County Building/Grading Permits



# COUNTY OF CASS COUNTY, MISSOURI BUILDING CODES DEPARTMENT

102 East Wall Street

Harrisonville, MO 64701

Phone: (816) 380-8134

Fax: (816) 380-8130

#### **CONSTRUCTION PERMIT**

| -  |   | ***   |   |   |  |   |
|--|---|---|---|---|--|---|
| PERMIT NO  |   | Project Contro  |   | <del></del>   | ate Permit Issued:   | 1/19/2005   |
| for inspections call 380-                            | 8134 (K.C.tine)   | ••  |   | Ц   |  |   |
| JOB ADDRESS:   | 24400   | S Harper  |   | Rd  | Post Office:   | Peculiar  |
| 32/45/32   |   |   |   |   |  |   |
| S/T/R  | QTR-QTR SEC   | PARCEL  | IO LOT  | BLOCK   | SUB D  | IVISION   |
| Project Name:  |   |   |   |   |  |   |
| Use Of Building: Te                                  | mp Non Residential S  | ervice  |   |   | Use Co   | de: 410   |
| Applicant ID:  |   |   |   | - Market  |  | Aurificant Codes (2   |
| Applicant Person or Fire                             | <del></del>   | n Company   |   | <u>,</u>  |  | Applicant Code: 2   |
|  | Brown   | 8131 Indiana Ave  |   | Kansas (  |  | 64132<br>ZIP CODE   |
| APPLICAN   |   | ADI   | DRESS   |   | CITY STA   | 'E  |
| Phone: 816-363-553                                   | 90 Fax  |   | Mobile: 816   | -560-7424   | Alternate Phone  | 9:  |
|  |   |   |   |   |  |   |
| OWNE   | ₹   | ADDRES  | ss  | CITY  | STATE ZIP  | PHONE   |
| DESCRIPTION OF W                                     | ORK TO BE PERFOR  | RMED:   |   |   |  |   |
| To install temporary pov                             | ver as per submitted p  | ans and all applicable bu   | ilding codes and c  | ounty ordinances  | S.   |   |
|  |   |   |   |   |  |   |
| 7  |   |   |   |   |  |   |
| WORK INCLUDED IN                                     | SCOPE OF WORK C   | OVERED BY PERMIT  |   | ····  | ·  |   |
| Electrical: Plu                                      | ımbing: Mec   | nanical: Electri  | cal Service: -1   | Gas Piping:   | Other:   |   |
| Type of Building: [Indu                              | strial Cla  | ss of Work Alter  | Occup   | ancy Group:   | -1 Type of C   | onstruction:  |
| Zoning District:                                     | Zoning File !   | lo: Flood   | Plain Map Panel:  |   | Flood Plain Develop  | ment Permit:  |
| Gross Building Area:                                 | 0 Stories   | or Bldg Height:   | No o  | f Dwelling Units:   |  | <del></del>   |
| Receipt No.  | 25012 Fee Amo   | unt \$454.00  | Permit Status A   | ctive   | /aluation of Work:   | \$15,000.00   |
| Date Fee Paid: 1/                                    | 19/2005 Fee Cod   | PRMT  | <b>1</b>  |   | Control No:  | 50109   |
| SPECIAL CONDITION                                    | S:  |   |   |   |  |   |
| not by issuing this perm<br>of this Court's judgemen | it, wave its right to enfo<br>nt and the suspension   | arce its requirement that   | building permits ca<br>appeal in the case   | innot be issued in<br>styled Cass Co  | n the absence of prope<br>unty, Missouri, Plaintif   | the site. The County does<br>er zoning. However, in light<br>f v. Aquila, Inc.,   |
| I, Pete B Brov                                       | rne ,   |   | ,hereby certify   | that I am Build   | er   |   |
| ,and affirm the above st                             | atements as true and o  | оггест.   |   |   |  |   |
| 180 days at any time after expired by limitation and | er work is commenced,<br>a new permit for any a<br>rees to abide by and con<br>nance governing this to<br>isions of any other sta | All work or construction<br>dditional work shall be ob<br>amply with the provisions<br>upe of work whether spect<br>e or local law regulating | allowed by this pe<br>tained prior to work<br>of all Building Cod<br>ified herein or not. | rmit shall be con<br>t or construction<br>les, Health Laws<br>Granting of a p | npleted within two (2) y<br>being resumed.<br>, and the Zoning Orde<br>ermit does not presum | abandonded for a period of<br>rears or this permit shall be<br>r of Cass County, Missouri<br>e to give authority to<br>Cass County Road and |
| FOR THIS PECTIONS C                                  |   |   | PERMISS   | ION FOR ABO   | VE DESCRIBED WO  | RK IS HEREBY GRANTED  |
| 47   |   | tra-1-12  |   | A 1   | <u> </u>   |   |
| ADDI ICANT CION                                      | ATUBE -   |   | /res  | THE ALLES   |  | 1/19/2005   |
| APPLICANT SIGN                                       | MIUKE D   | ATE   | _FOR  | THE CHIEF BU  | JILDING OFFICIAL   | DATE  |



#### COUNTY OF CASS COUNTY, MISSOURI **BUILDING CODES DEPARTMENT**

102 East Wall Street Phone: (816) 380-8134 Harrisonville, MO 64701 Fax: (816) 380-8130

| <b>25013</b><br>134 (K.C.line)                        | Project Control No:<br>Application Date:   | 250110<br>1/14/2005   | Da   | ite Permit Issued:  | 1/19/2005  |
|---|--|---|--|---|--|
| 24400   | 6 Harper   |   | Rd   | Post Office:  | Peculiar   |
|   |  |   |  |   |  |
| QTR-QTR SEC   | PARCEL NO  | LOT E   | SLOCK  | SUB DI  | VISION   |
|   |  |   |  |   |  |
| np Work Enclosure                                     |  |   | -  | Use Co  | de: 512  |
|   |  |   |  |   | Applicant Code: 2  |
| Kissick Construction                                  | T 1  |   |  | <del></del>   | 64132  |
|   | 8131 Indiana Ave   |   | l L  |   | ZIP CODE   |
| <del></del>   |  |   |  | •   |  |
| rax.  |  | 1010000   |  |   |  |
| L   | ADORESS  |   | CITY   | STATE ZIP   | PHONE  |
| 1   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  |   |  |   |  |
|   |  | -licable building co  | des and cor  | unty ordinance  |  |
| y work enclosure as pe                                | r submitted plans and all ap   | Sicable bullding Co.  |  | oral ordinarios   |  |
|   |  |   |  |   |  |
|   | · · · · · · · · · · · · · · · · · · ·  |   |  |   |  |
|   |  | Senaice: -1 G   | as Piping:   | Other:  |  |
|   |  |   |  |   | onstruction: VN  |
|   |  |   |  | <del></del> ' ·'  |  |
|   | · [  |   | elling Units   |   | <u> </u>   |
|   |  | mit Status Active   | ,  | Valuation of Work:  | \$5,000.00   |
| 19/2005 Fee Code                                      | PRMT   |   | •  | Control No:   | 250110   |
| S:  |  |   |  |   |  |
| it, wave its right to enfo<br>it and the suspension ( | rce its requirement that build<br>of that judgment pending app   | ding permits cannot<br>seal in the case styl  | t be issued<br>led Cass Co   | <i>in the absence of prop</i><br>ounty, Missouri, Plainti   | er zoning. nowever, wriigin [  |
| √n _  |  | ,hereby certify that  | Iam Buik   | der   |  |
| •   | orrect.  |   |  |   |  |
| er work is commenced.                                 | All work or construction all   | owed by this permit   | shall be co  | impleted within two (2)   | r abandonded for a period of<br>years or this permit shall be  |
|   | QTR-QTR SEC  QTR-QTR SEC  QTR-QTR SEC  TO WORK Enclosure  TO NAME  OF Fax:  CORK TO BE PERFORM  OF WORK COMMENT  OF WORK COME | Application Date:  24400 S Harper  QTR-QTR SEC PARCEL NO  PARCEL NO  PARCEL NO  REPOWN 8131 Indiana Ave  T NAME ADDRESS  DRK TO BE PERFORMED:  Y work enclosure as per submitted plans and all applications of Stories or Bidg Height:  25013 Fee Amount \$174.00 Per 1972005 Fee Code PRMT  S:  Led despite the fact this site has not been zoned in it, wave its right to enforce its requirement that built and the suspension of that judgment pending apply 104-1443CC, this building permit is being issued with a commenced. All work or construction is not commenced and void if work or construction is not compared to the commenced and work is commenced. All work or construction is not compared to the commenced and work or construction is not compared to the commenced and correct. | Application Date: 1/14/2005  24400 S Harper  QTR-QTR SEC PARCEL NO LOT E  TOWN 8131 Indiana Ave  T NAME ADDRESS  OF Fax: Mobile: 816-560-  RECOPE OF WORK COVERED BY PERMIT  Imbing: Mechanical: Electrical Service: -1 G  Mercial Class of Work New Occupancy  Zoning File No: Flood Plain Map Panel:  O Stories or Bldg Height: No of Dw  25013 Fee Amount \$174.00 Permit Status Active  19/2005 Fee Code PRMT  S:  Led despite the fact this site has not been zoned in a manner consister  if, wave its right to enforce its requirement that building permits cannot  and the suspension of that judgment pending appeal in the case styl  V104-1443CC, this building permit is being issued despite the absence  Vin hereby certify that  atterments as true and correct. | Application Date: 1/14/2005  24400 S Harper Rd  OTR-QTR SEC PARCEL NO LOT BLOCK  TO Work Enclosure    Klassick Construction: Co Inc   Rown   B131 Indiana Ave   Kansas (Inc)     T NAME | Application Date: 1/14/2005  Application Date: 1/14/2005  Rd Post Office:  QTR-QTR SEC PARCEL NO LOT BLOCK SUB DI  Work Enclosure  Use Co    Kissick Construction: Co Inc   In |

PERMISSION FOR ABOVE DESCRIBED WORK IS HEREBY GRANTED

EOR THE CHIEF BUILDING OFFICIAL

1/19/2005 DATE



#### **BUILDING CODES DEPARTMENT**

102 East Wall Street Phone: (816) 380-8134 Harrisonville, MO 64701 Fax: (816) 380-8130

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#### **CONSTRUCTION PERMIT**

|   | 0-8134 (K.C. <b>line</b>   | )   | · 4*"  | cation Date:   | 1/7/2005   |  |   |                                |   |
|---|--|---|--|--|--|--|---|--------------------------------|---|
| JOB ADDRESS   | : 2  | 4400 3  | Harp   | per  |  | Rd   | Post O  | ffice:                         | Peculiar  |
| 2/45/32   |  |   | ═╣┝═╧  | ŢĮ.  |  |  | 4   |                                |   |
| S/T/R   | QTR-QTF  | RSEC  | <br>   | ARCEL NO   | LOT  | RFOCK I  |   | SUB DIV                        | rision  |
| Project Name:   |  | <del></del>   |  |  |  |  |   |                                |   |
| · .   |  |   |  |  |  |  |   |                                |   |
| se Of Building:   | Temp Non Resid   | ential Servi  | <del> </del>                                       | *  |  |  |   | Use Cod                        | e: <u> 410                                    </u>                    |
| pp@cant ID:   |  |   |  |  |  |  |   |                                | _   |
| pplicant Person or F  | irm AZCO inte  | grated Cor  | estruction   | , · <b>15.</b>   |  |  |   |                                | Applicant Code: 02  |
| >htp  | Buechke  |   | PO Box 56  | 7  |  | Appleto  | П   | WI                             | 54912-0687  |
|   | ANT NAME   |   |  | ADDRESS  | ,  |  | CITY  | STAT                           |   |
| Phone:  800 545-8   | 462  | Fax:  |  | Mot  | bile: 920 4  | 50-3158  | Alterna   | te Phone:                      |   |
|   |  |   |  |  |  |  |   |                                |   |
| o <b>set u</b> p temporary ;  | oower at job site  | as per all s  | pplicable bui                                      | iding codes and d  | county ordina  | nces.  |   |                                |   |
| ORK INCLUDED I  | N SCOPE OF V   | ORK CO  | ÆRED BY F  | PERMIT   |  |  |   |                                |   |
| VORK INCLUDED I   | N SCOPE OF VI  | /ORK COV  | /ERED BY F   | PERMIT  Electrical Serv  | /ica: [-1]   | Gas Piping:  |   | ·                              |   |
| VORK INCLUDED I   | N SCOPE OF VI  | ORK COV   | /ERED BY Finical:                                  | PERMIT  Blectrical Services  | vice: [-1]   |  | T T   | ype of Cor                     | nstruction:   |
| WORK INCLUDED I   | N SCOPE OF VI  | VORK COV  | VERED BY F   | PERMIT  Electrical Service  Flood Plain Ma   | vice: [-1] Occupes ap Panel:   | Gas Piping:<br>ncy Group:  | Flood Plain   | ype of Cor                     | nstruction:   |
| WORK INCLUDED I   | N SCOPE OF VI  | VORK COV  | /ERED BY Finical:                                  | PERMIT  Electrical Service  Flood Plain Ma   | vice: [-1] Occupes ap Panel:   | Gas Piping:  | Flood Plain   | ype of Cor                     |   |
| WORK INCLUDED I   | N SCOPE OF VI<br>Plumbing:   | VORK COV  | /ERED BY F<br>nices:<br>of Work N                  | PERMIT  Electrical Service  Flood Plain Ma   | of Coupe   | Gas Piping:<br>ncy Group:<br>Dwelling Units  | Flood Plain   | уре of Cor<br>Developm         |   |
| FORK INCLUDED I   | N SCOPE OF VI  | ORK COV Mechas Class ing File No: Stories or  | /ERED BY F<br>nices:<br>of Work N                  | PERMIT  Electrical Service  Flood Plain Ma   | of Coupe   | Gas Piping:<br>ncy Group:<br>Dwelling Units  | Flood Plain   | ype of Cor<br>Developm<br>oric | nent Permit:  |
| VORK INCLUDED II sectrical: -1  Type of Building: Coloring District: Fross Building Area: Receipt No. Date Fee Paid:          | N SCOPE OF VIPAL PROMISE STATE OF VIPAL PROMI | /ORK CON<br>Mechan<br>Class<br>ing File No:<br>Stories or<br>Fee Amoun                              | /ERED BY F nicel: of Work N Bldg Height:           | PERMIT  Electrical Service  Flood Plain Ma   | of Coupe   | Gas Piping:<br>ncy Group:<br>Dwelling Units  | Flood Plain  Flood Plain  Co  Valuation of We   | ype of Cor<br>Developm<br>oric | nent Permit: \$5,000.0  |
| Type of Building: Coning District:  Zoning District:  Receipt No.  Date Fee Paid:  SPECIAL CONDITION  This permit is being is | N SCOPE OF VI Plumbing:  primercial  Zoni  25015  1/24/2005  ONS:  secued despite the rmit, wave its rightent and the sue  | Mechanic Classing File No: Stories or Fee Amount Fee Code e fact this enforcement to enforcement of | /ERED BY F nical: of Work N Bidg Height t \$8 PRMT | Electrical Service  Flood Plain Ma  0  E2.00 Permit  neen zoned in a moment that building appeal | of Cocupain No of Coc | Gas Piping: ncy Group: Dwelling Units tive  tent with the s not be issued tyled Cass C | Flood Plain Flood Plain Control No: activities anticip In the absence ounty, Missouri | ype of Cor Developm oric 255   | \$5,000.0<br>0108<br>De site. The County de<br>zoning. However, in it |

NOTICE: This permit becomes null and void if work or construction is not commenced within 180 days or if work is suspended or abandonded for a period of 180 days at any time after work is commenced. All work or construction allowed by this permit shall be completed within two (2) years or this permit shall be expired by limitation and a new permit for any additional work shall be obtained prior to work or construction being resumed.

The Applicant hereby agrees to abide by and comply with the provisions of all Building Codes, Health Laws, and the Zoning Order of Cass County, Miseouri and any other law or ordinance governing this type of work whether specified herein or not. Granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction. Contact Case County Road and Bridge at 830-8360 about driveway approach requirements.

