ARIZONA DEPARTMENT OF WATER RESOURCES

NON-EXEMPT WELL PERMIT

PURSUANT TO A.R.S. §§ 45-598 AND 45-599

PERMIT NO. S-225583

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

This is to certify that Application No. S-225583 meets the requirements of A.R.S. §§ 45-598 and 45-599 for the construction of a new well. The Director hereby grants authority to the Permittee to construct and operate a non-exempt well, subject to the following limitations and conditions:

Permit Limitations

Permittee: City of Buckeye
423 Arizona Eastern Avenue
Buckeye, AZ 85236

Well Registration Number: 55-225583 File No. B (4-4) 23AAA

Active Management Area: Phoenix

Subbasin: Hassayampa

PERMIT NO. S-225583

Well Location:	THE NE ¼ OF THE NE ¼ OF THE NE ¼ OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 4 WEST of the GSRB&M
Depth:	1,000 ft.
Casing Material:	Steel
Casing Diameter:	18 inches
Maximum Pumping Capacity:	1,600 gallons per minute
Maximum Annual Volume:	2,097 acre-feet
Authorized Place of Use for Groundwater Withdrawn:	As Authorized by Water Provider Right No. 56-002006.0000
Authorized Use of Groundwater:	As Authorized by Water Provider Right No. 56-002006.0000
Latest Date for Completing Well:	January 20, 2016

Permit Conditions

1. If the permitted well is not completed on or before January 20, 2016, the Permittee will be required to file a new application, and secure a new permit before proceeding with construction.

2. This permit is issued pursuant to A.R.S. § 45-599 and authorizes the permittee to construct a new well or a replacement well in a new location for the purpose of withdrawing groundwater for the use or uses set forth in the permit. This permit does not authorize the permittee to withdraw surface water from the well. If the permittee withdraws surface water from the well in any year, the permittee shall do so only pursuant to a decreed or appropriative surface water right and shall separately report in the annual report filed pursuant to A.R.S. § 45-632 the amount of groundwater and surface water withdrawn from the well.

3. The permittee shall monitor withdrawals of groundwater and shall report the total amount of groundwater withdrawn on an Annual Water Withdrawal and Use Report. The first annual reporting period shall be from the date of issuance of this permit through December 31, 2016. Subsequent annual reporting periods shall be from January 1 through December 31.

4. The proposed well shall be constructed in accordance with the minimum well construction standards, pursuant to A.A.C. R12-15-811.

5. The issuance of the permit does not waive any federal, state, county or local government ordinances, regulations or permits for which the facility may have to comply.

WITNESS my hand and seal of office this 10th day of May, 2016.

Lynne Smith
Deputy Director

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

ARIZONA DEPARTMENT *of* WATER RESOURCES
3550 North Central Avenue, Second Floor
Phoenix, Arizona 85012-2105
602.771.8500
azwater.gov

May 10, 2016

Ron Whitler, R.G.
City of Buckeye
423 Arizona Eastern Avenue
Buckeye, AZ 85236

RE: Non-Exempt Well Permit No. S-225583
Well Registration No. 55-225583; File No. B (4-4) 23AAA

Dear Permittee:

Your permit for the construction and operation of the above-referenced well is enclosed. The authority to drill and operate this well is granted on the condition that all applicable provisions of the Groundwater Code are met. The drilling card for the above referenced well has been forwarded to your well driller

In the event the location of the proposed well changes, you must notify the Arizona Department of Water Resources ("Department") of the change in writing. A drill card with the correct proposed well location must be in the possession of the driller before drilling may commence.

Within 30 days of completion of the well, the well driller is required to furnish the Department with a complete and accurate log of the well. In addition, the well owner is required to submit a Completion Report (DWR 55-56) within 30 days of the installation of pump equipment. Forms may be obtained by contacting the Department of online at http://www.azwater.gov

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage from the well. The total volume of pumpage from the well shall be reported on your Annual Water Withdrawal and Use Report for this calendar year. Subsequent annual reporting periods shall be from January 1 through December 31.

The Department has issued the authorization to drill and operate this well pursuant to A.R.S. §§ 45-598 and 45-599 of the Groundwater Code. The legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area. If there are court proceedings that could affect your well, you will be notified and be given the opportunity to participate.

Under A.R.S. § 45-593, the person to whom a well is registered must notify the Department of a change in ownership, physical characteristics or any other data about the well in order to keep the well registration records current and accurate. Forms may be obtained by contacting the Department of online at http://www.azwater.gov

Your permit has been issued by this Department without a hearing. As such, it is an appealable agency action. You are entitled to appeal and your rights are described in the enclosed notice of right to appeal.

If you have any questions regarding your permit or require any administrative correction, please contact me at 602-771-8594.

Sincerely,

Stella Murillo

Stella Murillo, Manager
Groundwater Permitting and Wells Section

IPR SUMMARY REVIEW MEMORANDUM

Stella Murillo, Groundwater Permitting and Wells Unit
April 20, 2016

APPLICANT:	**City of Buckeye**
APPLICATION NO:	**Permit No. S-225583, Well No. 55-225583**
APPLICATION TYPE:	**Application for Permit to Drill or Operate a Non-Exempt Well Within An Active Management Area**

Summary of the facts: The City of Buckeye("Applicant") filed an *Application for a Permit to Drill or Operate a Non-Exempt Well Within An Active Management Area* Pursuant to A.R.S § 45-599 on November 13, 2015. The applicant is proposing drill one new well within their service area. The proposed annual allotment is 2,097 acre-feet per annum. The claim of entitlement to withdraw groundwater is based upon the applicant's service area right number 56-002006.0000. The applicant's principal use of groundwater will be for municipal use. The registration number and location of the well is as follows: No. 55-225583 in the NE¼, NE¼, NE¼, of Section 23, Township 5 North, Range 4 West. The design pump capacity of the proposed well is 1,600 gpm.

The 5-year/10-feet drawdown boundary was calculated and shown on Figure 1 of the report the applicant submitted with the application. The applicant indicated that no non-applicant owned wells were impacted. However, Figure 1 indicates that one well is impacted, 55-205078, which is currently registered to Pulte Corporation. On January 20, 2016 the applicant subsequently submitted a Request to Change Well Information to ADWR in which ownership of the impacted well was transferred to the City of Buckeye. Therefore, no non-applicant owned wells are impacted.

Hydrology and Water Quality do not have any objections to the issuance of the permit.

Recommendations: Request approval of the application for the City of Buckeye to drill a new well with a permitted volume to 2,097 acre-feet per annum.

IPR Committee Comments:

IPR Special Conditions:

IPR Committee Recommendations:

- ☑ Approved
- ☐ Denied
- ☐ Other (explanation) _____

_____ 5/3/16

IPR Chairperson Date

Memorandum

To:	Stella Murillo, Groundwater Permitting and Wells
From:	David Christiana, Groundwater Permitting and Wells
CC:	Jeff Tannler, Statewide AMA Director
Date:	12/15/2015
Re:	Application for a Permit to Drill and Operate a Non-Exempt Well S-225583 55-225583 B(4-4)23AAA City of Buckeye

Comments: I have reviewed the above-referenced application for a permit to drill and operate a non-exempt well in the Phoenix AMA for well impacts, subsidence and water quality issues, well construction, and proximity to Maricopa County Flood Control District flood retention structures. The applicant is requesting 2,097 acre-feet per year from a new service area well.

Well Impacts

The applicant included a well spacing-well impact study (report) with the application. THWells was used to calculate the 5-year/10-foot drawdown boundary. Aquifer parameters were derived from a pumping test from a nearby well, 55-205078 and the Hassayampa groundwater flow model (Brown and Caldwell, 2006). A great deal of negotiation occurred during permitting of well 55-205078, when the applicant and ADWR came to an agreement of an appropriate value of transmissivity (T) and the location of an aquifer boundary based on site-specific data.

The 5 year/10 foot drawdown boundary was calculated and shown on Figure 1 of the report. The applicant indicated that no non-applicant owned wells were impacted. However, Figure 1 indicates that one well is impacted, 55-205078, which is currently registered to Pulte Home Corporation.

The drawdown analysis included a boundary condition which simulated the hard rock to the south of the well. The boundary does not seem to coincide with the boundary negotiated for the earlier evaluation at well 55-205078. The report did not include any information pertaining the boundary condition and image well.

I verified the applicant's calculations using THWells and similar reasonable aquifer parameters based on the applicant's analysis. The aquifer parameters used in the analysis are:

Transmissivity (T)	93,500 gallons/day/foot of drawdown
Storage (Sy)	0.1 (dimensionless)
Aquifer Thickness (b)	550 feet
Withdrawal (Q)	1,872,000 gpd (2,097 acre-feet/year)
Time (t)	1,825 days

The 5-year/10-foot drawdown boundary was calculated two different ways. In one set of calculations, I used the customary 400-foot depth to bedrock contour as a boundary condition. The boundary was simulated by inclusion of an image well in the analysis. The position of the boundary and the location of the image well are shown on the attached map. The results indicate a much larger impact area than the applicant's analysis.

A revised boundary condition based on the earlier analysis for well 55-205078 was employed. The position of the estimated boundary and the location of the image well are shown on the attached map. The results were similar to the applicant's. Abbreviated THWells output is attached. The full output is available.

The results indicate one well, 55-205078 (registered to Pulte Home Corporation) is impacted by drawdown greater than 10 feet after 5 years of pumping by the proposed well. The applicant must move the well to a more suitable location, reduce the requested withdrawal volume, or obtain a waiver from the owner of the impacted well.

Regional Land Subsidence

The proposed well is not near any known area of regional land subsidence. Consultation with the ADWR Survey Unit is not necessary.

Water Quality

The proposed well is not near any remedial action sites. No water quality issues are known. Consultation with ADEQ is not necessary.

Well Construction

The proposed well will be drilled to 1,030 feet, with 18 5/8 inch casing to 1,020 feet. Louvered well screen will be installed from 450 feet to 1,000 feet. The well casing will have two feet stickup, a sounding tube, and a surface seal to 38 feet. The well diagram included with the application indicates the well will meet all minimum well construction requirements. No special construction is required.

Proximity to Flood Retention Structures

The proposed well is not near any county flood retention structures. Consultation with the Maricopa County Flood Control District is not necessary.

