ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

KENTUCKY DIVISION OF WATER
WELLHEAD PROTECTION PLAN
5-YEAR UPDATE FORM

Update Requirements:

This form should be used for the 5-year update submittal requirements of the Kentucky Wellhead Protection Program (WHPP) in compliance with 401 KAR 4:220 and SDWA Section 1428. Once the form is complete, please sign and send to:

Kentucky Division of Water
Watershed Management Branch
Attention: Allan Shingleton
300 Sower Boulevard, 3rd Floor
Frankfort, Kentucky 40601 or allan.shingleton@ky.gov

For assistance contact Allan Shingleton at (502) 782-6907 or allan.shingleton@ky.gov

System Information:

PWS Name:**Lewisport Municipal Water Works**

PWS ID Number 0460248 AI Number: **1632**

Contact Person/Title:**Brent Wiggington**

Mailing Address:**P.O. Box 22 City Hall Lewisport, KY 42351**

Telephone: **(270) 295-3324** Email: **brentwcol@tds.net**

System Type*: **Community**
*Community; Non-Transient/Non-Community; Transient/Non-Community

Source*: **Wells** *Well(s) or Spring(s) and total number of each

County: **Hancock** ADD: **Green River ADD**

WWD Permit #: **0492** Permitted Amount (mgd): **0.325 MGD**

Population Served: **2719**

Overall Susceptibility Rating*: **Medium** *High, Medium or Low

WHPP Changes Summary: **Well maintenance**

Update Form Instructions:

Please complete each section that applies to any system or WHPP updates and submit the supporting documentation. Please indicate if a section is not applicable to this update. **Sections 4, and 6 through 11 are required for every 5-year update.**

Please sign certification on the last page upon completion.

Section Updates:

Section 1: Treatment Plant

There have been no changes to the treatment location for Lewisport Municipal Water Works since the previous WHPP submittal. A location map has been attached.

Section 2: Water Withdrawal and Water Quality

There have been no changes to Lewisport's water withdrawl or water quality since the previous WHPP submittal.

Section 3: Change or Modification to Groundwater Source

In 2019 Lewisport conducted flow tests on the supply wells. Well #1 was pulled for repairs and the well was cleaned. The rehabilitation brought Well #1 back to its design capacity. Copies of the associated Well and Pump inspection records are attached.

Section 4 (REQUIRED): Planning Team

Leader:

Brent Wiggington – General Manager

Team Members:

Jason Roberts – Water superintendent
Chad Gregory - Mayor

Section 5: WHPA Delineation

There are no changes to the WHPA delineation since the previous WHPP submittal.

Section 6 (REQUIRED): WHPA Map

A copy of the WHPA Map is attached.

Section 7 (REQUIRED): Contaminant Source Inventory

There have been no changes to the CSI since the previous WHPP submittal. Copies of the CSI Map and corresponding CSI table have been attached.

Section 8 (REQUIRED): Management Strategies

Provide a discussion of the previous and newly proposed management strategies. This discussion must include the previous management strategies that were implemented as well as the goals that were met. Next, include any NEWLY proposed management strategies, associated goals, implementation plans and the party responsible for implementation.

Previous Management Strategy Update:

Due to the low number of potential contaminants and mid-range threat of each, a strategy of public education has been used by the utility to manage the wellhead protection area. The annual Consumer Confidence Report has been used to help educate the customers about the wellhead protection program and how it specifically applies to Lewisport. Lewisport posted two water supply protection road signs located near the boundaries of the WHPAs. The city has worked to clean up and prevent any new illegal dumping.

Newly Proposed Management Strategies:

Regulatory Compliance Objectives:
Lewisport Municipal Water Works will continue to comply with groundwater protection planning regulations by reviewing or updating the city's groundwater protection plans.
The City will report any illegal dumping in the WHPA to the reginal office.

Public Education Objectives:
Wellhead Protection Area road signs have been strategically placed along area roads informing travelers of the approved WHPA.
Utilize the annual Consumer Confidence Report to inform customers about the WHPA, the susceptibility determination, and the measures that are being taken to protect the water supply.
Continue to promote the proper disposal of chemicals and waste through word of mouth, regulatory action when possible, and periodic mailings.
The City provides a disposal tank for used motor oil which is located behind the City Shop at 350 Carline Street.

Section 9 (REQUIRED): Contingency and WHP Planning

Provide a description of Contingency and WHP Planning. Complete the Emergency Response Phone List, Procedures for Public Notification, identification of Potential Future Problems and the procedures to establish Alternative Water Supplies. This section must also address how often the WHPP will be reviewed and updated.

Emergency Response Phone List

Fill in all Blanks and Phone Numbers with appropriate information.

Local Emergency Response	Phone Number
Plant Operator	(270) 295-6431
Lewisport Fire Dept.	911
Lewisport Police Dept.	911
Hancock County EMA	(270) 922-0094
Local Emergency Dispatch Click here to enter text.	(270) 927-1311

State and Federal Assistance	Phone Number
Kentucky DOW (Frankfort)	(502) 564-3410
Kentucky DOW Associated Field Office	(270) 824-7529

FIELD OFFICE	
Kentucky Environmental Response Team 24 hour response line	(502) 564-2380 (800) 928-2380
Kentucky State Fire Marshall	(502) 573-0382

Any Other Pertinent Contacts	**Any Other Pertinent Numbers**
Click here to enter text.	PHONE NUMBER
Click here to enter text.	PHONE NUMBER
Click here to enter text.	

Procedures for Public Notification:
In the event of a water system emergency that would threaten the health or life of the public, use the following procedure. Prepare and broadcast an advisory, including directions for the public. Describe the public notification process and provide contacts for those media outlets. If the system uses methods other than traditional media please list them.

Lewisport uses the County One Call System (270) 927-1311

Newspaper, Television, and Radio Stations	**Phone Numbers**
WBKR Radio	(270) 683-1558
The Hancock Clarion Newspaper	(270) 927-6945

Potential Future Problems:
Describe the *most likely* scenarios that could threaten the water supply.

The most likely sources of contamination for Lewisport are from agricultural land use activities or a railroad incident.

Alternative Water Supply (Short and Long Term):
Describe the short term and long term water supply alternatives that address each of the potential future problems identified above. List all current interconnections with other water systems. Discuss the capacity of each potential alternative water supply to sustain normal operations.

Short term contingency plans include a boil water advisory notification.

Long term contingency plans include interconnecting with the City of Hawesville or Owensboro or the development of a new wellfield.

Schedule for Update and Review:
The Wellhead Protection Plan will be reviewed regularly and updated every five years as required by regulation.

Section 10 (REQUIRED): Copies of Public Notices and Education Materials
Provide copies of wellhead protection public notices and education materials distributed.

Click here to enter text.

Section 11 (REQUIRED): Public Meeting Documentation***
Provide the record of WHPP public meeting attendance, minutes and comments.

Click here to enter text.

***Non-Community Water Systems are not required to have public meetings for 5 year updates, but must post a public notice in a conspicuous place. A public notice template is provided as a separate document. However, public input and associated documentation are encouraged. Please contact program staff if you have any questions.

Certification Signature (TO BE COMPLETED BY PLANNING REPRESENTATIVE):

"I certify that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Signature: Brent Higginson **Date:** 4-6-21

Printed Name/Title: Click here to enter text.

Assistance:

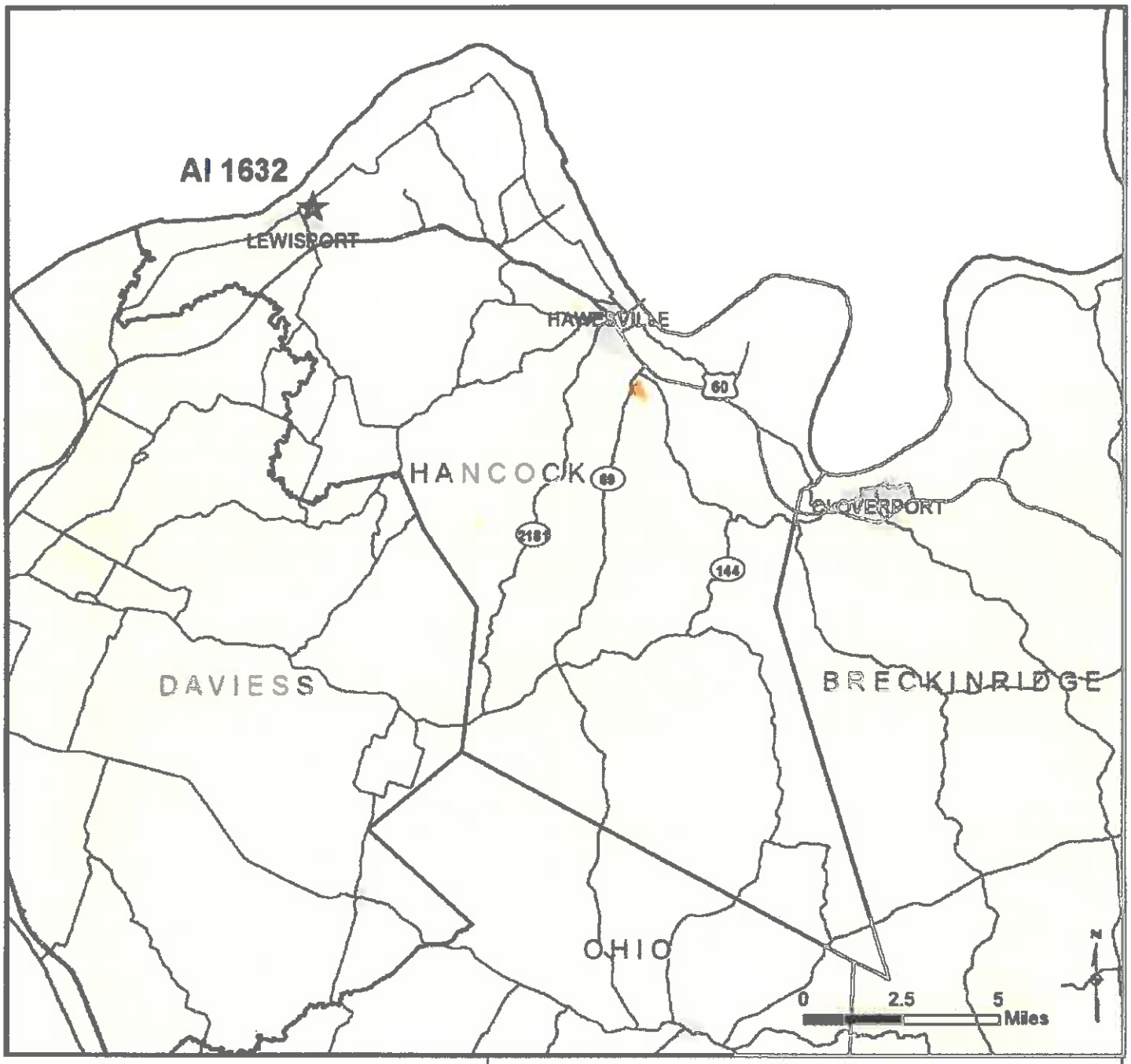
For any assistance please contact Wellhead Protection Staff:

Rob Blair
(502) 782-6893
Robert.Blair@ky.gov

Allan Shingleton
(502) 782-6907
Allan.Shingleton@ky.gov

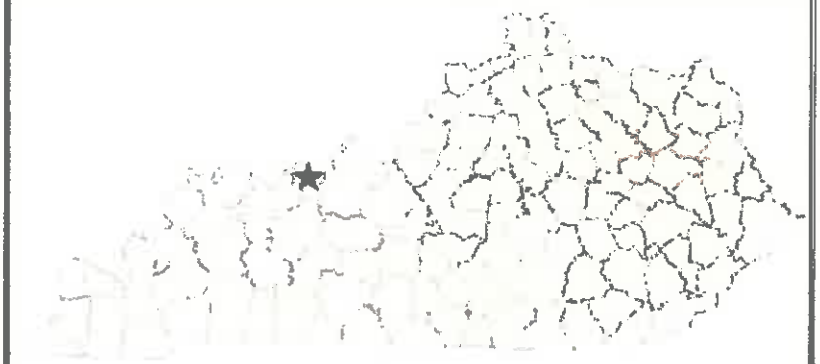
Please sign and return completed form to:

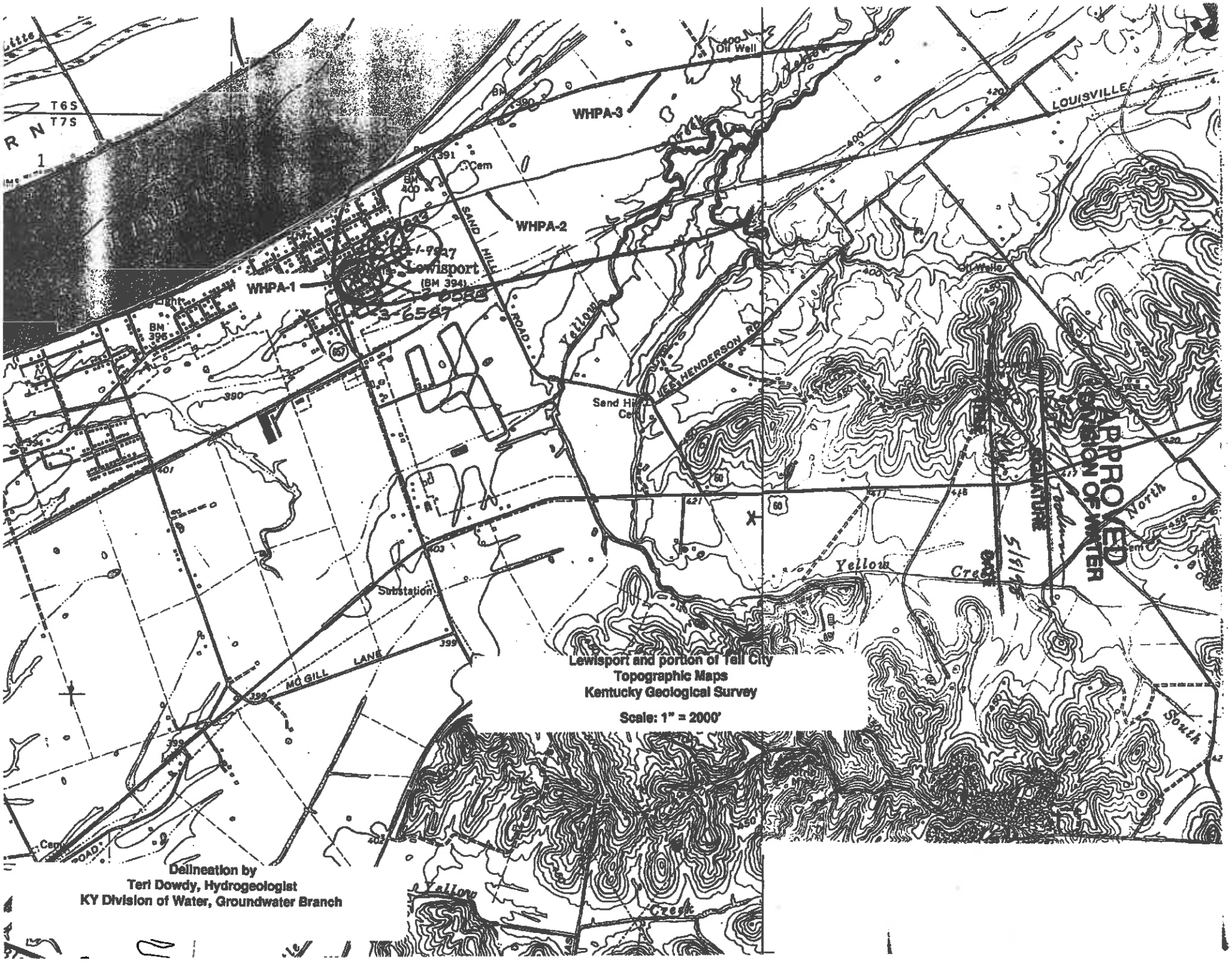
Kentucky Division of Water
Watershed Management Branch
Attention: Allan Shingleton
300 Sower Boulevard, 3rd Floor
Frankfort, Kentucky 40601
or allan.shingleton@ky.gov



Wellhead Protection Plan
5-yr Update

Lewisport Municipal Water Works
Hancock Co., KY
PWS ID 0460248
AI # 1632



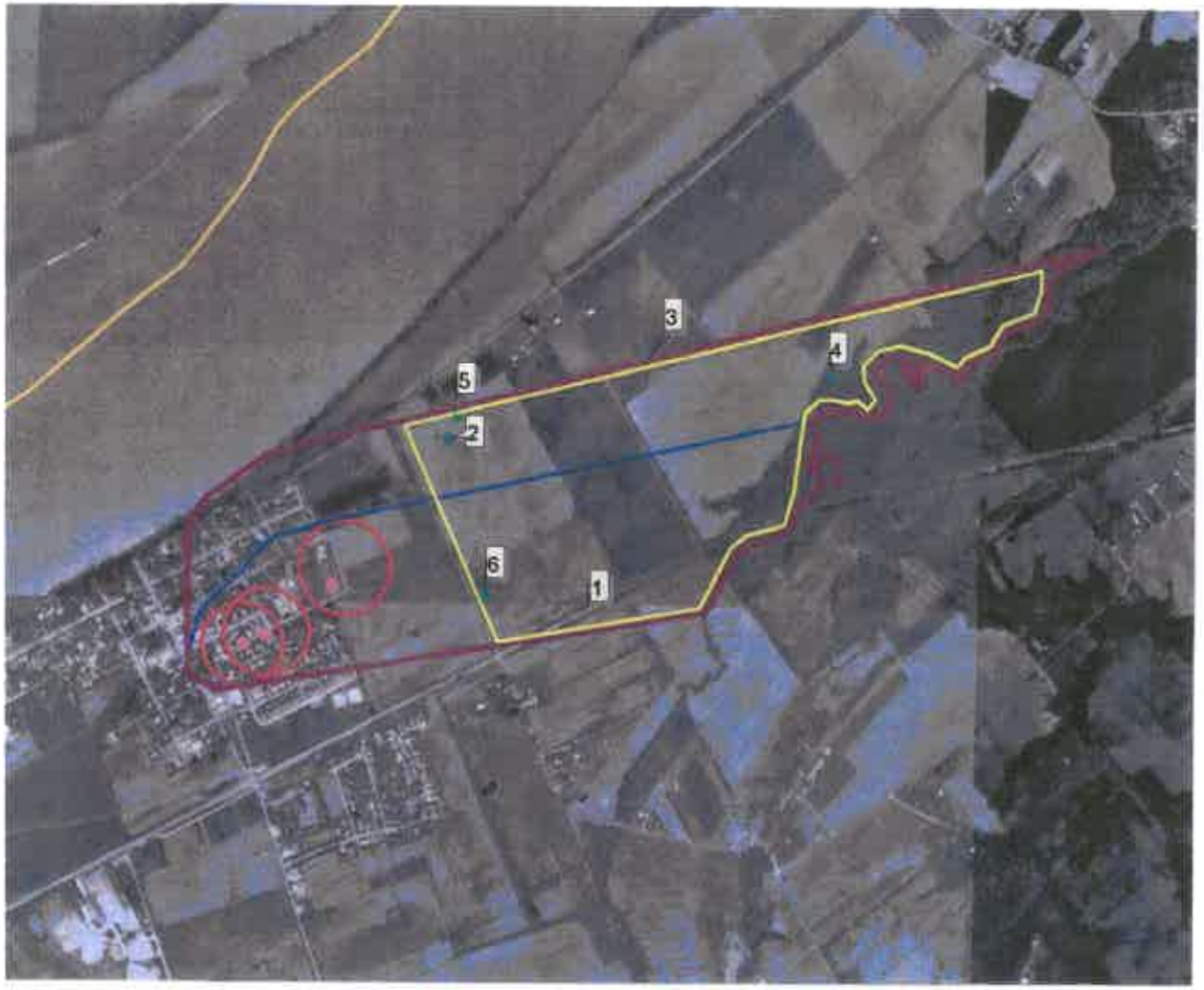


Lewisport and portion of Tell City
Topographic Maps
Kentucky Geological Survey

Scale: 1" = 2000'

Delineation by
Teri Dowdy, Hydrogeologist
KY Division of Water, Groundwater Branch