FOR INSPECTIONS CALL 380,8134

APPLICANT SIGNATURE

DATE

PERMISSION FOR ABOVE DESCRIBED WORK IS HEREBY GRANTED

FOR THE CHIEF BUILDING OFFICIAL

1/24/2005 DATE



#### COUNTY OF CASS COUNTY, MISSOURI **BUILDING CODES DEPARTMENT**

102 East Wall Street

Harrisonville, MO 64701

Phone: (816) 380-8134

Fax: (816) 380-8130

#### **CONSTRUCTION PERMIT**

| - CONT   | ,.<br>  |   |                       |   |                                  |                     |                            |                                  |                          | ·   |
|--|---|---|-----------------------|---|----------------------------------|---------------------|----------------------------|----------------------------------|--------------------------|---|
| PERMIT No for inspections call 3                                       |   | 25020                                   |                       | Project Control No:<br>Application Date:                                  | 24121<br>12/1                    | 7/04                |                            | Date Permit Is                   | sued: [_                 | 2/1/05  |
| OI II SPECIOLIS CON S  | או ובנדם אסו                                    | · ····································  |                       |   | -                                |                     |                            |                                  |                          |   |
| JOB ADDRES   | s:  | 24400                                   | S                     | Harper  |                                  |                     | Rd                         | Post (                           | Office:                  | Peculiar  |
| 32/45/32   |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
| S/T/R  | QTR   | QTR SEC                                 |                       | PARCEL NO   |                                  | LOT                 | BLOCK                      |                                  | SUB DIV                  | ISION   |
| Project Name:  |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
| Use Of Building:   | Equipment                                       | Building                                |                       |   |                                  |                     |                            |                                  | Use Cod                  | e; 473  |
| Applicant ID:  |   |   |                       |   |                                  |                     |                            | _                                |                          |   |
| Applicant Person or  | Firm Aquil                                      | a, Inc.                                 |                       |   |                                  |                     |                            |                                  |                          | Applicant Code:   02  |
| Doug   | Lukenbill                                       |   |                       | 00 East 350 Highway   |                                  |                     | Kansa                      | s City                           | MO                       | 64138<br>239 000e   |
|  | ANT NAME  |   |                       | ADDRESS   |                                  |                     |                            | _CTTY                            | STATI                    | <u> </u>  |
| Phone: 816-737   | -7547   | Fac                                     | <u> </u>              |   | lobile:                          | 816-800             | 5-1230                     | Alter                            | ate Phone                | <u> </u>  |
|  |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
| OWI  | NER   |   |                       | ADDRESS   |                                  |                     | απ                         | STATE                            | ZIP                      | PHONE   |
|  |   |   |                       |   |                                  |                     |                            | -                                |                          |   |
| DESCRIPTION OF   |   |   |                       | er Substation as per e  |                                  | d aleas a           |                            | Brable by didner                 | ~~!~                     | Courses configurates  |
| IO II DOMINI & COMBONI   | eriousure su                                    | CUCINE OF 201                           | au narp               | er autsatuun es bei e   |                                  | n benz s            | ura an ethh                | wcapie outking                   |                          | COURTY OF LINEAR TORSE.   |
|  |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
|  |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
| RK INCLUDED I  | N SCOPE OF                                      | WORK COVE                               | RED BY                | PERMIT  |                                  |                     |                            |                                  |                          |   |
| Electrical: [-1  | Plumbing:                                       | Med                                     | hanical:              | -1 Bectrical S  | ervice:                          | 1 (                 | Gas Piping                 | i: Othe                          | r:                       |   |
| Type of Building: [  | industrial                                      | Ca                                      | ss of Wo              | xk New  |                                  | )ocupano            | y Group:                   | נע                               | Type of Co               | nstruction: VN  |
| Zoning District: [   |   | Zoning File                             | No: 🗌                 | Flood Plain   | Map Pa                           | nei: [              |                            | Flood Plai                       | n Developi               | ment Permit:  |
| Bross Building Area:   |   | 0 Stories                               | or Bldg               | Height:   |                                  | No of D             | welling Un                 | its:                             |                          |   |
| Receipt No.  | 25020   | Fee Amo                                 | unt [                 | \$1,112.00 Perm   | nit Statu                        | s Adiv              | ·e                         | Valuation of                     | Work:                    | \$129,221.00  |
| Date Fee Paid:   | 2/ 1/05   | Fee Cod                                 | . 2                   | SHT.  |                                  |                     |                            | Cantrol No:                      | 24                       | 11219   |
| SPECIAL CONDITIO   | MS:   |   |                       |   |                                  |                     |                            |                                  | <b>L</b> -               |   |
| does not by lesuing<br>However, in light of                            | this permit,<br>f this Court's                  | wave its righ<br>judgement a            | t to enfo<br>nd the s | orce its requirement t  | rat buik<br>gment ı              | ing pem<br>ending a | nits cannol<br>openi in ti | t be issued in the case styled ( | ne absence<br>2005 Count | or the site. The County<br>of proper zoning.<br>y, Missouri, Plaintiff v. |
| ī, Doug  | Lukenbiil                                       | ,                                       |                       | ,   | hereby                           | certify the         | at I am Bu                 | ilder                            |                          |   |
| and affirm the abo   | ve statemen                                     | ts as true and                          | 1 correct             |   |                                  |                     |                            |                                  |                          |   |
|  |   |   |                       |   |                                  |                     |                            |                                  |                          |   |
| MATTER This second   | <b>.</b>  | فراهده المسمالة                         |                       |   |                                  |                     | 400 4                      | 10                               |                          |   |
| if 180 days at any ti  | ime after wo                                    | ark is comme                            | nced. Al              | construction is not of<br>I work or construction<br>y additional work sha | allowe                           | d by this           | permit sh                  | all be complete                  | d within to              | or abendonded for a per<br>to (2) years or this perm                      |
| The Applicant hereby<br>dissourl and any oth<br>authority to violate o | y agrees to a<br>ner taw or or<br>or cancel the | sbide by and dinance gove provisions of | comply the            | with the provisions of  | all Bulk<br>er speci<br>egulatik | ing Code            | s, Health<br>in or not.    | Laws, and the Granting of a s    | Zoning Ord               | ier of Cass County,<br>s not presume to give                              |
| INSPECTIONS  |   | •                                       | ,                     |   |                                  | MISSION             | FOR ABO                    | VE DESCRIBED                     | WORK IS                  | HEREBY GRANTED  |
| Vouslas  | Lohan   | bill 2                                  | 1.10                  | · ·   | N                                | \ich                | Q.P                        | ضمنة                             | JL .                     |   |
| APPLICANT S  | GNATURE   |   | NTE                   | <del>-</del>  |                                  | FOR TH              | E CHUEF!                   | LULUZING OFFI                    | CIAL                     | DATE  |

FOR THE CHIEF BUILDING OFFICIAL



#### COUNTY OF CASS COUNTY, MISSOURI **BUILDING CODES DEPARTMENT**

102 East Wall Street

Harrisonville, MO 64701

Phone: (816) 380-8134

Fax: (816) 380-8130

#### **CONSTRUCTION PERMIT**

| PERMIT NO   | <u> </u>   | 25021  |   | Project Conti  | rol No: 241  | 220                                     |  | 7 12   | ite Permit Iss  | und: [                                |                                      | 2/1/05  |
|---|--|--|---|--|--|---|--|--|---|---------------------------------------|--------------------------------------|---|
| for inspections call 3  |  |  |   | Application (  | Date: 1  | 2/17/0                                  | M  |  |   | ے ،حت                                 | ·                                    | 4 4 4 4   |
| 30B ADDRESS   | S:   | 8901   | E   | 203rd  |  |   |  | St _   | Post O  | ffice                                 | : <b>P</b>                           | eculiar   |
| 05/45/32  |  |  |   |  |  |   |  |  |   |                                       |                                      |   |
| S/T/R   | QTR  | -QTR SEC   |   | PARCEL   | NO L   | LOI                                     |  | BLOCK  |   | SUB C                                 | IVISE                                | ON  |
| Project Name:   |  |  |   |  |  |   |  |  |   |                                       |                                      |   |
| Use Of Building:  | Equipment  | Building   |   |  |  |   |  |  |   | Use C                                 | ode:                                 | 473   |
| Applicant ID:   |  |  |   |  |  |   |  |  |   |                                       |                                      |   |
| Applicant Person or   | Firm Aqui  | la, Inc.   |   |  |  |   |  |  |   |                                       | Appl                                 | licant Code: 02   |
| Doug  | Lukenbii   | t .  | 107   | 00 East 350 H  | ghway  |   |  | Kansas C   | ity   | MO                                    |                                      | 64138<br>ZIP 000E   |
|   | ANT NAME   |  |   | A  | DORESS   | <u>ب</u>                                |  |  | CITY  | 51/                                   |                                      |   |
| Phone: 816-737-   | 7547   | Fax:   | <u></u>   |  | Mobile   | e:  8:                                  | 16-806                                     | 1230   | Alterna   | ite Pho                               | ne:                                  | <u> </u>  |
|   |  |  |   |  |  |   |  |  |   |                                       |                                      |   |
| OWI   | NER  |  |   | ADDRE  | :SS  |   |  | CITY   | STATE   | ZIP                                   |                                      | PHONE   |
| Type of Building: [1  Zoning District: Gross Building Area:  Receipt No.  Date Fee Paid:  SPECIAL CONDITION   | Plumbing:<br>Industrial<br>2502;<br>2/ 1/00                                | Classification Classi | vanical:<br>es of Wo<br>No:<br>or Bidg<br>unt             | -1 Electoric New   | trical Service<br>ad Plain Map<br>Permit Si                                      | Panel No                                | upancy                                     | elling Units   | Flood Plain   | ype of<br>Develo                      |                                      | \$136,655.00  |
| does not by issuing<br>However, in light of<br>Aquila, Inc., Defend   | this permit<br>this Court<br>lant, Case N                                  | , wave its righ<br>s judgement a   | t to enfo<br>nd the s                                     | orce its require<br>suspension of t  | ament that b<br>that judgmen<br>mit is being                                     | puikling<br>nt pen<br>issued            | permit<br>ding ap<br>despit                | ts cannot b<br>peal in the<br>the absen                  | e issued in the<br>case styled Case of proper a                   | e abser<br>165 Cou                    | nce of<br>anty, N                    | he site. The County<br>proper zoning.<br>Hissouri, Plaintiff v. |
| I, Doug   | Lukenbiil  | ,<br>,   |   |  | ,nere  | ny cer                                  | ופתט עום                                   | : I am Bulid   | ख   |                                       |                                      |   |
| NOTICE: This permit<br>of 180 days at any ti<br>shall be expired by li<br>The Applicant hereb<br>Missouri and any oth<br>authority to violate of<br>County Road and Bri | ime after w<br>imitation an<br>y agrees to<br>ner law or o<br>or cancel th | ork is commer<br>id a new perm<br>abide by and i<br>rdinance gove<br>e provisions of   | nced. All<br>it for an<br>comply t<br>ming th<br>fany oth | Il work or cons<br>by additional w<br>with the provis<br>is type of worl<br>her state or loc | truction allo<br>ork shall be<br>sions of all B<br>k whether sp<br>cal law requi | wed b<br>obtain<br>tuilding<br>pecifier | y this p<br>ed prio<br>g Codes<br>d hereir | ermit shail<br>r to work o<br>, Health La<br>n or not. G | be completed<br>r construction<br>ws, and the Z<br>ranting of a p | within<br>being<br>oning (<br>ermit d | two (<br>resum<br>Order (<br>loes no | of Cass County,<br>ot presume to give                           |

PERMISSION FOR ABOVE DESCRIBED WORK IS HEREBY GRANTED

2/1/05

DATE

MicheloBurnwarter

FOR THE CHIEF BUILDING OFFICIAL

# County of the Co

#### COUNTY OF CASS COUNTY, MISSOURI BUILDING CODES DEPARTMENT

102 East Wali Street Phone: (\$16) 380-8134 Harrisonville, MO 64701

Fax: (816) 380-8130

#### **CONSTRUCTION PERMIT**

| PERMIT  |   |  | Seeland Com   | No. 241208   |                                       |  |                           |
|---|---|--|---|--|---------------------------------------|--|---------------------------|
| r inspections ca  |   | <b>25047</b><br>((K.C.line)                                    | Project Conf<br>Application (   | <u> </u>   |                                       | Date Permit Issued:  | 2/24/2005                 |
| JOB ADDRE   | E88:                                      | 24400  | S Harper  |  | Rd                                    | Post Office:   | Peculiar                  |
| 2/45/32   | I   | <u></u>  |   |  |                                       | 4  |                           |
| S/T/R   | , p                                       | QTR-QTR SEC  | PARCE   | L NO LO  | T BLOCK                               | SUB  | DIVISION                  |
| roject Name:  |   |  |   |  |                                       |  |                           |
| ee Of Building:   | Power                                     | Plant/Service Bull   | ding F1 Foundation on   | ly   |                                       | Use C  | ode: 530                  |
| pplicant ID:  |   |  |   |  |                                       |  |                           |
| pplicant Person   | or Firm                                   | iquile, inc.   |   |  |                                       |  | Applicant Code: 02        |
| епу   | Hed                                       | rick   | 10700 East 350 H  | lighway  | Kansas                                | <del></del>  | 64138<br>ZP CODE          |
|   | PLICANT N                                 | <del></del>  |   | NDDRESS  |                                       | •  | AIE                       |
| hone: 816-7   | 37-7664                                   | Feec   | (816) 743-3864  | Mobile: ((   | 316) 590-5489                         | Alternate Pho  | Mai:                      |
|   |   |  |   |  | <u> </u>                              | الا  | _                         |
| •   | WNER                                      |  | ADDR  | ESS  | CITY                                  | STATE ZIP  | PHONE                     |
| Section: 0  ype of Building: coning District: ross Building Ar Receipt No.    | industria                                 | Zoning File I  O Stories                                       | No: Flor or Bidg Height:  sunt \$12,280.00  | od Plain Map Pane  | supency Group:                        | F1 Type of ( Flood Plain Develors:  Valuation of Worlc     | \$2,789,900.0             |
| Date Fee Paid:  |   |  |   | <del></del>  |                                       |  | r the elle. The County of |
| SPECIAL COND<br>This permit is be<br>not by issuing the<br>of this Court's ju | ring leaved<br>is permit, v<br>dgement ar | eve its right to enf<br>nd the suspension<br>4-1443CC, this bu | is elte has not been zo<br>force its requirement th<br>of that judgment pend<br>ulkling permit is being i | net building permits<br>ling appeal in the co<br>lessued despits the | cannot be issued<br>see sivied Case C | in the absence of pro<br>ounty, Missouri, Plain<br>zoning. | per zoning, However, in   |
| SPECIAL COND<br>This permit is be<br>not by issuing the<br>of this Court's ju | ring leaved<br>is permit, v<br>dgement ar | reve its right to enf<br>nd the suspension                     | force its requirement the of that ludgment pend   | nat building permits<br>ling appeal in the c                         | cannot be issued<br>see sivied Case C | in the absence of projection. Plain                        | per zoning, However, in   |

PERMISSION FOR ABOVE DESCRIBED WORK IS HEREBY GRANTED

FOR THE CHIEF BUILDING OFFICIAL

2/24/2005

DATE



APPLICANT SEGNATURE

#### COUNTY OF CASS COUNTY, MISSOURI BUILDING CODES DEPARTMENT

102 Fast Wall Street Phone: (816) 380-8134 Harrecoville, MO 64701

Pare (816) 380-8130

#### **CONSTRUCTION PERMIT**

| COUNTY  |
|---|
| PERMIT NO. 25072 for inspections call 380-8134 (K.C.line)  Project Control No: 250206 Application Date: 2/ 7/05  Date Permit Issued: 3/21/05  |
| JOB ADDRESS: 24400 S Harper Rd Post Office: Peculiar  |
| 32/45/32  |
| S / T/ R QTR-QTR-SEC PARCEL NO LOT BLOCK SUB DIVESION   |
| Project Name:   |
| Use Of Building:   Power Plant/Service building, F-1   Use Code:   530  |
| Applicant ID:   |
| Applicant Person or Firm Aquila, Inc. Applicant Code: 102   |
| Terry Hedrick 10700 East 350 Highway Kansas City MO 64138   |
| APPLICANT NAME ADDRESS CITY STATE ZIP CODE  |
| Phone: 816-737-7854 Pax: Mobile: 816-590-5489 Alternate Phone:  |
|   |
| OWNER ADDRESS CITY STATE ZIP PHONE  |
|   |
| DESCRIPTION OF WORK TO BE PERFORMED:  |
| To Install the turbines and service building at the Aquila Peelding power as per submitted plans and applicable building codes and county ordinances, a note other permits are required deferred submittals.  |
| WANT THE THE COARS AS WANT AND STREET   |
| FWORK INCLUDED IN SCOPE OF WORK COVERED BY PERMIT    Sectrical: -1   Plumbing: -1   Mechanical: -1   Sectrical Service: -1   Gas Piping: -1   Other:  |
|   |
| Type of Building: Industrial Class of Work New Occupancy Group: F-1 Type of Construction: E-8   |
| Zoning District: Zoning File No: Hood Plain Map Panel: Hood Plain Development Permit: Gross Building Area: O Stories or Bidg Height: No of Dwelling Units:  |
| Receipt No. 25072 Fee Amount \$22,200.00 Permit Status Active Valuation of Work: \$5,381,000.0  |
| Date Fee Paid: 3/21/05 Fee Code PRMT Control No: 250206   |
| SPECIAL CONDITIONS:   |
| This permit is being issued despite the fact this site has not been zoned in a manner consistent with the activities anticipated for the site. The Court does not by issuing this permit, wave its right to enforce its requirement that building permits cannot be issued in the absence of proper zoning. However, in light of this Court's judgement and the suspension of that judgment pending appeal in the case styled Case County, Missouri, Plaintiff v. Aquilla, Inc., Defendant, Case No. CVIO4-1443CC, this building permit is being lesued despite the absence of proper zoning. |
| I, Terry Hedrick , ,hereby certify that I am Builder ,and affirm the above statements as true and correct.  |
| Same annual and security of the same security of  |
| NOTICE: This permit becomes null and void if work or construction is not commenced within 180 days or if work is suspended or abandonded for a p of 180 days at any time after work is commenced. All work or construction allowed by this permit shall be completed within two (2) years or this pershall be expired by limitation and a new permit for any additional work shall be obtained prior to work or construction being resumed.   |
| The Applicant hereby agrees to abide by and compty with the provisions of all Building Codes, Health Laws, and the Zoning Order of Cass County, Missouri and any other law or ordinance governing this type of work whether specified herein or not. Granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction. Contact Cass County Road and Bridge at 830-8360 about driveway approach requirements.  |
| PERMISSION POR ABOVE DESCRIBED WORK IS HEREBY GRANTED   |