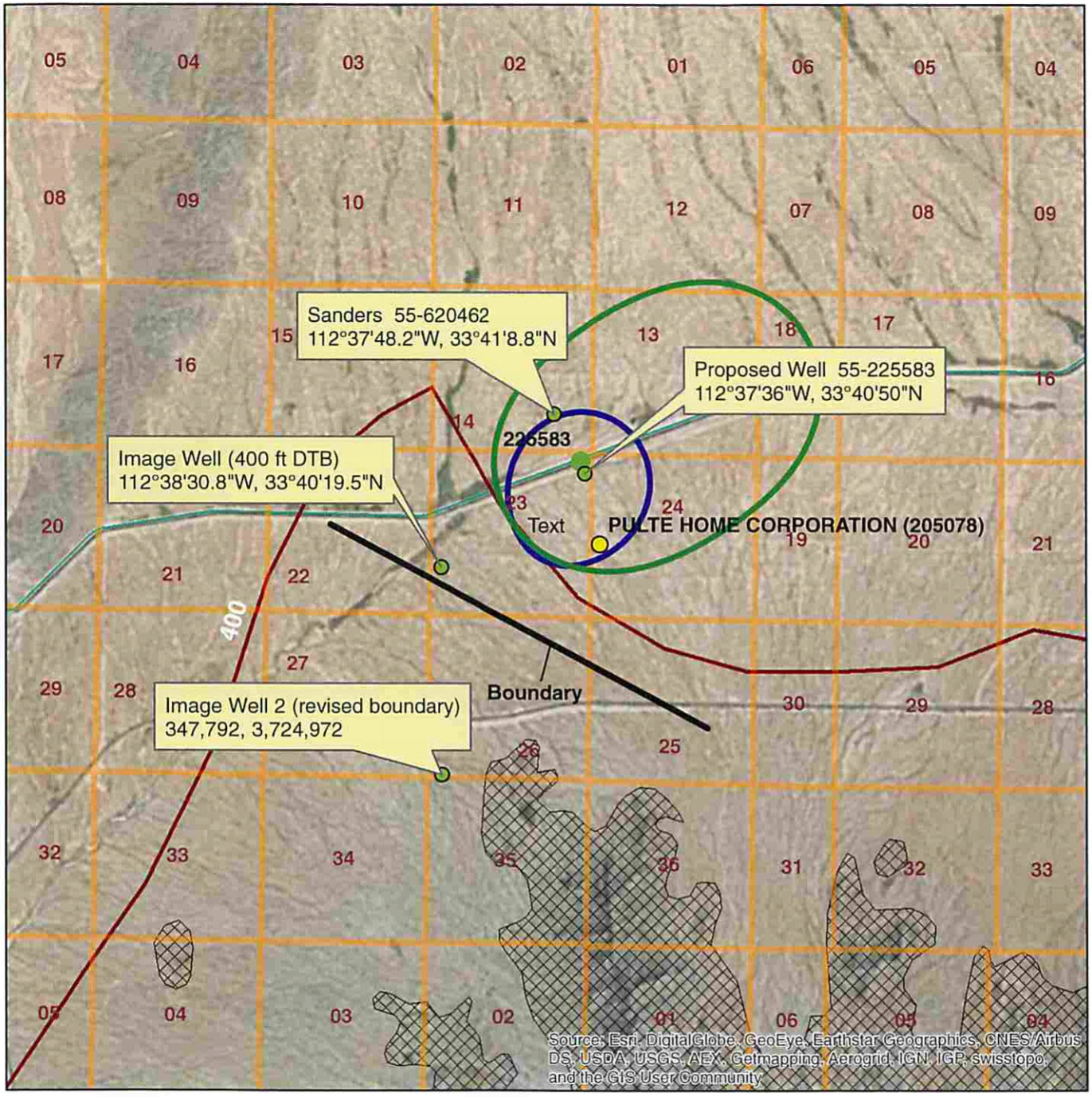
Conclusion

I do not support authorizing the construction and operation of this well at this time. The applicant must revise the application by lowering the requested volume, move the location of the well, or obtain a waiver from the registered owner of the impacted well.

Attachments:

Area map

THWells abbreviated output



City of Buckeye
Festival Well No. 4 (PW-4)
55-225583 S-225583
B(4-4)23AAA

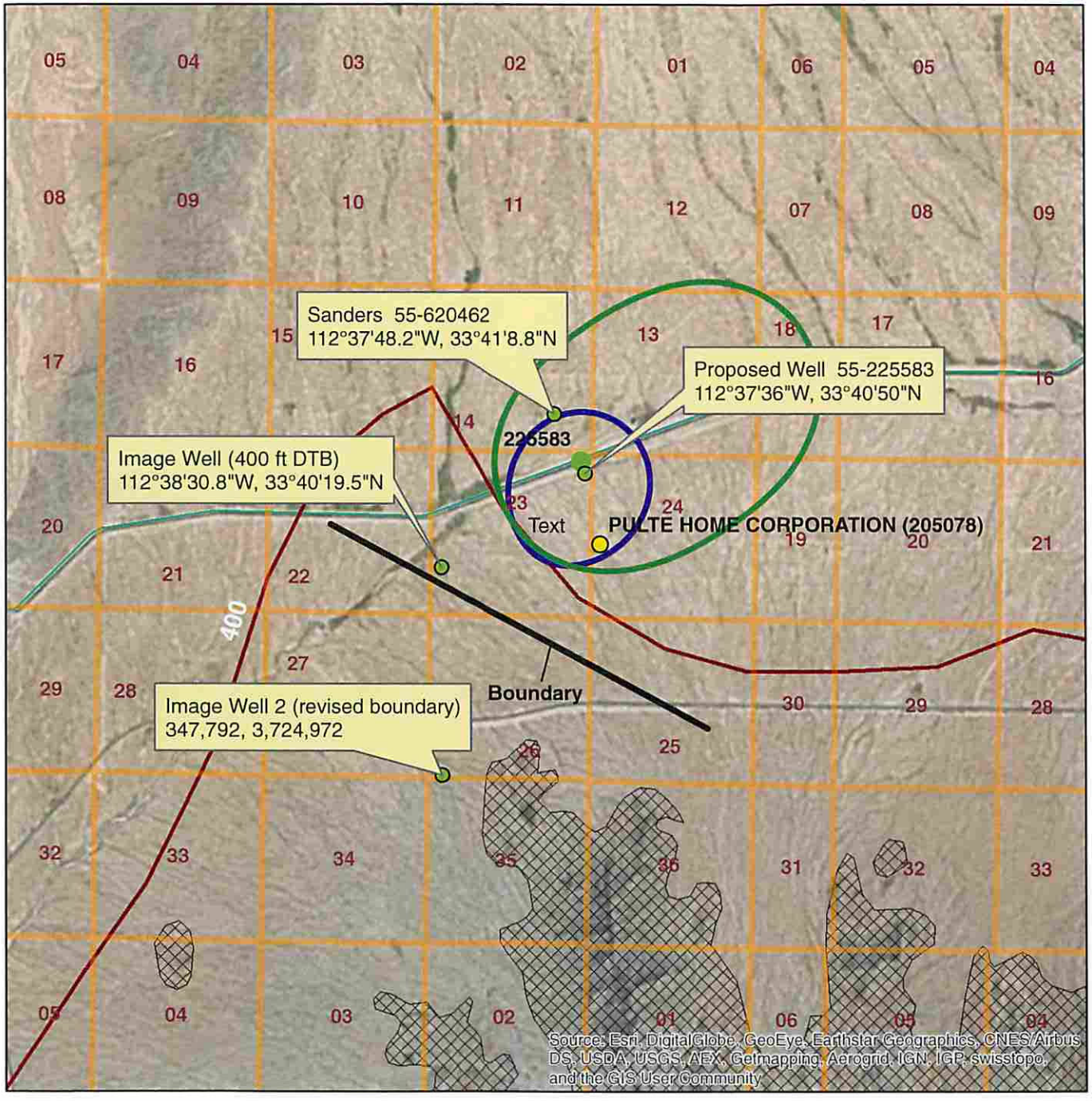
Legend

- Subject Well(s)
- Depth to Bedrock (400 feet)
- 5-yr/10-ft Drawdown Boundary
- Revised Drawdown Boundary
- Impacted Wells
- Section
- Hardrock (2005)
- CAP Canal

Miles
0 0.2 0.4 0.8 1.2 1.6 2

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983

Date: 12/15/2015Time: 11:54:40 AM
Document Path: U:\WorkSpaces\EngineerPermit\PermitSupport\TechSupportWqarf\Projects\Well Impacts\WellImpacts013.mxd



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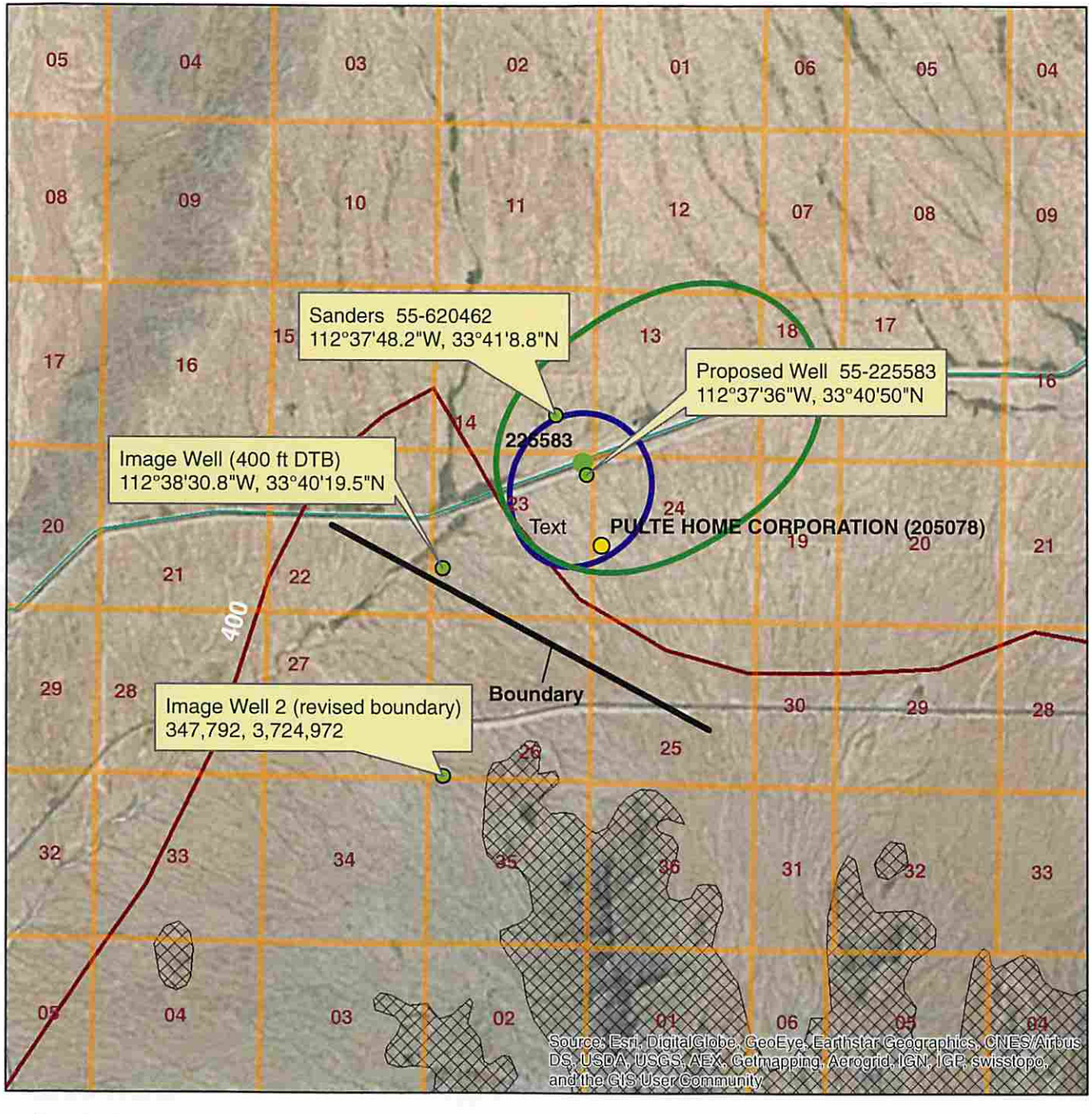

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Miles

0 0.2 0.4 0.8 1.2 1.6 2

N

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983

Date: 12/15/2015Time: 11:54:40 AM
Document Path: U:\WorkSpaces\EngineerPermit\PermitSupport\TechSupportWqarf\Projects\Well Impacts\WellImpacts013.mxd