Lewisport Municipal Water Works
CSI Map



0.6 0 0.6 1.2 Miles

CSI Point

CSX Railroad

Agricultural Land Use

WHPA-1

WHPA-2

WHPA-3

PWS Well

N
W E
S

Contaminant Source Inventory and Susceptibility Analysis for Lewisport Municipal Water Works

Contaminant Source ID#	Contaminant Source/Land Use	Address	Quantity	WHPA	Contaminant Value	Hydrologic Sensitivity	Numeric Rating	Susceptibility Ranking
1	CSX Railroad		1	2	3	2	14	Medium
2	Unknown		1	3	2	2	10	Medium
3	Agricultural Land Use		1	3	3	2	10	Medium
4	Septic System		1	3	2	2	10	Medium
5	Septic System		1	2	2	2	12	Medium
6	Septic System		1	2	2	2	12	Medium

Totals:	High	Med	Low
6		6	

KENTUCKY WELL INSPECTION FORM

NOV 4 1994

(1) AKGWA NUMBER: 0003-6587

0003-6587

(2) OWNER/FACILITY INFORMATION
Well Owner's Name: Lewisport Municipal Water System (Last / First / MI)
Mailing Address: P.O. Box 22
City: Lewisport State: KY Zip: 42351
Well Address (if different):
City: State: Zip:
Phone: (502) 295-3324

(3) WELL RECORD LABEL LOCATION:
( ) well casing ( ) pressure tank ( ) water pipe
( ) well cap ( ) electric box ( ) not labeled
( ) pump (✓) other Discharge Head

(4) WELL LOCATION
USGS Quadrangle Name: Lewisport
County: Hancock
Latitude: 37° 56' [illegible] Longitude: 86° 54' 00" CDH

(5) PHYSIOGRAPHIC OR HYDROLOGIC REGION
( ) Blue Grass (✓) Ohio River Alluvium
( ) E. Coal Field ( ) W. Coal Field
( ) Miss. Plateau ( ) Jackson Purchase

(6) DRILLER INFORMATION
Who Constructed Well? (✓) unknown
Address:
City: State: Zip:
Date Well Completed: / / (Month / Day / Year) (✓) unknown

(7) GENERAL
Type of Construction:
(✓) drilled/augered
( ) excavate & backfill
( ) hand dug/blasted
Depth of Well: 80 ft.
( ) measured
(✓) reported
( ) unknown
Static Water Level, ft. below surface: 38.5
( ) measured
(✓) reported
( ) not measured
( ) can't be measured
Well Yield: 390
(✓) gpm ( ) gph ( ) gpd
( ) measured
(✓) estimated
( ) unknown

(8) SURFACE ANNULAR MATERIAL:
( ) clay ( ) drill cuttings
( ) cement ( ) unknown
( ) open ( ) sand ( ) gravel
(✓) concrete pad

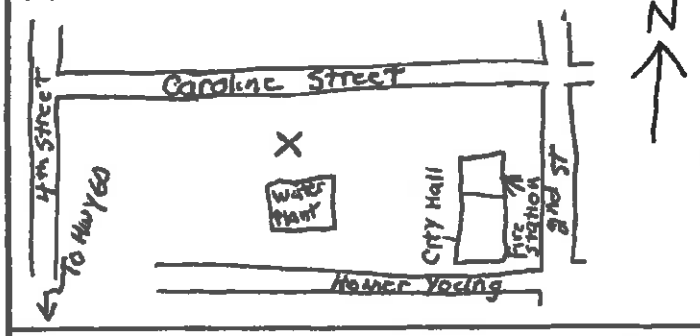
(9) WELLHEAD
Is Well Located in a Pit? See Comments
( ) yes (✓) no ( ) unknown
Wellhead (casing top):
( ) well cap (✓) sanitary seal
( ) flush mount ( ) locking cap
( ) open ( ) unknown
Casing Above Ground Level?
(✓) yes ( ) no ( ) unknown
≈60 see comments inches above ground.
Discharge Pipe Below Surface?
(✓) yes ( ) no ( ) unknown
Pitless Adapter Used?
( ) yes (✓) no ( ) unknown

(10) PUMP DETAILS
Date Installed: / / (Month / Day / Year)
(✓) unknown
Pump Type:
( ) submersible ( ) bailer
(✓) turbine ( ) jet ( ) hand pump
( ) none ( ) other ( ) unknown
Intake Level: ≈ 71 ft. below surface
Electric Connection:
( ) 2 wire (✓) 3 wire ( ) unknown

(11) WELL CONSTRUCTION DETAILS

Feet Below Surface From	To	Casing Inside Dia. (in.)	Casing Type	Casing Wall Thickness (in.)
—	70	12	Steel	
70	80	12	Screen	

(12) SKETCH MAP OF VICINITY



(13) WELL USE (check all that apply)
( ) domestic ( ) livestock ( ) not used
(✓) public ( ) irrigation ( ) abandoned
( ) industrial ( ) monitoring
( ) other
PWSID# 0460248
Water Withdrawal Permit # 492

(14) WELL SERVICE
Number of People Served: 2488
Number of Service Connections: 774
Any Quantity Problems? ( ) yes (✓) no
Any Quality Problems? (✓) yes ( ) no
If "yes", describe in COMMENTS section, below.

(15) COMPLIANCE TO STANDARDS
Construction in Compliance with KY Standards?
( ) yes ( ) no ( ) unknown (✓) pre-law
If "no", describe in COMMENTS section, below.

(16) RELATIVE LOCATION
( ) upgradient ( ) sidegradient ( ) unknown
( ) downgradient ( ) varying ( ) N/A

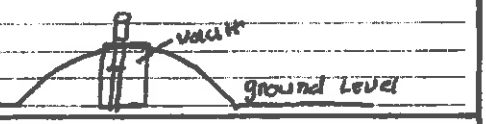
(17) INSPECTION INFORMATION
Date of Inspection: 10 / 28 / 94 (Month / Day / Year)
Water Quality Sample Taken: ( ) yes (✓) no
Reason for Inspection:
(X) general survey
( ) specific complaint investigation
( ) spill or incident response
( ) contamination site investigation
( ) enforcement
( ) general water quality analysis
( ) ambient groundwater monitoring
(✓) other WHP + GWUDI
Program Name and Facility ID#:
Alternate Well ID#: 1

(18) ELEVATION CDH
400 ft. AMSL
From (✓) ground surface
( ) top of casing
By (✓) map
( ) survey
( ) report
( ) GPS

(19) TREATMENT SYSTEM
( ) none
( ) water softener
( ) ultraviolet
(✓) chlorination
( ) aeration
(✓) charcoal filter
(✓) sand filter
( ) iron treatment
(✓) fluoridation
( ) other
Treatment Bypass Available? ( ) yes (✓) no

(20) OPTIONAL USE
Will Owner Allow State Access?
(✓) yes ( ) no ( ) unknown
Extent of Monitoring Allowed:
( ) collect sample
( ) measure SWL
( ) pump well
(✓) complete access
( ) notification required
( ) other (describe below)
Monitoring Feasibility:

(21) COMMENTS: Fe - .5 ppm Hardness ≈340. A concrete vault ≈6'x4'x7' was constructed at ground level to house the valves, flow meter & discharge line. The casing is extended through the top of the vault for the discharge head and motor. Fill material is mounded around the vault.



(22) INSPECTOR IDENTIFICATION
Name: Burns (Last) Joe (First) (MI) Inspector ID#
Agency: ( ) DOW ( ) DWM ( ) CHR ( ) KGS (✓) other KRWA
Signature of Inspector: Joe Burns Date: 10-28-94

Distribution: White copy to DOW, pink copy to Inspecting Agency, yellow copy to Owner.

Printed with State Funds.

DEP 4061
Revised 3/1/1993

01 DEP=4045-W

KENTUCKY WATER WELL RECORD

Please read all instructions prior to completing this form. Do not write in shaded areas. Completed copies of this form are to be submitted within 30 days of well completion to the property owner and to the KY Natural Resources and Environmental Protection Cabinet, Division of Water - Groundwater Branch, 18 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601. Telephone (502) 564-3410.
(TYPE OR PRINT CLEARLY)

(1) Attach Water Well Record (AKGWA) Label Here (If Applicable) (1)

(2) GENERAL INFORMATION:

Well Owner's Name (Last, First, MI)	Owner's Phone ( ) None	Date Received:
City of Lewisport	(502) 295-3324	

Mailing Address	Well Address (X) Same as owner's address	(3) AKGWA NUMBER:
P. O. Box 22		0004—1471

City	State	Zip Code	City	State	Zip Code	(4) VARIANCE WELL:
Lewisport	KY	42361				( ) Yes (X) No

(5) WELL LOCATION:	USGS Quadrangle Name	County	Latitude	Longitude
	Lewisport	Hancock	37 56 12.5N	86 53 58 W

(6) GENERAL WELL CONSTRUCTION:
Start Date: 5 13 97
Finish Date: 7 26 97
Drilling Method: Type of Work:
( ) Air Rotary ( ) New Well
( ) Mud Rotary ( ) Rework
(X) Cable ( ) Deepen
( ) Auger ( ) Plug
( ) Other ( ) Other
Surface El.: 400 ft.
Total Depth: 78 ft.
Depth to Bedrock: 80 ft.
Static Water Level: 30.5 ft.