3/21/05



#### COUNTY OF CASS COUNTY, MISSOURI **BUILDING CODES DEPARTMENT**

102 East Wall Street Phone: (816) 380-8134 Harrisonville, MO 64701 Fax: (816) 380-8130

#### **CONSTRUCTION PERMIT**

| PERMIT NO for inspections call 380-8                  |   |                          | •  | 0537<br>/19/2005                | Date Permit Iss                                    | sued:                                  | 7/6/2005   |
|---|---|--------------------------|--|---------------------------------|--|--|--|
| JOB ADDRESS:  | 24400   | S                        | Harper   |                                 | Rd Post C  | office:                                | Peculiar   |
| 32/45/32  |   |                          |  |                                 |  |  |  |
| S/T/R   | QTR-QTR SEC   |                          | PARCEL NO  | LOT                             | BLOCK  | SUB DIV                                | TSION  |
| Project Name:   |   |                          |  |                                 |  | ······································ |  |
| Use Of Building: For                                  | an H occupancy                                      | <del></del>              |  |                                 |  | Use Cod                                | e:   |
| Applicant ID:   |   |                          |  |                                 |  |  | Applicant Code: 02                                       |
| Applicant Person or Firm                              |   |                          |  |                                 | 1.4  |  | Applicant Code: 02 64138                                 |
| L L L   | Miller  |                          | 00 East 350 Highway  |                                 | Kansas City CITY                                   | MO<br>STAT                             | - ZIR CODE   |
| APPLICAN<br>Phone: 816-737-785                        | <del></del>   |                          | ADDRESS Mobil  | e: 816-223-                     |  | ا STAT<br>:ate Phone                   |  |
| [010-737-763  | rax.  |                          | Middin   | e. 10-2234                      | 7.52 Alleni  | le Filorie.                            |  |
| OWNER   |   |                          | ADDRESS  | !                               | TTY STATE  | L<br>ZIP                               | PHONE  |
|   |   |                          |  | ·                               | <del>-</del> ·/··-                                 |  | - /  |
| DESCRIPTION OF W                                      |   |                          | a, as per submited plans a   |                                 |  | <del></del> -                          |  |
|   | SCOPE OF WORK O                                     |                          |  |                                 | - Dunding codes that so                            |  |  |
|   |   | hanical:                 | D Electrical Service   | e: 0 Ga                         | s Piping: 0 Othe                                   | r: [                                   |  |
| Type of Building: Indu:                               | strial Cla  | ss of Wo                 | ork New  | Occupancy                       | Group: H   | ype of Co                              | nstruction:  |
| Zoning District:                                      | Zoning File t                                       | No:                      | Flood Plain Map  | Panel:                          | Flood Plain  | n Developn                             | nent Permit:   |
| Gross Building Area:                                  | 0 Stories   | or Bldg                  | Height;  | No of Dwe                       | elling Units;                                      |  | <u> </u>   |
| Receipt No.   | 25196 Fee Amo                                       | unt                      | \$473.00 Permit S  | tatus Active                    | Valuation of V                                     | Vork:                                  | \$32,950.00  |
| Date Fee Paid: 7                                      | /6/2005 Fee Code                                    | e PF                     | RMT  | -                               | Control No:  | 25                                     | 0537   |
| SPECIAL CONDITION                                     | S:  |                          |  |                                 |  | <u> </u>                               |  |
| not by issuing this permi<br>of this Court's judgemen | it, wave its right to enfi<br>it and the suspension | orce its r<br>of that ju | is not been zoned in a mar<br>requirement that building p<br>adgment pending appeal in<br>armit is being issued despit | ermits cannot in the case style | be issued in the absence<br>d Cass County, Missoul | e of proper                            | zoning, However, in light                                |
| I, Tom Mille  | •   | correct                  | here   | by certify that I               | am Builder   |  |  |
|   |   |                          |  |                                 |  |  |  |
| )80 days at any time afte                             | r work is commenced                                 | . All wor                | construction is not commer<br>it or construction allowed to<br>work shall be obtained pri                              | by this permit s                | hall be completed within                           | two (2) ye                             | bandonded for a period of<br>ars or this permit shall be |
| ind any other law or ordin                            | nance governing this t<br>sions of any other sta    | ype of wi<br>te or loca  | ith the provisions of all Buil<br>ork whether specified here<br>al law regulating constructi<br>ents.                  | in or not. Gran                 | nting of a permit does no                          | t presume                              | to give authority to                                     |
| FOR INSPECTIONS C                                     | AL 380-8134   |                          | F  | PERMISSION                      | FOR ABOVE DESCRIE                                  | BED WOR                                | K IS HEREBY GRANTED                                      |
|   | LATA 71   | 10/20                    | 05   | True                            | XX   |  | 7/6/2005   |
| APPLICANT SIGN  | ATURE D   | ATE                      | -  | FOR THE                         | CHIEF BUILDING OF                                  | TCIAL                                  | DATE   |

PERMISSION FOR ABOVE DESCRIBED WORK IS HEREBY GRANTED

FOR THE CHIEF BUILDING OFFICIAL

9/6/2005

DATE

APPLICANT SIGNATURE



# COUNTY OF CASS COUNTY, MISSOURI BUILDING CODES DEPARTMENT

102 East Wali Street

Harrisonville, MO 64701

Phone: (816) 380-8134

Fax: (816) 380-8130

#### CONSTRUCTION PERMIT

| PERMIT NO<br>or inspections call 360-813  | <b>2526</b><br>4 (K.C.line)  | 7  | Project Control No:<br>Application Date:  | 250 <b>63</b> 9<br>7/6/2005  |   | Date Permit Issu   | ued:                         | 9/6/2005   |
|---|--|--|---|--|---|--|------------------------------|--|
| IOB ADDRESS:  | 244  | 00 8   | Harper  | **   | Rd  | Post O   | ffice:                       | Peculiar   |
| 2/45/32   |  |  |   |  |   |  |                              |  |
| S/T/R   | QTR-QTR SE   | C  | PARCEL NO   | LOT  | BLOCK   |  | SUB DI                       | IVISION  |
| oject Name:   |  |  |   |  |   |  |                              |  |
| e Of Building: Hocci  | ipancy   |  |   |  | The last of the Table   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  | Use Co                       | de:  |
| opticant ID:  |  |  |   |  | <u> </u>  |  |                              |  |
| opticant Person or Firm   |  | Llans  |   | ·  | T For   |  | <del></del>                  | Applicant Code: 02                               |
| APPLICANT I   |  |  | 700 East 350 Highway<br>ADDRES  |  | Kansas  | CITY   | MO<br>STA                    | 210 00006  |
| hone: 816-737-7854  | Fas  | c  |   |  | 223-8732  |  | te Phone                     |  |
|   |  | ٦ <u>'</u>   |   |  |   |  |                              | _ <del></del>                                    |
|   |  | 4 1  |   |  |   |  |                              |  |
| Install Flamable material   | storage buildir  |  | ADDRESS<br>'x 25' w/12' sidewalls a   | t the Aquila F   | CITY<br><br>eeking power a                                      | STATE<br>as per submitted  | ZIP<br><br>  plans ar        | PHONE  nd applicable building                    |
| DESCRIPTION OF WOR Install Flamable material des and county ordinance of the state | storage buildings.  DPE OF WOR ing: 0 1  Zoning F 600 Storage Fee (                | MCOVERIMECTERICEL Class of Wile No: ries or Bldg Amount CodeP                      | ED BY PERMIT  -1 Electrical Soloric New  Flood Plain Height:  \$622.00 Permit   | ervice: -1 Occup Map Panel: No o   | Gas Piping: ancy Group: Dwelling Units                          | O Other: H-2 Ty Flood Plain :  | ype of Co<br>Develop<br>ork: | onstruction: [I B] sment Permit: \$53,709.0      |
| DESCRIPTION OF WOR Install Flamable material idea and county ordinance work included in Scription of Building: Storage conting District:  Toss Building Area:  Receipt No. 25   | storage building: OPE OF WOR ing: O I Zoning F 600 Storage Cost Fee of the suspens | K COVER! Mechanical: Class of W ries or Bldg Amount Code P this site h enforce its | ED BY PERMIT  -1 Electrical Soloric New  Flood Plain  Height:  \$822.00 Permit  RMT  as not been zoned in a requirement that builds judgment pending appearmnt is being issued di | ervice: -1 Occup Map Panel: No o  at Status A  manner cons ng permits ca at in the case asplie the abs | Gas Piping: ancy Group:  Dwelling Units tive  istent with the a | O Other: H-2 Ty Flood Plain : Valuation of W Control No: activities anticip in the absence ounty, Missouri zoning. | ype of Co                    | onstruction: [I B] ment Permit: \$53,709.0 50839 |



# COUNTY OF CASS COUNTY, MISSOURI BUILDING CODES DEPARTMENT 102 East Wall Street Harrisonville, MO 64701

Phone: (816) 380-8134

Fax: (816) 380-8130

#### CONSTRUCTION PERMIT

| PERMIT NO  | 25339  | _                               | 251034                     | De   | te Permit Issued:        | 10/31/2005  |
|--|--|---------------------------------|----------------------------|--|--------------------------|---|
| r inspections call 380-813                                 | 34 (K.C.line)  | Application Date:               | 10/28/2005                 |  |                          |   |
| •  |  |                                 |                            |  |                          |   |
| OB ADDRESS:  | 24400 S  | Harper                          |                            | Rd   | Post Office:             | Peculiar  |
| ¥45/32   |  |                                 |                            |  |                          |   |
| S/T/R  | QTR-QTR SEC  | PARCEL NO                       | LOT                        | BLOCK  | SUB DI                   | VISION  |
| raject Name:   |  | <u> </u>                        |                            |  |                          | <del></del> ]   |
| · ·  |  |                                 |                            |  | Lies Co.                 | de: <b>730</b>  |
| se Of Building: Found                                      | HELIOTI  |                                 | <del></del>                |  |                          | us. [130  |
| oplicant IÓ:   |  |                                 |                            |  |                          | A   |
|  | Aquile, inc.   |                                 | <del></del>                | . 1.17.2   |                          | Applicant Code: 02  |
| APPLICANT  |  | 0700 East 350 Highway<br>ADDRES | <u> </u>                   | Капзаз С   | EITY STAT                | ZIR COOK  |
| hone: 816-737-7854   | Fax  |                                 | o<br>obše: <u>  816-22</u> |  | Alternate Phone          | _ ,   |
| 0101101-1001   |  |                                 |                            |  |                          | ~ <del></del>   |
| OWNER  |  | ADDRESS                         |                            | CITY   | STATE ZIP                | PHONE   |
|  |  |                                 |                            |  |                          |   |
| ESCRIPTION OF WOR  |  |                                 |                            |  |                          |   |
| alleran localida tind toni                                 | lambau ibi. Sortua biootiili   | g wells es per submited pl      | ans and an appl            | ICBIDIE DUNGLIN  | 3 COORER MAIG CONTRY OF  | unances.  |
|  |  |                                 |                            |  |                          |   |
|  |  |                                 |                            |  | ,                        |   |
| MORK INCLUDED IN SC  | <del></del>  |                                 |                            |  | A                        |   |
|  | bing: 0 Mechanic   |                                 |                            |  | O Other:                 |   |
| ype of Building: Comme                                     | rcial Class of   | Work New                        | Occupano                   | y Group:   | Type of Co               | oristruction: VN  |
| uning District:  | Zoning File No:  | Flood Plain I                   | Vap Penet:                 |  | Flood Plain Develop      | ment Permit:  |
| ross Building Area:  | O Stories or Bl  | dg Height:                      | No. of Da                  | welling Units:   |                          |   |
| Receipt No. 2  | 5339 Fee Amount  | \$1,414.00 Perm                 | i Status Activ             | e IV   | aluation of Work         | \$174,469.00  |
| Date Fee Paid: 10/31/                                      |  | PRMT                            |                            |  | · ·                      |   |
| \ <del></del>  |  | <u>. 10</u>                     |                            | C  | Control No: 2            | 51034   |
| PECIAL CONDITIONS:   |  |                                 |                            | - Mt 41  | 22.72                    |   |
|  |  |                                 |                            |  |                          | the site. The County does<br>r zoning, However, in light  |
| f this Court's judgement a                                 | nd the auspension of the   | t judgment pending appa         | of in the case sty         | ried Cass Col  | unty, Missouri, Plaintif |   |
| efendant, Case No. CV10                                    | <b>04-1443 (CC, this building</b>  | permit is being issued de       | apite the absen            | ce of proper 2   | oning.                   |   |
| Tom Miller   | •  | d,                              | ereby certify that         | tiam Builde  | <b>T</b>                 |   |
| ind affirm the above state                                 | ments as true and correc   |                                 | • •                        |  |                          |   |
|  |  |                                 |                            |  |                          |   |
| Tire.This same bases                                       | و ماسعه و الأراضية و المسلم المسلم الأراضية و المسلمة و المسلمة و الأراضية و المسلمة و المسلمة و المسلمة و الم |                                 |                            | 30 des en 90   |                          | abandandud for a madad a                                  |
|  |  |                                 |                            |  |                          | abandonded for a period o<br>ears or this permit chall be |
|  |  | nal work shall be obtained      |                            |  |                          |   |
| n Applicant hereby agree                                   | s to abide by and comply   | with the provisions of all      | Building Codes,            | Health Laws  | and the Zoning Order     | of Coss County, Missour                                   |
| d any other law or ordinar                                 |  |                                 |                            |  |                          |   |
| state or cancel the provision<br>idge at 830-8380 about de |  |                                 | action of the bei          | INTERNO OF   | CARSUUCUON, COMBICE      |   |
| ^  |  |                                 |                            | ;  |                          |   |
| OR INSPECTIONS CALL  | 390-8134   |                                 | PERMISSION                 | N FOR ABOY   | A: DESCRIBED WO          | RK IS HEREBY GRANTE                                       |
| Thu, Mud   | lislai XI  | 2005                            | Land                       | afgarage and the same of the s |                          | 10/31/2005  |
| APPLICANT SIGNAT   | TIPE DATE  | <del></del>                     | EOR TL                     | E CHIEF OI   | DI DING OFFICIAL         | TATE  |

# Cass County Commission

#### **GARY L. MALLORY**

Presiding Commissioner

Email commission@casscounty.com

#### JIM MEARA

Associate Commissioner Dist. 2 Email commissioner@casacounty.com

Jan Cantrell, Administrative Assistant 102 E. Wall, Harrisonville, No 64701 Phone (816) 380-8155 Fax (816) 380-8156 JON H. SEABAUGH
Associate Commissioner Dist. 1
Email commissioner@casscounty.com

October 4, 2004

Sega Inc. Attn: Mike Blake 16041 Foster PO Box 1000 Stilwell, KS 66085

Dear Mr. Blake,

Please accept this correspondence as official confirmation that Cass County does not require a grading permit for the Aquila South Harper Peaking Facility.

I sincerely appreciate receiving the information you sent regarding the site.

If you require anything further, please do not hesitate to give me a call.

Sincerely,

Presiding Commissioner

Road & Bridge Driveway Permit

<u>Sega</u>®

14/01/2004 NED 00:00 PAA 010 001 0200

#### FAX TRANSMITTAL FORM

JEOR INC.

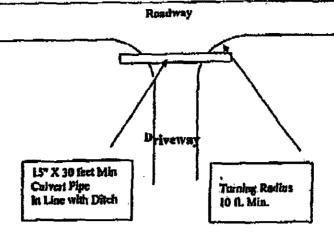
|                                       | Name:<br>Company:  | Robert Leeper Cass County, MO Road and Bridge   | Fax No.:<br>City/State:                        | 816-380-8365<br>Cass County, MO |
|---------------------------------------|--|---|--|---------------------------------|
| /                                     | Name:<br>Company:  | Terry Hedrick<br>Aquila, Inc.   | Fax No.:<br>City/State:                        | 816-743-3854<br>Kansas City, MO |
| m:                                    | Michael Bla  | ke  | Sega Projec                                    | t No.: <u>04-0112-02</u>        |
|                                       | Andrea 6   |   |  |                                 |
| _                                     | Aquila, Inc. – 8   | South Harper Peaking Facility   |  |                                 |
|                                       |  | South Harper Peaking Facility and Bridge Driveway Permit  |  |                                 |
| JBJE                                  | ECT: Road  |   |  |                                 |
| BJE<br>mm                             | ECT: Road  |   |  |                                 |
| mm                                    | ECT: Road ents:  |   | la.  |                                 |
| BJE<br>mm<br>ober                     | ents; t,   | and Bridge Driveway Permit  |  | ce permit has been issued       |
| mm<br>ober                            | ents: t, led is entrance                                 | and Bridge Driveway Permit permit signed by Terry Hedrick with Aqui   | stating the entran                             | ce permit has been issued       |
| BJE<br>mmm<br>ober<br>ober<br>or Ac   | ents: t, ned is entrance quila's records, an address the | and Bridge Driveway Permit  permit signed by Terry Hedrick with Aqui  could you please provide a formal letter s                                  | stating the entran                             |                                 |
| JBJE<br>omm<br>ober<br>ttach<br>or Ad | ents: t, ned is entrance quila's records, an address the | and Bridge Driveway Permit  permit signed by Terry Hedrick with Aqui  could you please provide a formal letter to Michael Blake (Fax: 913-681-84) | stating the entran                             | itate to give me a call.        |
| omm<br>tober<br>ttach<br>or Ad        | ents: t, ned is entrance quila's records, an address the | and Bridge Driveway Permit  permit signed by Terry Hedrick with Aqui  could you please provide a formal letter to Michael Blake (Fax: 913-681-84) | stating the entran<br>75)<br>please do not hes | itate to give me a call.        |

Sega Inc, P. O. BOX 1000

OUR FAX NUMBER IS: (913) 681-8475

16041 FOSTER STILWELL, KANSAS 66085-1000 www.segainc.com PHONE 913-681-2881 FAX 913-681-8475

**昭** ママエ



### ROAD & BRIDGE DRIVEWAY PERMIT

| Name Aguila Inc. South Harper Peaking Facility |
|--|
| Address 24400 South Harper Road                |
| City Cass County, NO 64078-9086                |
| Phone 8/6/737-7854                             |
| Date requested                                 |
| Owner Signature Jany 5 Hechick                 |
| Safety Issues/ Site Distance                   |
| Approval Robert Lugar Sout can so              |
| Date Installed                                 |
| Permit Fee \$25.00                             |

File in R & B

Water Supply Agreement

## PUBLIC WATER SUPPLY DISTRICT #7 OF CASS COUNTY

| NEW SERVICE APPLICATION & WATER USERS AGREEMENT   |          |
|---|----------|
| DATE: 10/19/04  |          |
| Billing Name Aquila-S. Harper Plant co-owner None   |          |
| Service Address 24400 Si Harper City Peculiar   |          |
| State MO zip 67801 Telephone(816) 537 - 6895  |          |
| Owner Birthdate N/A Co-Owner Birthdate N/A  |          |
| Mailing Address 14015 S. Smort Rd. Green word, Ma 640   | <b>.</b> |
| Aquila TIN# 11153784 = Go Owner Soc. Sec. # Mone  | -        |
|   |          |
| Address PO Box 13447 City Konsas City State Mo zip 64/99  |          |
|   |          |
| Co-Owner Employer Nhone # N/A   |          |
| Address City State Zip  |          |
| For Emergeholes   |          |
| Nearest Relative Greenwood Energy Center Phone # 8/6-537-689  | }<       |
| Nearest Relative Greenwood Energy Center Phone # 8/6-537-689  Address 14015 S. Smart Bd city Greenwood state MO zip 64034 |          |
| **************************************  |          |
| OFFICE USE ONLY   |          |
| · ·   |          |
| Account # Page # Contract #   |          |
| Deposit Ck # Taxable: Y N Renter / Owner  |          |
| Meter# Reading Date Reading   |          |
| Meter Type: A B Sub-District  |          |
| Meter Location  |          |
| Meter Reading Sequence #  |          |
| New Service Contract/Rev. 070102/jib<br>Rev. 12112002/jib   |          |

#### AGREEMENT

In consideration of Applicant's promise to abide by all the rules and regulations of Public Water Supply District #7 of Cass County Missouri (hereinafter "District") and to pay all water bills as they become due, District agrees to supply water to Applicant for Applicant's reasonable and lawful use, subject to the terms and conditions of this agreement. To become a water user of the District, I hereby tender a sum of \$2,200.00. The District shall charge a fee of \$2,200.00 plus and additional cost of connection. "Standard" means a short side up to 20 feet from main, a long side up to 90 feet from main, clean-up (if applicable), up to 2 hours District labor. MO #1 notification, up to 15 ton gravel for long side set, contractor labor and machine time, and District materials based upon above limits. Upon cancellation prior to service installation, by the user, costs incurred by the District will be deducted from the total sum tendered, prior to refund.