CALCULATION OF DRAWDOWN IN A HOMOGENEOUS, ISOTROPIC, CONFINED, LEAKY
CONFINED OR UNCONFINED AQUIFER WITH MULTIPLE PRODUCTION AND INJECTION
WELLS AND UNIFORM REGIONAL FLOW

********** INPUT DATA **********

UNCONFINED AQUIFER - THEIS EQUATION WITH JACOB'S CORRECTION

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 550 [ft]
TRANSMISSIVITY = 93500 [gpd/ft]

STORAGE COEFFICIENT = .1

REGIONAL FLOW GRADIENT
(positive--downwards--in flow direction) = 0

REGIONAL FLOW DIRECTION
(horizontal angle in degrees
counter-clockwise from positive x-axis) = 0

REGIONAL FLOW OFFSET AT ORIGIN
(positive in downwards direction) = 0 [ft]

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 550 [ft]

PUMPING/INJECTION WELL DATA

WELL NO. 1

```
                    X-COORDINATE  =  0 [ft]
                    Y-COORDINATE  =  0 [ft]
          PUMPING/INJECTION RATE  =  1872000 [gpd]
TIME SINCE START PUMPING/INJECTION  =  1825 [day]
```

WELL NO. 2

```
                    X-COORDINATE  =  4658 [ft]
                    Y-COORDINATE  =  9689 [ft]
          PUMPING/INJECTION RATE  =  1872000 [gpd]
TIME SINCE START PUMPING/INJECTION  =  1825 [day]
```

---------- Drawdown in [ft] ----------

Y [ft]	<- X [ft] ->					
	0	150	300	450	600	750
0.00	39.489	18.894	16.629	15.315	14.390	13.676
150.00	18.914	17.789	16.300	15.181	14.329	13.651
300.00	16.669	16.320	15.567	14.790	14.102	13.512
450.00	15.376	15.222	14.811	14.296	13.777	13.293
600.00	14.472	14.392	14.145	13.799	13.414	13.028
750.00	13.780	13.736	13.578	13.337	13.051	12.746
900.00	13.224	13.200	13.093	12.921	12.704	12.463
1050.00	12.761	12.749	12.675	12.548	12.383	12.191
1200.00	12.366	12.362	12.310	12.216	12.087	11.934
1350.00	12.023	12.025	11.989	11.918	11.817	11.694
1500.00	11.721	11.728	11.703	11.649	11.570	11.470
1650.00	11.453	11.463	11.447	11.407	11.344	11.263
1800.00	11.212	11.225	11.216	11.186	11.137	11.071
1950.00	10.995	11.011	11.007	10.986	10.947	10.894
2100.00	10.798	10.815	10.817	10.802	10.773	10.730
2250.00	10.618	10.637	10.643	10.634	10.612	10.578
2400.00	10.453	10.474	10.483	10.479	10.464	10.437
2550.00	10.301	10.324	10.336	10.336	10.327	10.307
2700.00	10.161	10.186	10.200	10.205	10.200	10.186
2850.00	10.032	10.058	10.075	10.083	10.082	10.073
3000.00	9.913	9.940	9.959	9.970	9.974	9.969
3150.00	9.802	9.831	9.852	9.866	9.873	9.872
3300.00	9.699	9.729	9.753	9.769	9.779	9.783
3450.00	9.603	9.635	9.660	9.679	9.693	9.700
3600.00	9.514	9.547	9.575	9.596	9.612	9.623
3750.00	9.431	9.466	9.495	9.519	9.538	9.551
3900.00	9.354	9.390	9.421	9.447	9.469	9.485
4050.00	9.281	9.319	9.352	9.381	9.405	9.424
4200.00	9.214	9.253	9.288	9.319	9.345	9.368
4350.00	9.152	9.192	9.229	9.262	9.291	9.316
4500.00	9.093	9.135	9.174	9.209	9.241	9.268
4650.00	9.039	9.083	9.123	9.160	9.194	9.224
4800.00	8.988	9.033	9.076	9.115	9.151	9.184
4950.00	8.940	8.988	9.032	9.074	9.112	9.148
5100.00	8.896	8.945	8.992	9.035	9.076	9.115
5250.00	8.854	8.905	8.954	9.000	9.044	9.085
5400.00	8.816	8.869	8.919	8.968	9.014	9.057
5550.00	8.780	8.834	8.887	8.938	8.987	9.033
5700.00	8.746	8.803	8.858	8.911	8.962	9.011

Y [ft]	<- X [ft] ->					
	4500	4650	4800	4950	5100	5250
8850.00	13.402	13.438	13.372	13.210	12.976	12.695
9000.00	13.979	14.043	13.955	13.733	13.419	13.059
9150.00	14.692	14.808	14.679	14.348	13.908	13.435
9300.00	15.607	15.838	15.615	15.068	14.423	13.799
9450.00	16.824	17.400	16.886	15.864	14.906	14.104
9600.00	18.292	20.612	18.516	16.524	15.226	14.279
9750.00	18.480	21.812	18.747	16.564	15.225	14.264
9900.00	16.987	17.700	17.071	15.910	14.886	14.052
10050.00	15.631	15.901	15.649	15.044	14.351	13.698
10200.00	14.594	14.728	14.590	14.234	13.766	13.272
10350.00	13.776	13.852	13.763	13.529	13.201	12.827
10500.00	13.104	13.150	13.086	12.921	12.680	12.392
10650.00	12.534	12.563	12.514	12.390	12.206	11.980
10800.00	12.040	12.058	12.018	11.921	11.776	11.593
10950.00	11.602	11.614	11.579	11.501	11.383	11.233
11100.00	11.210	11.217	11.187	11.121	11.024	10.898
11250.00	10.854	10.857	10.831	10.775	10.692	10.585
11400.00	10.528	10.529	10.505	10.456	10.385	10.293
11550.00	10.227	10.226	10.204	10.161	10.099	10.019
11700.00	9.947	9.945	9.925	9.887	9.832	9.761
11850.00	9.686	9.683	9.664	9.630	9.580	9.517
12000.00	9.440	9.437	9.419	9.388	9.343	9.287
12150.00	9.209	9.205	9.188	9.160	9.119	9.068
12300.00	8.991	8.986	8.970	8.944	8.907	8.860
12450.00	8.783	8.778	8.763	8.738	8.705	8.662
12600.00	8.585	8.580	8.566	8.543	8.512	8.472
12750.00	8.397	8.391	8.378	8.356	8.327	8.291
12900.00	8.217	8.211	8.198	8.178	8.151	8.117
13050.00	8.044	8.038	8.026	8.007	7.981	7.950
13200.00	7.878	7.872	7.860	7.842	7.818	7.789
13350.00	7.719	7.713	7.701	7.684	7.662	7.634
13500.00	7.565	7.559	7.548	7.532	7.510	7.484
13650.00	7.417	7.411	7.400	7.385	7.364	7.340
13800.00	7.274	7.268	7.257	7.243	7.223	7.200
13950.00	7.135	7.130	7.119	7.105	7.087	7.065
14100.00	7.002	6.996	6.986	6.972	6.955	6.934
14250.00	6.872	6.866	6.856	6.843	6.827	6.807
14400.00	6.746	6.740	6.731	6.718	6.703	6.683
14550.00	6.624	6.618	6.609	6.597	6.582	6.564
14700.00	6.505	6.499	6.491	6.479	6.464	6.447

orig. Rec.

RECEIVED NOV 20 2015 ARIZONA DEPARTMENT OF WATER RESOURCES

- Re-Submit date

RECEIVED JAN 20 2016 ARIZONA DEPARTMENT OF WATER RESOURCES

PW-4

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
MAIL TO: P.O. BOX 36020, PHOENIX, ARIZONA 85067-6020
3550 North Central Avenue, Phoenix, Arizona 85012
Phone (602) 771-8500 • Fax (602) 771-8690

APPLICATION FOR A PERMIT TO DRILL OR OPERATE A NON-EXEMPT WELL WITHIN AN ACTIVE MANAGEMENT AREA PURSUANT TO A.R.S. § 45-599

I. INSTRUCTIONS:

1. **This application should be used to obtain a permit to:**
   (a) **Drill a non-exempt well in conjunction with a new or existing General Industrial Use Permit Application, a Certificate of Grandfathered Right, a Service Area Right, or an Irrigation District Right.**
   (b) **Convert an existing well to a non-exempt well, or increase the annual permitted volume to be withdrawn from the well.**
2. **Complete all appropriate items on this application, sign in the appropriate place and mail to P.O. Box 33589, Phoenix, Arizona 85067-3589 or hand deliver to 3550 North Central Avenue, Phoenix, Arizona 85012**
3. **Pursuant to A.R.S. § 45-599 and A.A.C. R12-15-104, the fee for this application is $150.00 and the permit fee is $30.00.**

II. GENERAL DATA:

FOR DEPARTMENT USE ONLY
Application No. S-225583
Registration No. 55-225583
File No. B(4-4)23 AAA
Date Received Nov 13, 2015
AMA Phoenix
W/S 15 S/B 03

1. Applicant City of Buckeye
   Mailing Address 423 Arizona Eastern Avenue
   Buckeye (City) Arizona (State) 85236 (Zip Code)
   Contact Person Ron Whitler, R.G.
   Telephone Number 623.349.6122
2. Name of Land Owner Pulte Home Corporation
   Mailing Address 16767 N Perimeter Drive
   Scottsdale (City) Arizona (State) 85260 (Zip) 480.391.6068 (Telephone Number)

   2B. Parcel No. 503-84-007F
   2C. Public Water System ID #
3. Applicant is: ☐ Owner ☒ Lessee
4. Proposed well is: ☒ New well ☐ Increase in Permitted Maximum Annual Volume for Existing Well ☐ Replacement well in a new location.
5. Claim of entitlement to withdraw groundwater is based upon:
   ☐ Certificate of Grandfathered Right No:
   ☐ General Industrial Use Permit No. 59-
   ☒ Service Area Right No: 56-002006.0000
   ☐ Irrigation District Right No:
6. The principal use(s) of groundwater will be (**be specific**) Construction Water, Landscape Irrigation, Residential supply
7. Well location: NE ¼ (10 Acre) NE ¼ (40 Acre) NE ¼ (160 Acre) Section 23 Township 4N N/S Range 4W E/W
8. Position location of the well: Latitude 33 ° 40 ' 50 " N Longitude 112 ° 37 ' 36 " W
9. Design Pump Capacity 1,600 gpm Depth 1,000 feet
   Diameter 18 inches Type of casing HSLA
10. Proposed annual volume of water 2,097 acre feet
11. Well is located in the Hassayampa subbasin of the Phoenix Active Management Area.

12. Approximate date construction will begin: MONTH January YEAR 2016

Estimated time to complete new well 3 months. (If longer than 1 year, attach explanation.)

13. Legal description of the land where the groundwater will be used:
_____ ¼ _____ ¼ _____ ¼ Section 23, 24 Township 4N N/S Range 4W E/W. County Maricopa
10 Acre 40 Acre 160 Acre

14. Is the proposed well site within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials? ☐ Yes ☒ No (if yes, a request for a variance must accompany this application pursuant to R12-15-820.)