(7) WELL TEST:
Date:
Testing Method:
(X) Pump ( ) Blowing
( ) Bailer ( ) Other
Well Yield: ( ) gpm ( ) gph
Drawdown:
3 ft. after 2 (X) hrs ( ) min
of pumping at 300 (X) gpm ( ) gph
ft. after ( ) hrs ( ) min
of pumping at ( ) gpm ( ) gph
Flowing Artesian Well:
Shut-in Pressure: (psi)
Discharge: ( ) gpm ( ) gph

(8) WATER QUALITY:
Well was (X) pumped ( ) bailed
( ) blown ( ) not purged, for
4 (X) hrs. ( ) min.,
at 200 per (X) min. ( ) hr.
before sampling.
Appearance: Odor:
(X) Clear (X) None
( ) Cloudy ( ) Musty
( ) Muddy ( ) Sulfur
( ) Other ( ) Other
Well Disinfectant: Type HTH
Amount 10 pounds
Results of (✓) fecal ( ) total coliform analysis:
(X) < 1.0 ( ) TNTC ( ) Conf.
0 # colonies/100 ml
Other
Sampling Date: 3 11 98
Analysis Date: 3 11 98
Lab Performing Test:
Moss-McGraw

(9) WELL COMPLETION:

Feet Below Surface From	To	Hole Diameter (in.)	Casing Inside Diameter (in.)	Casing Type
78'	68'	18"	12"	SST Screen
68'	0'	18"	12"	STL Casing

Casing Joint:
( ) Glued Coupler ( ) Threaded Coupler ( ) Flush Thread
(X) Welded ( ) No Joint ( ) Other
Well Head (Casing Top) Seal:
( ) Well Cap (X) Sanitary Seal ( ) Other
Was a pitless adapter installed?: ( ) yes (X) no
Screen or Casing Perforation:
I.D. (in.) 12 From 78 To 68 ft. Type SSW Slot Size .045
I.D. (in.) From To ft. Type Slot Size
Annulus Fill and Seal:
Feet Below Surface

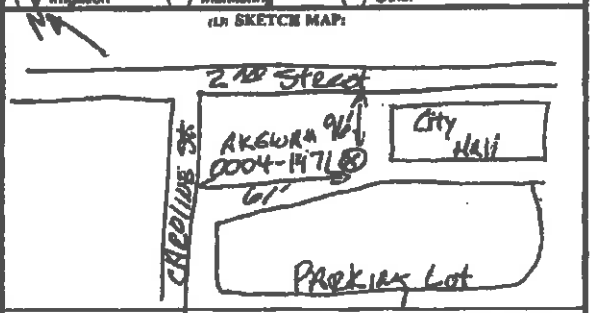
From	To	Material
78'	48'	Gravel pack
48'	46'	Bentonite slurry
46'	0'	Concrete/bentonite slurry

(10) PHYSIOGRAPHIC OR HYDROLOGIC REGION:
( ) Blue Grass (X) Ohio River Alluvium
( ) E. Coal Field ( ) W. Coal Field
( ) Miss. Plateau ( ) Jackson Purchase

(11) WELL SERVICE:
Number of people served:
Number of service connections:

(12) WELL USE:
( ) Domestic ( ) Industrial ( ) Dry Hole
(X) Public ( ) Livestock ( ) Heat Pump
( ) Irrigation ( ) Monitoring ( ) Other

(13) SKETCH MAP:



Show well location and distances from permanent structures, septic drain fields, major roads (include name or number) and intersections. INDICATE NORTH WITH AN ARROW. Provide a photocopy of a topographic map with the well location clearly marked with an "X", the AKGWA number, and the well owner's name.

(14) PUMP DATA: Was a pump set?: (X) yes ( ) no
Date set: 7 31 97 Pump Type:
Installed by:
( ) Driller ( ) Jet ( ) Submersible
(X) Pump Installer (X) Turbine
( ) Home Owner or Other ( ) Hand ( ) Bailer/Bucket ( ) Other
Horsepower 20
Rating (gpm) 300
Pump intake set at 74' feet below ground surface

(15) LITHOLOGIC LOG:

Feet Below Surface From	To	Description	Water Quality and GPM
0	18	Brown clay	
18	20	Brown sand	
20	63	Fine gravel and sand	
63	78	Coarse sand, medium & small gravel	
78	80	Gray clay	

(16) COMMENTS:

(17) AFFIRMATION: The work described above was done under my supervision, and this report is true and correct to the best of my knowledge.
NOTE: The water well driller is not responsible for natural groundwater quality or quantity encountered while drilling or constructing this well.

Well Driller's or Rig Operator's Name (Print or Type)	State Certification Number or Rig Operator's Permit No.	Signature
David Walker, Jr.	0092-0212	

Company Mailing Address	City	State	Zip Code	Date
4118 Camp Ground Road	Louisville	KY	40211	6 23 98

Number of Attached sheets 3

White Copy to Division of Water, Yellow Copy to Owner, Pink Copy to Driller's Files

DEP-4045 Printed with State Funds 9/15/97

Please read all instructions prior to completing this form. Do not write in shaded areas. Completed copies of this form are to be submitted within 30 days of well completion to the property owner and to the KY Natural Resources and Environmental Protection Cabinet, Division of Water - Groundwater Branch, 18 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601. Telephone (502) 564-3410.
(TYPE OR PRINT CLEARLY)

Attach Water Well Record

(AKGWA) Label Here
0001-9827- well #3
(If Applicable)

(1) GENERAL INFORMATION:

Well Owner's Name (Last / First / MI)	Owner's Phone	Date Received:
Lewisport Water & Sewer	(502) 295-3324 ( ) None	AUG 08 1991
Mailing Address	**Well Address** ~~Same as owner's address~~	**(3) AKGWA NUMBER:**
PO Box 22		0001-9827
City / State / Zip Code	**City / State / Zip Code**	**(4) VARIANCE WELL:**
Lewisport KY		( ) Yes (X) No

(5) WELL LOCATION: USGS Quadrangle Name: Lewisport | County: Hancock | 37°56'17" | 86°53'46" | SW

(6) GENERAL WELL CONSTRUCTION:
Start Date: 6/10/91
Finish Date: 6/14/91
Drilling Method: Type of Work:
( ) Air Rotary (X) New Well
( ) Mud Rotary ( ) Rework
( ) Cable ( ) Deepen
( ) Auger ( ) Plug
(X) Other ( ) Other
RC
Surface El.: 400 ft.
Total Depth: ~~101~~ 116 ft.
Depth to Bedrock: 116 ft.
Static Water Level: 16 ft.

(7) WELL TEST:
Date: 8/2/91
Testing Method:
(X) Pump ( ) Blowing
( ) Bailer ( ) Other
Well Yield 515 (X) gpm ( ) gph
Drawdown:
7 ft. after 9 hrs ( ) min
of pumping at 515 gpm ( ) gph
..... ft. after ..... ( ) hrs ( ) min
of pumping at ( ) gpm ( ) gph

Flowing Artesian Well:
Shut-In Pressure: ..... (psi)
Discharge: ..... ( ) gpm ( ) gph

(8) WATER QUALITY:
Well was (X) pumped ( ) bailed
( ) blown ( ) not purged, for
( ) hrs. ( ) min.,
at ..... per ( ) min. ( ) hr.
before sampling.
Appearance: (X) Clear ( ) Cloudy ( ) Muddy ( ) Other
Odor: (X) None ( ) Musty ( ) Sulfur ( ) Other
Well Disinfectant: Type HTH
Amount 500 PPM
Results of ( ) fecal (X) total coliform analysis:
( ) <1.0 ( ) TNTC (X) Confl. ..... # colonies/100 ml
Other
Sampling Date: 8 2 91
Analysis Date: 8 5 91
Lab Performing Test: McCoy + McCoy

(9) WELL COMPLETION:

Feet Below Surface From	To	Hole Diameter (in.)	Casing Inside Diameter (in.)	Casing Type
0	~~81~~	32	12	BLK Steel
81	101	32	12	~~Screen~~ Stainless steel screen

Casing joint:
( ) Glued Coupler ( ) Threaded Coupler ( ) Flush Thread
(X) Welded ( ) No joint ( ) Other
Well Head (Casing Top) Seal:
( ) Well Cap (X) Sanitary Seal ( ) Other
Was a pitless adapter installed?: ( ) yes (X) no
Screen or Casing Perforation: stainless steel
I.D. (in.) 12 From 81 To 101 ft. Type ~~Perf~~ Slot Size .035
I.D. (in.) ..... From ..... To ..... ft. Type ..... Slot Size .....
Annulus Fill and Seal:
Feet Below Surface

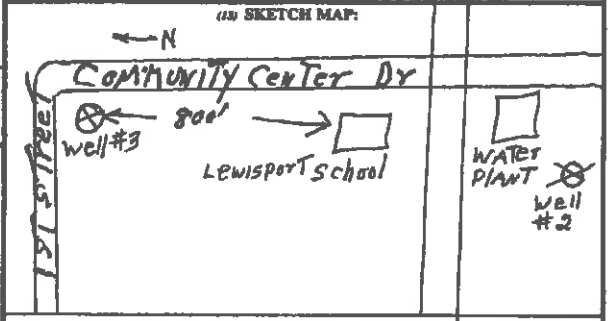
From	To	Material
~~35~~	~~101~~	~~Silica Gravel~~
0	35	Cement
35	101	~~Silica~~ gravel
0	35	cement
35	101	gravel

(10) PUMP DATA: Was a pump set?: (X) yes ( ) no
Date set: ..... Pump Type:
Installed by:
( ) Driller
(X) Pump Installer
( ) Home Owner or Other
( ) Jet
( ) Submersible
(X) Turbine
( ) Hand
( ) Bailer/Bucket
( ) Other
Horsepower 25
Rating (gpm) 500
Pump intake set at 70' feet below ground surface

(11) WELL SERVICE:
Number of people served: ~~Municipal~~
Number of service connections: .....

(12) WELL USE:
( ) Domestic ( ) Industrial ( ) Dry Hole
(X) Public ( ) Livestock ( ) Heat Pump
( ) Irrigation ( ) Monitoring ( ) Other .....

(13) SKETCH MAP:



Show well location and distances from permanent structures, septic drain fields, major roads (include name or number) and intersections. INDICATE NORTH WITH AN ARROW. Provide a photocopy of a topographic map with the well location clearly marked with an "X", the AKGWA number, and the well owner's name.

(14) PUMP DATA: Was a pump set?: (X) yes ( ) no
Date set: ..... Pump Type:
Installed by:
( ) Driller
(X) Pump Installer
( ) Home Owner or Other
( ) Jet
( ) Submersible
(X) Turbine
( ) Hand
( ) Bailer/Bucket
( ) Other
Horsepower 25
Rating (gpm) 500
Pump intake set at 70' feet below ground surface

(15) LITHOLOGIC LOG:

Feet Below Surface From	To	Description	Water Quality and GPM
0	9	CLAY	
9	24	SANDY CLAY	
24	101	SAND & Gravel	
101	116	CLAY & Gravel	
116		Rock	

(16) COMMENTS:

(17) AFFIRMATION: The work described above was done under my supervision, and this report is true and correct to the best of my knowledge.
NOTE: The water well driller is not responsible for natural groundwater quality or quantity encountered while drilling or completing this well.

