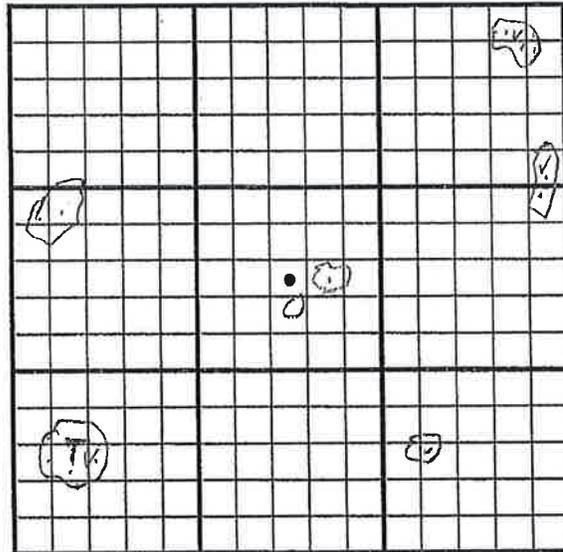
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WILDCAT LOADOUT  
Coal Fines Monitoring

Site: S 4  
Date: 11/29/12

Scale: 1"=1'



Notes: 0-1' WHOLE AREA

VEGETATION: 2.5, .5, .75, 2, 1, 1.25 = 8 sq

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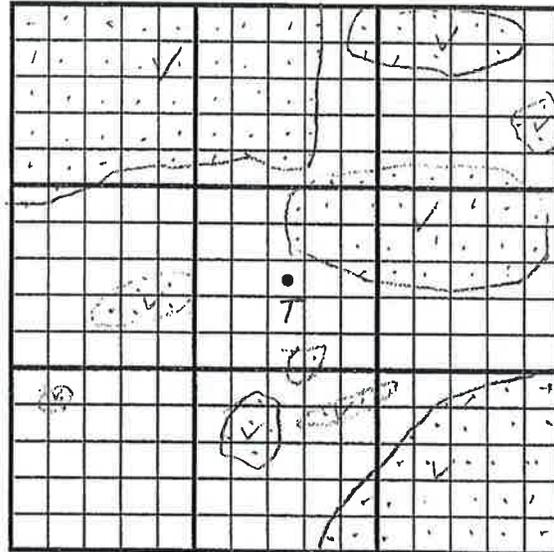




WILDCAT LOADOUT  
Coal Fines Monitoring

Site: 59  
Date: 11/29/12

Scale: 1"=1'



Notes: T WHOLE AREA
VEGETATION: 39.5, 9.5, 1.5, 3, 23.5, 18, 2, 1, 1.25, = 99.25 SQ

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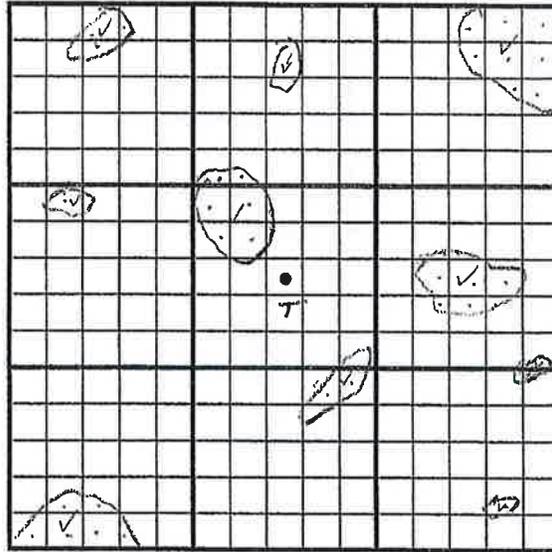




WILDCAT LOADOUT  
Coal Fines Monitoring

Site: 513  
Date: 11/29/12

Scale: 1"=1'



Notes: 0"-T WHOLE AREA
VEGETATION: 4, 1.5, 3.25, 1, 2, 6, 4 = 21.75 SQ

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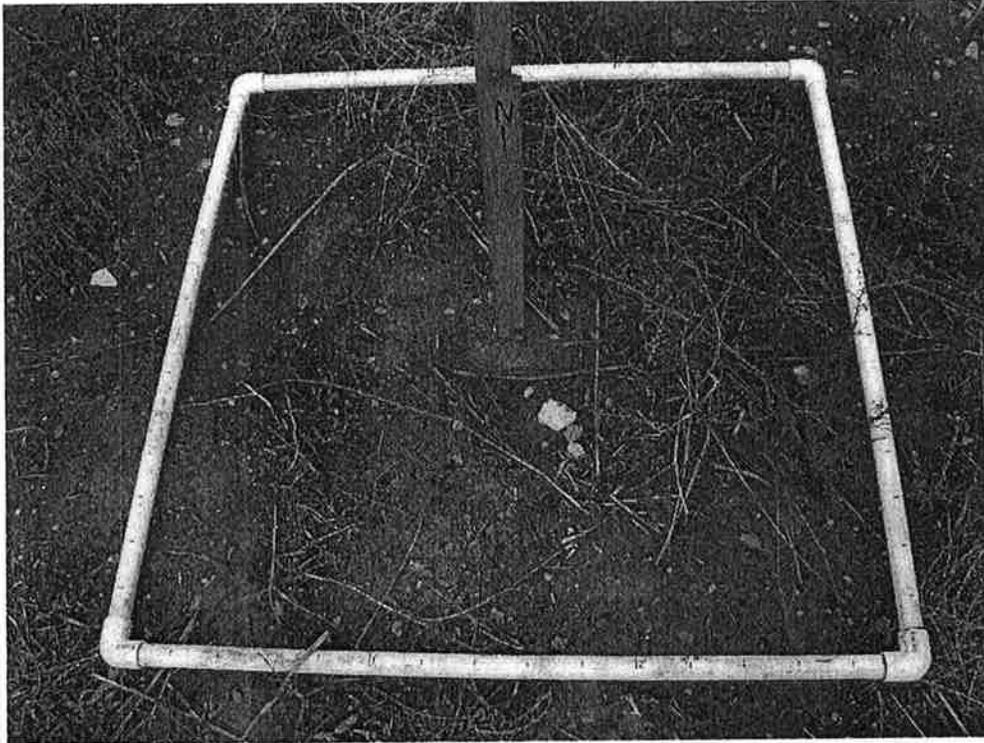
**APPENDIX 3**  
**PHOTOGRAPHS**

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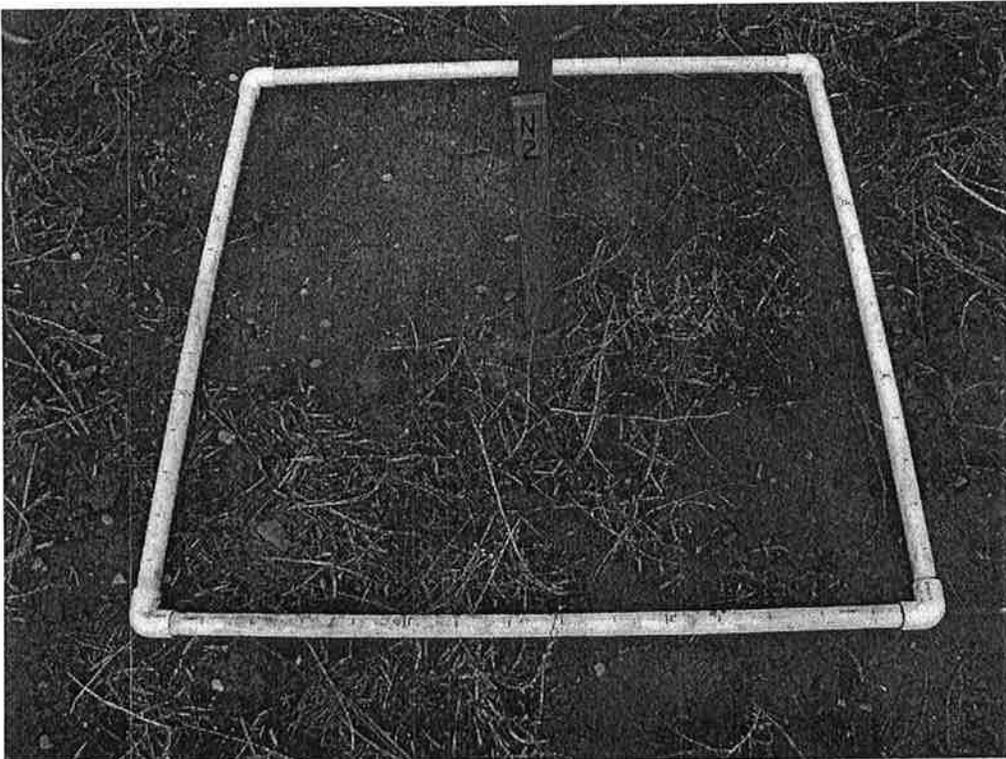
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PHOTOGRAPHS