15. Driller's Name Yellow Jacket Drilling DWR License No: 78 ROC License Category 218848

Mailing Address: 3922 E. University Drive Suite 1 Phoenix Arizona 85034 602-453-3252
Street City State Zip Telephone Number

16. **Attach a Well Construction Supplement, DWR form 55-90, and include a detailed construction diagram as indicated on the form.**

III. FOR SERVICE AREA WELLS AND IRRIGATION DISTRICT WELLS ONLY:

17. Is the proposed well located in your service area? ☒ Yes ☐ No

18. Will groundwater withdrawn be used in your service area? ☒ Yes ☐ No **(If answer is no, attach explanation.)**

IV. FOR REPLACEMENT WELL IN NEW LOCATION ONLY:

19. Registration number of original well 55- _____.

20. Location of the original well: _____ ¼ _____ ¼ _____ ¼ Section _____ Township _____ N/S Range _____ E/W
10 Acre 40 Acre 160 Acre

21. Distance between original well and proposed replacement well _____ feet.

22. When determining impacts under the Department's well spacing rules, the director will take into account the collective efforts of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director.
Will a hydrological study be submitted? ☐ Yes ☐ No

23. Will the original well be abandoned if applicant receives a permit to drill a replacement well? ☐ Yes ☐ No.
(If yes, please submit a completed Notice of Intent to Abandon a Well along with this application.)
If no, explain the planned use of the original well _____

V. FOR INCREASE IN PERMITTED MAXIMUM VOLUME FOR EXISTING WELL ONLY:

24. Registration number of the existing well 55- _____ Present pump design capacity _____ gallons per minute. Present permitted volume _____ acre-feet per year.

25. The new design pump capacity will be _____ gallons per minute. New permitted volume will be _____ acre-feet per year.

26. Will the well be modified or deepened? ☐ Yes ☐ No [Pursuant to R12-15-801(29)] **If yes, Attach a Well Construction Supplement, DWR form 55-90, and include a detailed construction diagram as indicated on the form.**

27. The existing well has previously been used in conjunction with or for the following: _____

It is understood that the permit, if granted, will be in accordance with the Groundwater Management Act (Title 45, Chapter 2), and the rules adopted thereunder. The permittee will be bound by the provisions of such law and the provisions of the permit issued.

I (we), Ron Whitler (print name) hereby affirm that all information provided in this application is true and correct to the best of my/our knowledge and belief.

Signature of Applicant Ron Whitler, City of Buckeye Date 11/3/2015

Signature of Land Owner (if applicable) _____ Date 11/9/2015

PW#4

ARIZONA DEPARTMENT OF WATER RESOURCES

WATER MANAGEMENT DIVISION
3550 North Central Avenue, Phoenix, Arizona 85012
Phone (602) 771-8585 Fax (602) 771-8688

WELL CONSTRUCTION SUPPLEMENT (form DWR 55-90)

Well Registration Number 55- 225583

1. Well Location:

   NE ¼ of the NE ¼ of the NE ¼, Sec. 23, Township T4N Range R4W.
   (10AC) (40AC) (160AC)

2. Position Location of the Well:

   Latitude 33 ° 40 ' 50 " Longitude 112 ° 37 ' 36 "

   Datum: • NAD 83 • NAD 27 • Other: _____

3. County Maricopa.

4. Date construction to start: January 2016.

5. Time period well will remain in use: Indefinitely.

6. Is pump equipment to be installed? Yes If so, design pump capacity: 1,600 GPM.

7. Well construction plan:

   a. Drilling method (mud rotary, hollow-stem auger, etc.) Reverse Circulation.

   b. Borehole diameters 38 inches from 0 feet to 39 feet.
      26 inches from 39 feet to 1,030 feet.

   c. Casing materials High strength low alloy (HSLA) Steel.

   d. Method of well development (bail, air lift, surge, etc.) Swab and airlift, pump and surge.

   e. Will surface or conductor casing extend above grade? Yes.

8. Include a detailed construction diagram of the proposed well design. The diagram should verify consistency with minimum construction requirements specified in the Department's well construction rules found in Arizona Administrative Code (A.A.C.) R12-15-801 *et seq.* Specifically, the diagram should include borehole diameters; casing materials and diameters; perforation intervals; the expected water level; depth and thickness of the surface seal; proposed grouting materials; and the length that the surface or conductor casing will extend above grade, or vault details, if specified.

   Pursuant to Arizona Revised Statutes (A.R.S.) § 45-594.B, all well construction, replacement, deepening and abandonment operations shall comply with the rules adopted pursuant to this section. Therefore, any existing well that is deepened or modified must be brought into compliance with minimum well construction standards specified above, if not already in compliance.

9. Proposed materials and method of abandonment if well is to be abandoned after project is completed (Minimum requirements per A.A.C. R12-15-816):

_____

10. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous material, or petroleum storage area or tank? _____Yes __x__No

11. Is this well to monitor existing contamination? ____Yes __x__No

Potential contamination?_____Yes ___x__No If yes, please provide explanation:_____

_____

12. Name of Consulting firm, if any: Clear Creek Associates

6155 East Indian School Road, Suite 200	Scottsdale	Arizona	85251
Address	City	State	Zip

Contact Person: Don Hanson/Geno Mammini Telephone Number: 480-659-7131

13. Drilling firm Yellow Jacket Drilling

DWR License Number: 78 ROC License Category: 218848

14. Special construction standards, if any, required pursuant to A.A.C. R12-15-821:_____

_____

I (we), Ron Whitler (print name) hereby affirm that all information provided in this application is true and correct to the best of my/our knowledge and belief.

Signature of Applicant Ron Whitler, City of Buckeye Date 11/3/2015

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
3550 N. Central Avenue, Phoenix Arizona 85012

THIS AUTHORIZATION SHALL BE IN THE POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-225583 **PERMIT NO.:** S-225583

AUTHORIZED DRILLER: YELLOW JACKET DRILLING **LICENSE NO.:** 78

A PERMIT TO DRILL A NON-EXEMPT WELL INSIDE THE PHOENIX ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: CITY OF BUCKEYE 423 ARIZONA EASTERN AVENUE BUCKEYE, AZ 85236

The well(s) is/are to be located in the:

NE¼ of the NE¼ of the NE¼ of Section 23 Township 4 North, Range 4 West

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 20th DAY OF JANUARY, 2016

Stella Morales

GROUNDWATER PERMITTING ANS WELLS UNIT

THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

Arizona Department of Water Resources
Information Management Unit
P.O. Box 33589 Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.azwater.gov

Well Driller Report and Well Log

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

FILE NUMBER: **B (4-4) 23AAA**
WELL REGISTRATION NUMBER: 55-225583
PERMIT NUMBER (IF ISSUED): **S-225583**

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

Mail To:

NAME Yellow Jacket Drilling	DWR LICENSE NUMBER 78
ADDRESS 3922 E University Drive Suite 1	TELEPHONE NUMBER
CITY / STATE / ZIP Phoenix, AZ 85034	FAX

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL

MAILING ADDRESS

CITY / STATE / ZIP CODE

CONTACT PERSON NAME AND TITLE

TELEPHONE NUMBER | FAX

WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well, etc.)

Location of Well

WELL LOCATION ADDRESS (IF ANY)

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
			¼	¼	¼

LATITUDE			LONGITUDE		
° Degrees	' Minutes	"N Seconds	° Degrees	' Minutes	"W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE)
☐ *GPS: Hand-Held ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL
Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE)
☐ *GPS: Hand-Held ☐ *GPS: Survey-Grade

*GEOGRAPHIC COORDINATE DATUM (CHECK ONE)
☐ NAD-83 ☐ Other (*please specify*):

COUNTY

ASSESSOR'S PARCEL ID NUMBER
BOOK | MAP | PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ALL THAT APPLY
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development

CHECK ALL THAT APPLY
- ☐ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*:

Condition of Well

CHECK ONE
- ☐ Capped
- ☐ Pump Installed

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Construction Dates

DATE WELL CONSTRUCTION STARTED

DATE WELL CONSTRUCTION COMPLETED

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY | DATE

WELL REGISTRATION NUMBER
55-225583

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
Feet Below Land Surface	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Feet Below Land Surface			☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (T)				PERFORATION TYPE (T)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-225583

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE		Description	Check (T) every interval where water was encountered (if known)
FROM (feet)	TO (feet)	Describe material, grain size, color, etc.	

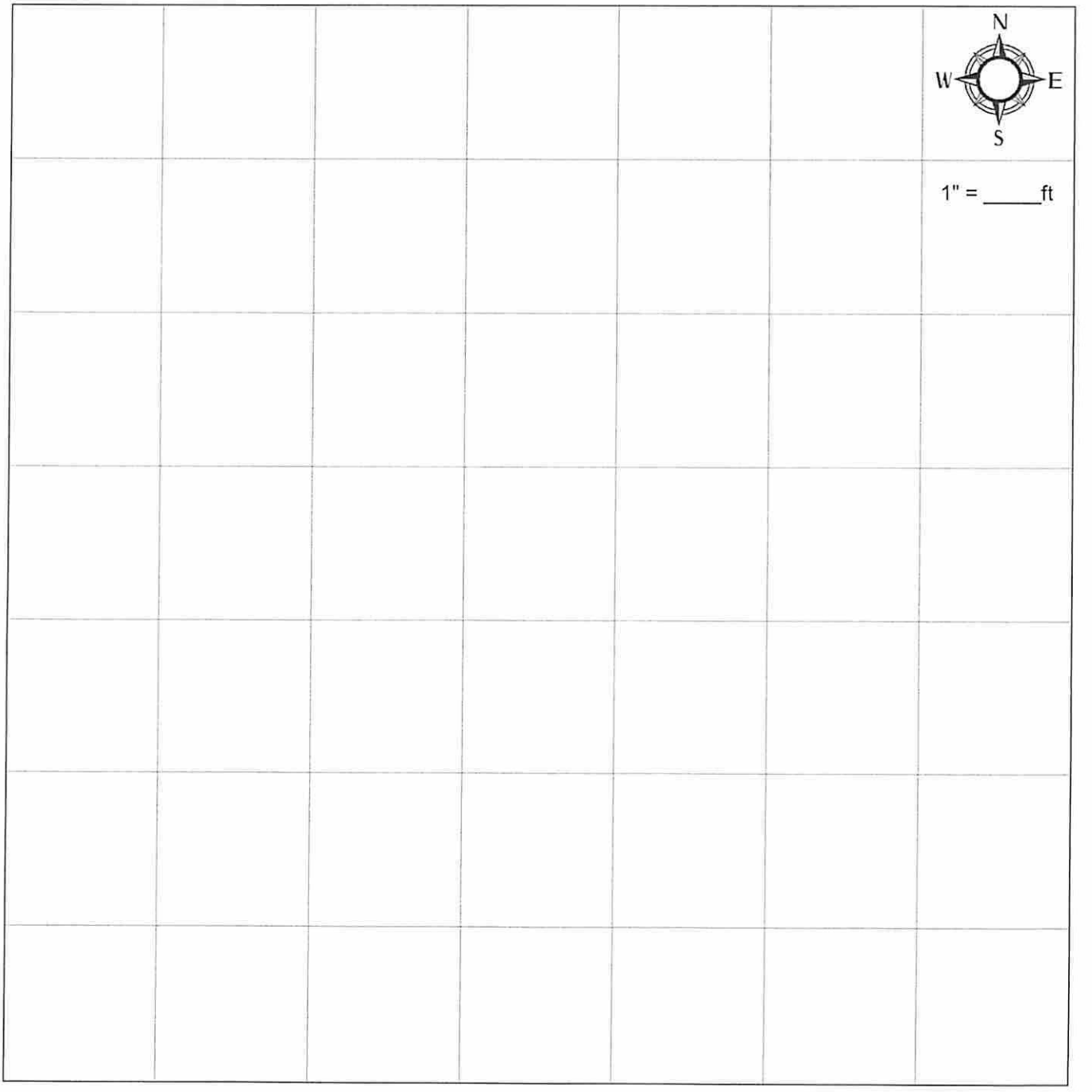
Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-225583