Well Driller's or Rig Operator's Name (Print or Type)	State Certification Number or Rig Operator's Permit No.	Signature of Responsible Certified Driller
Lawrence B. Cravens	0091-0118-03	
Company Mailing Address	**City / State / Zip Code**	**Date**
PO Box 2396	Owensboro KY 42302	8/6/91

Number of Attached sheets: 3

White Copy to Division of Water, Yellow Copy to Owner, Pink Copy to Driller's Files

DEP-4046 Printed with State Funds 01/97

Layne – A Granite Company
1301 E. Main Street
Louisville, KY 40206
T [502-585-1241]
graniteconstruction.com

October 14, 2019

Mr. Brent Wiggington
City of Lewisport
405 2nd Street
Lewisport, KY 42351

RE: Well Flow Test 2019

Mr. Wiggington:

Enclosed for your records, please find copies of the annual flow test conducted on Wells #1, #2A and #3. The conditions we found are as follows.

Well #1 — Unit was pulled for repairs and well was cleaned this service. The pump is rated for 250gpm @ 115' TDH; it is currently producing 252gpm @ 114' TDH, following repairs. The pump is operating at design conditions. Well rehabilitation brought the well back from 14 gpm/ft to 32 gpm/ft specific capacity.

Well #2A — The pump is rated for 250gpm @ 115' TDH; it is currently producing 269gpm @ 114' TDH. The pump is operating at design conditions. Well is holding steady at 14.94 gpm/ft specific capacity.

Well #3 — The pump is rated at 500gpm @ 152' TDH; it is currently producing 431gpm @ 48' TDH. It will produce 352gpm @ 110' TDH. Specific capacity is currently 43.1gallons per foot, which is still above critical. Due to the oil on top of the water in the well, all water levels were taken using the existing airline. This method is not as accurate as using an electric water level probe as used on Wells #1 and #2A. Based on the airline reading, no maintenance is recommended at this time. I think you may have installed an orifice in your line to restrict flow, if so that could be why the capacity is off. Recommend budgeting this well for service/conversion in the future.

Conclusions: As a rule of thumb, we recommend that wells and/or pumps be scheduled for maintenance when capacity loss reaches 25% or more. Wells 1 and 2 have been serviced most recently and are still in acceptable range. Well 3, while still in acceptable range, we recommend budgeting for service and conversion from oil to water lubrication in the near future.

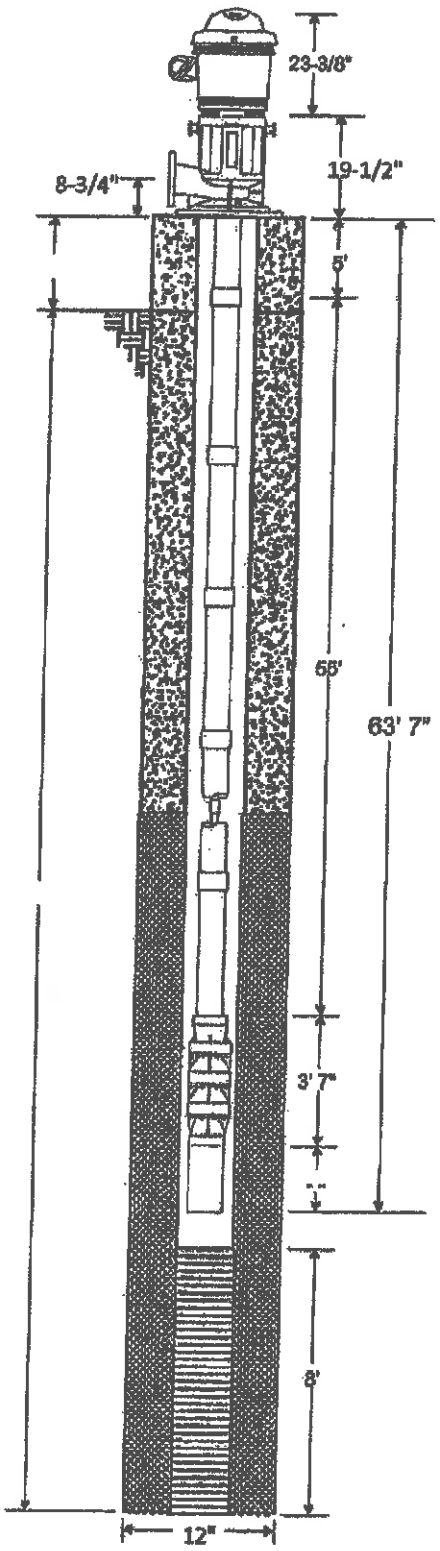
If you have any questions, after your review of this report, please contact us at your convenience. We appreciate the opportunity to be of service for your well and pump maintenance needs.

Sincerely,
LAYNE CHRISTENSEN COMPANY
Emily Miesner
Account Manager
Attachments

Layne
A GRAVITE COMPANY

Layne Christensen Company

Job No. 939068
Date 9/20/2019



Customer: City of Lewisport
Address: Lewisport, Kentucky
Well No.: 1
GPM: 250 TDH: 115'

Motor Make: U.S. HP: 20 (VHS) VSS
Type: AU Serial No.: F415A
Phase: 3 Voltage: 230/460 Hz: 60
RPM: 1770 Clutch Dia.: 1-1/4"
Frame: 256TPA Mtr. Shaft Dia.: 1-1/4"
Length: top shaft Keyway: 3/8" (NRR) SRC

Discharge Head: Indersoll Dresser
Material: cast iron ASA Flange:
Packing: X Seal:
Topshaft Dia.: 1-1/4" Length: 92-3/4"
Topshaft Material: stainless steel

Column Pipe Size: 6" Type: coupled
Lengths: 2 5' 5 10'

Enclosing Tube Size: None Thread:

Lineshaft Dia.: 1-1/4" Material: stainless steel
Thread: Water Lube: X Oil Lube:
Sleeve: None

Pump Mfg.: National Model: M8MCA
Stages: 4 Trim: Stick-up: 12"
Impeller Shaft Dia.: 1" Length: 43"

Suction Size: None Length:

Well Information

ID of Casing: 12" ID of Screen: 10-1/2"
Dpth. from Fdn.: Dpth. from Grd.: 78'
Screen Length: 8' Slot Size:
Date Drilled: 2' of cement plug installed
Static Water Level: 46.41' Date: 9/20/2019
Static Water Level: Date:

Notes: Pump rebuilt and well surged this service.
Installer: Tom Adkins

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Layne - A Granite Company
Well and Pump Inspection Data Sheet

Owner: Lewisport Municipal Water Works
Location: Lewisport, KY
Well / Pump No.: 1
Tested By: Tom Adkins
Inspection Date: 9/20/2019
Job Number: 939068

Well Information

Casing Diameter:	12"
Total Depth:	78'
Screen Diameter:	
Screen Length:	8'
Slot Size:	
Year Installed:	
Last Serviced:	2011
Rated Capacity:	

Pump Information

Serial Number:	
Make:	National
Model:	M8MCA
Design Point:	250@115'
Column Size:	6"
Shaft Size:	1-1/4"
Depth to Suction:	70'
Low Water Probe:	
Year Installed:	rebuilt 2011

Motor Information

Make:	US
Hp:	20
Voltage:	230/460
Amperage:	
RPM:	1770
Frame:	256TPA
Type:	
MegOhms:	
Year Installed:	rebuilt 2011

Pump Performance

	year	design	test	% off
Original:		250	250	--
Previous Test:	Aug-18	250	180	-28.00%
Current Test:	Sep-19	250	250	0.00%

Well Performance

	year	gpm	gpm/ft	% off
Previous Test:	2011	252	13.81	--
Previous Test:	2016	252	8.99	-34.90%
Previous Test:	2017	252	15.17	9.85%
Previous Test:	2018	252	14.52	5.14%
Current Test:	2019	252	32.86	137.94%

Static Water Level		46.41		Pressure Gage Ht		0.00											
Pumping Level	Draw Down	Flow Meter	6 x 4 Orifice	Specific Capacity	Discharge Pressure	TDH	Amperages L1	L2	L3	Kilowatts L1-L2	L2-L3	Total		Horsepower Elec.	Water	Eff.
46.41	0.00	--		NA	50	161.9									0.00	
49.41	3.00	--	153	51.00	38	137.2	27	27	26						5.31	
54.08	7.67	--	252	32.86	26	114.1	29	29	30						7.27	
58.75	12.34	--	339	27.47	10	81.9	29	29	30							

Sand Content at Rated Flow : _____ PPM after 5 Min _____ PPM After 15 Min _____ PPM After 30 Min

Comments:

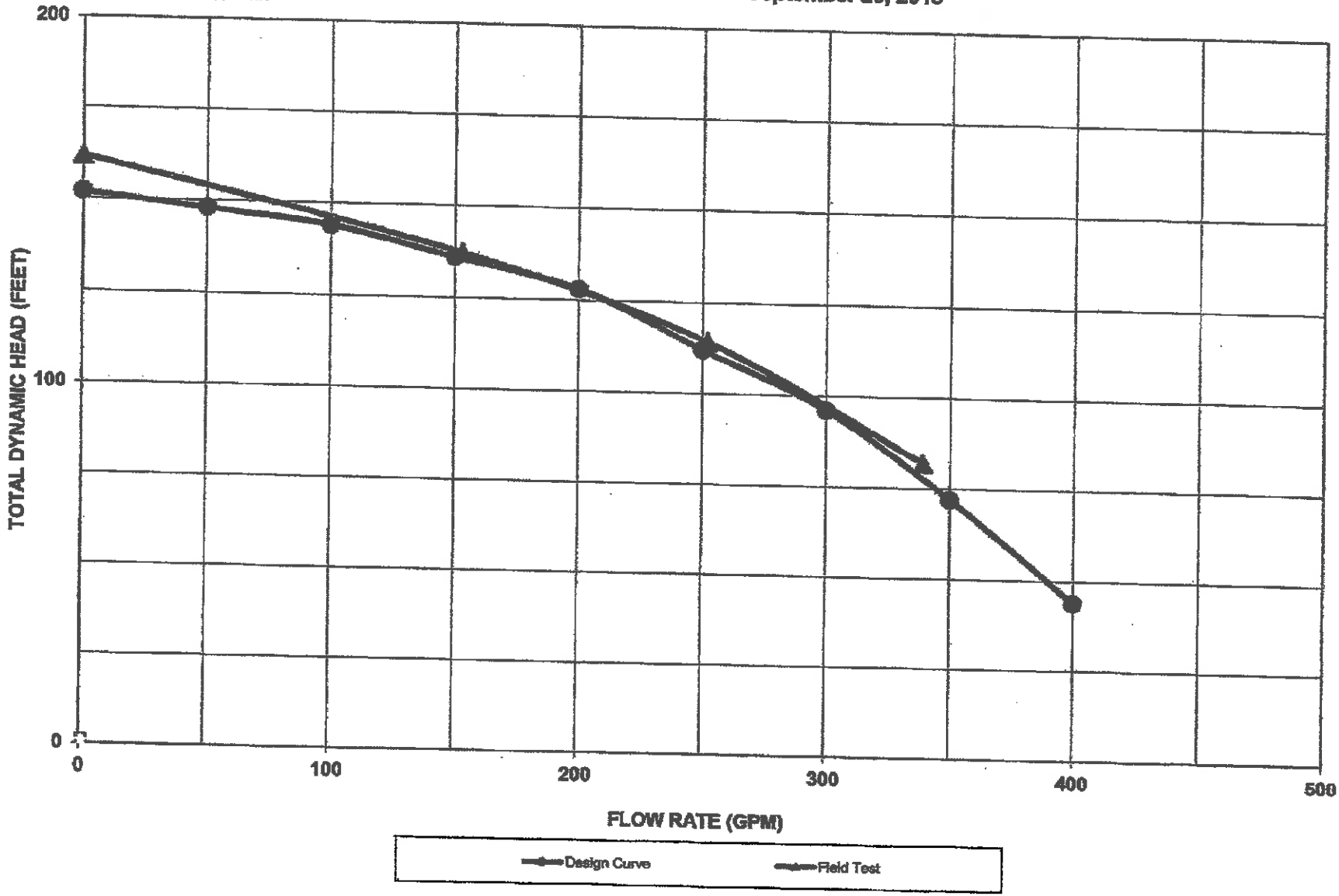
Annual Test

Maintenance Services: Change Motor Oil: _____ Grease Bearings: X Replace Packing Material: _____

Layne Christensen Company

A GRAFITE COMPANY

City of Lewisport
WELL #1
National M8MCA 4-stage
FIELD TEST DATA - September 20, 2019



Layne
A GRAFTE COMPANY

Vibration Analysis

Customer City of Lewisport

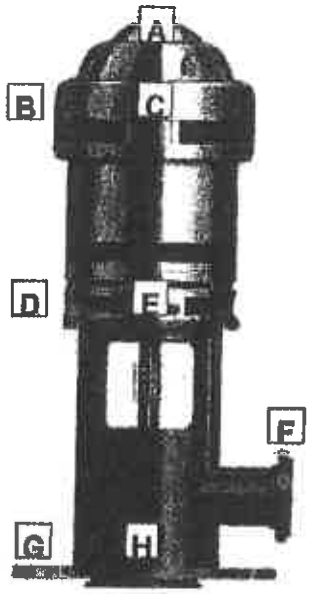
Location Lewisport, KY

Analysis of Well #1

Date September 20, 2019

Analysis by Tom Adkins

Job No. 939068



Legend

(A) Axial
(B) Top Bearing
(C) Top Bearing
(D) Guide Bearing
(E) Guide Bearing
(F) Base
(G) Foundation
(H) Foundation

Data

Motor Make US H.P. 20 Voltage 230/460 Frame 256TPA

R.P.M. 1760 Nameplate Amps 51.2/25.6 Running Amps _____ S.F. 1.15

Base [x] Bolted [ ] Grouted [ ] Building [ ] Pit [ ] Tower

Design GPM 250 Actual GPM 250 Design TDH (ft) 115 Actual TDH (ft) _____

Actual Discharge Pressure [ ] Above [ ] Below ____ PSIG

Pump Make National Model M8MCA Serial No. _____ No. of Stg. 4

Comments:

	motor only (mils)	pump & motor (mils)
A		0.50
B		2.90
C		1.50
D		1.70
E		1.40
F		0.60
G		0.90
H		0.60

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Layne Christensen Company

Well and Pump Inspection Data Sheet

Owner: Lewisport Municipal Water Works
Location: Lewisport, KY
Well / Pump No.: 2A
Tested By: Tom Adkins
Inspection Date: 9/4/2019
Job Number: 939068

Well Information

Casing Diameter:	12"
Total Depth:	78'
Screen Diameter:	
Screen Length:	10'
Slot Size:	.045"
Year Installed:	
Last Serviced:	2018
Rated Capacity:	250

Pump Information

Serial Number:	
Make:	National
Model:	M8MCA
Design Point:	250@115'
Column Size:	6"
Shaft Size:	1-1/4"
Depth to Suction:	68'
Low Water Probe:	
Year Installed:	2018-rebuilt

Motor Information

Make:	US
Hp:	20
Voltage:	230/460
Amperage:	
RPM:	1770
Frame:	256TPA
Type:	
MegOhms:	
Year Installed:	2018 - repairs

Pump Performance

	year	design	test	% off
Original:		250	250	--
Previous Test:	Aug-18	250	250	0.00%
Current Test:	Sep-19	250	250	0.00%

Well Performance

	year	gpm	gpm/ft	% off
Previous Test:	2011	239	15.30	--
Previous Test:	2016	239	11.48	-24.97%
Previous Test:	2017	239	11.41	-25.42%
Previous Test:	2018	239	16.91	10.52%
Current Test:	2019	239	14.94	-2.35%

Static Water Level		38.85		Pressure Gage Ht		0.00										
Pumping Level	Draw Down	Flow Meter	6 x 4 Orifice	Specific Capacity	Discharge Pressure	TDH	Amperages L1	L2	L3	Kilowatts L1-L2	L2-L3	Total		Horsepower Elec.	Water	Eff.
38.85	0.00	--		NA	58	172.8									0.00	
53.42	14.57	--	206	14.14	36	136.6	32	32	32						7.11	
54.85	16.00	--	239	14.94	31	126.5	32	32	33						7.64	
56.45	17.60	--	269	15.28	25	114.2	34	34	34						7.77	

Sand Content at Rated Flow : _____ PPM after 5 Min _____ PPM After 15 Min _____ PPM After 30 Min

Comments:

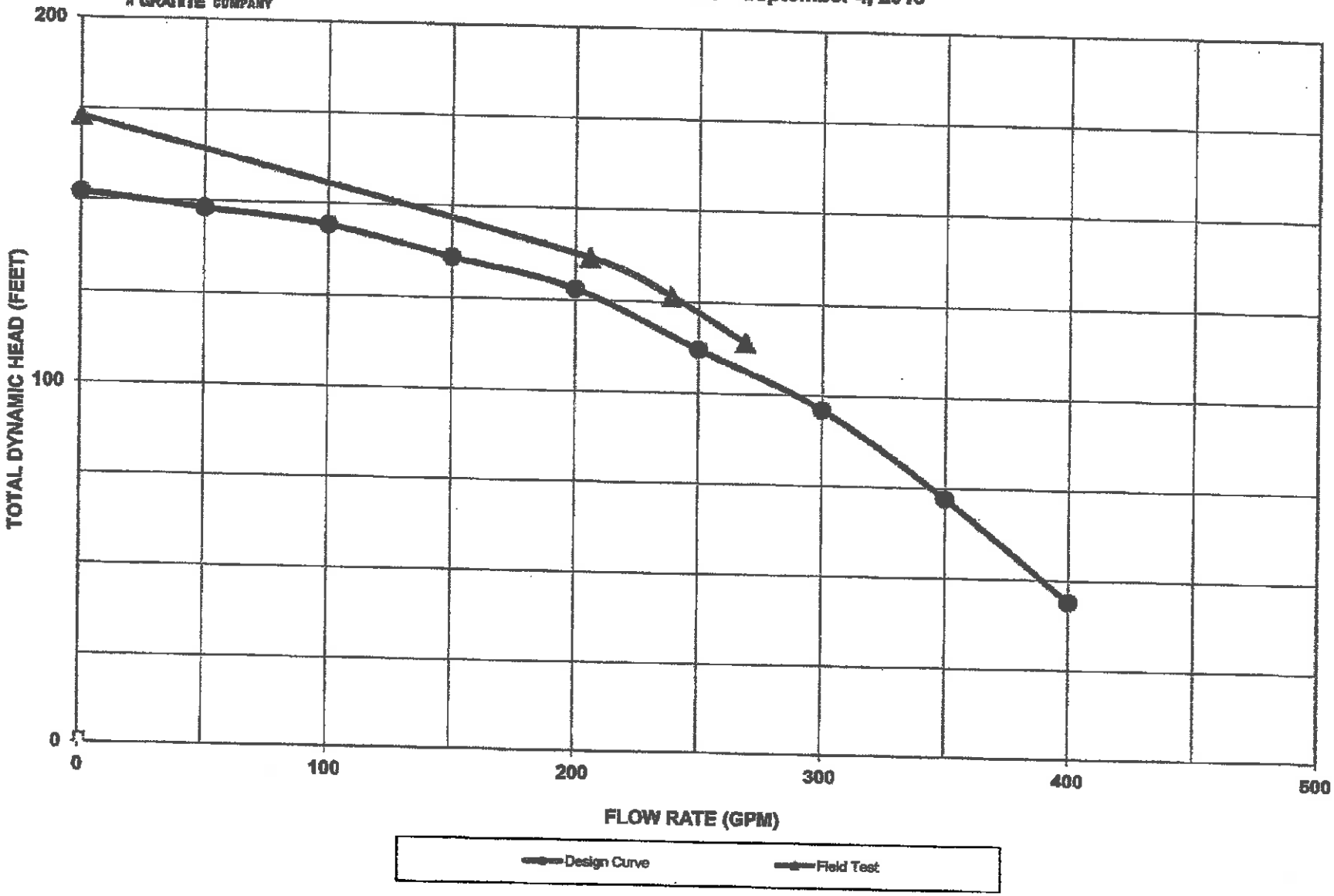
Annual Flow test

Maintenance Services: Change Motor Oil: _____ Grease Bearings: X Replace Packing Material: _____