1. Prior to initiation of any service to Applicant by District, Applicant shall deposit with District the sum of amount as prescribed in Policy #5005R1. To insure payment for water supplied to Applicant. Said deposit shall not bear interest, and shall be held until Applicant requests that water service be discontinued. The deposit shall be applied to payment of Applicant's final bill. Any funds not so used to be returned to Applicant. In the event the final bill exceeds the deposit amount, Applicant will be required to pay the District the additional amount subject to the penalty provisions of paragraph 4 of this agreement.

Upon activation of a new meter connection, a minimum of 12 (twelve) consecutive minimums at current rate must be made prior to honoring any request for disconnection for any reasons, other than non-payment. If less than 12 (twelve) months minimums have been met, there shall be a trip charge at current rate added to the account to read and lock the meter.

- 2. Pay a minimum monthly meter charge for the water service connection from time service is made available by the District, and pay for additional water used at the rate set out in the rate schedule, adopted by the Board of Directors. Any changes made in the minimum monthly water charge and rate schedule by the Board of Directors of the District shall become a part of this agreement, as though fully set out herein.
- The District shall read the water meters. Service bill for water used shall be rendered by the 15<sup>th</sup> of the month, following the month in which the water is used, and the undersigned agrees to pay said service bill on or before the first (1<sup>st</sup>) day of each month, or be subject to a late charge of 10%. Failure of the District to submit a service bill shall not excuse the undersigned from his/her obligation to pay for the water used when the bill is submitted, nor shall it be an excuse not to pay the late charge, or to be disconnected for non-payment. Failure to pay a bill prior to the last Tuesday of each month shall result in discontinuance of the service. If an account is disconnected due to non-payment, a \$25.00 fee for each trip to the residence will be added to the past due bill and the entire amount must be paid prior to service restoration. Failure to make payment prior to 10 AM on the last Tuesday of each month shall result in a \$25.00 fee for late payment.

- The water service supplied by the District shall be for the sole use of the undersigned. The undersigned agrees that he/she will not extend or permit the extension of pipes for the purpose of transferring water from one property to another, nor will he/she share, resale or sub-meter water to any other customer. Each meter service shall supply water to only one residence or business establishment located on land within the District. If after water service is made available the same is discontinued or disconnected for any
  - after water service is made available the same is discontinued or disconnected for any purpose, pursuant to the bylaws and rules and regulations of the District, reconnection shall be upon the conditions set out by the bylaws and policies of the District.
- 5. The undersigned agrees there will be no physical connection between any private water system and the District.
- 6. Representatives of the District may at any reasonable time come on the premises where the water is being used, for the purpose of making inspection to enforce this provision. Violation of the provision shall be grounds for disconnection of service.
- 7. The Laws of the State of Missouri, the Bylaws of the District, Rules and Regulations and Policies set by the Board of Directors of the District as presently existing and as may be amended from time to time, are made a part of this agreement as though fully set out herein.
- 8. The District reserves the right, at any time, to discontinue service to protect itself against violations of its rules, or the laws of the State of Missouri, as well as against fraud or the illegal or unsafe use of water or any appliances and appurtanences used therewith.
- 9. Applicant understands that the District is not responsible, in law or in equity, for the construction maintenance or repair of any pipeline, or any other fixture, appurtenance or appliance located on the applicant's property. The District's responsibility shall extend only from its water supply system to the water meter, which shall be located as close as possible to the property line of the Applicant.
- The District shall not be responsible for damages, compensatory, punitive or otherwise for loss of service to Applicant or damage to Applicant's property real or personal, as a result of any drought, injury to the water supply system. Failure of any supplier to supply water to the District, act of God, contamination of the water system or another such foreseeable breakdown in the District's supply system. Applicant further authorizes the repair, maintenance or cleaning of the water supply system.
- 11. The undersigned agrees to grant an easement, when requested to do so, for water line along public roads adjacent to the user's property.
- 12. This agreement shall not be effective until accepted by the District.
- 13. The location or description of the property to be serviced by this water service connection is set forth either the legal description of the property and/or the address and location thereof as assigned by the assessors office located in Cass County as recorded at the Cass County Court House.

- The applicant shall be responsible for any damage to the Districts meter wells, lids, valves, valve risers, valve lid covers, posts and clean-outs. Should any damage occur, charges will be debited to the applicant's account.
- 15. As of January 1, 1989, all materials used in the construction, expansion, modification or improvements of a public water system or customer water system, shall be lead free.
- This section shall not apply to leaded joints necessary for the repair of cast iron pipes. Any applicant's water system constructed, expanded, modified or repaired after January 1, 1989, that is connected to a public water system and later found to contain materials that are not lead free, shall have the water meter removed or otherwise have the service line severed from the public water supply system when supplier or water is so ordered by the appropriate local governmental authority or by the District.
- 17. Applicant's account is not assignable or transferable. This agreement shall be binding upon the heirs, successors, executors, administrators and assigns of applicant and District.

I, the below signed Applicant, do swear, under penalty of perjury, that the answers to all

State of Missouri)
County of Cass)

On this 21 st day of October, In the year of 2004, before me, the undersigned a Notary Public in and for said state, personally appeared the above signed, known to be the person who executed the within contract and acknowledged to me that he/she executed the same for the purposes therein stated.

Alexa (Wassery)
Notary Public

Alexa Nunnery)
Printed Name

New Service Contract/Rev. 070102/jib Rev. 12112002/jibRev. 01/01/2004bs



### PUBLIC WATER SUPPLY DISTRICT #7 OF CASS COUNTY, MO

106 E. MAIN ♦ P.O. BOX 345 ♦ FREEMAN, MO. 64746 Phone 816-250-2300 ♦ Fax 816-250-2900

November 2, 2004

FYI

Aquila Networks
Mr. Terry Hedrick, Project Manager
Aquila S. Harper Peaking Facility
10700 E. 350 Highway
P.O. Box 11739
Kansas City, MO 64138
(816) 737-7854
Fax (816) 743-3854



Dear Mr. Hedrick,

We are pleased to have the opportunity to provide water from our Water District #7 system to your proposed project at 24400 S. Harper Road in Peculiar, Missouri. We support the added water sales revenue value, which aids in controlling the escalating cost of water for all of our customers.

Currently we have studied the need for system upgrades to meet your water usage. Aquila's commitment to the 6" loop option to provide Aquila backup water also provides benefit to other customers through enhanced system stability and added additional fire hydrants to the area. Costs for these improvement upgrades would be borne by Aquila.

We support the opportunity Aquila brings to enhance and improve Water District #7's system, residential fire protection and increase water sales revenue; which we see would provide improvements for all of our customers, as well as provide backup contingency for Aquila.

We are pleased that Aquila has selected a development site in Water District #7 and will meet your water usage needs to the best of our capabilities. If you should have any questions, please do not hesitate to contact Water District #7.

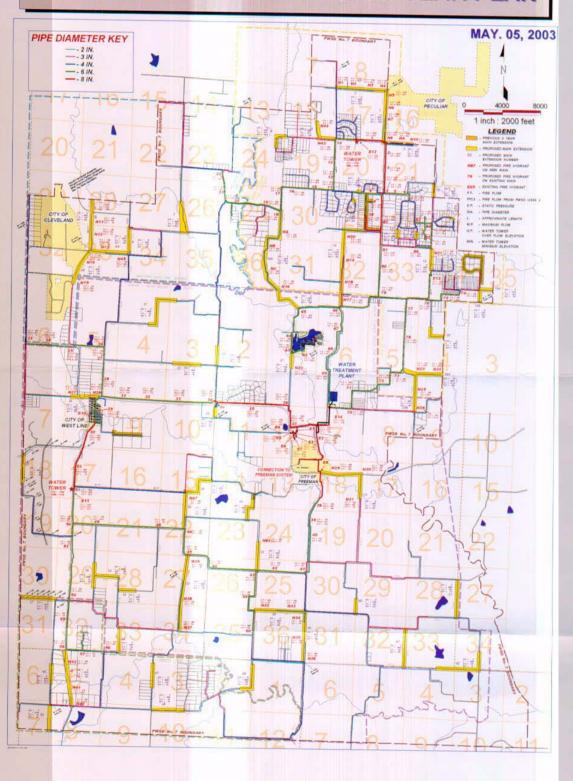
Sincerely,

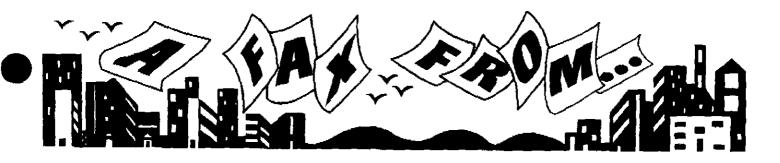
Benny Odom, Board Chairman.

Date 11-01-01



# CASS 7 PWSD - UTILITY MAP : 5-YEAR PLAN





#### **Billing Address**

Public Water Supply District #7 106 E. Main Street, Box 345 Freeman, MO 64746 Phone (816) 250-2300 Fax (816) 250-2900

#### **Shipping Addres**

**Public Water Supply District #7** 8906 E. 267th Street Freeman, MO 64746 Phone (816) 779-6887 Part Time Fax (816) 779-6623 (Must call before sending fax)

| Date: 6-6-05                             |
|--|
| Fax To: Desry Hedrick Fax From: Leonard  |
| Aguila Dac. (a copy your files           |
| Fax #: 743-31.30                         |
| Phone #:                                 |
| Number of Pages: 5 (Cover Page Included) |
| Comments:                                |
| a Copy To your commation & your siers    |
| Bick Did he world get back with us       |
|  |
| - Oparks                                 |
|  |
| Leonard                                  |
| Jan 1987                                 |
|  |

#### 06/06/2**0**05 8167796623

# Public water supply district #7 of Cass County, Mo

108 E. MAIN ♦ P.O. BOX 345 ♦ FREEMAN, MO. 84748 Phone 816-250-2300 ♦ Fax 816-250-2900

June 6, 2005

Mr. Rick Krepps Aquila, Inc. P.O. Box 11739 10700 350 Highway - Mail Stop 502 Kansas City, MO 64138

Cc:

Mr. Terry Hedrick, Aquita #7 Board of Directors Barbara Scott, #7 Acct. Mgr. Ed Lopez, #7 Dist, Mgr. File

Re: Notice to Proceed

North Feed Loop #2 and Fire Protection Improvements

Dear Rick.

Per our phone conversation and your request, I have included a new Notice to Proceed with an estimated cost and a not to exceed amount for Aquila to be responsible for under contract #11008-1003 which you have already issued to Cass #7.

Also as we had discussed and based upon our requirements we require that you submit \$62,500 along with Notice to Proceed. The advance funds are important in that our public concerns are quelled and with both entities' cooperative effort underway, it is a win-win for all involved.

I have rebid the materials and they appear to be about \$2,000 higher than our November 2004 estimate.

Also as we may or may not do in house, a new prevailing wage order if we were to contract is in place as of April 2005 which increases labor costs.

Cass #7 will show you invoices on all materials subject to that project as well as purchase orders and will not exceed the \$125,000 estimated cost in as mush as Aquila's participation financially is anticipated.

We are willing to continue under your original contract #11008-1003 for this project also.

To assist, I have included an invoice with project title Cass #7 North Feed Loop #2 & Fire Protection Improvements your contract #11008-1003, File name CBS-340, Labor-Resource #1821 and Materials-Resource #1822 and the estimated total amount not to exceed \$125,000. As we finish the project and along the way we will bill Aquila under the contract on a monthly basis after invoicing with paid invoices until we use the \$62,500 advance deposit on the project.

Our key focus is to get the second feed loop done initially for your dual feed protection, then work with the Fire Department and community on hydrant placement. Unless you instruct me differently I will still plan on placing a 4x8 construction sign declaring 100% Aquila participation on this loop and hydrant project. It will list cost of \$125,000, lengths and sizes of main as well as hydrants, their placements and project title.

My board meeting is June 13, 2005. You had indicated you could make this happen prior to that. That would be great! Timing on the \$62,500 can be later if it's easier. Signatures on all the documents to me would be great prior to the 13th, or both would be better. The \$62,500 would need to be in our hands before we'd order materials and/or contract or start work. Please sign or have your representative sign this agreement and forward back also.

Let me know if other details are needed.

Sincerely,

| Leonard Whiting Systems Manager Sel     |                             |
|---|-----------------------------|
| Name - Aquila Representative            | have read this document and |
| understand the details and its context. |                             |
| Signature                               |                             |
| Date                                    | <del></del>                 |

# Public Water Supply District #7 of Cass County Missouri 106 E. Main Street, Box 345 \* Fraeman, Missouri 64746 \* (818) 250-2300

### INAOICE

| •••                           |  | ***         | ***      | ***                                    | ***            | ***         |
|-------------------------------|--|-------------|----------|--|----------------|-------------|
| TOTAL DUE                     | 62,500.00                                      | REF NO.     | άΤΥ      | DESCRIPTION                            | PRICE<br>EACH  | TOTAL       |
| Salesperson                   | Leonard Whiting                                |             |          |  |                | <del></del> |
| Invoice number                |  |             |          | }                                      | 1 )            |             |
| Invoice date                  | 6/06/2005                                      |             |          | ass #7 North Feed Loop                 |                |             |
| Customer ID                   |  | 1           | 8        | Fire Protection Improvement            | ents           |             |
| Terms                         | Payment Due upon Receipt                       |             | <b>)</b> | 6200 feet of 6" water main fee         | . 1            |             |
| Date shipped                  | *  |             |          | loops & fire hydrants as per th        | e l            |             |
| Shipped vie                   |  |             |          | 10/29/2004 letter.                     | [ [            |             |
| FOB                           |  | •           |          |  |                |             |
| Prepaid / Collect             |  |             | 1        | Estimated total cost of project        | 1              |             |
| Tax exempt                    |  |             | 1        | is \$125,000.00, and not to            | 1              |             |
| Reason                        |  |             |          | exceed \$125,000.00.                   | 1              |             |
| Exemption no.                 |  |             |          |  |                | 40 500 0    |
|                               |  |             | 1        | Deposit for Project                    | 62,500.90      | 62,500.00   |
| ***                           |  | <b>I</b> .  | <b> </b> | As materials are purchased             | \$ j           |             |
| \$849.79                      | A. 9. A  | 1           |          | monthly billings will be sent          | 1 }            |             |
| Name                          | Aquila, Inc.                                   | 1           | }        | to show disbursments from the          | e i            |             |
| Address (line 1)              | Contract Order # 11008-1003<br>P.O. Box 412237 | 1           |          | \$82,500.00, updating the              | 1              |             |
| Address (line 2)              | ,  | 1           | 1        | credit balance remaining.              | 1              |             |
| City, State or Prov.          | Kansas City, MO<br>64141                       | 1           | İ        | 1                                      | )              |             |
| Postal code, Country<br>Phone | (816) 650-2950                                 | II.         | 1        | Invoice Coding                         | 1              |             |
| Fex                           | (610) 030-2830                                 |             | l        |  | 1              |             |
| Company name                  | Aquila Inc.                                    | ł           |          | Activity # 10019648<br>Process = # 340 | 1 [            |             |
| Острану напе                  | File Name: CBS 340                             |             | 1        | Department #7130                       | 1              |             |
|                               | The Hame, God 540                              | 4           |          | Resource - # see below                 | (              |             |
| 2007th To                     |  |             | 1        | Labor: 1821                            | 1              |             |
| Retype the following or       | nly if the name and                            | •           | 1        | Materials: 1822                        |                |             |
|                               | me as the SOLD TO name                         |             | }        | Engineering: 1808                      | 1              |             |
| and address.                  |  |             | }        |  | 1 1            |             |
| Name                          |  | 1           |          |  | 1              | •           |
| Address (line 1)              |  | 1           |          |  | 1              |             |
| Address (line 2)              |  |             |          |  | 1 1            |             |
| City, State or Prov.          |  | 1           |          | }                                      | ] ]            |             |
| Postal code, Country          |  |             |          |  | 1              |             |
| Company name                  | •  |             |          | <b>k</b>                               | }              |             |
| Please state check            | z pryskie te:                                  | <b>L</b>    | ٠        | <del></del>                            | SUSTOTIAL      | 62,500.00   |
|                               | Public Water Supply District #                 | 7 of Cass C | ounty    | Sales tim !                            | K .            |             |
|                               | 106 E. Main St., box 345                       |             | •        | SECTION                                | e, region inc  |             |
|                               | Freeman, MO 64746                              |             |          |  | PRIMITS        |             |
| <u> </u>                      |  |             |          | PLEASE PAY T                           | THE AMOUNT !   | 62,500.00   |
|                               |  |             |          | TERMS                                  | : Prior to Mac | 's Parchasa |

Date:\_

Notice to Proceed
Per Aquila Contract Order #11008-1003
File Name: CBS 340

| Cass County, Misso         | ouri e e e e e e e e e e e e e e e e e e e   |
|----------------------------|--|
|                            | otice to proceed regarding the Aquila Peek Use Powe arper Rd., Peculiar, Missouri on:  |
| itle: <u>Cass #7 North</u> | Feed Loop #2 & Fire Protection Improvements  |
| To include:                | Add 6200 Feet (+ or -) of 6" Feed Loops and Fire Hydrants per the 10/29/2004 letter at an Estimated Cost of \$125,000.00, and not to exceed \$125,000.00.  |
| B:Authorized Aquila        | Date:Representative  |
| lame:                      |  |
|                            |  |
|                            | blic Water Supply Dass County, Misson Se. Main St., Box 3 seman, MO 64746 6) 250-2300 ccept this as your nated at 243 <sup>rd</sup> and Hotel Second Sec |

# Notice to Proceed Per Aquila Contract Order #11008-1003

| Date: 11/2/04   |
|---|
| To: Mr. Leonard Whiting Public Water Supply District No. 7 of Cass County, Missouri 106 E. Main St., Box 345 Freeman, MO 64746 (816) 250-2300             |
| Please accept this as your notice to proceed regarding the Aquila Peek Use Powe Plant located at 243 <sup>rd</sup> and Harper Rd., Peculiar, Missouri on: |
| Project Title: Line Lowering at South Harper Peeking Facility Drive Entrance Per 10/29/04 Letter & Bid  |
| Please check (1) one and initial  |
| 6" Main Lowering - (Initial)  |
| 8" Main Lowering - Alternate X 151 (Initial)  |
| Signature: X/ow Section Date: 1/2/84 Authorized Aquifa Representative   |
| Printed Name: Terry Hedrick   |
| Title: Project Manager - Aquila   |

Fire Protection Agreement



### West Peculiar Fire Protection District

James B. Toone Fire Chief

200 South Main Peculiar, MO 64078 (816) 779-5766 (816) 758-7423 (Fax)

Mr. Terry Hedrick Aquila August 26, 2005

Mr. Hedrick,

Attached is our Standard Operating Guideline for Commercial Structure Fires. This is a standard guideline that we would use for fires in commercial buildings or installations. We, of course would alter the SOG somewhat for the specific occupancy where a fire would occur. Your facility would call for some alterations to the plan, but would, in essence follow the attached Standard Operating Guideline.