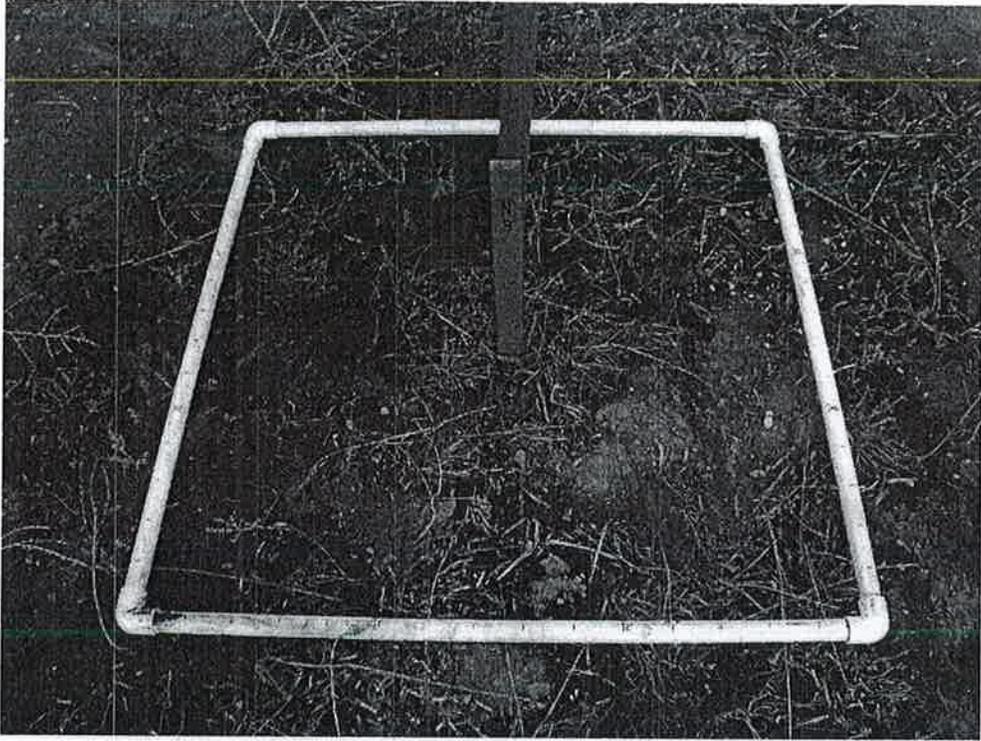


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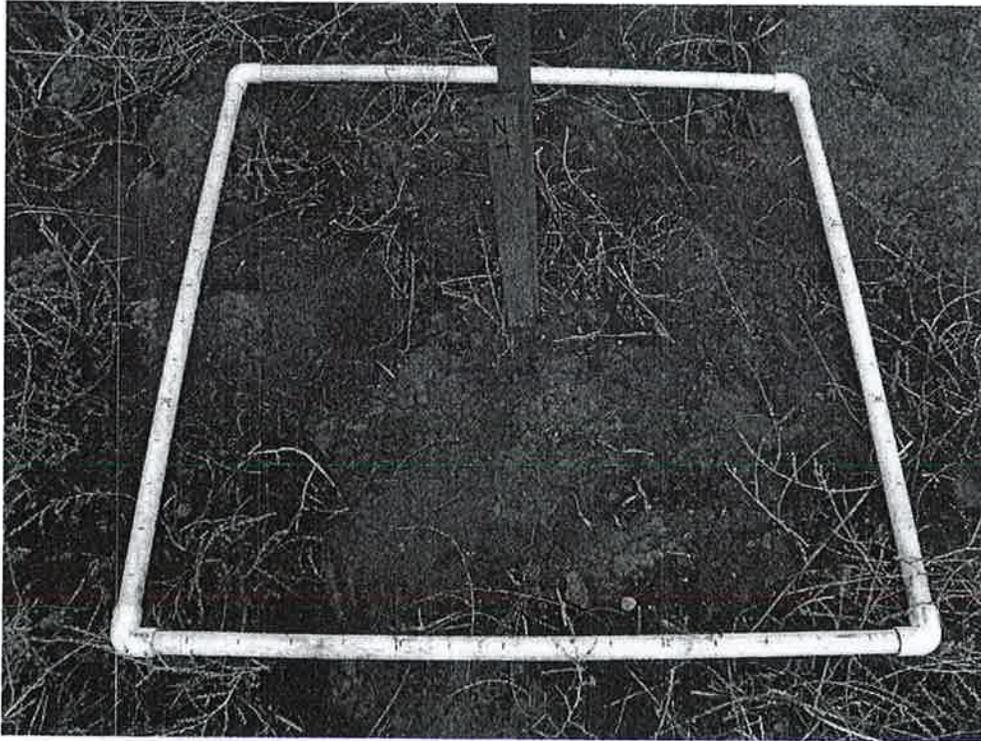