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER		
	BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



Run Date: 04/21/2016

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location B 4.0 4.0 23 A A A

Well Reg.No 55 - 225583

AMA PHOENIX AMA

Registered Name CITY OF BUCKEYE - WATER RESOURCES DEPT
423 ARIZONA EASTERN AVE.
BUCKEYE AZ 85326

File Type NEW WELLS (INTENTS OR APPLICATIONS)
Application/Issue Date 01/20/2016

Owner OWNER
Driller No. 78
Driller Name YELLOW JACKET DRILLING SERVICES, LLC
Driller Phone 602-453-3252
County MARICOPA

Intended Capacity GPM 0.00

Well Type NON-EXEMPT - SERVICE
SubBasin HASSAYAMPA
Watershed LOWER GILA RIVER
Registered Water Uses MUNICIPAL USES
Registered Well Uses WATER PRODUCTION
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	0.00	**Case Diam**	0.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	NO CASING CODE LISTED

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments

Current Action

4/20/2016 601 PERMIT ISSUED - AWAITING SELECTION OF DRILLER (S, T, 59, 74)
Action Comment: sm

Action History

4/20/2016 880 CHANGE IN REMEDIAL ACTION SITE CODE
Action Comment: OLD WQARF code: null

4/12/2016 867 APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment: dgc

4/12/2016 300 APP RCVD FOR A WELL PERMIT FOR A NEW WELL (S, T)
Action Comment: dgc

1/20/2016 300 APP RCVD FOR A WELL PERMIT FOR A NEW WELL (S, T)
Action Comment: sm

Run Date: 04/21/2016

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location B 4.0 4.0 24 C B B

Well Reg.No 55 - 205078

AMA PHOENIX AMA

Registered Name CITY OF BUCKEYE
423 ARIZONA EASTERN AVENUE

BUCKEYE AZ 85326

File Type NEW WELLS (INTENTS OR APPLICATIONS)
Application/Issue Date 11/18/2004

Owner OWNER
Driller No. 360
Driller Name ARIZONA BEEMAN DRILLING dba Morex Investments LLC
Driller Phone 480-983-2542
County MARICOPA
Parcel No. 503-84-475
Intended Capacity GPM 2,000.00

Well Type NON-EXEMPT - NON-SERVICE
SubBasin HASSAYAMPA
Watershed UPPER GILA RIVER
Registered Water Uses MUNICIPAL USES
Registered Well Uses WATER PRODUCTION
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	910.00	**Case Diam**	26.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	910.00	**CRT**	
Draw Down	0.00	**Water Level**	352.00	**Log**	X
		Acres Irrig	0.00	**Finish**	STEEL - PERFORATED OR SLOTTED CASING

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments recovery well permit no. 74-218764

Places Of Use

B	4 0	4 0	13
B	4 0	4 0	22
B	4 0	4 0	26

Current Action

1/20/2016 860 CHANGE OF WELL OWNERSHIP
Action Comment: Online

Action History

8/11/2012 320 APP RCVD FOR A RECOVERY WELL PERMIT (74)
Action Comment:

1/11/2012 600 PERMIT ISSUED (S, T, 59, 74)
Action Comment: sm

6/30/2011 867 APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment: dgc

4/29/2010 750 WELL DRILLER REPORT AND WELL LOG RECEIVED/ENTERED
Action Comment: sm

12/22/2008 600 PERMIT ISSUED (S, T, 59, 74)
Action Comment: dh
Recovery Well Permit No. 74-218764

12/19/2008 410 AMA APPLICATION/NOI REVIEW COMPLETE
Action Comment: dh

8/5/2008 400 HYDROLOGY APPLICATION REVIEW COMPLETE
Action Comment: dh

4/19/2008 322 APP/NOI SENT TO AMA FOR REVIEW
Action Comment: dh

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

4/19/2008 365 APP SENT TO HYDROLOGY FOR REVIEW
Action Comment: dh
4/19/2008 321 APP/NOI SENT TO WATER QUALITY FOR REVIEW
Action Comment: dh
4/19/2008 355 APP SENT TO AMA FOR REVIEW
Action Comment:
4/26/2007 867 APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment: dh
9/16/2005 400 HYDROLOGY APPLICATION REVIEW COMPLETE
Action Comment:
8/11/2005 430 APP/NOI RETURNED TO ADWR
Action Comment:
8/5/2005 869 CHANGE OF DRILLER PACKET ISSUED
Action Comment:
7/28/2005 865 CHANGE OF DRILLER RECEIVED
Action Comment:
6/28/2005 455 APPLICATION DEFICIENCY LETTER SENT; RETURNED TO APPLICANT
Action Comment:
6/21/2005 400 HYDROLOGY APPLICATION REVIEW COMPLETE
Action Comment:
6/15/2005 867 APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment:
6/6/2005 866 APP/NOI SENT TO HYDRO/WATER QUALITY REVIEW
Action Comment:
6/6/2005 365 APP SENT TO HYDROLOGY FOR REVIEW
Action Comment:
6/6/2005 850 CHANGE OF WELL DATA (CONSTRUCTION, PUMP, ETC)
Action Comment:
6/6/2005 430 APP/NOI RETURNED TO ADWR
Action Comment:
6/6/2005 355 APP SENT TO AMA FOR REVIEW
Action Comment:
3/21/2005 450 WELL IMPACT NOTIFICATION SENT
Action Comment:
1/26/2005 867 APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment:
1/20/2005 400 HYDROLOGY APPLICATION REVIEW COMPLETE
Action Comment:
12/23/2004 365 APP SENT TO HYDROLOGY FOR REVIEW
Action Comment:
12/23/2004 866 APP/NOI SENT TO HYDRO/WATER QUALITY REVIEW
Action Comment:
12/23/2004 355 APP SENT TO AMA FOR REVIEW
Action Comment:
12/21/2004 305 APP RCVD FOR A WELL PERMIT FOR A CONVERSION (S, T)
Action Comment:
12/3/2004 550 DRILLING AUTHORITY ISSUED
Action Comment:
12/2/2004 700 SITE VERIFIED AS ACCURATE
Action Comment:

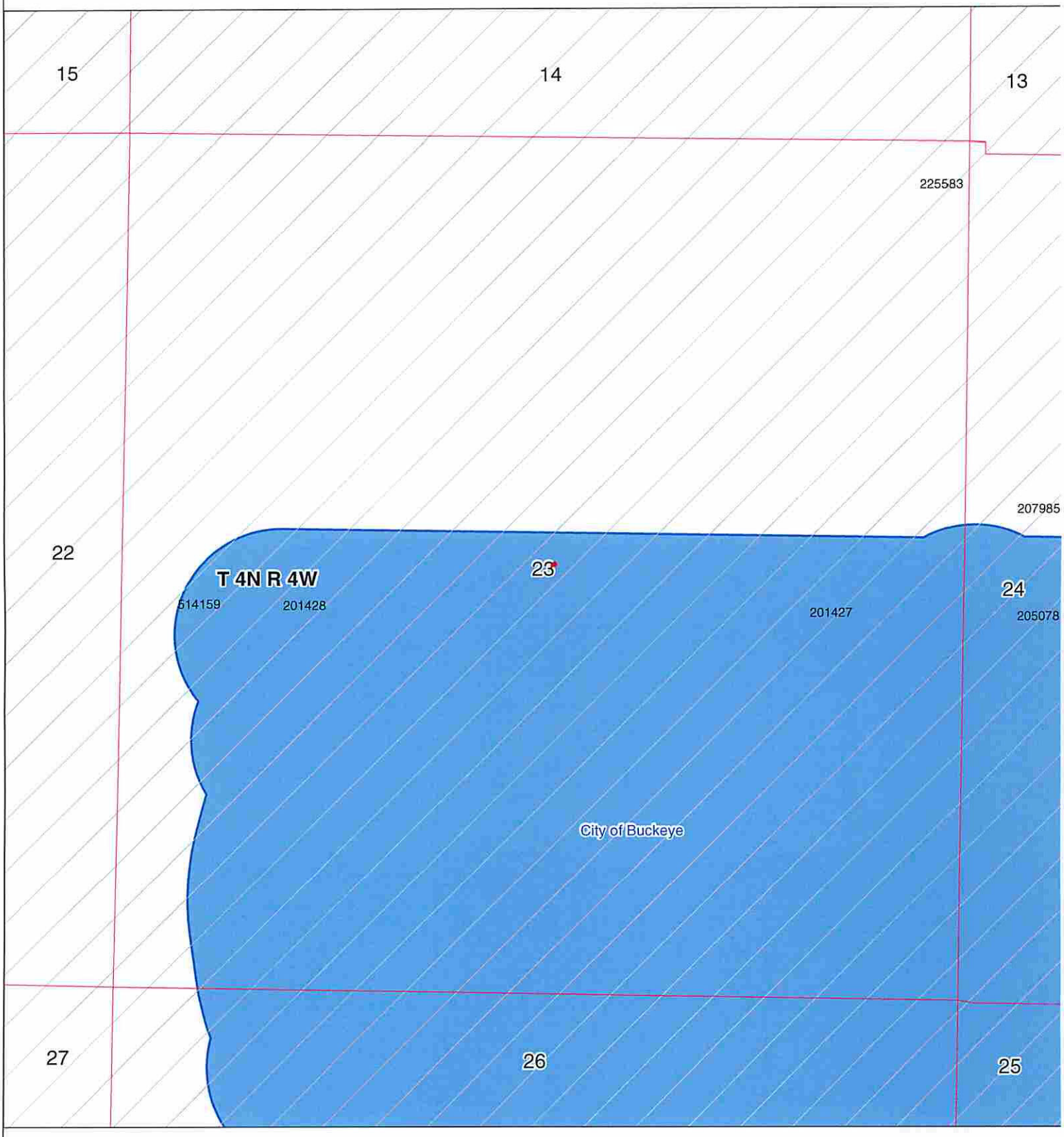
AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

11/23/2004	600	PERMIT ISSUED (S, T, 59, 74)
Action Comment:		
11/23/2004	552	DRILL CARD HELD BY AMA PENDING SITE VERIFICATION
Action Comment:		
11/18/2004	410	AMA APPLICATION/NOI REVIEW COMPLETE
Action Comment:		
11/10/2004	400	HYDROLOGY APPLICATION REVIEW COMPLETE
Action Comment:		
10/21/2004	867	APP/NOI HYDRO/WATER QUALITY REVIEW COMPLETE
Action Comment:		
9/30/2004	866	APP/NOI SENT TO HYDRO/WATER QUALITY REVIEW
Action Comment:		
9/30/2004	365	APP SENT TO HYDROLOGY FOR REVIEW
Action Comment:		
9/30/2004	355	APP SENT TO AMA FOR REVIEW
Action Comment:		
9/24/2004	300	APP RCVD FOR A WELL PERMIT FOR A NEW WELL (S, T)
Action Comment:		

ARIZONA MUNICIPAL WATER PROVIDERS AND CERTIFICATES OF CONVENIENCE AND NECESSITY

55-225583



0.0 0.25 0.5 0.75 1 Miles

Scale 1:9,869

Major Cities
Counties
Water Provider Labels
Water Provider 2009
Townships
Sections
City and Town Areas