Additionally, about 80% of our crews have completed a walk-through of your facility and understand its major hazards and know how to respond to keep your staff, our staff, and most importantly the public safe during an emergency.

Please contact me if you have any further needs or questions.

Respectfully,

James Toone Fire Chief



# West Peculiar Fire Projection District Policies & Procedures

The following is the accepted policy of the West Peculiar Fire Protection District for:

Policy: SOG

Section: Operational

Topic: RESPONSE TO COMMERCIAL STRUCTURE FIRES

March 2003

Purpose

To provide guidance for personnel responding to commercial structure fires.

Scope

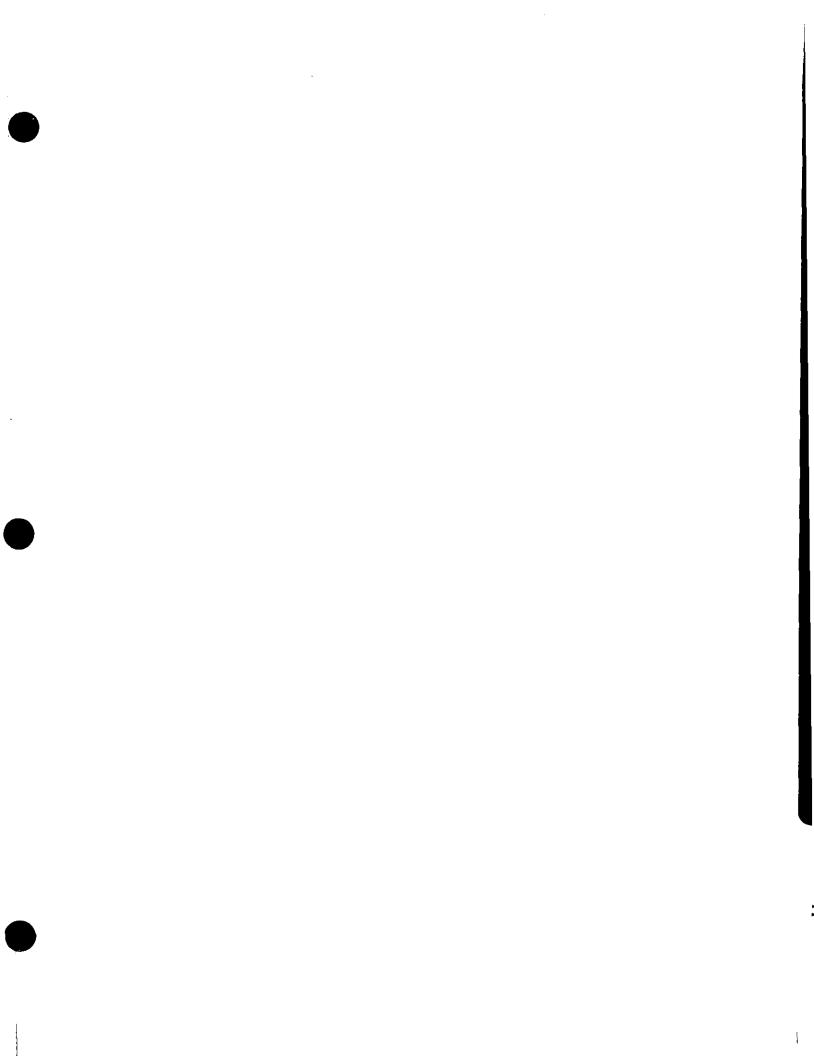
This SOG applies to all who have the potential to respond to commercial structure fires within the West Peculiar Fire District.

#### Guidelines

- Priorities include:
  - o Personnel safety (hazardous materials, structural integrity, etc.)
  - o Protection of exposures
  - o Establishing adequate water supply
  - o Containment of fire.
  - o Preserving property.
- The general attack regiment will be the same as for a residential structure fire but on a larger scale.
- Mutual aid should include a level two staging area with at least two stand-by engines and at least two stand-by tankers in cases where there is limited water supply.
- Specific tactics are left to the discretion of the incident commander.
- The Personnel Accountability System will be used on all commercial structure fires.

@ 2004

257



**APPENDIX I** 

Noise Studies

# **Noise Study**

for the

# South Harper Peaking Facility Peculiar, Missouri

for

Aquila, Inc.



October 2006



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# Noise Study South Harper Peaking Facility Peculiar, Missouri

prepared for

Aquila, Inc. Kansas City, Missouri

October 2006

Project No. 43752

prepared by

Burns & McDonnell Engineering Company, Inc. Kansas City, Missouri

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#### 1.0 INTRODUCTION

Burns & McDonnell has been contracted by Aquila, Inc. (Aquila) to conduct an environmental noise study for the South Harper Peaking Facility (SHPF). This simple-cycle facility consists of three Siemens-Westinghouse 501D5A combustion turbines. The existing land use in the vicinity of the South Harper Peaking Facility is a mixture of agricultural, industrial, and residential land use. The 73-acre site is located on flat to rolling terrain in Missouri, Sections 29 and 32, Township 45N, Range 32W, approximately three miles southwest of Peculiar, on South Harper Road near 243<sup>rd</sup> Street. The nearest residences are located to the east and north of the site. The combustion turbines are housed in an enclosure designed to abate sound. The inlet air and exhaust sections of the combustion turbines have silencing equipment to further minimize sound levels.

In its May 23, 2006 order approving Aquila's operation of the SHPF, the Missouri Public Service Commission stated as a condition of its approval, among other things, "sound abatement measures must be fully utilized and maintained (stack attenuation, turbine acoustical enclosures, berms, trees, and strict adherence by Aquila to the sound limits in its contract with the manufacturer) . . . ." Aquila has verified that they have fully complied with this condition.

The objective of this study was to measure the sound levels at the SHPF and compare them with the residential limits established by the Cass County Noise Disturbance Ordinance (No. 02-20). Key points along the fenceline were selected for sound level measurement.

#### 2.0 CASS COUNTY REGULATIONS

Cass County, Missouri, developed a noise ordinance in 2002. This ordinance (Ordinance No. 02-20, Noise Disturbance) states:

"It shall be unlawful to make or cause to be made a Noise Disturbance within the unincorporated area of Cass County. A Noise Disturbance shall include any or all of the following:

a. A sound registered on a decibel meter from any source not exempted or otherwise regulated by this Ordinance and which, when measured anywhere off of the property of the sound source, is in excess of the dB(A) established for the time period and zones listed below.

| <u>Area</u> | 7:00 a.m. – 10:00 p.m. | 10:00 p.m. – 7 a.m. |
|-------------|------------------------|---------------------|
| Residential | 60 dB(A)               | 55 dB(A)            |
| Commercial  | 65 dB(A)               | 60 dB(A)            |
| Industrial  | 70 dB(A)               | 65 dB(A)"           |

Aquila has asked Burns & McDonnell to measure the SHPF noise levels and compare them with these limits. The Cass County ordinance does not distinguish whether noise levels are determined on a  $L_{eq}$  or  $L_{90}$  basis; however, both units of measurement have been used for noise standards in other areas.  $L_{eq}$  is the average of all noise measurements over the entire monitoring period, whereas  $L_{90}$  is the sound level that is exceeded 90 percent of the time during a measurement period. The intent of  $L_{90}$  is to filter out noises such as passing traffic, aircraft, and other transient noise sources that do not reflect the true sound level of the source. Because the ordinance does not specify which measurement is determinative, both  $L_{eq}$  and  $L_{90}$  have been examined for this report.

#### 3.0 BACKGROUND NOISE ENVIRONMENT

An ambient noise measurement survey was conducted for the SHPF prior to the start-up of the three combustion turbines. On October 9, 2006, between the hours of 10:30 a.m. and 11:30 a.m., Burns & McDonnell personnel obtained background sound level measurements at key points on the property near the fenceline boundary (note that the fenceline is not the property boundary) to capture the ambient sound levels at those locations (Figure 4-1). These points approximate the four cardinal directions from the turbines at the fenceline boundary.

Weather conditions were favorable for conducting ambient sound measurements during the survey periods. Skies were mostly clear, winds varied between two and nine miles per hour, and temperatures were around 60 degrees Fahrenheit during the measurement periods. Relative humidity was between 44 and 47 percent.

At each location, measurements were made in decibels (dB) at 16, 31.5, 63, 125, 250, 500, 1,000, 2,000, 4,000, and 8,000 Hertz (Hz) using a Larson-Davis Model 824 Type I sound level meter. The sound level meter was calibrated before the background measurements. The calibration level change did not exceed  $\pm$  0.3 dB. A windscreen was used at all times on the meter, and the meter was mounted on a tripod, approximately five feet above ground with the microphone directed toward the turbines. The meter measured A-weighted  $L_{eq}$  and  $L_{90}$  sound levels along with A-weighted octave band frequency sound levels. Ten-minute measurement samples were recorded at each point (Figure 4-1). The measured dBA-weighted  $L_{eq}$  and  $L_{90}$  sound levels are presented in Table 3-1, along with a description of each measurement point. Ambient A-weighted  $L_{eq}$  sound levels varied from a low of 40.4 dBA at MP2 to a high of 49.7 dBA at MP4.

Table 3-1
Background Ambient Sound Levels (dBA)

| Measurement<br>Point | Location Description                 | $L_{eq}$ | L <sub>90</sub> |
|----------------------|--------------------------------------|----------|-----------------|
| MP1                  | East of turbines on fenceline        | 40.7     | 38.9            |
| MP2                  | West of turbines on fenceline        | 40.4     | 38.4            |
| MP3                  | South of turbines on fenceline       | 46.6     | 45.1            |
| MP4                  | North of turbines along 241st street | 49.7     | 46.3            |

The similar  $L_{eq}$  and  $L_{90}$  values for all four measurement points indicate that there were few loud, transient noise sources during the sampling periods. MP4 had the greatest difference between the  $L_{eq}$  and  $L_{90}$  values (3.4 dBA), which was most likely due to a truck that drove by on the street located near MP4 during the measurement period. This may also have contributed to the overall noise level observed during this time period.

#### 4.0 OPERATIONAL NOISE LEVELS

On October 9, 2006, between 1:20 p.m. and 2:45 p.m., Burns & McDonnell personnel collected noise measurements at positions (MP1 – MP6 on Figure 4-1) on the SHPF property near the fenceline boundary while all three SHPF combustion turbines were operating at full-load. These measurement locations were selected based on proximity to the turbines.

Atmospheric conditions were measured and recorded during each ten-minute measurement at each point. Temperatures were around 70 degrees Fahrenheit during the measurement periods, relative humidity was between 27 and 36 percent, and winds were between three and eight miles per hour.

The measured dBA-weighted  $L_{eq}$  and  $L_{90}$  sound levels are presented in Table 4-1, along with a description of each measurement point. Sound levels ( $L_{eq}$ ) varied from a low of 44.8 dBA at MP4 to a high of 54.1 dBA at MP1. Each measurement was recorded on a ten-minute interval, with the exception of MP3. MP8 was located behind a berm directly south of the turbines along inside of the fenceline. This measurement was recorded for a two-minute period, and sound levels throughout the two-minute period were constant with no sharp fluctuations.

Table 4-1
Operational Sound Levels (dBA)

| Measurement<br>Point | Location Description                        | $\mathbf{L}_{	ext{eq}}$ | L <sub>90</sub> |  |
|----------------------|---|-------------------------|-----------------|--|
| MP1                  | East of turbines on fenceline               | 54.1                    | 48.7            |  |
| MP2                  | West of turbines on fenceline               | 50.0                    | 49.1            |  |
| MP3                  | South of turbines on fenceline              | 50.0                    | 48.4            |  |
| MP4                  | North of turbines along 241st street        | 44.8                    | 42.9            |  |
| MP5                  | Along the west fenceline; south of turbines | 50.0                    | 49.1            |  |
| MP6                  | Along the south fenceline; east of turbines | 44.8                    | 42.9            |  |

MP1 and MP5 measurement points were both located along the east fenceline which borders South Harper Road. During both of the sampling periods, insect sounds were heard and three cars drove by on the adjacent street. These sounds may have contributed to the overall  $L_{eq}$  noise level, but would have a lesser effect on the  $L_{90}$  noise level during this time period.

During the measurement period at MP6, leaves rustling on the nearby trees and insects could be heard. Insect sounds could also be heard during the measurement periods at MP2, MP3, and MP4. In addition, the sound of birds chirping was heard during the measurement period at MP4. All of these sounds may have contributed to the overall L<sub>eq</sub> noise levels.

Both the  $L_{90}$  and the  $L_{eq}$  noise levels at each of the above listed measurement points were below the nighttime Cass County Noise Disturbance Ordinance residential limit of 55 dBA. Therefore, based on this noise study, the SHPF complies with the Cass County Noise Disturbance Ordinance regardless of which area applies.

Figure 4-1

#### 5.0 CONTINUOUS NOISE MONITORING

In addition to the noise measurements discussed above, Burns & McDonnell personnel placed sound level meters at two nearby residences outside the property boundary (MP7 and MP8 on Figure 4-1) and performed continuous monitoring with these meters. The placement of these meters was designed to provide specific sound level analysis requested by certain neighbors. These noise meters collected sound level data continuously from about 10 a.m. to 5 p.m. During this period, the three combustion turbines were started, operated at full-load, and shut down. Additionally, the nearby Southern Star Company (SSC) compressor station (Figure 4-1) operated during this time frame. A description of the location of each of the continuous measurement points is provided in Table 5-1 as well as the overall L<sub>eq</sub> and L<sub>90</sub> noise levels for the seven-hour period. These values are for informational purposes only and are not intended to determine compliance with the Cass County ordinance, as these readings incorporate time periods when the units were not operating and also include sounds not attributable to the SHPF.

Table 5-1
Continuous Noise Monitoring Sound Levels (dBA)

| Measurement<br>Point | Location Description  |      | L <sub>90</sub> |
|----------------------|---|------|-----------------|
| MP7                  | Residence on 241 <sup>st</sup> street; north of turbines                    | 44.6 | 40.7            |
| MP8                  | Residence approximately 2,500 feet from the facility; southwest of turbines | 45.4 | 41.3            |

The fluctuations of the  $L_{eq}$  and  $L_{90}$  values over the seven-hour time period are shown in Figures A-1 and A-2, provided in Appendix A. On each of the figures, the time of the turbine start-up, SSC compressor station start-up, and turbine shut-down is shown. The sound levels at the two measurement points appear to be unaffected by either the SHPF turbine operation or the SSC compressor station operation. Even though transient noises occurred during the measurement period (such as cars passing, dogs barking, etc.), all noise measurements (both Lcq and L<sub>90</sub>) were below 55 dBA at all times.

#### 6.0 IMPACTS TO SENSITIVE NOISE RECEPTORS

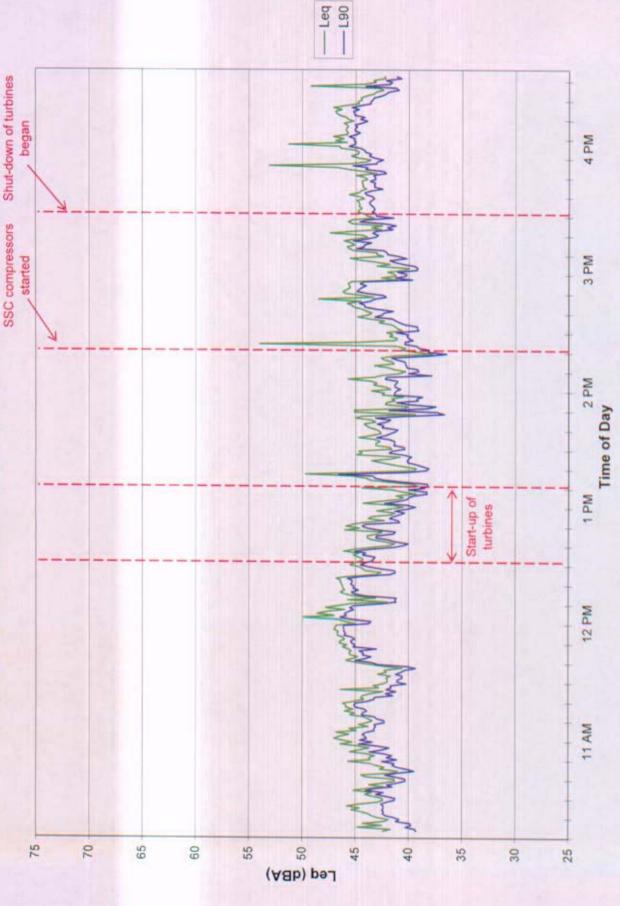
The sensitive noise receptors closest to the SHPF are residences. No schools, hospitals or other community facilities are located within one mile of the facility. Noise attenuating equipment has been added to the facility to minimize any potential impacts on the surrounding community. The operational noise measurements taken directly inside the fenceline are under the Cass County Noise Ordinance thresholds; therefore, no impact to sensitive noise receivers is expected.

#### 7.0 CONCLUSION

A facility noise evaluation has been performed for the South Harper Peaking Facility located just outside the city limits of Peculiar, Missouri. The noise evaluation included an ambient noise survey to quantify the background acoustical environment as well as noise levels while the turbines were in operation to measure sound levels and compare them with the local residential noise ordinance.