N 2

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N 3

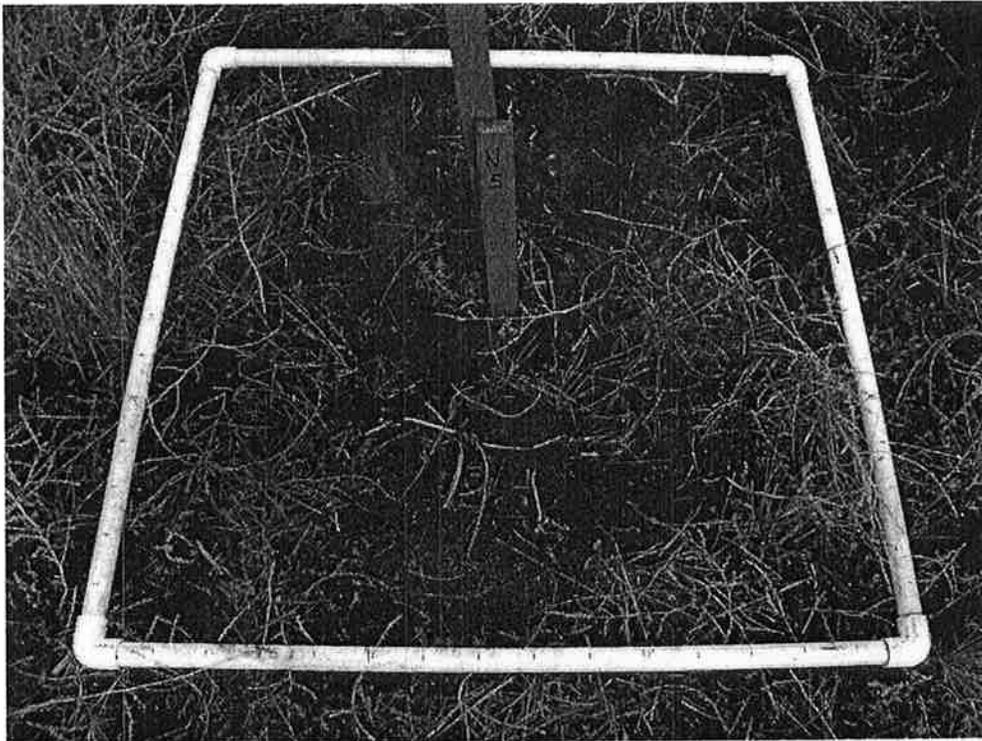


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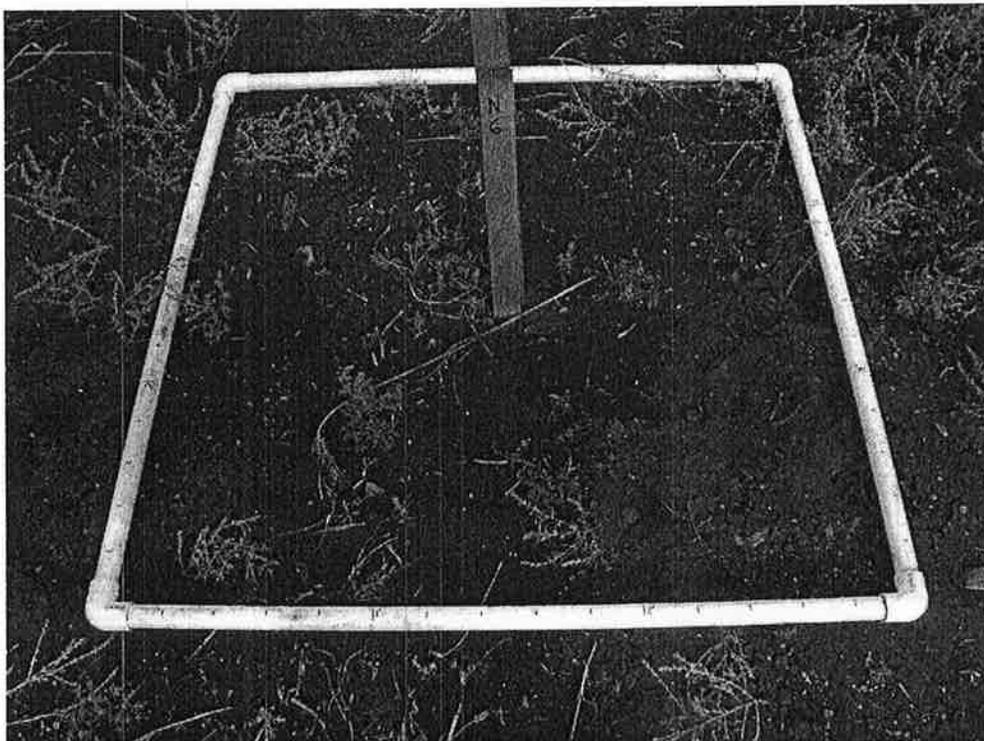
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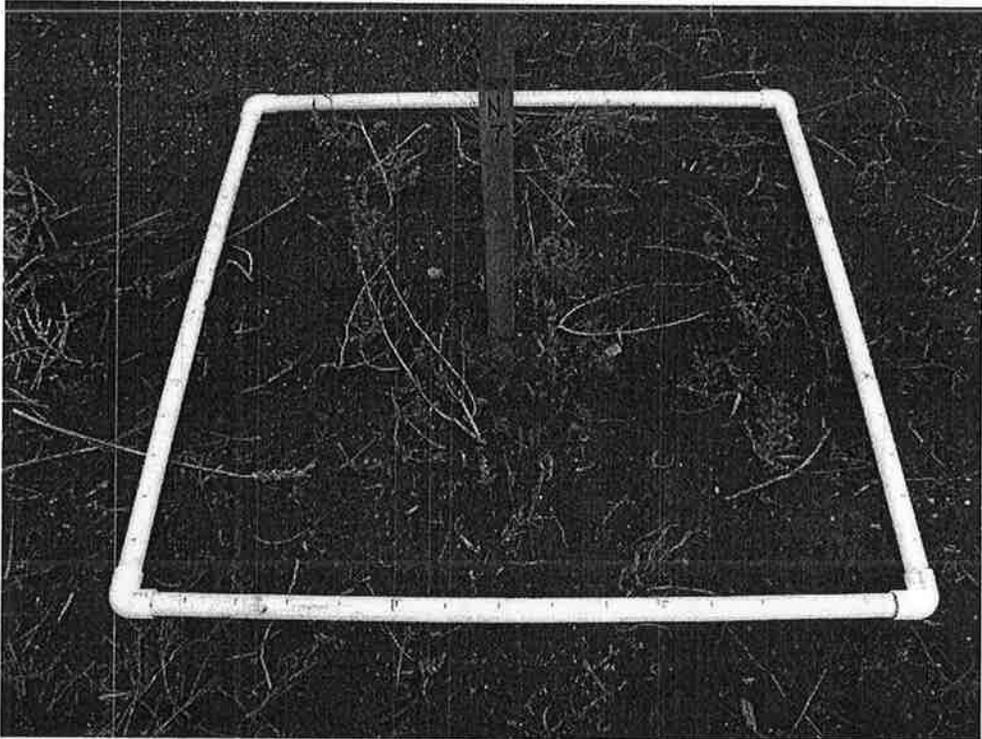


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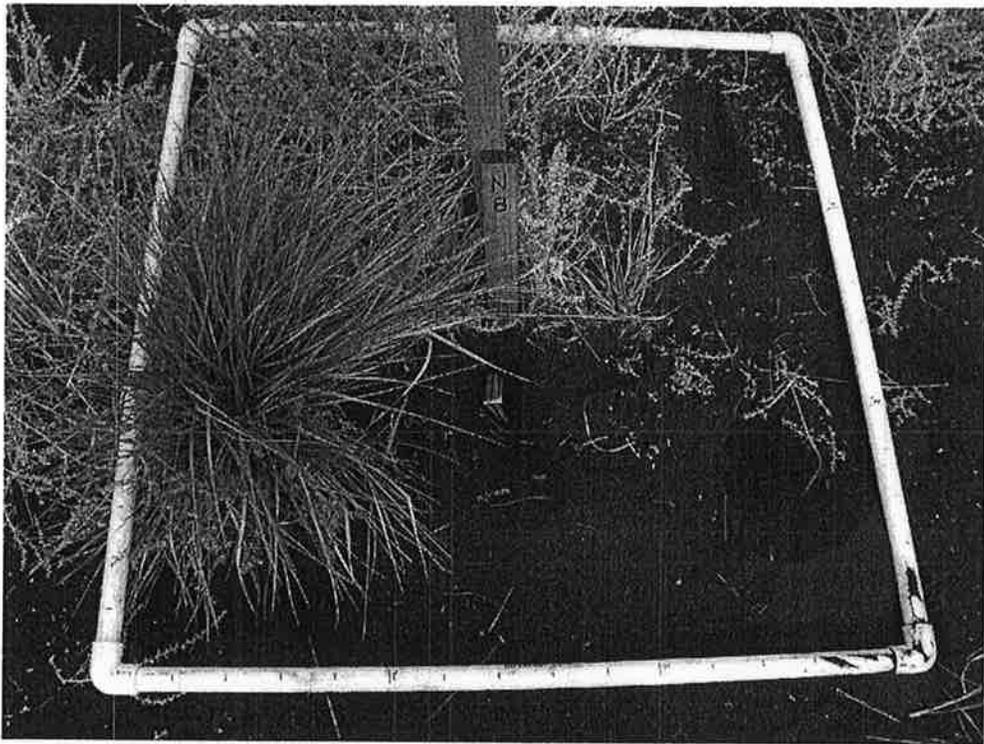
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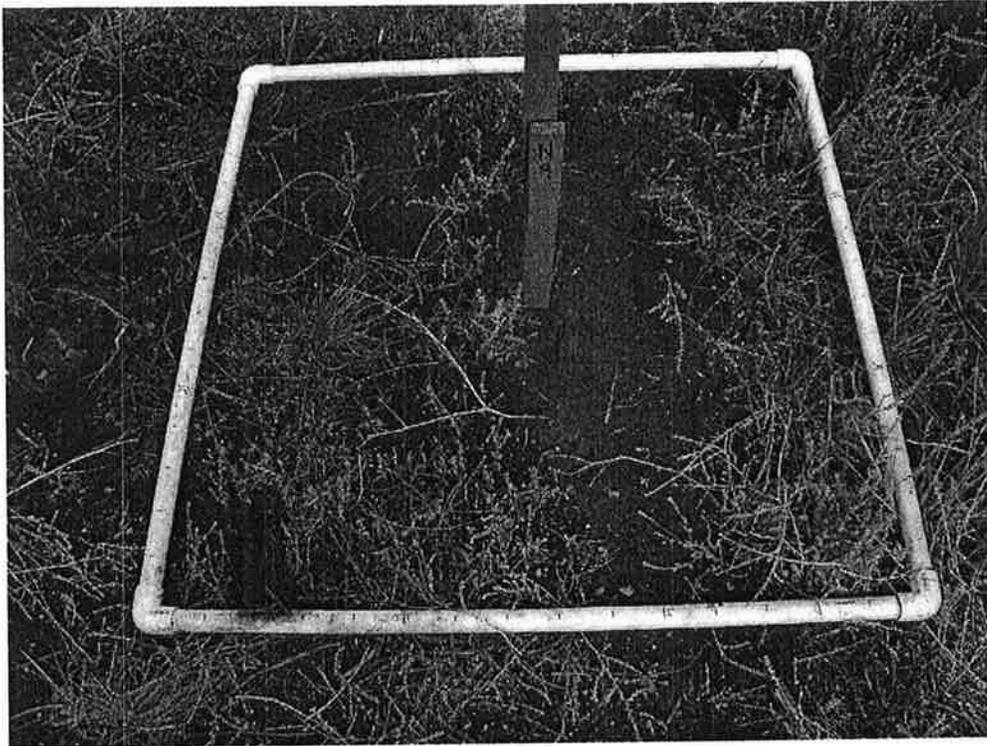