ARIZONA DEPARTMENT OF WATER RESOURCES ©

N

Map Printed: 12/2/2015 8:16:05 AM

For more information about this map contact:
Arizona Department of Water Resources
Water Resources Information Central
3550 North Central Ave
Phoenix, AZ 85012
Phone: (602) 771-8500 or 1-800-352-8488

Topographic map source: U.S. Geological Surv

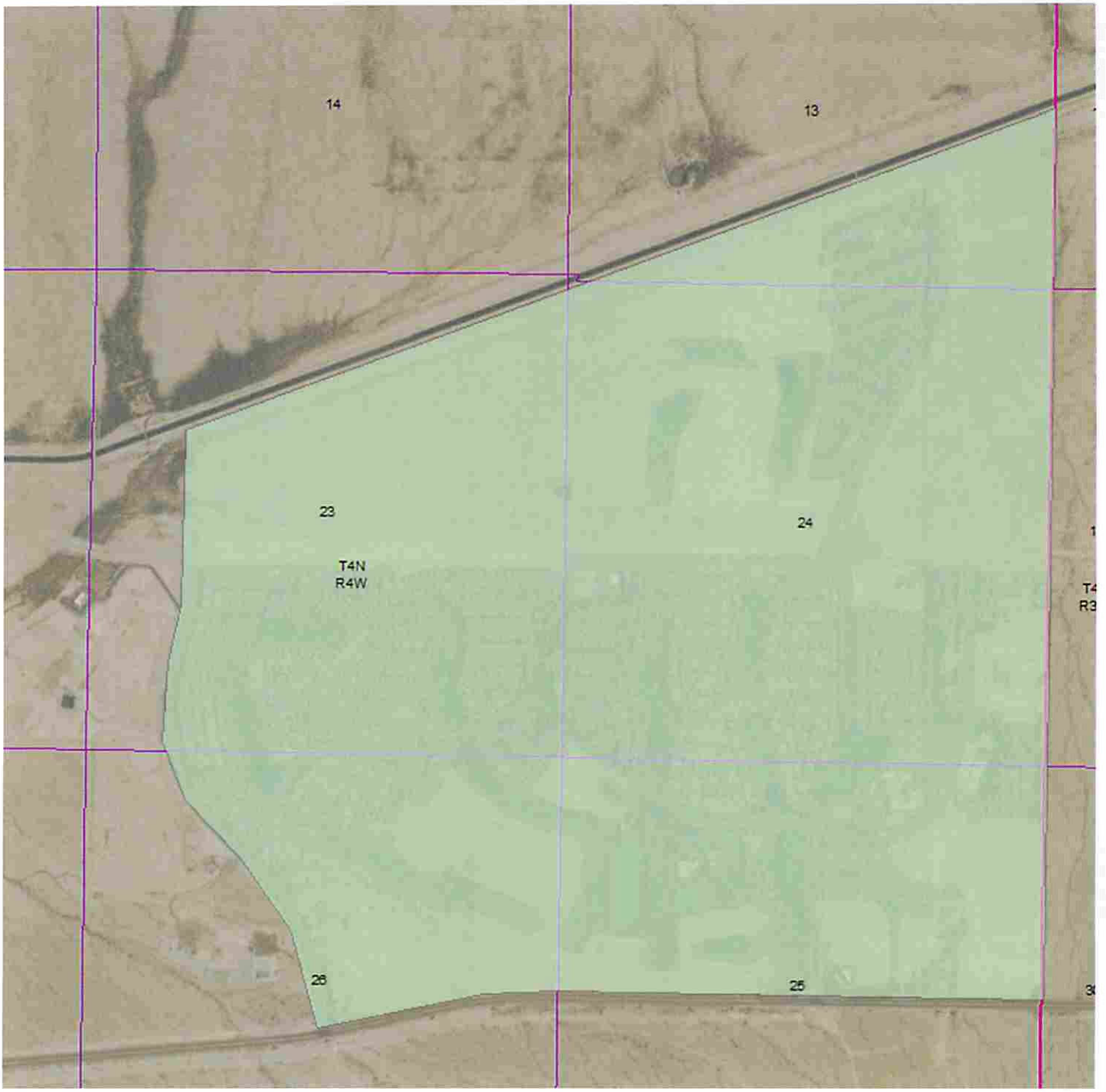
Memorandum

To:	Stella Murillo, Groundwater Permitting and Wells
From:	David Christiana, Groundwater Permitting and Wells
CC:	Jeff Tannler, Statewide AMA Director
Date:	04/12/2016
Re:	Response to Comments for Application for a Permit to Drill and Operate a Non-Exempt Well S-225583 55-225583 B(4-4)23AAA City of Buckeye

Comments: I reviewed the above-referenced application for a permit to drill and operate a non-exempt well in the Phoenix AMA and presented comments in a memorandum dated 12/16/2015. My review indicated that one well (55-205078), registered to Pulte Homes, was impacted by the proposed withdrawals from the subject well.

The applicant subsequently submitted a Request to Change Well Information to ADWR in which ownership of the impacted well was transferred to the City of Buckeye. Therefore, no non-applicant owned wells are impacted.

I support issuing a permit to construct and operate a well at the location and with a withdrawal authority of 2,097 acre-feet per year as specified in the application.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R4W
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25

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

ARIZONA DEPARTMENT of WATER RESOURCES
3550 North Central Avenue, Second Floor
Phoenix, Arizona 85012-2105
602.771.8500
azwater.gov

December 17, 2015

City of Buckeye Water
Attn: Ron Whitler
423 Arizona Eastern Avenue
Buckeye, AZ 85326

RE: Application for Permit to Drill Service Area Well Nos. 55-225583

Dear Mr. Whitler:

The Arizona Department of Water Resources ("Department") has reviewed the above-mentioned application, submitted on November 13, 2015 for administrative completeness. Pursuant to A.R.S. §§ 41-1074 and 45-871.01, the Department has determined the application to be incomplete and incorrect.

The following item must be addressed before the Department can continue its review of the application:

- Well registration number 55-205078, owned by Pulte Home Corporation, is located between the 10-foot and 25-foot drawdown area based on the impact analysis that was submitted for this application. The City of Buckeye has the following options to negate the adverse impact of this well on surrounding wells:

    1. You may reduce the annual volume of pumpage from the proposed wells to an amount which does not affect surrounding wells.

    2. You may amend the locations of the proposed wells to a site which does not contain a concentration of wells.

    3. You may negotiate and obtain waivers from the impacted well owner.

4. You may submit evidence which proves that the wells of record are not within the radius of impact. This evidence will be subject to field verification by the Phoenix AMA.

5. You may withdraw one or more of your applications.

Please advise within 60 days of the date of this letter what action you intend to take on the applications. Failure to submit the information requested within 60 days may result in the denial of the applications. The Department's administrative review time frame is suspended until all of the requested information is provided.

If you have any additional questions please call me at (602) 771-8594.

Sincerely,

Stella Murillo

Stella Murillo, Manager
Groundwater Permitting and Wells Unit

WELL SPACING-WELL IMPACT REPORT
SUN CITY FESTIVAL WELL NO. 4 (PW-4)
BUCKEYE, ARIZONA

Prepared For:

Pulte Group
16767 N. Perimeter Drive
Scottsdale, AZ, 85260

Prepared By

Clear Creek Associates, PLC
6155 E. Indian School Rd., Suite 200
Scottsdale, Arizona 85251

REGISTERED GEOLOGIST
CERTIFICATE NO.
46075
GENO J
MAMMINI
Date Signed 10/9/15
ARIZONA U.S.A.
Expires 3/31/18

October 2015

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2.0 HYDROLOGIC SETTING 3
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2.2 AQUIFER COEFFICIENTS 3
2.3 WELL IMPACT ANALYSIS PARAMETERS 4

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LIST OF FIGURES

Figure 1. Well Location/Inventory and Well Impact Map
Figure 2. Preliminary Well Design

LIST OF TABLES

Table 1. Well Inventory

ATTACHMENTS

ADWR's August 5, 2008 Memorandum
THWELLS Input Data File

1.0 INTRODUCTION

1.1 BACKGROUND

The Pulte Group (Pulte) is planning to permit, install and operate a new production well within the Phoenix Active Management Area (AMA). The well, designated PW-4 is located to the north of the intersection of West Desert Vista Boulevard and West Beardsley Parkway in Buckeye, Arizona (Figure 1). The land is owned by Pulte Home Corporation. PW-4 is located in the NE ¼ (10-acre) of the NE ¼ (40-acre) of the NE ¼ (160-acre) of Section 23, in Township 4 North, Range 4 West of the Gila and Salt River Baseline and Meridian (also referenced as B(4-4)23aaa). Approximate GPS coordinates of the proposed well location are 33° 40' 50" N; 112° 37' 36" W. PW-4 will have a designed pumping capacity of 1,600 gallons per minute (gpm). The preliminary well design drawing for PW-4 is presented on Figure 2.

1.2 PURPOSE AND SCOPE

This report has been prepared to satisfy the requirements of the Arizona Department of Water Resources (ADWR) Rule R12-15-830. That rule requires a hydrological study projecting the local groundwater level declines that result from the pumping of the proposed well. This report presents a determination of the extent of the 10-foot drawdown impact areas attributable to pumping the proposed well continuously for a 5-year period. The storage coefficient (S) for the area was obtained from the Brown and Caldwell Groundwater Flow Model for the Hassayampa Valley. The transmissivity value (T) was calculated based on aquifer test data obtained from the Clear Creek Associates, PLC (Clear Creek) Well Completion Report for well SCF No. 3 (CCA, 2007), which was approved by ADWR in 2008 and is included as an attachment. The calculation of the well impact area was based on the computer application THWELLS (version 4.01), which uses the Theis non-equilibrium formula to calculate drawdown (van der Heijde, 1996).

2.0 HYDROLOGIC SETTING

2.1 HYDROGEOLOGY

The Hassayampa Sub-basin is a broad alluvial valley located in the western half of the Phoenix AMA and covers an area of approximately 1,200 square miles. The sub-basin includes the Hassayampa Plain in the north, which consists largely of undeveloped desert land, and the lower Hassayampa area in the south, which consists of both undeveloped desert and agricultural land. The White Tank Mountains lie along the east side in Townships 2 and 3 North. The mountains and hills bordering the Hassayampa Plain are comprised of bedrock including granite, gneiss, andesite, rhyolite, and basalt (Wilson and others, 1957). Halpenny and Halpenny (1988) described three hydrogeologic units for the basin-fill alluvium. The three hydrogeologic units include the Younger Alluvium Unit (YAU), the Older Alluvium Unit (OAU), and the Bedrock Rubble Unit (BRU).

Younger Alluvial Unit

The YAU consists primarily of sand with some gravel zones and some silt and clay layers (Halpenny and Halpenny, 1988). The YAU is present adjacent to the mountain front in the eastern portion of the study area and is generally less than 2 miles in width. The YAU is not present in the western portion of the study area. The YAU reaches a maximum thickness of approximately 400 feet and is weakly cemented.

Older Alluvial Unit

The OAU consists predominantly of gravel with some sand. The OAU is commonly unconsolidated to weakly consolidated. Based on well data the OAU is at least 1,200 feet thick in the western portion of the study area. The OAU may be greater than 2,000 feet thick in the central portion of the lower Hassayampa area.

Bedrock Rubble Unit

The BRU overlies the top of the bedrock with increasing thickness located along the west and northwest flanks of the White Tank Mountains. The BRU consists of angular fragments of

granite, gneiss, andesite, rhyolite, and basalt with little or no sand. Thicknesses of the BRU range from approximately 900 feet along mountain fronts to approximately 300 feet basin-ward.