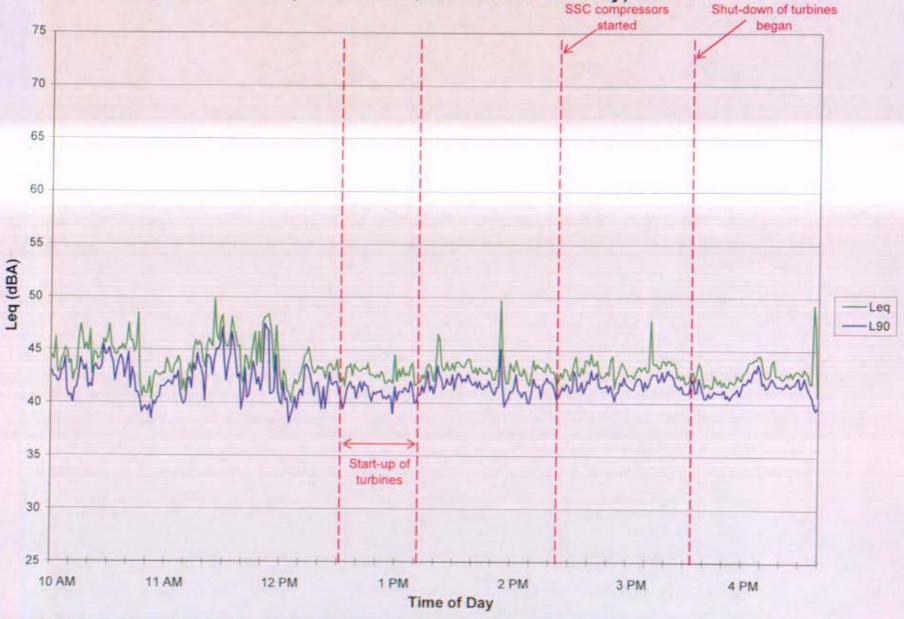
Specifically, not only were all of the fenceline noise measurements attributable to the SHPF combustion turbines below the daytime Cass County ordinance residential limit of 60 dBA, but they were also below the nighttime residential limit of 55 dBA. Based on this study, the South Harper Peaking Facility complies with the Cass County Noise Disturbance Ordinance regardless of which area applies.

Figure A-1: MP7 (Residence on 241st Street) Sound Levels



Note: Spikes in the Leq values during the measurement period are most likely due to extraneous noises (cars passing, dogs barking, etc.) not attributable to the SHPF combustion turbines. All measured noise levels were below 55 dBA.

Figure A-2: MP8 (Residence 2,500 feet from Facility) Sound Levels
SSC compressors Shut-down



Note: Spikes in the Leq values during the measurement period are most likely due to extraneous noises (cars passing, dogs barking, etc.) not attributable to the SHPF combustion turbines. All measured noise levels were below 55 dBA.

## Residential Noise Assessment Study

Aquila South Harper Peaking Facility Cass County, Missouri



August 2005



# Residential Noise Assessment Study Aquila South Harper Peaking Facility Cass County, Missouri

Prepared for:

**Aquila** 20 West 9<sup>th</sup> Street Kansas City, Missouri 65206

August 2005

#### BURNS & McDONNELL ENGINEERING COMPANY, INC. ENGINEERS-ARCHITECTS-CONSULTANTS

Kansas City, Missouri

#### **EXECUTIVE SUMMARY**

Background and operational sound measurements were taken at residences near the Aquila South Harper Peaking Facility. Operational measurements were taken when all three combustion turbines at the facility were operating at full load. Background sound measurements were taken while the facility was not operating. When the background noise measurements are compared to the operational noise measurements, the difference is insignificant. Although one can perceivably "hear" the sound from the plant, the change in the overall noise level is barely perceptible (3-5 dB increase at the closest residences).

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#### 1.0 Introduction

Burns & McDonnell was contracted by Aquila to conduct a noise assessment study for the South Harper Peaking Facility (Facility) located in Cass County, Missouri The Facility consists of three Siemens-Westinghouse 501D5A combustion turbines that operate in simple cycle mode. The existing land use in the vicinity of the project site can be characterized as a mixture of agricultural, industrial, and residential use. The site consists of 73 acres, located on flat to rolling terrain, in Township 45N, Range 32W, Section 29 and 32 approximately three miles southwest of the City of Peculiar on South Harper Road near 243<sup>rd</sup> Street. The nearest residences to the facility are located to the east and south of the site.

The objectives of this study are to conduct noise measurements to capture the ambient and operational sound levels in the vicinity of the project site, quantify the sound emissions from the Facility, and compare those measured sound levels to the Cass County noise ordinance (Ordinance No. 02-20, Noise Disturbance).

#### 2.0 Acoustical Terminology

The human response to sound is complex and is influenced by a variety of acoustic and non-acoustic factors. Acoustic factors generally include the sound's amplitude, duration, frequency content, and fluctuations. Non-acoustic factors typically include the listener's ability to become acclimated to the sound, the listener's attitude towards the sound and the sound source, the listener's interpretation of the necessity of the sound, and the predictability of the sound. As such, response to sound is highly individualized.

Amplitude and frequency physically characterize sound energy. Sound amplitude is measured in decibels (dB) as the logarithmic ratio of a sound pressure to a reference sound pressure (20 microPascals). The reference sound pressure corresponds to the typical threshold of human hearing. A 3 to 5 dB change in a continuous broadband sound is generally considered "just barely perceptible" to the average listener. Similarly, a 6 dB change is generally considered "clearly noticeable" and a 10 dB change is generally considered a doubling (or halving) of the apparent loudness.

Frequency is measured in Hertz (Hz), which is the number of cycles per second. The typical human ear can hear frequencies ranging from approximately 20 Hz to 20,000 Hz. Typically, the human ear is most sensitive to sounds in the middle frequencies (1,000 to 8,000 Hz) and is less sensitive to sounds in the low and high frequencies. As such, the A-weighting scale was developed to simulate the frequency response of the human ear to sounds at typical environmental levels. The A-weighting scale emphasizes sounds in

the middle frequencies and de-emphasizes sounds in the low and high frequencies. Any sound level to which the A-weighting scale has been applied is expressed in A-weighted decibels, dBA. For reference, the A-weighted sound pressure level and subjective loudness associated with some common sound sources are listed in Table 2-1. Most ordinances, including Cass County's, are based on the A-weighting scale.

Table 2-1
Typical Sound Pressure Levels Associated with Common Sound Sources

| Sound Pressure Level | Subjective           | Environment  |   |  |
|----------------------|----------------------|--|---|--|
| (dBA)                | Evaluation           | Outdoor  | Indoor  |  |
| 140                  | Deafening            | Jet aircraft at 75 ft  |   |  |
| 130                  | Threshold of pain    | Jet aircraft during takeoff at a distance of 300 ft                                | 9   |  |
| 120                  | Threshold of feeling | Elevated train   | Hard rock band  |  |
| 110                  |                      | Jet flyover at 1000 ft   | Inside propeller plane  |  |
| 100                  | Very loud            | Power mower, motorcycle at 25 ft, auto horn at 10 ft, crowd sound at football game |   |  |
| 90                   |                      | Propeller plane flyover at 1000 ft, noisy urban street                             | Full symphony or band, food blender, noisy factory            |  |
| 80                   | Moderately loud      | Diesel truck (40 mph) at 50 ft   | Inside auto at high speed,<br>garbage disposal,<br>dishwasher |  |
| 70                   | Loud                 | B-757 cabin during flight  | Close conversation,<br>vacuum cleaner, electric<br>typewriter |  |
| 60                   | Moderate             | Air-conditioner condenser at 15 ft, near highway traffic                           | General office  |  |
| 50                   | Quiet                |  | Private office  |  |
| 40                   |                      | Farm field with light breeze, birdcalls  | Soft stereo music in residence                                |  |
| 30                   | Very quiet           | Quiet residentia l<br>neighborhood   | Bedroom, average residence (without t.v. and stereo)          |  |
| 20                   |                      | Rustling leaves  | Quiet theater, whisper  |  |
| 10                   | Just audible         |  | Human breathing   |  |
| 0                    | Threshold of hearing | M David Eggs 1000 and Ava  |   |  |

Source: Adapted from Architectural Acoustics, M. David Egan, 1988 and Architectural Graphic Standards, Ramsey and Sleeper, 1994.

Another weighting scale is the C-weighting scale. The C-weighting scale simulates the human ear's response to relatively high frequency sound levels. At high frequency sound levels, the response of the human ear to different frequencies is relatively constant. The C-weighting scale generally applies to

sound levels that are much higher than typical environmental sound levels. Nonetheless, the C-weighting scale can be useful in evaluating low-frequency sound levels. Excessive levels of low frequency noise, while not being readily perceptible to the human ear, can be sensed as airborne vibrations. These vibrations can be felt as much as they can be heard. In extreme cases, these vibrations may cause light frame structures to vibrate causing a noticeable vibration within residences. In general, low-frequency impacts to residences in the way of perceptible vibrations are minimized when the C-weighted sound pressure levels are at or below 75-80 dBC.

Sound in the environment is constantly fluctuating, such as when a car drives by, a dog barks, or a plane passes overhead. Therefore, sound metrics have been developed to quantify fluctuating environmental sound levels. These metrics include the exceedance sound levels. The exceedance sound level,  $L_x$ , is the sound level exceeded "x" percent of the sampling period and is referred to as a statistical sound level. The most common  $L_x$  values are  $L_{eq}$ ,  $L_{90}$ ,  $L_{50}$ , and  $L_{10}$ .  $L_{eq}$  is the level of a constant sound over a specific time period that has the same sound energy as the actual sound over the same period.  $L_{90}$  is the sound level exceeded 90 percent of the sampling period.  $L_{90}$  represents the sound level without the influence of loud, transient sound sources and is therefore often referred to as the residual or background sound level.  $L_{50}$  is the sound level exceeded 50 percent of the sampling period.  $L_{10}$  represents the occasional louder sounds and is often referred to as the intrusive sound level.

For this sound report, the most logical metric for sound measurements is  $L_{eq}$ . This report examines  $L_{eq}$  values and compares these measured levels with the applicable noise regulations.

#### 3.0 Applicable Regulations

Burns & McDonnell reviewed applicable state, county and local noise regulations for the project. Cass County has developed a noise ordinance (Ordinance No. 02-20, Noise Disturbance) in 2002. This noise ordinance states that in residential areas, anywhere off property of the sound source shall not exceed 60 dBA during the daytime hours (7 AM through 10 PM), nor shall it exceed 55 dBA during the nighttime hours (10 PM to 7 AM) at the property boundaries of the noise source. This noise assessment study will compare measured noise levels at nearby residences to these noise ordinance specified noise levels.

#### 4.0 Sound Measurement Methodology

On August 11, 2005 between 5:25 and 6:00 AM, ambient (background) sound measurements were taken at representative locations in the neighborhoods (Figure A-1 and Table 4-1) near the facility. None of the

combustion turbines on-site were operating. According to American National Standard, ANSI B133.8-1977, "measurements should not be made when average wind velocity exceeds 7 mph. Cloudy or overcast, or nighttime conditions are preferred". During the ambient sound readings, temperatures were approximately 78 degrees Fahrenheit, relative humidity was approximately 71 percent and average wind velocity was zero to two miles per hour (mph).

Table 4-1
Background Noise Measurement Point Locations

| Measurement Location Description |   |  |  |  |
|----------------------------------|---|--|--|--|
| MP1                              | South Harper Road, South of Facility on Hill    |  |  |  |
| MP2                              | 24211 South Harper Road                         |  |  |  |
| MP3                              | 24005 South Harper Road (Northeast of Facility) |  |  |  |
| MP4                              | New House on 241st Street, North of Facility    |  |  |  |
| MP5                              | 9804 241st Street, North of Facility            |  |  |  |
| MP6                              | 241st Street South of 24021 Lucille Residence   |  |  |  |
| MP7                              | Intersection of Lucille and 241st Street        |  |  |  |
| MP8                              | 24407 Overfelt Road (on Street at Driveway)     |  |  |  |

Also on August 11, 2005 between 3:00 and 6:00 PM, Burns & McDonnell personnel conducted an operational noise level survey at nearby residences in the area while the Facility was operating at full load (all three turbines operating at 108 MW each). During the measurements, temperatures were in the mid-90's, humidity was approximately 40 percent and winds blowing an average of 6 miles per hour with gusts up to 12 miles per hour. The wind was predominantly from the southeast and switched to the southwest towards the end of the measurements. Because the wind was gusting at high speeds, secondary measurements were taken on August 12, 2005 at some of the nearest residences between 2 and 4 PM. Temperatures and humidity were relatively the same as on August 11, but measurements were only taken when wind velocities were less than 7 mph. Other measurements in the neighborhood were taken on Friday, August 19, 2005 at locations that were not available on previous measurement days. On that day, wind was 5 to 8 mph with gusts up to 12 mph, temperatures were approximately 99 degrees Fahrenheit, and relative humidity was 50 percent. A description, along with the measurements at each point is presented in Table 6-1.

Measurements were taken in decibels (dB) at one-third (1/3) octave bands (Hz) using two Larson-Davis model 824, American National Standards Institute (ANSI) Type 1 sound level meters. Both meters were

current for certifications and calibrations. At each monitoring location, sound levels at the referenced bands were measured and logged by the sound meter. Measurements were taken and accumulated until a stable sound level was reached, which was between 30 seconds to one minute. When necessary the meter was paused for traffic passing by the measurement point. The average sound level  $(L_{eq})$  for each measurement point location was recorded. The contribution of the frequency bands to the total sound level is customarily weighted to approximate the frequency sensitivity of human hearing (dBA).

#### 5.0 Background Sound Levels

The background noise measurements were taken while the South Harper Peaking Facility was not operating. Background sound was measured at each of the measurement points listed in Table 4-1 (and shown in Figure A-1) during the early morning hours before the plant was turned on and before traffic increased for morning rush hour. During the background noise measurements, some extraneous noises were observed. These noises are included for each measurement point along with the ambient A-weighted background noise levels, as shown in Table 5-1. The noise levels did not vary much between each measurement point; the variations in noise levels that did occur appeared to result from insect noise. Overall, the measured background noise levels are not uncommon for a rural area without traffic.

Table 5-1
Background Sound Pressure Levels, dBA

| Measurement<br>Point Number | Description  | Sound Pressure Level, L <sub>eq</sub> (dBA) | Extraneous Noises                              |
|-----------------------------|--|---|--|
| MP1                         | South Harper Road, South of plant on hill                  | 52.1  | Insect noise                                   |
| MP2                         | 24211 S. Harper Road                                       | 45.8  | Rooster noise                                  |
| MP3                         | 24005 S. Harper Road (Northeast of Facility)               | 41.8  |  |
| MP4                         | New house on 241 <sup>st</sup> Street, North of plant      | 49.5  | Insect noise                                   |
| MP5                         | 9804 241 <sup>st</sup> Street, North of plant              | 58.4  | Insect noise - Heavy                           |
| MP6                         | 241 <sup>st</sup> Street, South of 24021 Lucille residence | 47.8  | Insect and bird noise                          |
| MP7                         | Intersection of Lucille and 241st Street                   | 44.4  | Light insect noise                             |
| MP8                         | 24407 Overfelt Road (on street at driveway)                | 45.3  | Insect/bird noise, some distant traffic noise. |

#### 6.0 Operational Sound Levels

Operational noise levels were measured at each operational measurement point while the South Harper Peaking Facility was operating at full load (approximately 324 MW) during three different days, as described in Section 4. If vehicles passed by during measurements, the meter was paused so as not to inflate the measurements.

Table 6-1 displays  $L_{eq}$  measured noise levels at each measurement point. At some residences, multiple measurements were taken because the residents requested multiple measurements. Figure A-2, in Appendix A, displays the approximate location of each operational noise measurement taken in the surrounding community.

 $\label{eq:Table 6-1} Table 6-1 \\ Measured (L_{eq}) Operational Sound Pressure Levels, dBA$ 

| Measure-<br>ment Point |                                    | Sound Pressure Level,  L <sub>eq</sub> (dBA) |              |   |
|------------------------|------------------------------------|--|--------------|---|
| Number                 | Location Description               | 8/11/2005                                    | 8/12/2005    | Notes   |
| 1A                     | 24121 Lucille – Play area          | 50.0   | 43.9         | Plant audible, bird noise                             |
| 1B                     | 24121 Lucille - Table in back      | 48,4   | 41.0         | Plant audible   |
| 1C                     | 24121 Lucille – Near garage        | 48.5   | 43.6         | Plant audible   |
| 1D                     | 24121 Lucille – Near driveway      | 42.8   | 41.8         | Plant audible   |
| 2A                     | January - Front drive              | 46.9   | 39.0         | Plant audible   |
| 2B                     | January – Back porch               | 43.9   | 44.4         | Plant audible   |
| 2C                     | January – Back property line       | 45.3   | 44.3         | Plant audible   |
|                        | 9908 241st St. – Road &            | _  |              |   |
| 3A                     | Driveway                           | 48.8   | 41.5         | Plant audible   |
| 3B                     | 9908 241st St Front door           | 46.6   | 47.4         | Plant audible   |
|                        | 9812 241st St Road &               |  |              |   |
| 4A                     | Driveway                           | 49.1   |              | Plant audible   |
| 4B                     | 9812 241st St. – Front Door        | 50.5   |              | Plant audible   |
| 5                      | 9804 241st St Driveway             | 49.9   |              | Plant audible   |
| 6                      | 9801 241st St. – Driveway          | 45.6   |              | Plant audible   |
| 7                      | 24000 Lucille – Driveweay          | 47.3   |              | Plant audible   |
| 8                      | 9204 241st St Driveway             | 44.6   |              | Plant audible   |
|                        | 24407 Overfelt – Driveway          |  |              |   |
| 9                      | entrance                           | 47.2   |              | Plant audible   |
| 10                     | Rt. 1, Box 165, Overfelt           | 48.1   |              |   |
| 11                     | 24005 Lucille                      | 45.1   |              | Plant audible   |
| 12                     | 23925 Lucille – Driveway           | 44.6   |              | Plant audible   |
|                        | Across Street from 23925 Lucille   |  |              |   |
| 13                     | – Driveway                         | 46.2   |              | Plant audible   |
| 14                     | 23910 Lucille – Driveway           | 42.7   |              | Plant audible   |
| 15                     | 23817 Lucille – Driveway           | 51.1   | <u> </u>     | Plant audible   |
| 16                     | 23805 Lucille – Driveway           | 41.9   |              | Plant audible   |
| 17                     | 23717 Lucille – Driveway           | 40.3   |              | Plant audible   |
|                        |                                    |  |              | Plant not audible - electric box                      |
| 18                     | 23706 Lucille – Driveway           | 49.8   | <del> </del> | audible   |
| 19                     | 23623 Lucille – Driveway           | 39.4   |              | Plant not audible                                     |
| 20                     | 236th Dead-End At trees            | 46.6   |              | Dog barking   |
| 21                     | 23521 Lucille – Driveway           | 52.4   |              | Dog barking   |
| 22                     | 23520 Lucille – Driveway           | 43.0   |              | Flag in yard making noise                             |
| 23                     | 23506 S Crest – Driveway           | 45.2   |              |   |
| 24                     | 23615 Greenridge – Driveway        | 50.0   | <u> </u>     |   |
| 25                     | 23601 Greenridge – Driveway        | 46.9   | <del> </del> |   |
| 26                     | Tunnicliff - Driveway              | 40.9   |              | <u> </u>  |
| 27                     | 24600 S. Harper – North fenceline  | 40.9   |              | Plant audible   |
| 28                     | 24800 S. Harper - Front yard       | 47.8   |              | Plant not audible - tractor noise                     |
| 29                     | Intersection S. Harper & 243rd St. | 58.8 <sup>+</sup>                            |              | Gas compressor station operating, plant audible, also |
| 30A                    | 10312 243d St Front yard           | 47.0   |              | Plant audible, insect noise                           |
| 30B                    | 13012 243rd St Backyard            | 51.8   | T            | Plant audible, insect noise                           |