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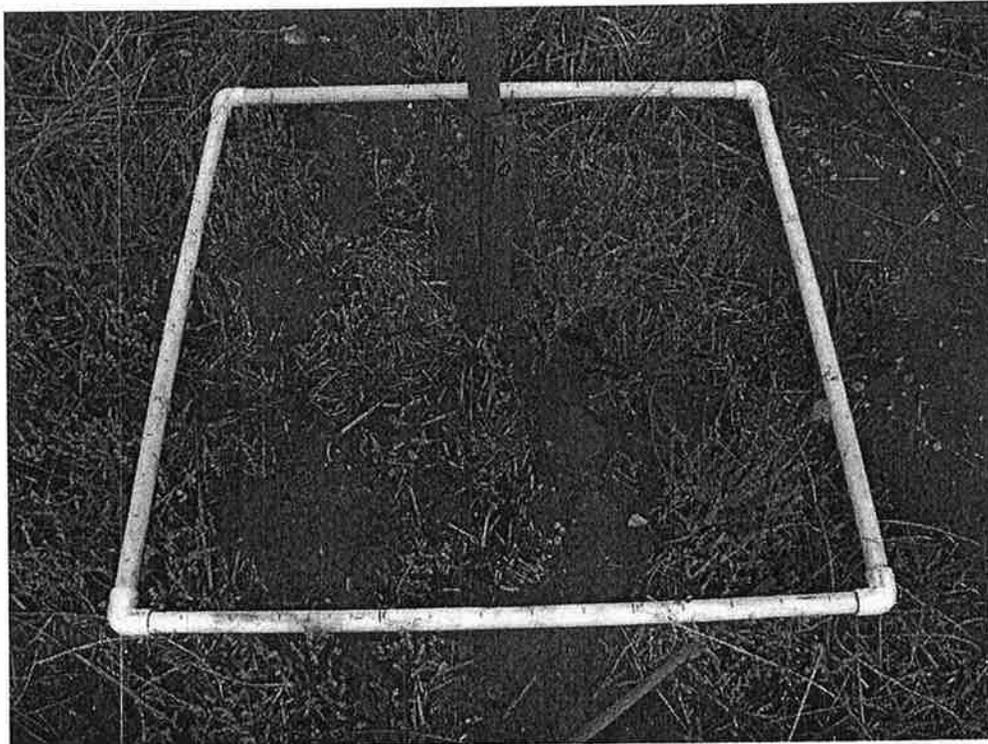
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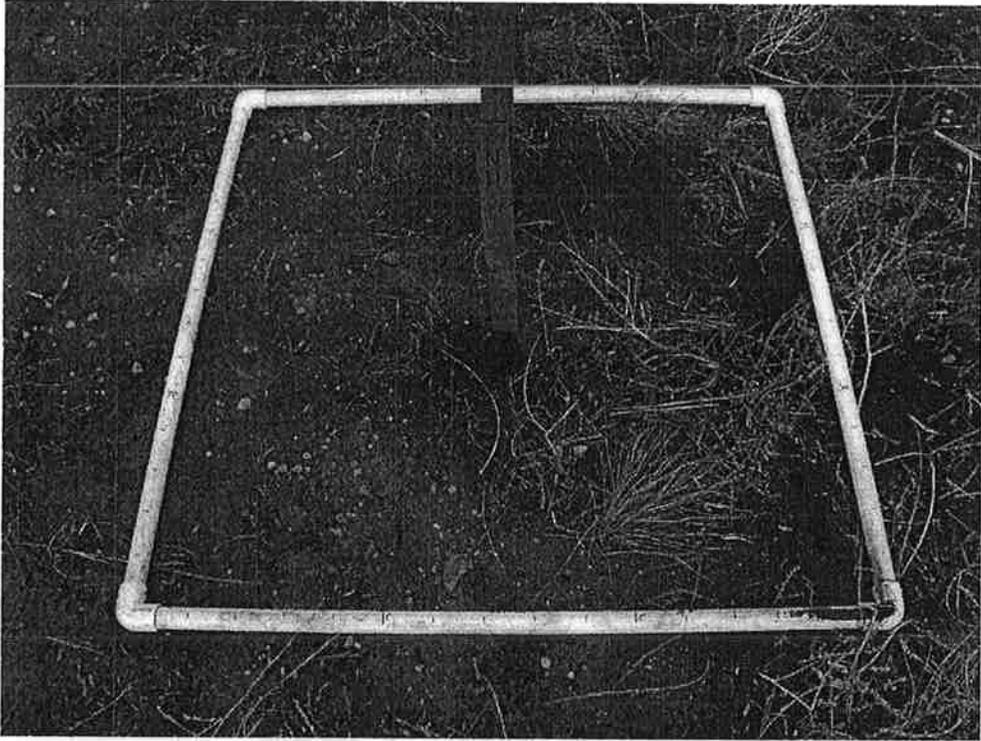
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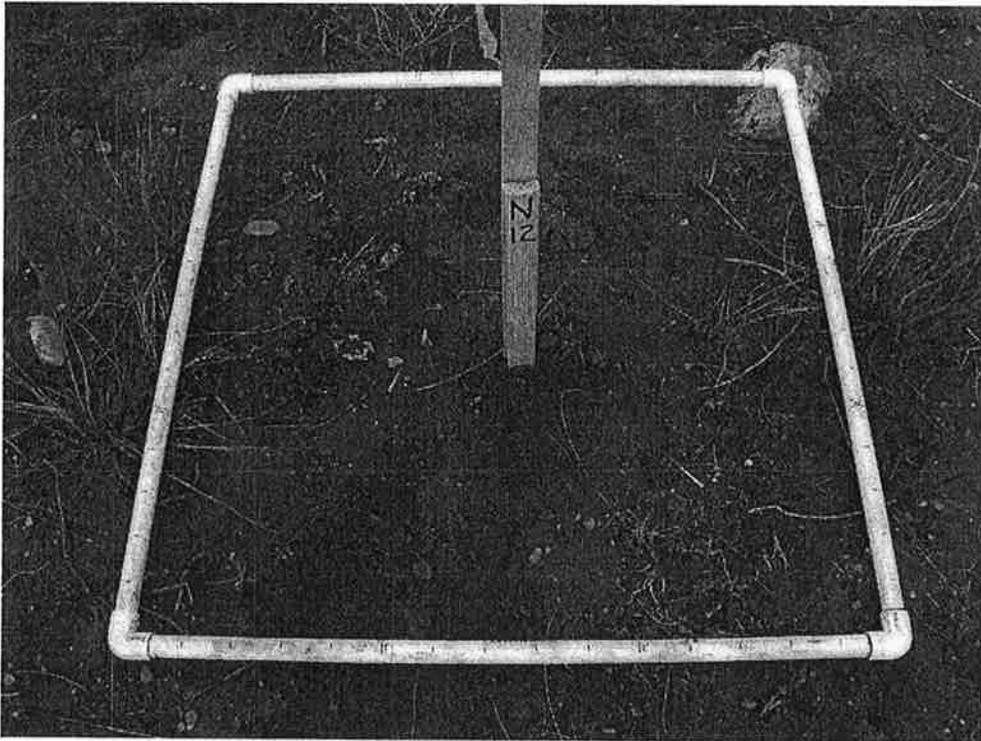
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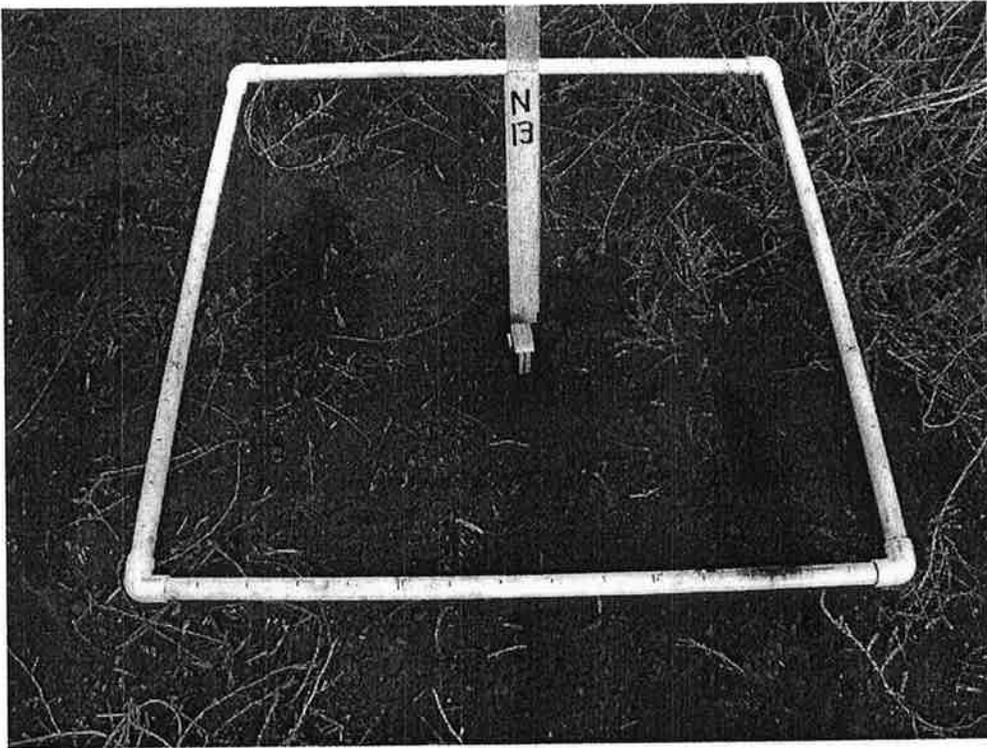


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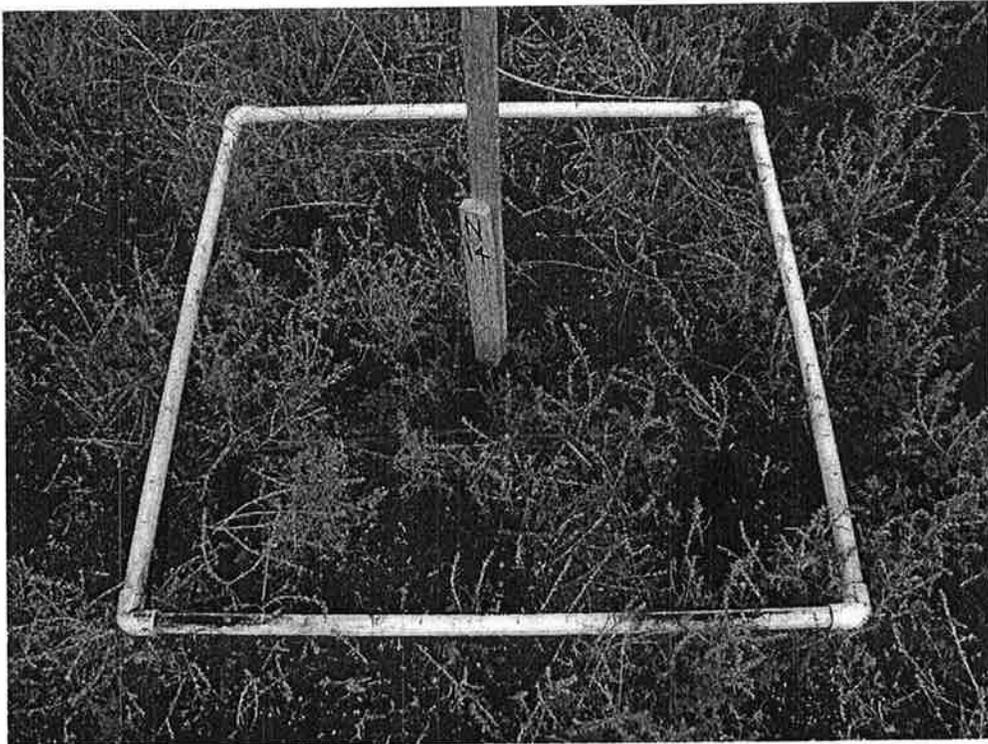
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N 13