Layne Christensen Company

A GRAYTE COMPANY

City of Lewisport
WELL #2A
National M8MCA 4-stage
FIELD TEST DATA - September 4, 2019



Layne - A Granite Company

Well and Pump Inspection Data Sheet

Owner: Lewisport Municipal Water Works
Location: Lewisport, KY
Well / Pump No.: 3
Tested By: Tom Adkins
Inspection Date: 9/24/2019
Job Number: 939068

Well Information

Casing Diameter:	12"
Total Depth:	101'
Screen Diameter:	12"
Screen Length:	20'
Slot Size:	.035"
Year Installed:	1991
Last Serviced:	
Rated Capacity:	500

Pump Information

Serial Number:	
Make:	Goulds
Model:	10RJLO
Design Point:	500@152'
Column Size:	6"
Shaft Size:	1"
Depth to Suction:	81'
Low Water Probe:	
Year Installed:	1991

Motor Information

Make:	US
Hp:	25
Voltage:	230/460
Amperage:	
RPM:	1770
Frame:	284TPA
Type:	
MegOhms:	
Year Installed:	1991

Pump Performance

	year	design	test	% off
Original:	1991	500	500	--
Previous Test:	Aug-18	500	320	-36.00%
Current Test:	Sep-19	500	278	-44.40%

Well Performance

	year	gpm	gpm/ft	% off
Previous Test:	2012	513	51.30	--
Previous Test:	2016	466	29.13	-43.22%
Previous Test:	2017	466	29.13	-43.22%
Previous Test:	2018	466	66.57	29.77%
Current Test:	2019	431	43.10	-15.98%

Static Water Level: 38.00 | **Pressure Gage Ht:** 0.00

Pumping Level	Draw Down	Flow Meter	6 x 5 Orifice	Specific Capacity	Discharge Pressure	TDH	Amperages L1	Amperages L2	Amperages L3	Kilowatts L1-L2	Kilowatts L2-L3	Kilowatts Total		Horsepower Elec.	Horsepower Water	Horsepower Eff.
38.00	0.00	--		NA	84	232.0									0.00	
44.00	6.00	--	278	46.33	45	148.0	42	45	46						10.40	
46.00	8.00	--	352	44.00	28	110.7	42	48	49						9.85	
48.00	10.00	--	431	43.10	0	48.0	47	49	50						5.23	

Sand Content at Rated Flow : _____ PPM after 5 Min _____ PPM After 15 Min _____ PPM After 30 Min

Comments:

Annual Test

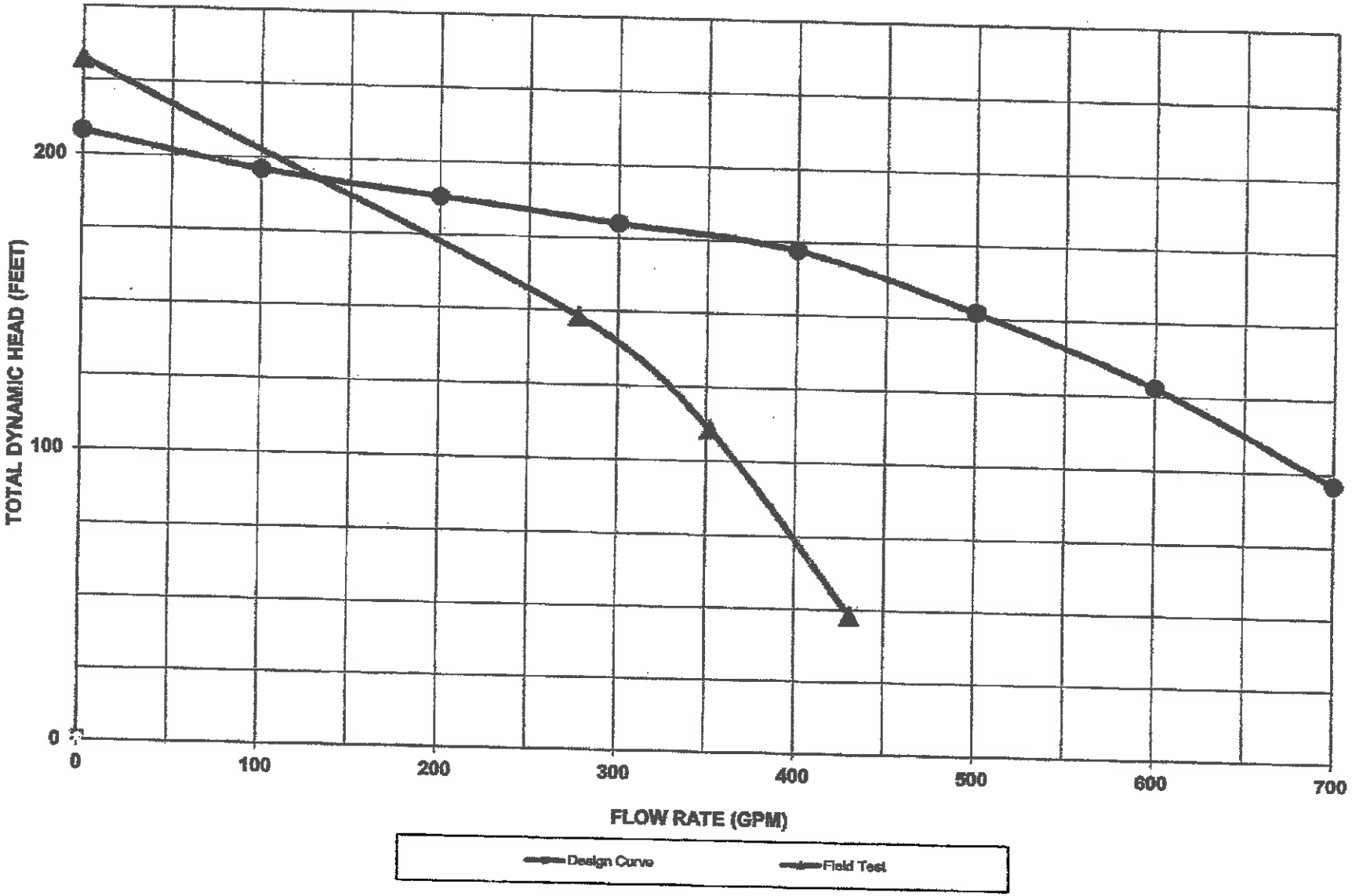
Valve was shut off in plant

Maintenance Services: Change Motor Oil: _____ Grease Bearings: X Replace Packing Material: _____

Layne Christensen Company

A GRANITE COMPANY

City of Lewisport
WELL #3
Goulds 10RJLO 4-Stage
FIELD TEST DATA - September 24, 2019



Layne
A GRAVITY COMPANY

Vibration Analysis

Customer City of Lewisport

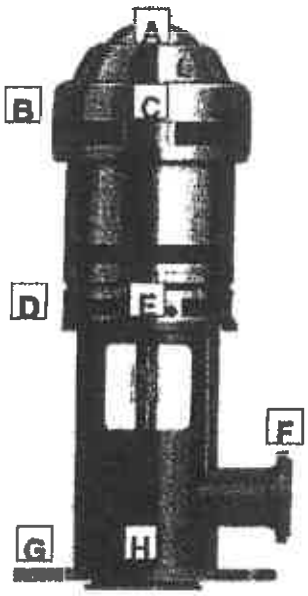
Location Lewisport, KY

Analysis of Well #3

Date September 24, 2019

Analysis by Tom Adkins

Job No. 939068



Legend

(A) Axial
(B) Top Bearing
(C) Top Bearing
(D) Guide Bearing
(E) Guide Bearing
(F) Base
(G) Foundation
(H) Foundation

Data

Motor Make US H.P. 20 Voltage 230/460 Frame 284TPA

R.P.M. 1770 Nameplate Amps _____ Running Amps _____ S.F. 1.15

Base [x] Bolted [ ] Grouted [ ] Building [ ] Pit [ ] Tower

Design GPM 500 Actual GPM _____ Design TDH (ft) 152 Actual TDH (ft) _____

Actual Discharge Pressure [ ] Above [ ] Below _____ PSIG

Pump Make Goulds Model 10RJLO Serial No. _____ No. of Stg. 4

Comments:

	motor only (mils)	pump & motor (mils)
A		0.10
B		0.90
C		1.30
D		0.50
E		0.80
F		0.10
G		0.30
H		0.20

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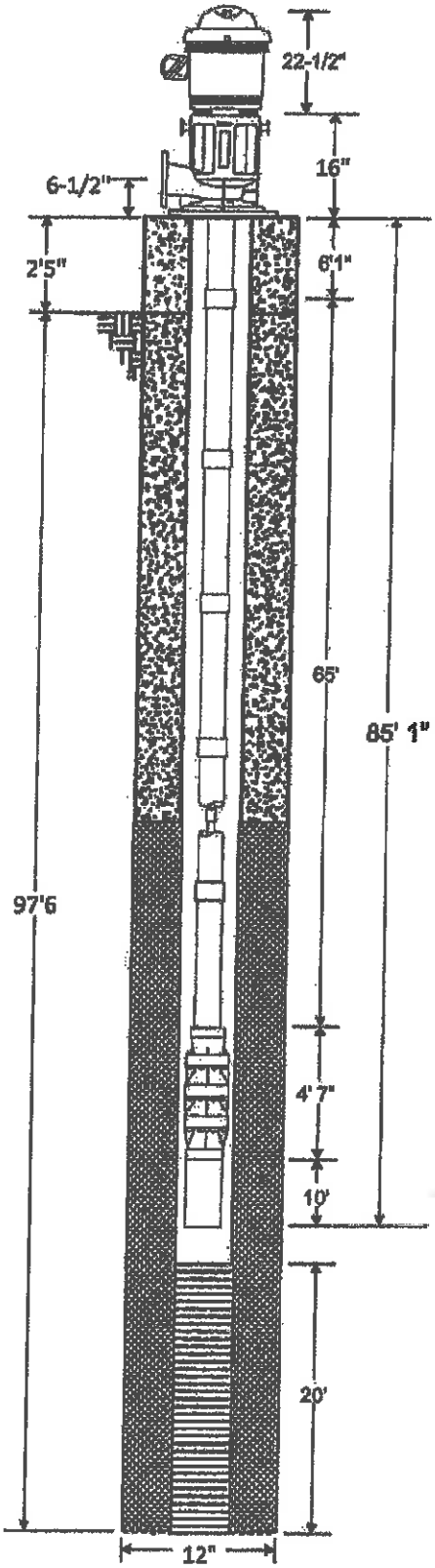
Layne Christensen Company