Table 6-1, Continued

| Measure-             | Table  |  |        |  |
|----------------------|--|--|--------|--|
| ment Point<br>Number | Location Description   | $\frac{L_{eq} (dBA)}{8/11/2005} = \frac{8/12/2005}{8/12/2005}$ |        | Notes  |
| 31A                  | 10707 240th St. – Backyard   | 39.7   |        | Plant audible, insect noise                    |
| 31B                  | 10707 240th St Front yard  | 43.7   |        | Plant audible, insect noise                    |
| 32                   | 23300 Aero Dr. – Front yard  | 50.2   |        | Plant not audible, insect and traffic noise    |
| 33                   | 10501 E. 235th St. – Back yard deck  | 43.7   |        | Plant not audible                              |
| 34                   | Intersection S. Harper & 235th St  | 52.2 <sup>+</sup>  |        | Insect noise, traffic noise. Plant not audible |
| 35                   | 23903 S. Harper - Front yard   | 44.9   |        | Plant audible                                  |
| 36                   | 24405 S. Harper – Front yard   | 45.9   |        | Plant audible, insect noise                    |
| 37A                  | 24401 S. Harper – Front yard   | 57.4   |        | Leaves in wind noise - heavy                   |
| 37B                  | 24401 S. Harper – South side of property   | 48.5   |        | Plant audible                                  |
| 38                   | House to north of 24211 S. Harper  - Front yard                                    | 49.1   |        | Plant audible                                  |
| 39                   | 24211 S. Harper – Front yard   | 52.0   |        | Plant audible                                  |
| 40                   | 10606 243rd St Front yard  | 45.3   |        | Plant audible                                  |
| 41                   | 24214 S. Tanaine   | 49.6   | 47.8*  | Plant not audible                              |
| 42A                  | Aquila west property boundary, 350 ft. south of 214st St., 22 ft below plant elev. |  | 53.2*+ | Plant audible                                  |
| 42B                  | Aquila west property boundary, 350 ft. south of 214st St., 12 ft below plant elev. |  | 58*+   | Plant audible                                  |

<sup>\*</sup>Measurement taken on 08/19/05.

The highest measured operational noise level was the measurement taken at the intersection of 243<sup>rd</sup> Street and South Harper Road (not a residence). The noise testing personnel observed that the gas compressor station was operating during the measurement. Because the compressor station was operating and was directly between the measurement point and the plant the measurement is high due to the noise from the compressor station. The only other operational measurement at a residence that was higher than 55 dBA was the measurement at 24401 South Harper Road. Noted during this measurement was that the wind was very high and the leaves on the trees were blowing and making significant noise.

In order to determine if any low or high frequencies are dominating the sound at the nearby residences, the octave bands were analyzed. Appendix B contains a sound spectral graph of the A-weighted one-third octave band frequency sound pressure levels at a representative measurement point on 241<sup>st</sup> Street. The figure displays the measured noise levels at each octave band frequency when the plant is not operating (background) and when the plant is at full load (operational). In reviewing both spectrums, it appears that the high-pitched tone that can be heard at some nearby locations is in the 1000 to 1250 Hz range.

Measurement not taken at a residence.

Because the noise levels in these frequencies are 10 dB higher than the other frequencies, this frequency is more audible and may create a more tonal noise that "stands out".

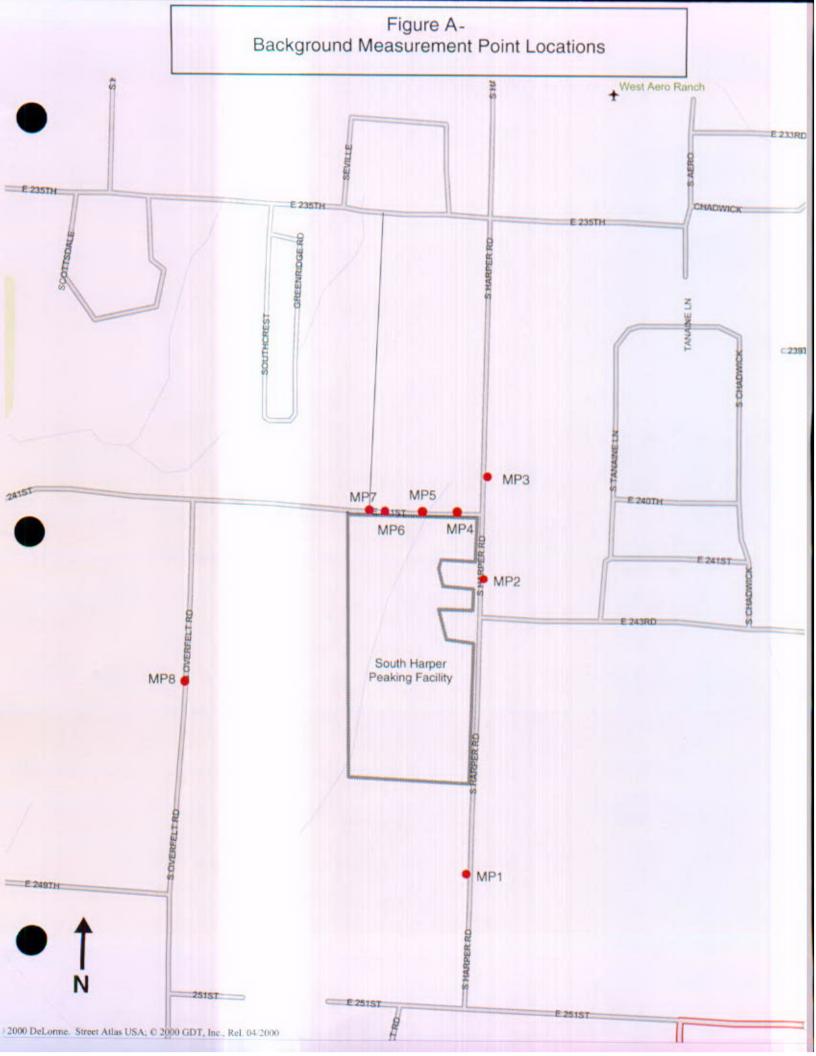
During the near-field measurements around each of the combustion turbines on the site, the possible source of this tonal noise was determined to be the air inlet expansion joint. Aquila is currently obtaining information on possible attenuation that is available for this piece of equipment.

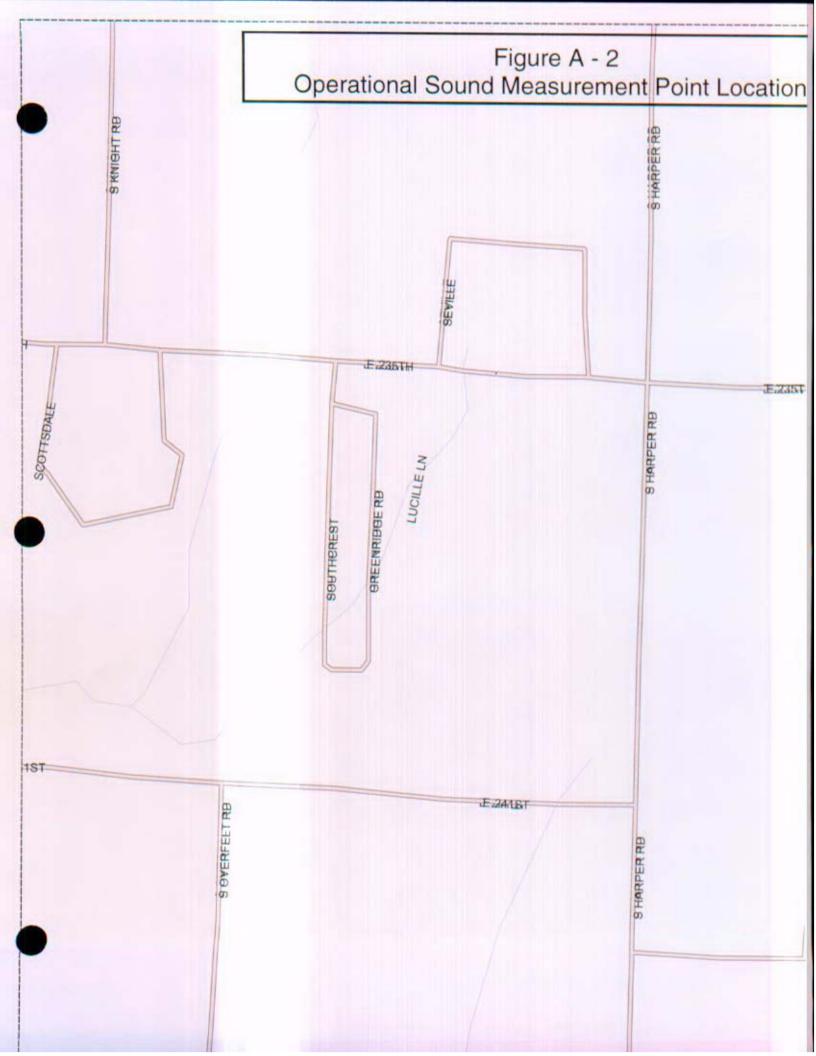
#### 7.0 Conclusions

Noise levels in the neighborhoods around the South Harper Peaking Facility were measured while the facility was operating at full load and these measurements were compared to the existing background noise measurements when the facility is not operating. When the ambient noise measurements are compared to the operational noise measurements, the difference is insignificant. Although one can perceivably "hear" the sound from the plant, the change in the overall noise level is barely perceptible (3-5 dB increase at the closest residences).

**APPENDICES** 

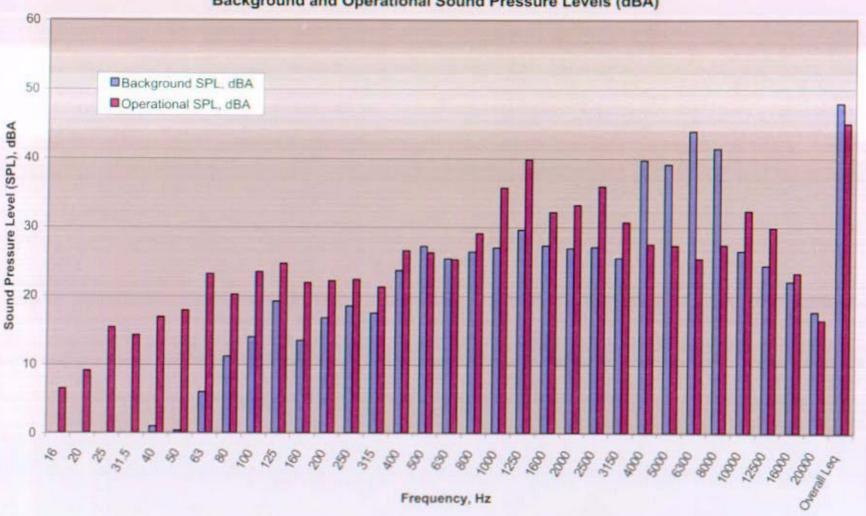
APPENDIX A
BACKGROUND AND OPERATIONAL
NOISE MEASUREMENT POINTS





APPENDIX B 1/3 OCTAVE BAND FREQUENCY SOUND PRESSURE LEVELS FOR BACKGROUND AND OPERATIONAL NOISE

Figure B-1
241st Street One-third Octave Band Frequency
Background and Operational Sound Pressure Levels (dBA)



APPENDIX J

KANSAS UNIVERSITY

TOXICOLOGIST RESUMES



#### Scientific Freedom, Responsibility and Law Program

## COURT APPOINTED SCIENTIFIC EXPERTS

A Demonstration Project of the AAAS

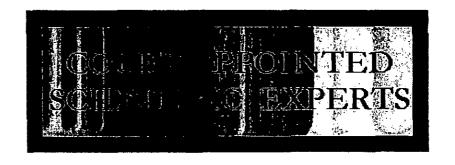
- MAIN
- ADVISORY COMMITTEE
- SUBCOMMITTEES
- RECRUITMENT AND SCREENING PANEL
- **BIOSKETCHES**
- **CASE EXPERIENCE**
- HANDBOOKS

The project is staffed by Mark S. Frankel, Project Director; Deborah Runkle, Project Manager; and Kristina Schaefer, Program Associate.

### Court Appointed Scientific Experts AAAS

1200 New York Avenue, NW Washington, DC 20005 Phone: (202) 326-8964 Fax: (202) 289-4950 case@aaas.org

Court Appointed Scientific Experts is funded by the Leland Fikes Foundation and the Open Society Institute.



## John Doull, M.D., Ph.D. Recruitment and Screening Panel

Dr. John Doull is Professor Emeritus of Pharmacology and Toxicology in the Department of Pharmacology, Toxicology and Therapeutics at the University of Kansas Medical School. Prior to coming to Kansas, he was the Assistant Director of the University of Chicago Toxicity Laboratory and Associate Professor in the Department of Pharmacology at the University of Chicago. He has a BS degree in chemistry from Montana State University and PhD (pharmacology) and MD degrees from the University of Chicago.

He served on the Toxicology Study Section of NIH and the council of the National Institute of Environmental Health Sciences (NIEHS). He is past president of the Society of Toxicology and the American Board of Toxicology, has chaired the Threshold Limit Value Committee of the American Conference of Governmental Industrial Hygienists. He has served on the Expert Panels of the International Life Sciences Institute (ILSI), the Flavor Extract Manufacturing Association (FEMA), and the Distilled Spirits Council of the United States (DISCUS), and was a member of the Presidential Clean Air Commission. He has chaired the Committee on Toxicology of the National Research Council of the National Academy of Sciences, served on the scientific advisory panels of the Environmental Protection Agency (EPA), the National Institute of Occupational Safety and Health (NIOSH), among others, and consults with many governmental, state, industrial and private organizations.

He received the Kenneth DuBois Award in 1981 from the Mid-America chapter of Society of Toxicology, the Samuel Kuna Award in 1989 from Rutgers University (Robert Wood Johnson Medical School), the International Achievement Award in 1990 from the International Society for Regulatory Toxicology and Pharmacology, and the Commanders Award for Public Service from the Department of the Army Armed Forces Epidemiological Board (AFEB). In 1991, he received the Toxicology Ambassador Award from the Mid Atlantic

Chapter of the Society of Toxicology and a Distinguished Medical Alumnus Award from the University of Chicago. In 1992 he received the Stockinger Award from the American Conference of Governmental Industrial Hygienists (ACGIH) and was the first recipient of the John Doull Award, which was established by the Central States Chapter of the Society of Toxicology to recognize his contributions to the discipline of toxicology. In 1993, he received the Merit award of the Society of Toxicology and in 1994 he was honored as the Snider Awardee of the Arkansas Toxicology Symposium Series. In 1996 he received the Founder's Award from the Chemical Industry Institute of Toxicology (CIIT), was awarded an honorary doctorate degree from the University of Kuopio in Finland, the Meritorious Service Award from ACGIH and the Distinguished Service Award from the American College of Toxicology.

#### CURRICULUM VITAE

#### Karl K. Rozman, Ph.D., D.A.B.T.

Date of Birth: July 20, 1945

Place of Birth: Nagycenk, Hungary

Family:

Wife: Maria

Children: Marissa, Gabriella, Catarina, Alexandra

Citizenship: U.S.A.