N 14

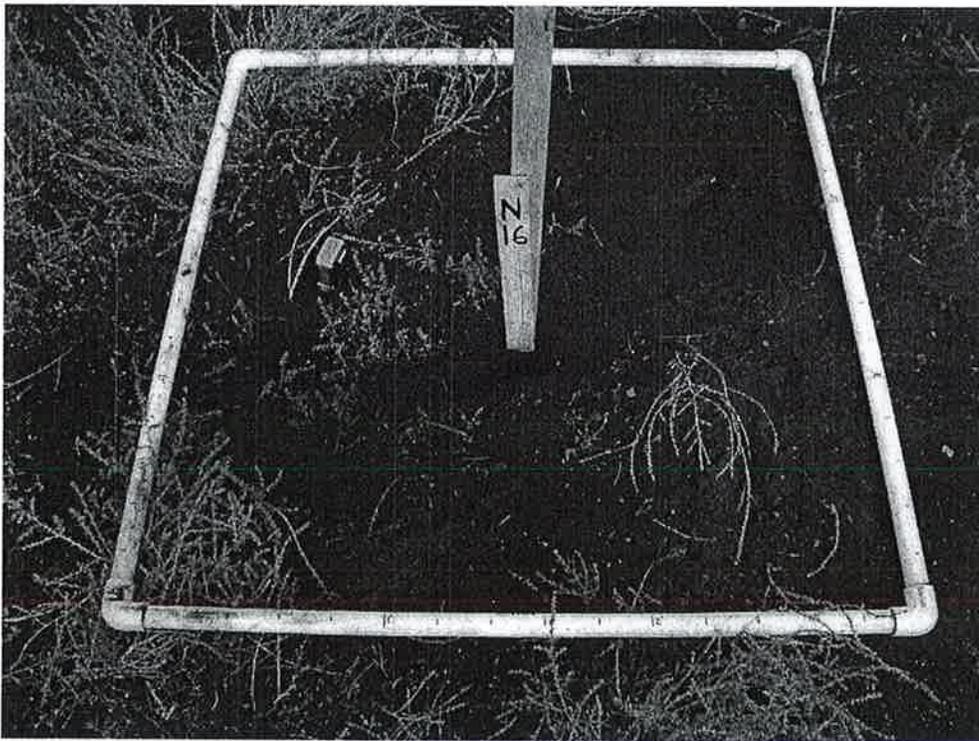
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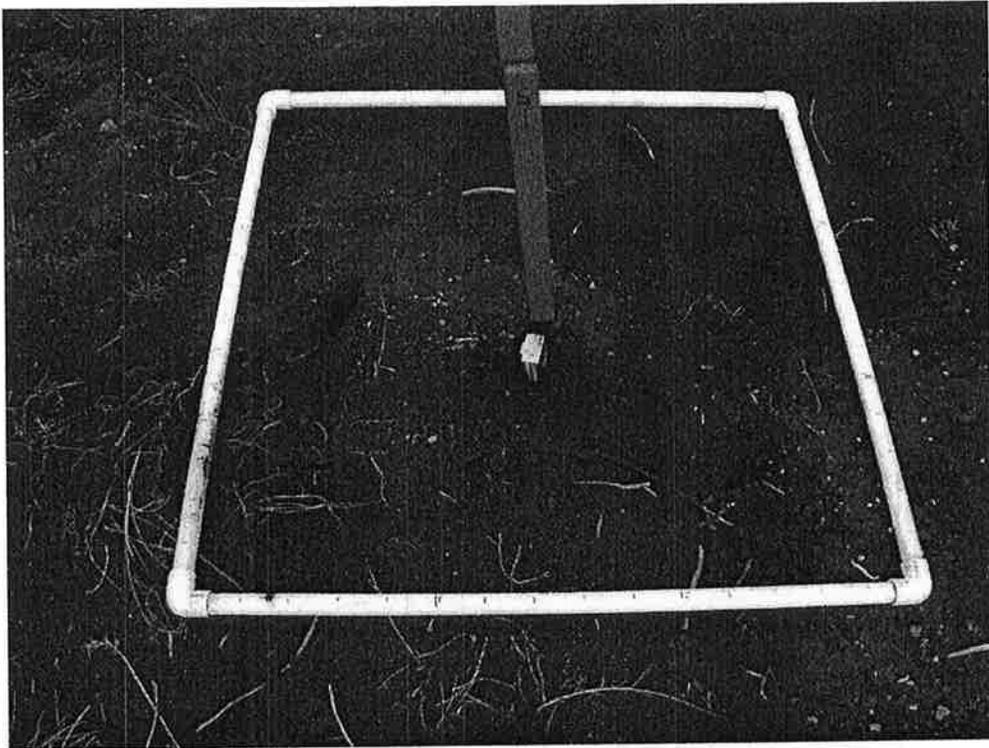


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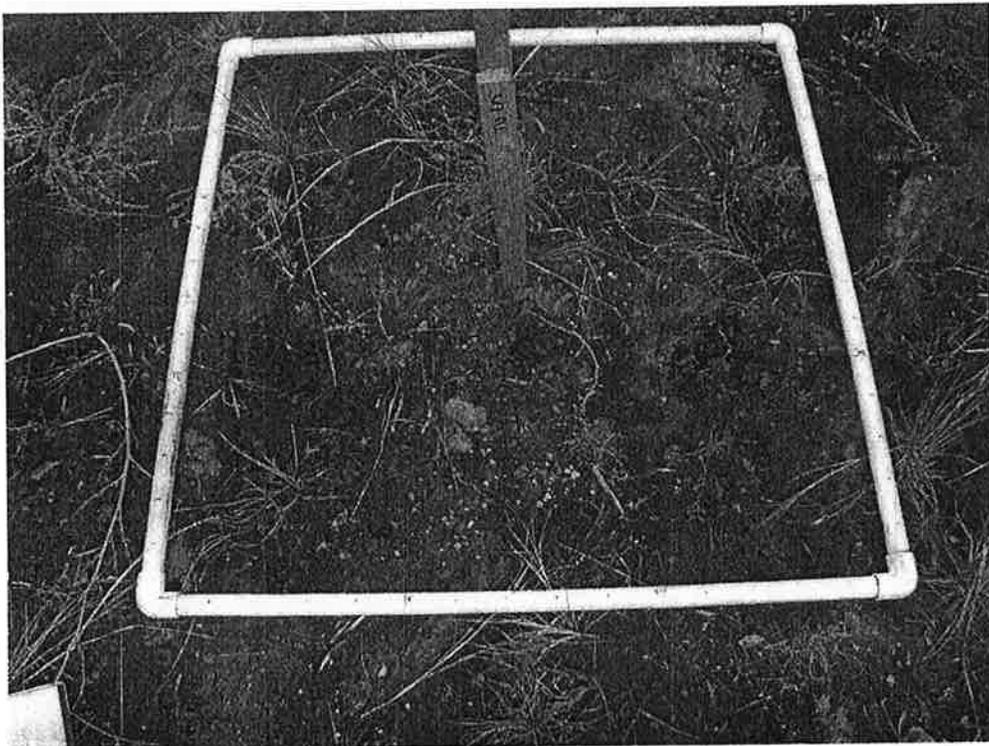
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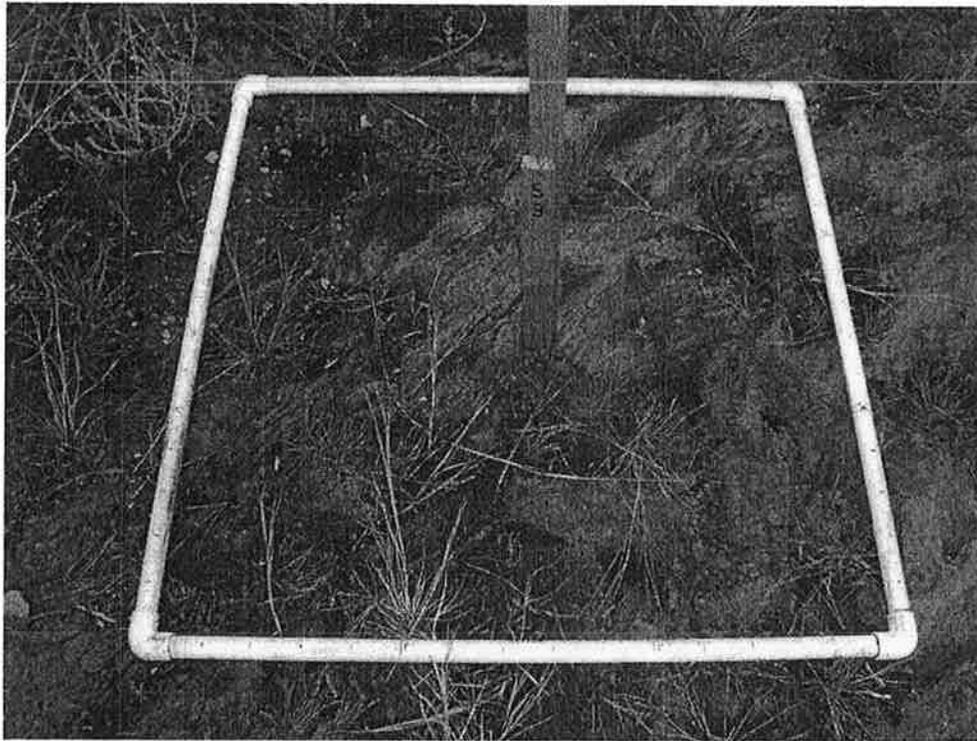