A GRAVITE COMPANY

Job No. 1032834
Date 9/21/2020



Customer City of Lewisport
Address Lewisport, Kentucky
Well No. 3
GPM 500 TDH 152'

Motor Make U.S. HP 25 (VHS) VSS
Type AU Serial No.
Phase 3 Voltage 230/460 Hz 60
RPM 1770 Clutch Dia. 1"
Frame 284TPA Mtr. Shaft Dia. 1"
Length 29-1/8" Keyway 1/4" (NRR) SRC

Discharge Head Goulds
Material cast iron ASA Flange
Packing 3/8" Seal
Topshaft Dia. 1" Length 76-5/16"
Topshaft Material stainless steel

Column Pipe Size 6" Type coupled
Lengths 1 5' 6 10'

Underground Disch. 6" x 72" Flg x thd Thread

Lineshaft Dia. 1" Material stainless steel
Thread Water Lube X Oil Lube
Sleeve None

Pump Mfg. Goulds Model 10RJLO
Stages 4 Trim Stick-up 8"
Impeller Shaft Dia. 1-1/2" Length 53-7/16"

Suction Size 6" Length 10'

Well Information underground discharge 4'
ID of Casing 12" ID of Screen 10-1/2"
Dpth. from Fdn. Dpth. from Grd. 97'6"
Screen Length 20' Slot Size 0.035"
Date Drilled 1991
Static Water Level 40' Date 9/21/2020
Static Water Level Date

Pump converted from oil lube to product lube
Installer Tom Adkins

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Layne - A Granite Company

Well and Pump Inspection Data Sheet

Owner: Lewisport Municipal Water Works
Location: Lewisport, KY
Well / Pump No.: 3
Tested By: Tom Adkins
Inspection Date: 9/21/2020
Job Number: 1032834

Well Information

Casing Diameter:	12"
Total Depth:	101'
Screen Diameter:	12"
Screen Length:	20'
Slot Size:	.035"
Year Installed:	1991
Last Serviced:	
Rated Capacity:	500

Pump Information

Serial Number:	
Make:	Goulds
Model:	10RJLO
Design Point:	500@152'
Column Size:	6"
Shaft Size:	1"
Depth to Suction:	81'
Low Water Probe:	
Year Installed:	1991

Motor Information

Make:	US
Hp:	25
Voltage:	230/460
Amperage:	
RPM:	1770
Frame:	284TPA
Type:	
MegOhms:	
Year Installed:	1991

Pump Performance

	year	design	test	% off
Original:	1991	500	500	–
Previous Test:	Sep-19	500	278	-44.40%
Current Test:	Sep-20	500	278	-44.40%

Well Performance

	year	gpm	gpm/ft	% off
Previous Test:	2012	513	51.30	–
Previous Test:	2017	466	29.13	-43.22%
Previous Test:	2018	466	66.57	29.77%
Previous Test:	2019	431	43.10	-15.98%
Current Test:	2020	474	39.50	-23.00%

Static Water Level		40.00		Pressure Gage Ht		0.00										
Pumping Level	Draw Down	Flow Meter	6 x 5 Orifice	Specific Capacity	Discharge Pressure	TDH	Amperages L1	L2	L3	Kilowatts L1-L2	L2-L3	Total		Horsepower Elec.	Water	Eff.
40.00	0.00	–		NA	72	206.3									0.00	
48.00	8.00	–	292	36.50	46	154.3	43	43	44						11.39	
50.00	10.00	–	373	37.30	30	119.3	45	45	46						11.25	
52.00	12.00	–	474	39.50	6	65.9	44	45	46						7.89	

Sand Content at Rated Flow : _____ PPM after 5 Min _____ PPM After 15 Min _____ PPM After 30 Min

Comments: **Maintenance Services:** Change Motor Oil: _____ Grease Bearings: X Replace Packing Material: _____

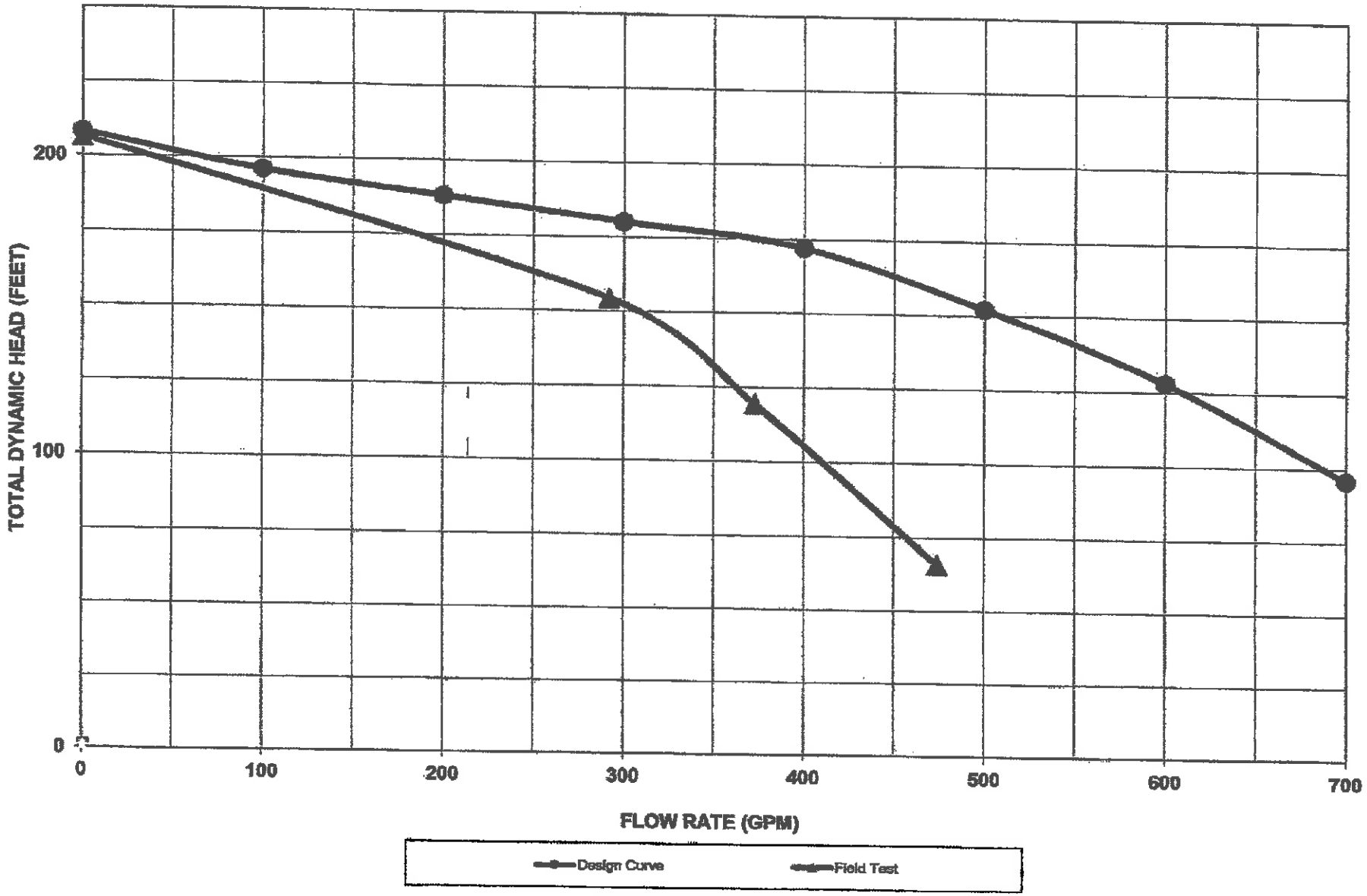
Test conducted following pump conversion.

Valve may have been leaking thru.

Layne Christensen Company

A GRANITE COMPANY

City of Lewisport
WELL #3
Goulds 10RJLO 4-Stage
FIELD TEST DATA - September 21, 2020



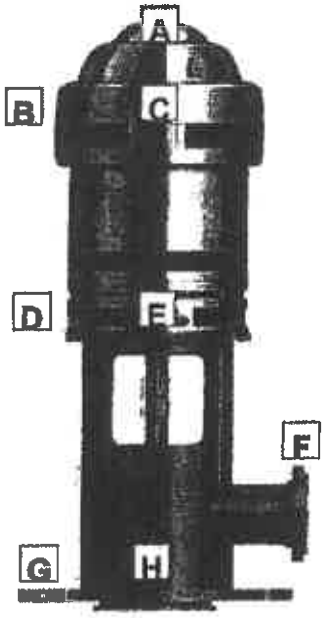
Layne
A GRANITE COMPANY

Vibration Analysis

Customer City of Lewisport Date September 21, 2020

Location Lewisport, KY Analysis by Tom Adkins

Analysis of Well #3 Job No. 1032834



Legend

(A) Axial
(B) Top Bearing
(C) Top Bearing
(D) Guide Bearing
(E) Guide Bearing
(F) Base
(G) Foundation
(H) Foundation

Data

Motor Make US H.P. 20 Voltage 230/460 Frame 284TPA

R.P.M. 1770 Nameplate Amps _____ Running Amps _____ S.F. 1.15

Base [x] Bolted [ ] Grouted [ ] Building [ ] Pit [ ] Tower

Design GPM 500 Actual GPM _____ Design TDH (ft) 152 Actual TDH (ft) _____

Actual Discharge Pressure [ ] Above [ ] Below _____ PSIG

Pump Make Goulds Model 10RJLO Serial No. _____ No. of Stg. 4

Comments:

	motor only (mils)	pump & motor (mils)
A		0.20
B		0.30
C		0.10
D		0.10
E		0.10
F		0.10
G		0.10
H		0.10