Education/Degrees:

Matura (Secondary education and college): Realgymnasium, Innsbruck, Austria, 1963

Cand. phil. (M.S. equivalent): Leopold Franzen's University, Innsbruck, Austria, 1970 (Chemistry)

Dr. phil. (Ph.D. equivalent): Leopold Franzen's University, Innsbruck. Austria, 1973 (Organic and Pharmaceutical Chemistry)

#### Certifications:

American Board of Toxicology: 1981, recertified 1986, 1991, 1996, 2001

#### Academic Appointments:

Instructor, Institute of Organic and Pharmaceutical Chemistry, Leopold Franzen's University, Innsbruck, Austria, 1970-1973

Adjunct Assistant Professor, Department of Biology, New Mexico State University, Las Cruces, NM, 1978-1980

Assistant Professor, Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, 1981-1982

Associate Professor, Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, 1983-1985

Professor, Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, 1986-present

#### Professional Affiliations:

- Research Associate, Institute of Ecological Chemistry, National Research Center for Environment and Health, Neuherberg, F.R.G. (GSF-Forschungszentrum für Umwelt und Gesundheit, GmbH), at Holloman AFB, NM, 1974-1977
- Group Leader, Institute of Toxicology, National Research Center for Environment and Health, Neuherberg, F.R.G. at Holloman AFB, NM and Kansas City, KS 1978-1988.
- Visiting Scientist, Department of Experimental Pathology, Karl Thomae (Böhringer-Ingelheim) GmbH, Biberach an der Riß, F.R.G., Nov.-Dec., 1984
- Visiting Scientist, Department of Experimental Pathology, American Cyanamid Co., Pearl River, NY, Jan.-March, 1985
- Sabbatical Leave, National Research Center for Environment and Health, Neuherberg, F.R.G., 1988-1989

Head, Section of Environmental Toxicology, GSF-Institut für Toxikologie, Neuherberg, F.R.G., 1989-present

#### Languages:

English, German and Hungarian; fluent in speaking and writing

#### Professional Societies:

International Society of Ecotoxicology and Environmental Safety, 1978-New York Academy of Sciences, 1979-American Association for the Advancement of Science, 1980-Society of Toxicology, 1983-International Society for the Study of Xenobiotics, 1983-Deutsche Gesellschaft für Pharmakologie und Toxikologie, 1984-Sigma Xi, 1984-American Society for Pharmacology and Experimental Therapeutics, 1985-American Association of Pharmaceutical Scientists, 1986-Society of Toxicologic Pathologists, 1988-American Conference of Governmental and Industrial Hygienists, 1995-Academy of Toxicological Sciences, 2002-

#### Organizations:

Member, Awards Committee, Society of Toxicology, Washington, DC, 1986-1988

- Member, Executive Council, Environmental and Occupational Health Center, University of Kansas Medical Center, Kansas City, KS, 1986-
- Chairman, Platform Session, Pesticides, 25th Annual Meeting of the Society of Toxicology, New Orleans, LA, March 5, 1986
- Scientific Program Chairman, 6th International Symposium of the Society of Toxicologic Pathologists, Gastrointestinal Toxicologic Pathology, Philadelphia, PA, June 1-3, 1987
- Chairman, Symposium, Morphological, Functional, Biochemical and Immunological Aspects of the Gut, 6th International Symposium of the Society of Toxicologic Pathologists, Philadelphia, PA, June 1, 1987

Liaison Representative, Society of Toxicology to Eurotox, Washington, DC, 1988-present

Member, BMFT Study Section on Dioxins and Furans, Bonn, F.R.G., 1988-1993

Member, Education Committee, Society of Toxicology, Washington, DC, 1989-1990

Member, Environmental Health & Safety Council, American Health Foundation, Valhalla, NY, 1989-1997

Chairman, Platform Session, TCDD I, 30th Annual Meeting of the Society of Toxicology, Dallas, TX, Feb. 25, 1991

Member, TLV Committee, American Conference of Governmental and Industrial Hygienists, Cincinnati, OH, 1992-1998

Liaison Representative, TLV Committee to the German MAK Kommission, 1992-present

Member, IEHR Expert Scientific Group on EPA's Dioxin Document, 1994-1995

Chairman, Platform Sessions, TCDD I, 35th Annual Meeting of the Society of Toxicology, Anaheim, CA, March 12, 1996

Vice-chair, TLV Committee, American Conference of Governmental and Industrial Hygienists, Cincinnati, OH, 1998

Member, Air Force Panel of Experts, ACTA, Torrance, CA, Commissioned by NRC, 1999

Member, NICEATM Expert Panel, Washington, D.C., 2000-20001

Chairman, Poster Discussion Session, Developmental and Reproductive Toxicology in Mammals, 40<sup>th</sup> Annual Meeting, Society of Toxicology, San Francisco, March 28, 2001

Member, Steering Committee, ILSI Agriculture Chemical Safety Assessment, Washington, D.C., 2001

Member, Site Visiting Team, Environmental Toxicology Program, Wilmington, NC, August 21-23, 2001.

Chairman, Advisory board to IBSA, Kansas City, KS, 2002 - present.

Member, NTP-CERHR Expert Panel, Reproductive and Developmental Toxicity of Propylene Glycol and Ethylene Glycol, 2002-2003.

## Editor:

Gastrointestinal Toxicology, Elsevier, New York/Amsterdam/Oxford, pp. 606, 1986

## Associate Editor:

Archives of Toxicology, 1991-present

## Editorial Board:

Pharmaceutical Research, 1987-1995 Toxicology and Applied Pharmacology, 1989-1997 Archives of Toxicology, 1990-present Toxicology, 2000 – present Nonlinearity in Biology, Toxicology and Medicine, 2002 - present

## Consultant:

American Cyanamid Co., Pearl River, NY, 1985-1988
Environmental Protection Agency, Washington, D.C., 1986-present
Reviewed Chlorobenzene, Drinking Water Criteria Document, 1986
Reviewed Dichlorobenzenes, Drinking Water Criteria Document, 1986
Reviewed Hexachlorobenzene, Drinking Water Criteria Document, 1986
Reviewed Polychlorinated Dibenzofurans, Drinking Water Criteria Document, 1986
Reviewed Dichloromethane, Health Assessment Document, 1987
Reviewed Trichloroethylene, Health Assessment Document, 1987
Reviewed 2,3,7,8-Tetrachloro-dibenzo-p-dioxin (TCDD) and Related Compounds, Health Assessment Document, 1996

Environmental Protection Agency, Region VII, Kansas City, KS, 1986-1987 Reviewed 2,3,7,8-Tetrachlorodibenzo-p-dioxin Risk Assessment, 1986

National Research Council, Subcommittee on Dioxin, Washington, D.C., 1987-1988 Co-authored Acceptable Levels of Dioxin Contamination in Office Building Following a Transformer Fire, 1988

BGA/UBA (Bundesgesundheitsamt/Umweltbundesamt) Berlin, F.R.G., Gesundheitliche Beurteilung von Dioxinen und Furanen, ISBN 3-89254-1174-4, 1992

BAGS (Behörde für Arbeit, Gesundheit und Soziales) Hamburg, F.R.G., Untersuchung der Schilddrüse und ihrer Funktion in der epidemiologischen Studie der Bille-Siedlung, 1994-1996

## Teaching:

## Undergraduate:

Medical Pharmacology (team teaching), 1981-present

## Graduate:

Toxicology, 1978-present
Disposition of Xenobiotics, 1981-present
Advanced Toxicology, 1986-present
Toxicology of Pesticides, occasionally
Special Topics in Toxicology, occasionally

## Principal Advisor.

## Graduate Students:

Joel R. Gorski, 1984-1988, Ph.D. Fan Fang, 1991-1995, Ph.D. Xuelin Li, 1991-1995, Ph.D. Steffen Ernst, 1992-1996, Dr.med. Johann Wirsing, 1993-1999, Dr rer. nat Xin Gao, 1996-1998, M.S. Claire Croutch, 1998-present

## Kristian Fried, 2000 - present

# Postgraduate Fellows:

Eckhard Scheufler, Ph.D., 1982-1983 Lutz W. D. Weber, Ph.D., 1985-1987 Giacomo Muzi, M.D., 1985-1986 Bernhard Stahl, D.V.M., 1989-1992 William L. Roth, Ph.D., 1990-1991 Matti Viluksela, Ph.D., 1992-1994 Marja Viluksela, M.S., 1993-1994 Claire Redman, M.S., 1996-1997 Shakil Saghir, Ph.D., 1998-1999

#### Senior Associates:

Lutz W.D. Weber, Ph.D., Research Assistant/Associate Professor, 1988-1995 Laszlo Kerecsen, M.D., Research Associate Professor, 1993-1995 Bernhard U. Stahl, D.V.M., Research Assistant Professor, 1993-1995 Jan E. Storm, Ph.D. Research Assistant Professor, 1995-1999 Deok-Soo Son, D.V.M., Ph. D., Research Assistant Professor, 2000 – present

#### Honors:

- Matura (Secondary education and college): Realgymnasium, Innsbruck, Austria, 1963, summa cum laude (= mit Auszeichnung)
- Cand. phil. (M.S. equivalent): Leopold Franzen's University, Innsbruck, Austria, 1970 (Chemistry), summa cum laude
- Dr. phil. (Ph.D. equivalent): Leopold Franzen's University, Innsbruck, Austria, 1973 (Organic and Pharmaceutical Chemistry), summa cum laude
- Carriè-Schneider Award of the German Dermatological Society, Munich, F.R.G., 1988
- Margin of Excellence Award, University of Kansas Medical Center, Kansas City, KS, 1989
- Distinguished Visiting Professor, New Mexico State University, Las Cruces, NM, 1990

#### **BIBLIOGRAPHY**

#### Thesis:

Acylierungsprodukte (NH)- und (CH)-acider Verbindungen und deren Abwandlung durch Cyclisierung und Umlagerung.

(Acylation products of (NH)- and (CH)-acidic compounds and their modification by cyclisation and rearrangement).

# Full-length Publications:

- 1. Rozman, K.K., Müller, W.F., latropoulos, M.J., Korte, F. and Coulston, F.: Ausscheidung, Körperverteilung und Metabolisierung von Hexachlorbenzol nach oraler Einzeldosis in Ratten und Rhesusaffen. *Chemosphere* **4**:289-298, 1975.
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- 4. Rozman, K.K., Müller, W.F., Coulston, F. and Korte, F.: Chronic low dose exposure of rhesus monkeys to hexachlorobenzene. *Chemosphere* **7**:177-184, 1978.
- Müller, W.F., Scheunert, I., Rozman, K.K., Kögel, W., Freitag, D., Richter, E., Coulston, F. and Korte, F.: Comparative metabolism of hexachlorobenzene and pentachloronitrobenzene in plants, rats and rhesus monkeys. *Ecotoxicol. Environ. Safety* 2:437-445, 1978.
- 6. Rozman, K.K., Williams, J., Müller, W.F., Coulston, F. and Korte, F.: Metabolism and pharmacokinetics of pentachlorobenzene in the rhesus monkey. *Bull. Environ. Contam. Toxicol.* **22**:190-195, 1979.
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- 160. Gao, X., Petroff, B.K., Oluola, O., Rozman, K.K., and Terranova, P.F.: Effects of indole-3-carbinol and tamoxifen on ovulation and its hormonal regulation—comparison to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). *Toxicologist* 66 (1-S): 376, 2002.
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# Invited Lectures:

| Sept. 5, 1978         | University of Amsterdam                                   | Amsterdam, Holland/    |
|-----------------------|---|------------------------|
| June 30, 1980 ·       | Michigan State University                                 | East Lansing, MI       |
| July 2, 1980          | University of Marburg                                     | Marburg, F.R.G.        |
| July 4, 1980          | University of Wageningen                                  | Wageningen, Holland <  |
| March 25, 1982        | University of Kansas                                      | Lawrence, KS '         |
| May 24, 1982          | American Chemical Society<br>Toxicology-Short Course      | Washington, DC         |
| Sept. 15, 1982        | American Chemical Society<br>National Meeting             | Kansas City, MO        |
| Nov. 4, 1982          | Velsicol Chem. Corp.                                      | Chicago, IL            |
| Dec. 3, 1982          | University of Pecs  | Pecs, Hungary          |
| Dec. 19, 1982         | University of Bern  | Bern, Switzerland      |
| June 15, 1983         | American Chemical Society Toxicology-Short Course         | New York City, NY      |
| April 3, 1984         | Banbury Conference  | Cold Spring Harbor, NY |
| April 24, 1984        | INTERx/Merck & Co.  | Lawrence, KS           |
| May 24, 1984          | Merck, Sharp & Dohme<br>Research Laboratories             | Rahway, NJ             |
| June 13, 1984         | 25th Congress of the<br>European Society of<br>Toxicology | Budapest, Hungary      |
| Oct. 30, 1984         | National Research Center for<br>Environment and Health    | Neuherberg, F.R.G.     |
| Feb. 25, 1985         | American Cyanamid Co.                                     | Pearl River, NY        |
| March 4, 1985         | University of Amsterdam                                   | Amsterdam, Holland     |
| April 18-19, 1985 (2) | New Mexico State University                               | Las Cruces, NM         |
| June 19, 1985         | University of Kuopio                                      | Kuopio, Finland        |
| June 20, 1985         | National Public Health Institute                          | Kuopio, Finland        |
| June 24, 1985         | University of Lübeck                                      | Lübeck, F.R.G.         |
| June 27, 1985         | University of Innsbruck                                   | Innsbruck, Austria     |
| July 30, 1985         | Gordon Research Conferences                               | Meriden, NH            |
| Aug. 9, 1985          | American Academy of<br>Clinical Toxicology                | Kansas City, MO        |

| March 14, 1986       | Deutsche Gesellschaft für<br>Pharmakologie und<br>Toxikologie | Mainz, F.R.G.              |
|----------------------|---|----------------------------|
| April 3, 1986        | New Mexico State University                                   | Las Cruces, NM             |
| Nov. 3, 1986         | American Association of<br>Pharmaceutical Scientists          | Washington, DC             |
| March 9, 1987        | Monsanto Co.  | St. Louis, MO              |
| June 1, 1987         | Society of Toxicologic<br>Pathologists                        | Philadelphia, PÂ           |
| Sept. 1, 1987        | Environmental Protection<br>Agency, Region VII                | Kansas City, KS            |
| Oct. 25, 1988        | University of Würzburg  | Würzburg, F.R.G.           |
| Nov. 14-16, 1988 (3) | ETH and University of Zürich                                  | Schwerzenbach, Switzerland |
| Apr. 6, 1989         | University of Tübingen  | Tübingen, F.R.G.           |
| May 12, 1989         | University of München   | München, F.R.G.            |
| Jan. 16, 1990        | The Toxicology Forum  | Karlsruhe, F.R.G.          |
| June 19, 1990        | University of Zürich  | Zürich, Switzerland        |
| Nov. 5-9, 1990 (6)   | New Mexico State University                                   | Las Cruces, NM             |
| March 1, 1991        | American Health Foundation                                    | Valhalla, NY               |
| April 12, 1991       | SOT/Central States  | St. Louis, MO              |
| April 24, 1991       | American Association of<br>Pharmaceutical Scientists          | Arlington, VA '            |
| April 25, 1991       | EPA   | Washington, DC             |
| May 27-28, 1991 (2)  | GSF-Forschungszentrum   | Neuherberg, F.R.G.         |
| Sept. 24, 1991       | Dioxin '91  | Research Triangle Park, NC |
| Nov. 12, 1991        | Dioxin-Information  | Augsburg, F.R.G.           |
| Nov. 13, 1991        | GSF-Institut für Ökologische<br>Chemie                        | Neuherberg, F.R.G.         |
| Jan. 16, 1992        | Comett III Module   | Kuopio, Finland /          |

| Feb. 4, 1992   | EPA  | Research Triangle Park, NC |
|----------------|--|----------------------------|
| April 23, 1992 | First Conference of of Toxicologic Pathologists  | Nagoya, Japan              |
| July 17, 1992  | Tulane University  | New Orleans, LA ~          |
| Jan. 28, 1993  | University of Würzburg   | Würzburg, F.R.G.           |
| Feb. 24, 1994  | University of Louisville   | Louisville, KY             |
| Feb. 28, 1994  | IEHR   | Chicago, IL                |
| Apr. 20, 1994  | Analytica 94   | München, F.R.G.            |
| May 17, 1994   | SECOTOX  | Balatonaliga, Hungary      |
| Oct. 11, 1994  | Da Vinci Society   | Kansas City, KS            |
| Nov. 10, 1994  | Third Annual Arkansas<br>Toxicology Symposium  | Little Rock, AR            |
| Feb. 12, 1996  | University of Oklahoma   | Oklahoma City, OK          |
| Sept. 4, 1996  | Environmental Medicine<br>Conference   | Aspen, CO -                |
| Nov. 16, 1998  | National Research Council (Deployed Forces)  | Washington, DC             |
| Jan. 29, 1999  | National Research Council (Deployed Forces)  | Washington, DC             |
| Apr. 18, 1999  | National Research Council (AEGLE)  | Washington, DC             |
| March 21, 2000 | S.O.T.   | Philadelphia, PA           |
| Dec. 14, 2000  | Ethics and Sustainability<br>Dialogue Group  | Washington, DC -           |
| Jan. 24, 2001  | University of Missouri   | Kansas City, MO            |
| Dec. 3, 2001   | University of Kansas   | Kansas City, KS            |
| Dec. 19, 2001  | NIEHS  | Research Triangle Park, NC |
| June 11, 2002  | Int. Conference on Non-Linear Dose-<br>Response Relationships in Biology,<br>Toxicology and Medicine | Amherst, MA                |

## Principal Investigator:

GSF (F.R.G.), 1981-1983, Enhanced removal of halogenated hydrocarbons from tissue stores, \$172,000.

Penreco, a division of Pennzoil, Inc., 1982, Enhanced fecal excretion of DDE in dairy cattle, \$5,000

Velsicol Chem. Corp., 1983, Decontamination of humans and livestock exposed to chlordane and heptachlor, \$33,000

BRSG, 1983, Is induction of porphyria cutanea tarda by hexachlorobenzene Ca2+ mediated?, \$3,000

GSF (F.R.G.), 1984-1986, Mechanism of halogenated hydrocarbon toxicity I, \$212,000

Dow Chem. Co., 1984, Mechanisms of toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin, \$15,000

The Standard Oil Co., 1985, Training in Toxicology, \$10,000.

BSLU (F.R.G.), 1985-1987, Role of brown adipose tissue in the toxicity of 2,3,7,8-tetrachlorodibenzo-pdioxin, \$189,000

The Standard Oil Co., 1986, Training in Toxicology, \$15,000

GSF (F.R.G.), 1987-1989, Mechanisms of halogenated hydrocarbon toxicity II, \$292,000

Basotherm GmbH (F.R.G.), 1987, Dermal penetration of Tamol-DN, \$16,000

The Hartz Mountain Corp., 1988, Pesticide research and development, \$15,000

Basotherm GmbH (F.R.G.), 1988, Dermal penetration of Pandel7 with or without pretreatment with Tannolact, \$43,000

GSF (F.R.G.), 1990-1991, Toxicity of mixtures of chlorinated dibenzo-p-dioxins, \$86,000

Basotherm, GmbH (F.R.G.), 1990-1991, Dermal penetration of benzoylperoxide with or without urea, \$33,800

GSF (F.R.G.), 1990-1992, Mechanisms of halogenated hydrocarbon toxicity III, \$242,600

EPA (C R820241-01-0), 1992-1995, Subchronic toxicity of chlorinated dibenzo-p-dioxins (CDDs) and their mixture, \$372,500

Basotherm, GmbH (F.R.G.), 1994, Dermal and ocular toxicity of drugs, \$28,860.

GSF (F.R.G.), 1993-1994 Mechanism of toxicity of chlorinated dibenzo-p-dioxins, \$105,250.

GSF (F.R.G.), 1993-1995, Research in toxicology, \$300,000

GSF (F.R.G.), 1981-present, Equipment and service contracts, 410,170

Basotherm, GmbH (F.R.G.), 1995, Dermal and ocular toxicity of drugs, \$36,500

Research Institute, 1995-1996, Pesticide research, \$25,800

GSF (F.R.G.), 1996-1998, Research in toxicology, \$360,000

GSF (F.R.G.) 1997-1999, Mechanisms of toxicity, \$60,000 Research Institute, 1997-1998, Time as a variable in toxicology, \$56,504

Research Institute, 1999-2001, Chlorinated phenothiazines as endocrine disruptors, \$117,000

GSF (F.R.G.), 1999-2001, Research in toxicology, \$384,000

GSF (F.R.G.), 2001-2003, Research in toxicology, \$372,000

# Co-principal investigator:

EPA 1997-2000, Models assessing direct effects of dioxins and related compounds on the ovary, \$398,569

July 14, 2003