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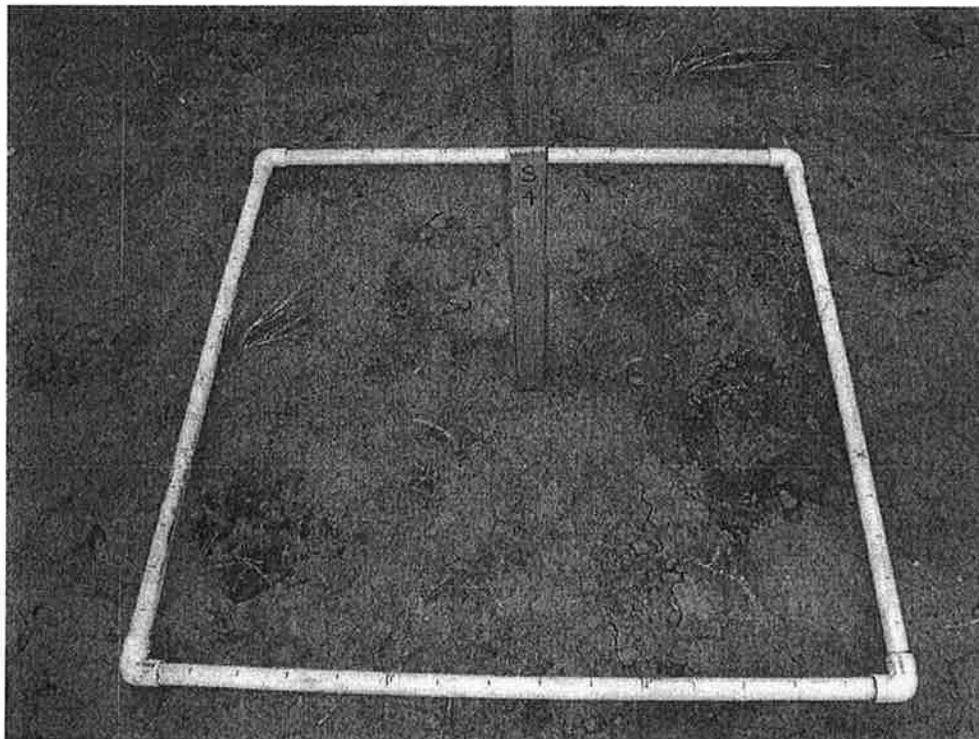
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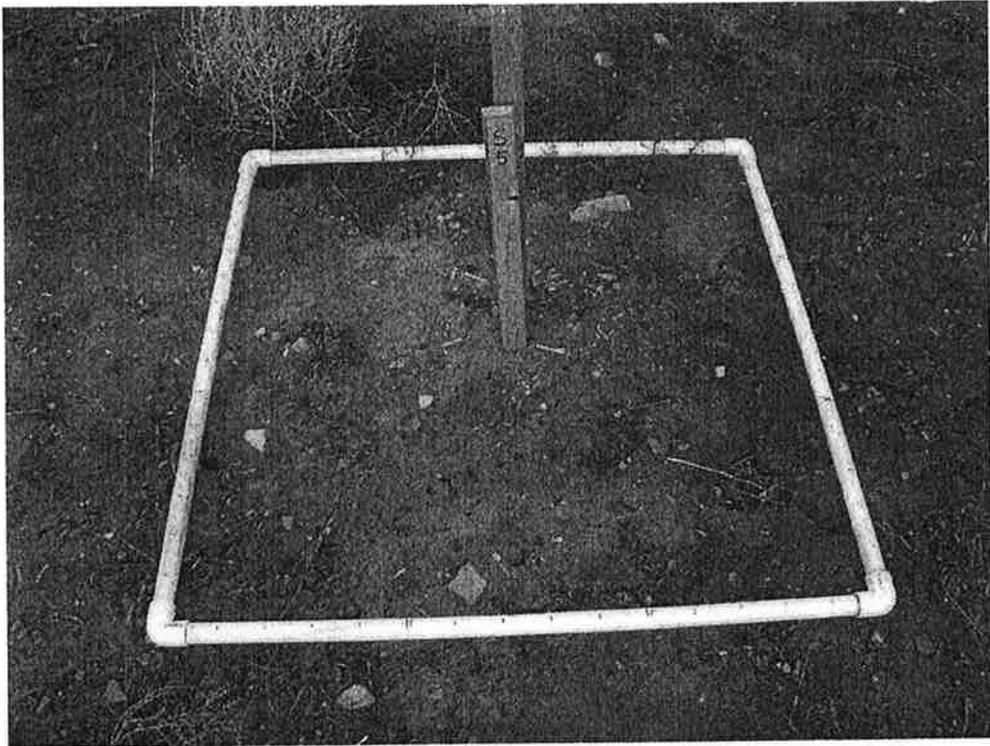


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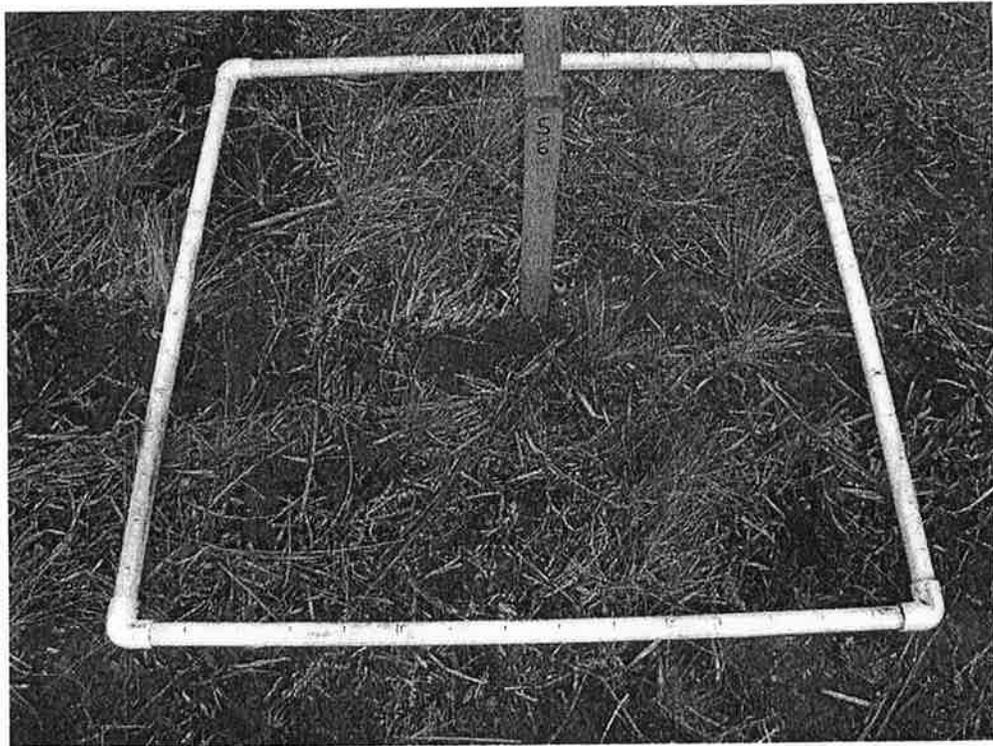
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S 5