2.2 AQUIFER COEFFICIENTS

The aquifer transmissivity (T) generally describes the ability of the penetrated aquifer to supply water to a pumping well. The T value is dependent upon the hydraulic conductivity (K) and the aquifer thickness (b), and is defined by the relationship T = Kb. Transmissivity is expressed in terms of gallons per day per foot (gpd/ft) or square feet per day (ft^2/day). Hydraulic conductivity is expressed in units of gallons per day per square foot (gpd/ft^2) or feet per day (ft/day).

The impact analysis was performed using a transmissivity value of 93,500 gpd/ft, which was previously approved by ADWR for nearby well PW-3 in 2008. ADWR's 2008 memorandum is included as an attachment. It should be noted that this is a conservative transmissivity value as the transmissivity values for wells PW-1 and PW-2, which are also nearby are nearly two the three time greater. The screened interval of the proposed well (b) is 550 ft, and the hydraulic conductivity of the aquifer is approximately 170 gpd/ft^2 or approximately 22.7 ft/day. The storage coefficient (S) used in this investigation is 0.1, as reported by Brown and Caldwell (2006) for the lower alluvial unit (LAU), which was deemed conservative for the site.

2.3 WELL IMPACT ANALYSIS PARAMETERS

It is anticipated that PW-4 will be drilled to a total depth of approximately 1,020 feet below land surface (bls), and constructed with a screened interval that extends from 450 feet to 1,000 feet bls (Figure 2). The static water level at the PW-4 site is estimated to be approximately 340 feet bls.

ADWR guidelines for a well impact analysis require that when impermeable aquifer boundaries exist, such as bedrock, those boundaries must be considered. For analysis purposes, an impermeable boundary exists where the depth to bedrock is 400 feet bls or less. When a well site is located within five miles of an impermeable aquifer boundary, ADWR guidelines generally require that the well impact analysis take into account the effect the boundary (or boundaries) may have on aquifer drawdown due to the pumping of the well. In order to accomplish this, the

method of image wells is used (Freeze and Cherry, 1979). With this method, the impact analysis assumes that two wells are pumping; the real well, and a second theoretical image well, which is located perpendicular to, and on the opposite side of the aquifer boundary. Both wells are located an equal distance from the boundary, are assumed to be identical in construction and depth, and are assumed to pump at the same rate. If multiple aquifer boundaries exist, multiple image wells should be incorporated into the impact analysis.

3.0 IMPACT OF THE NEW WELL

3.1 IMPACT ON THE AQUIFER

The total annual groundwater production from PW-4 will be approximately 2,097 acre feet per year (ac-ft/yr) based on a continuous pumping rate of 1,300 gpm. The anticipated maximum pumping capacity for PW-4 is 1,600 gpm. The impact analysis for PW-4 is based on a pumping rate of 1,300 gpm, 24 hours per day, for a 5-year period.

The computer application THWELLS, which uses the Theis (1935) non-equilibrium formula to calculate drawdown (van der Heijde, 1996), was used to estimate the impact of the new well on surrounding wells after a 5-year period of continuous pumping. The following criteria were used to calculate the impact of the proposed groundwater withdrawal (2,097 ac-ft/yr) on the underlying source aquifer:

- The transmissivity (T) is approximately 93,500 gpd/ft (12,498 ft^2/day) based on the T value for nearby well PW-3, previously approved by ADWR in 2008.
- The estimated aquifer thickness (b) is based on the screen interval of 550 feet.
- The hydraulic conductivity (K) value is estimated at 170 gpd/ft^2 (22.7 ft/day) based on the relationship T=Kb.
- The storage coefficient of the source aquifer can be reasonably estimated to be 0.1 (Brown and Caldwell, 2006).
- Because the site is within five miles of the boundary of the aquifer, a boundary condition and an image well were incorporated into the analysis.

The THWELLS calculated 5-year drawdown is also presented on Figure 1. The configuration of the 5-year 10-foot drawdown impact takes into account the pumping well and the image well across the boundary conditions. The radius of the area with a hydrologic impact (water-level drawdown) of 10 feet after pumping continuously for a 5-year period is presented on Figure 1. The locations of neighboring wells in the study area are also shown on this Figure 1. A summary

of registered wells in the vicinity of PW-4 is presented in Table 1 and the input data used for THWELLS are included as an attachment. Available ADWR records indicate that there is one registration number within the 5-year 10 foot impact radius. A summary of this registration number is included below:

- Well 55-207985 is located at B(4-4)24bcc. The owner is the City of Buckeye. Since the City of Buckeye is the "Applicant", no Waiver of Well Impact is necessary.

All other nearby wells are outside the 10-foot impact drawdown. Therefore, the impact analysis for PW-4 indicates that the water level of the existing wells in the study area, with the exceptions noted above, will not be impacted greater than 10 feet after 5 years of continuous pumping at PW-4.

4.0 SUMMARY AND CONCLUSIONS

The analyses presented herein indicate that groundwater production of approximately 2,097 ac-ft/yr (1,300 gpm, continuous flow) from Well PW-4 will not adversely impact any existing wells of record except one well owned by the applicant, as noted in Section 3.0. The radial extent of the 10-foot drawdown impact is approximately 2,070 feet. Based on the drawdown analysis and the legal locations of neighboring wells as indicated in the ADWR database, no existing wells receiving water from the regional aquifer will experience water-level impacts greater than 10 feet after 5 years of continuous pumping at the Well PW-4.

5.0 REFERENCES

1. Brown and Caldwell, 2006. Lower Hassayampa Sub-Basin Hydrologic Study and Computer Model. Buckeye, Arizona.

2. Clear Creek Associates PLC., 2007, Completion Report- Sun City Festival Public Supply Well No. 3, Buckeye, Arizona.

3. Freeze, R. Allan and Cherry, John A. 1979. Groundwater, pp. 330-331

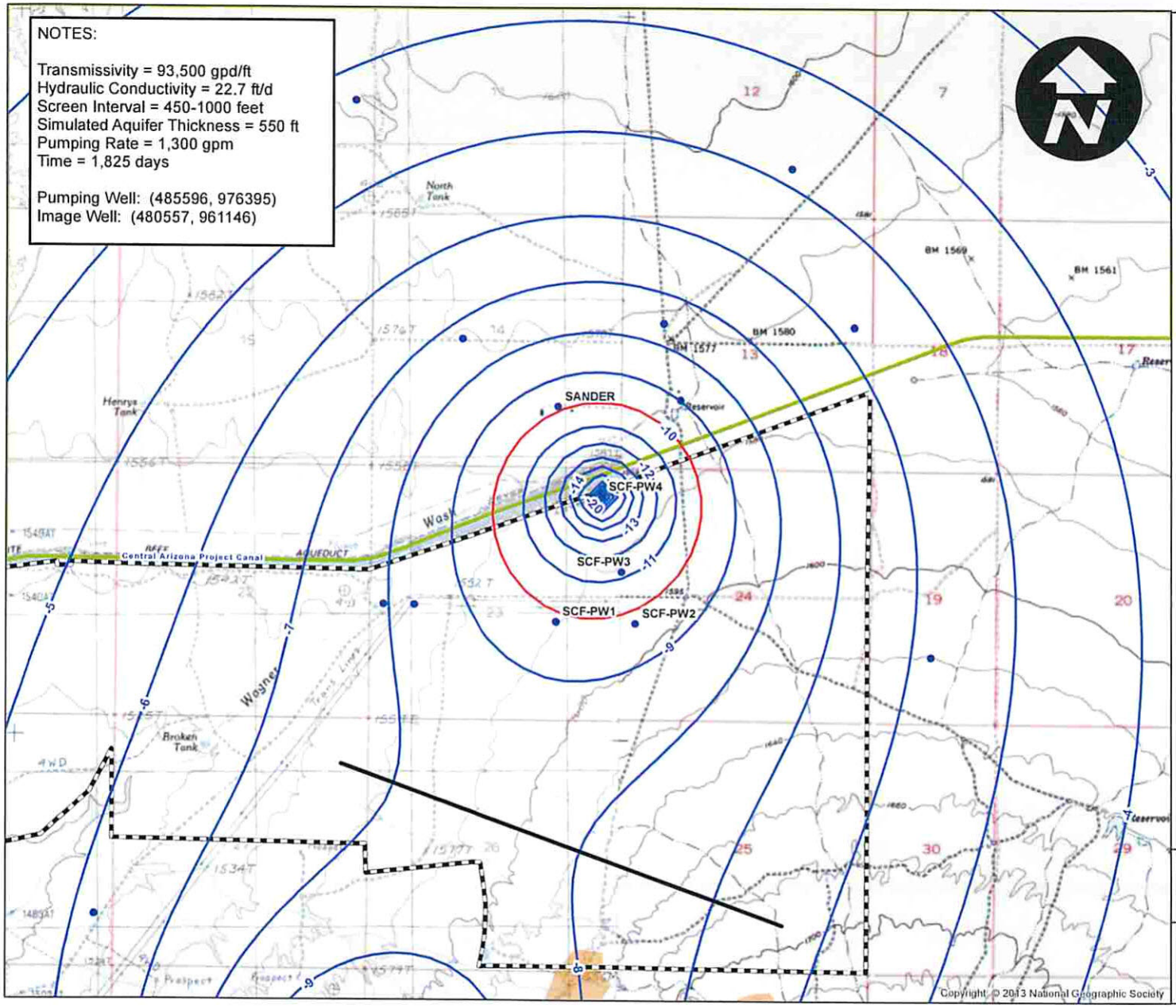
4. Halpenny & Halpenny, 1988, Evaluation of Groundwater Supply At Sun Valley Project, Hassayampa Plain, Arizona

5. Theis, C.V., 1935. The relation between the lowering of piezometric surface and the rate and duration of discharge of a well using ground-water storage. Trans. Am. Geophys. Union, v. 16, p. 519-524.

6. Van der Heijde, P.K.M., 1996. Calculating Drawdown Resulting from Multiple Discharge or Recharge Wells in an Isotropic Homogeneous Aquifer with Regional Flow. International Ground Water Modeling Center – BAS 04, Ver. 4.01, November 1996, 13 p.