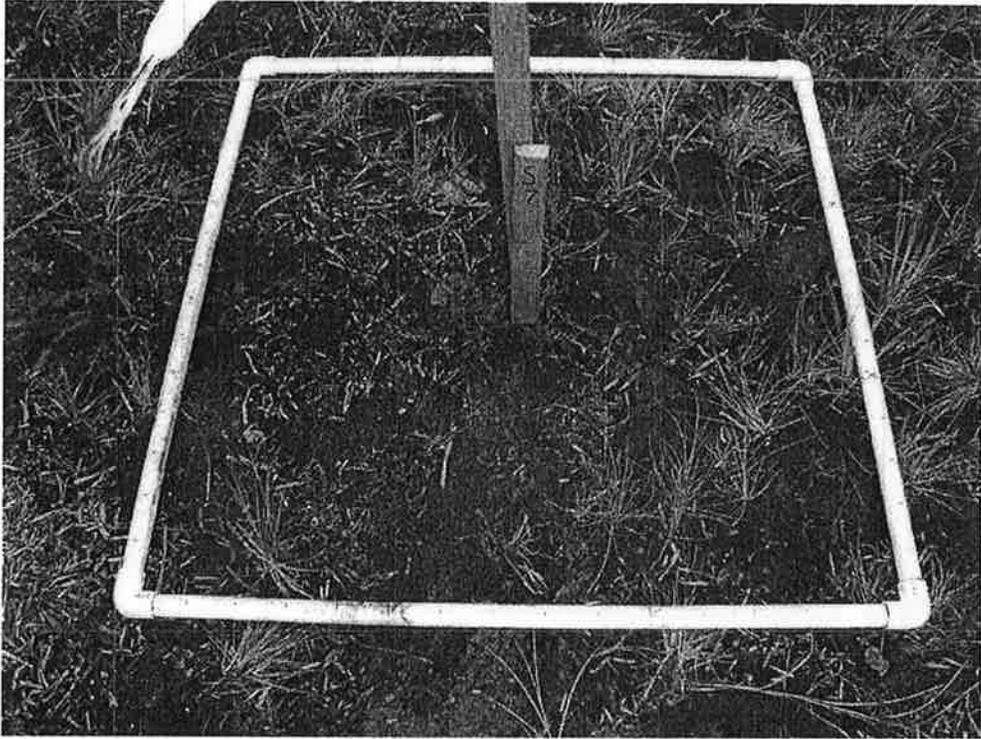


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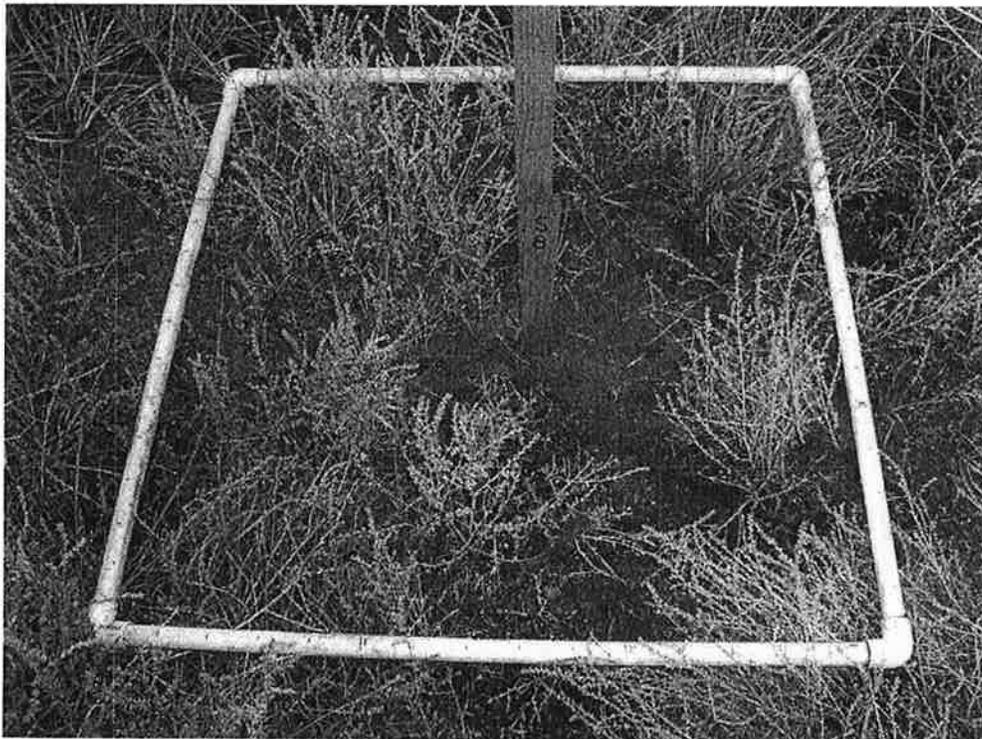
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S7

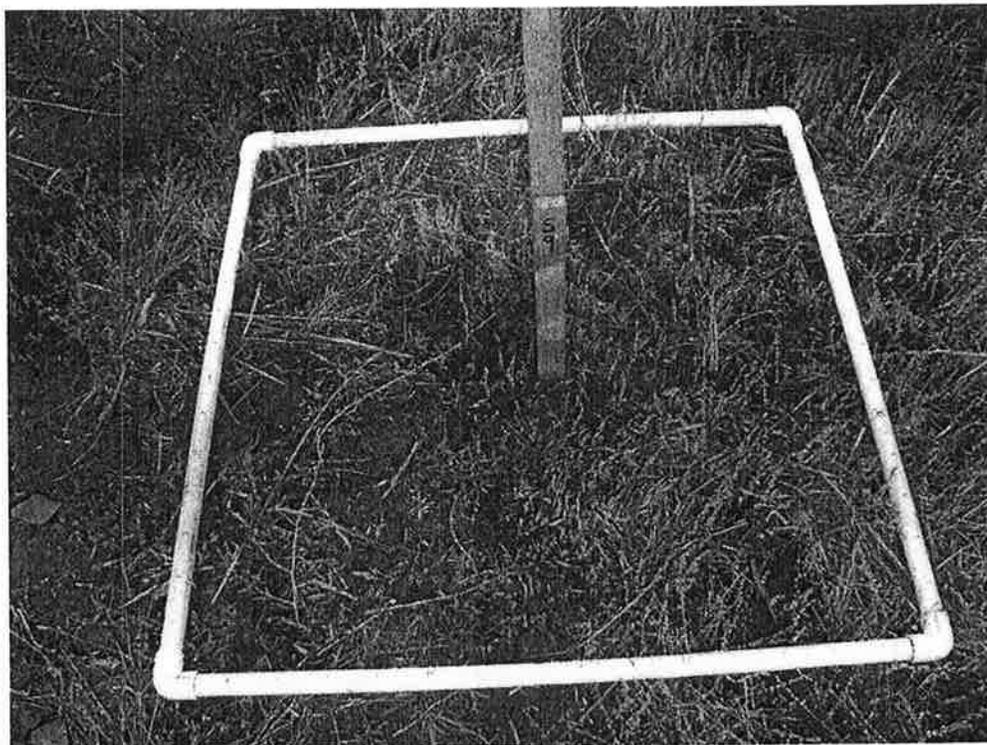


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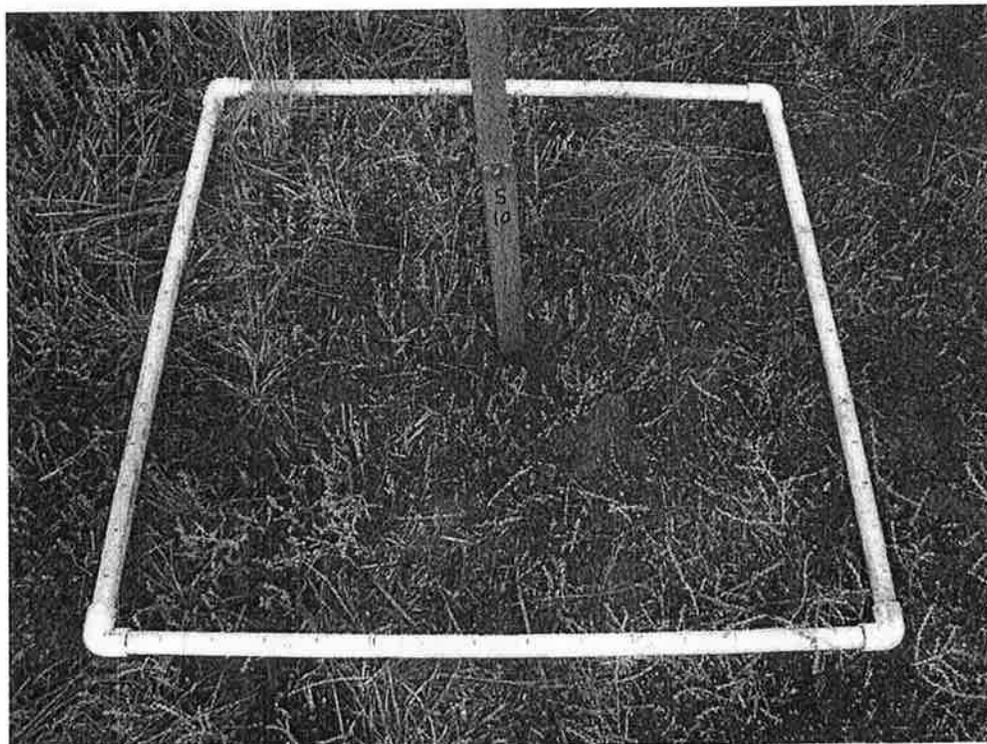
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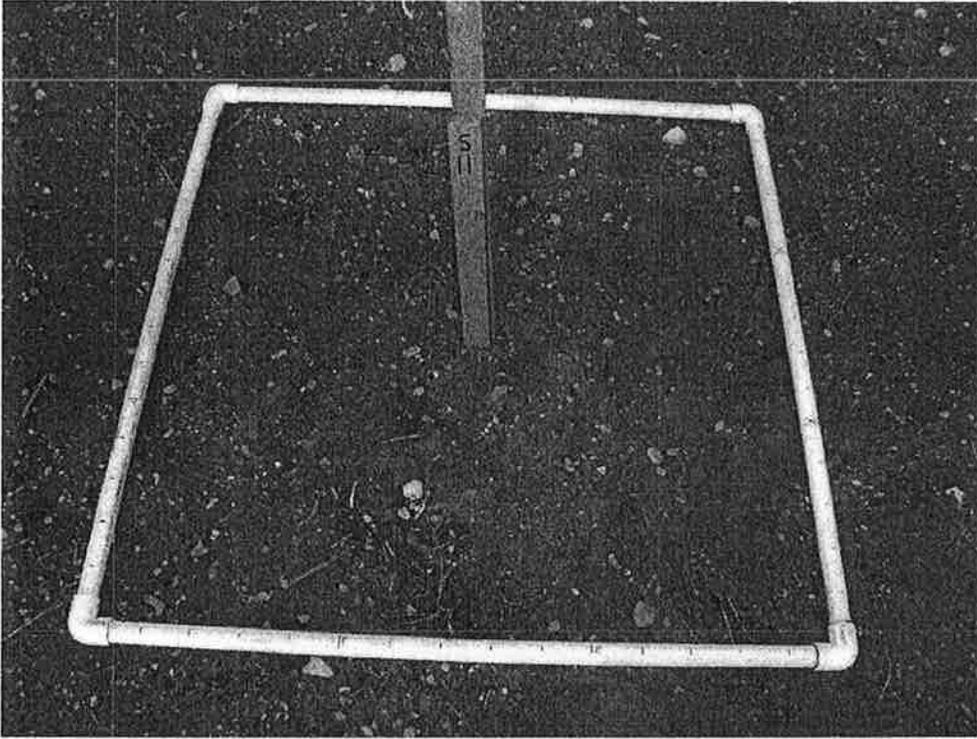


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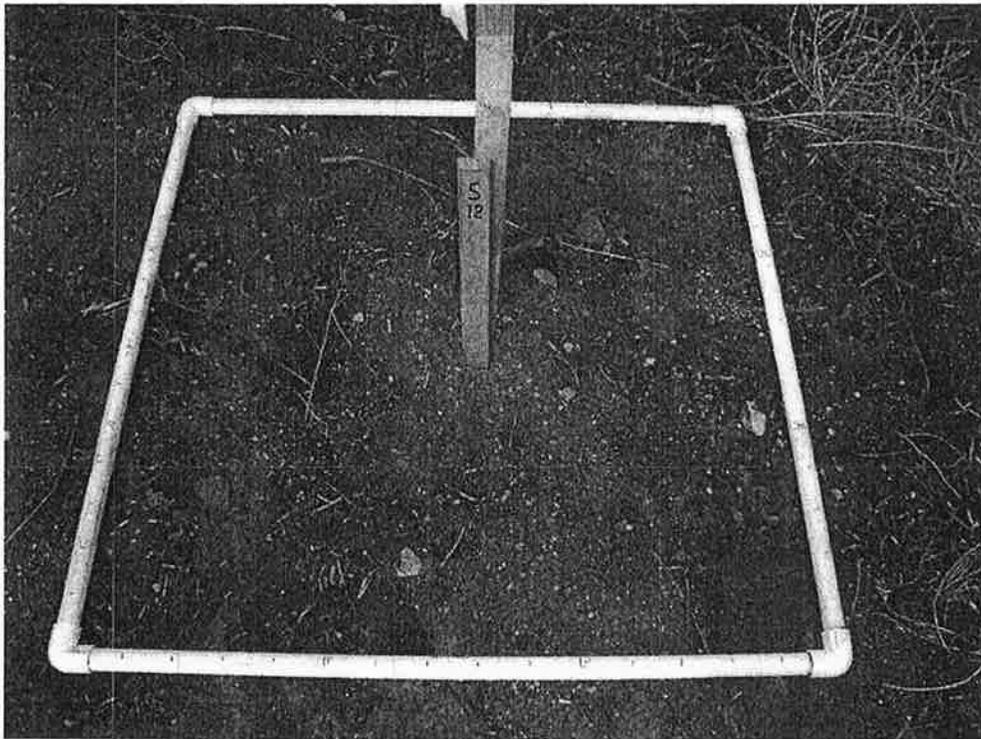


S 10

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S 11

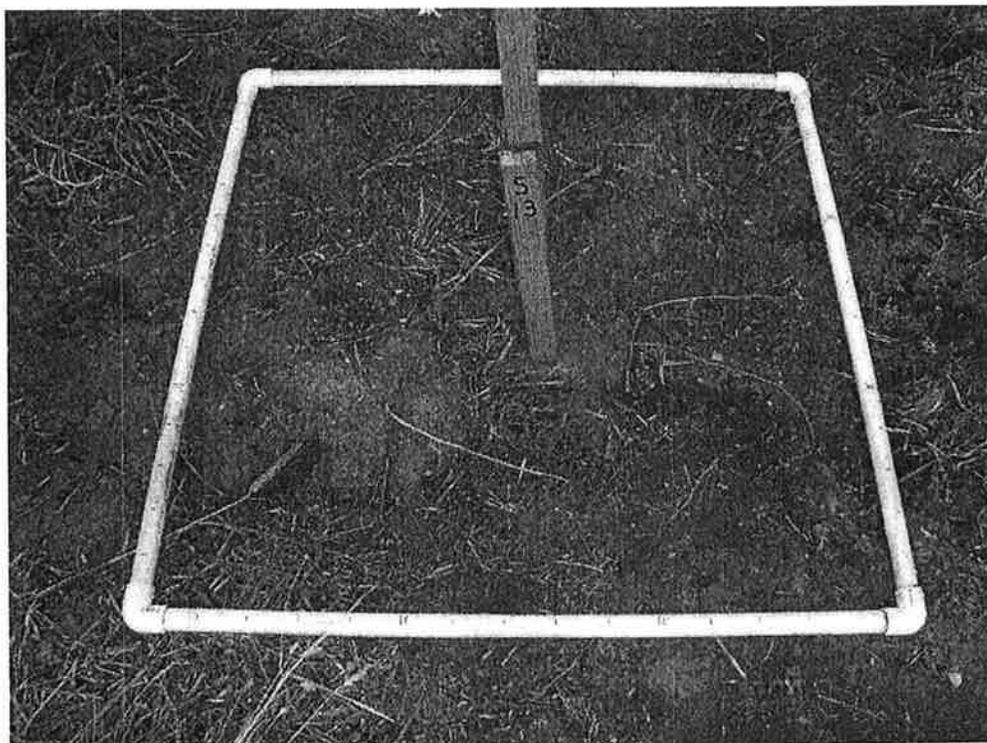


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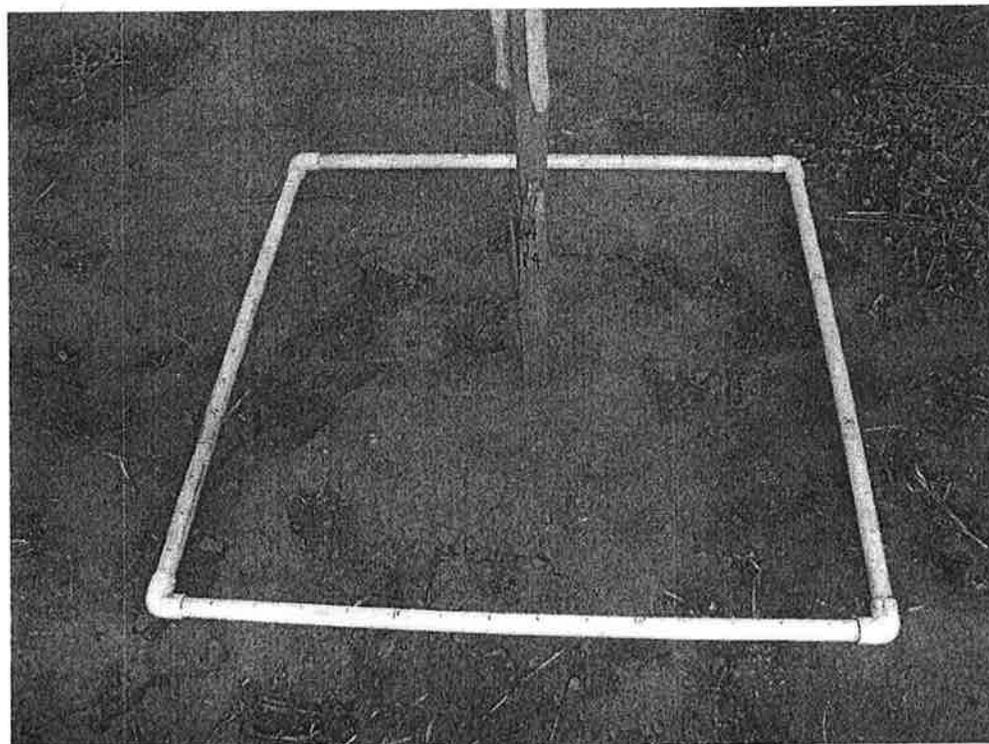
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S 13



S 14

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