7. Wilson, Eldred D., and others, 1957, Geologic map of Maricopa County, Arizona: Univ. of Ariz., Ariz. Bur. Of Mines, 1 sheet

FIGURES



Pulte Home Corporation
Sun City Festival

Well Location/Inventory and Well Impact Map

Explanation

Well Database

- Well Database

Drawdown after 5 Years

- (feet)
- 10
- Festival Property

Canals

- Canals

ADWR Bedrock

- ADWR Bedrock

6155 East Indian School Road
Suite 200
Scottsdale, Arizona 85251
(480) 659-7131

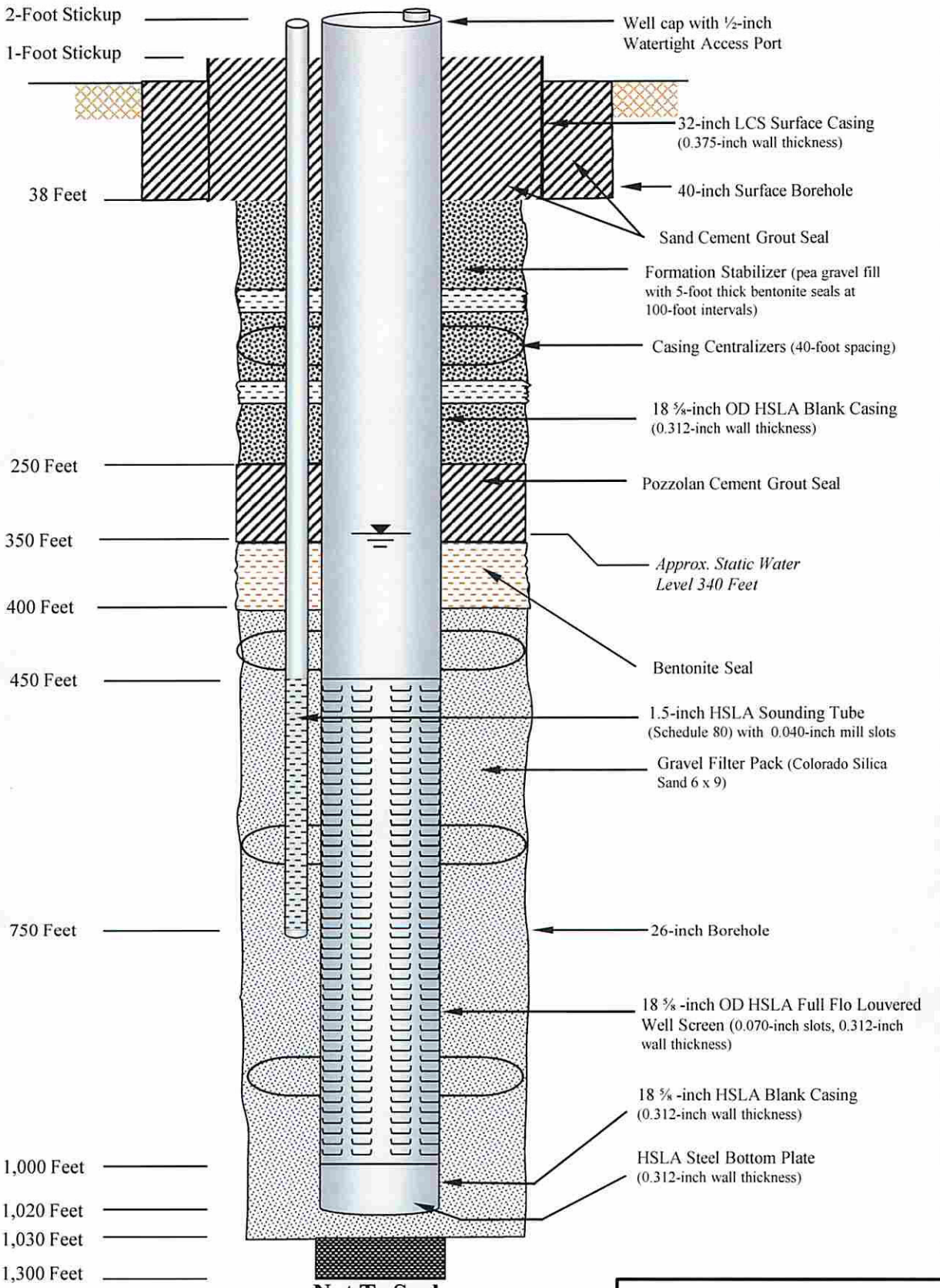
CLEAR CREEK ASSOCIATES

Date: October 2015

Drafted: PRP
Revision: 3

Figure 1

Well Location: B(4-4)23aaa



Not To Scale

Notes: HSLA = high-strength low-alloy
All diameters are O.D. unless stated differently.

CLEAR CREEK ASSOCIATES

FIGURE 2
PRELIMINARY WELL DESIGN
Festival Ranch – PW-4
Buckeye, Arizona

TABLES

TABLE 1

WELL INVENTORY TABLE

PULTE GROUP - SUN CITY FESTIVAL

Reg_No	Cadastral	Owner_Name	Well_Type	Well_Depth	Casing_Depth	Case_Dia	UTM X (meters)	UTM Y (meters)
620462	B04004014D00	SANDER,D L	EXEMPT	525	0	6	348882.20	3728553.00
205078	B04004024CBB	PULTE HOME CORPORATION	NON-EXEMPT	910	910	26	349361.60	3727229.00
207985	B04004024BCC	CITY OF BUCKEYE	NON-EXEMPT	1200	1000	19	349364.40	3727432.00
215431	B04004013ADD	SPURLOCK LAND LLC	NON-EXEMPT				350811.90	3729004.00
215429	B04004013BCD	SPURLOCK LAND LLC	NON-EXEMPT				349590.60	3729038.00
201427	B04004023DAB	CITY OF BUCKEYE	NON-EXEMPT	760	760	19	348963.10	3727237.00
514159	B04004023CBB	WATER DEVELOPMENT,	MONITOR	980	0	6	347771.60	3727255.00
803742	B04004014000	BELLEMORE, ROSALYN,M	EXEMPT	525	525	6	348490.70	3728960.00
201428	B04004023CBA	PULTE HOME CORPORATION	NON-EXEMPT		39	30	347970.50	3727252.00

ATTACHMENTS

ARIZONA DEPARTMENT OF WATER RESOURCES
Hydrology Division

MEMORANDUM

TO: Vanessa Reyes, Phoenix AMA
Danita Haywood, Tucson AMA

THRU: Drew Swieczkowski, Manager, Water Resources Section

FROM: Ryan D. Hort, Hydrologist, Water Resources Section

DATE: August 5, 2008

RE: Town of Buckeye, Application to Operate a Non-Exempt Service Area Well in the Phoenix AMA. No. S-215444; **REVISED WELL IMPACT ANALYSIS** for well number 55-205078, B(4-4)24CBB

Hydrology has reevaluated the above referenced application to operate a non-exempt service area well. This well is currently permitted for a volume of 1,665 acre-feet/year (Permit # T-206173). Hydrology has conducted a revised THWELLS analysis after the applicant's consultant disagreed with the parameters used in Hydrology's original analysis. After discussions with the applicant's consultant and reviewing of all available data, Hydrology and the applicant's consultant agreed on a transmissivity of 93,500 gpd/ft based on both the consultant's and Hydrology's interpretation of drawdown data from a constant rate pumping test at the well. Hydrology and the consultant also agreed on a reinterpretation of the location of the hard rock boundary from the White Tank Mountains to the south of the well. The other parameters in the THWELLS analysis remained the same. The results of the revised analysis are presented below:

Well Location & Registration Number:	Analysis Performed by	Transmissivity Value (gpd/ft)	Specific Yield	Aquifer Thickness	Pumping Volume AFA	Ten-Foot Drawdown Radius After Five Years
B(4-4)24CBB 55-205078	ADWR	93,500	0.10	545 feet	2,581 (1600 gpm)	3,820 – 11,500 feet

The predicted drawdown radius after five years of pumping the well was approximately 3,820 to 11,500 feet. The excluded drawdown radius related to the currently permitted pumping volume is approximately 1,220 to 1,720 feet. Hydrology's calculations should be used to determine the impact of pumping this well.

The location of the proposed well was also reviewed for water quality and subsidence. No additional monitoring is required.

Attachments

Well Spacing Review Sheet

Well Reg. No.	***55-205078***	Well Location:	***B (4-4) 24 CBB***
Permit Number	**S-215444**		
Applicant:	***Town of Buckeye***		

Depth of well:	***890***	feet
Diameter:	***18***	in.

Proposed Well:	***no***	Replacement:	***NA***
Existing:	***yes***	Replacement no:	

Proposed volume:	***2,581***	acre-ft/yr		
Q =	***1600***	gpm		
T =	***93,500***	gpd/ft	T Source:	***Based on pump test of well, Sept 07***
Sy =	***0.1***		Sy Source:	***Hassayampa Model***

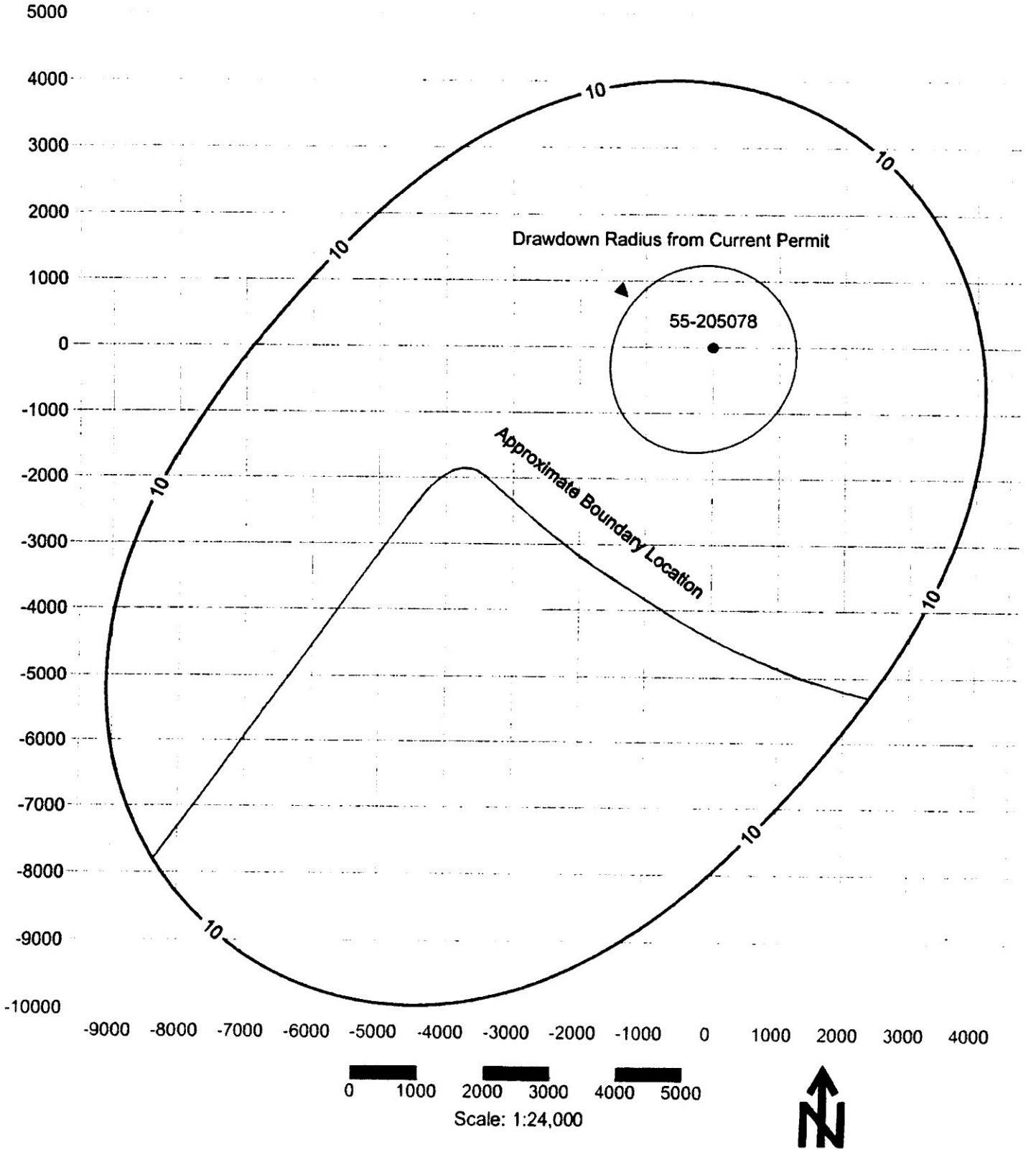
10 foot drawdown radius =	Approx. 3,820 to 11,500	***feet (see attached map)***
drawdown at well =	50.4	***feet***

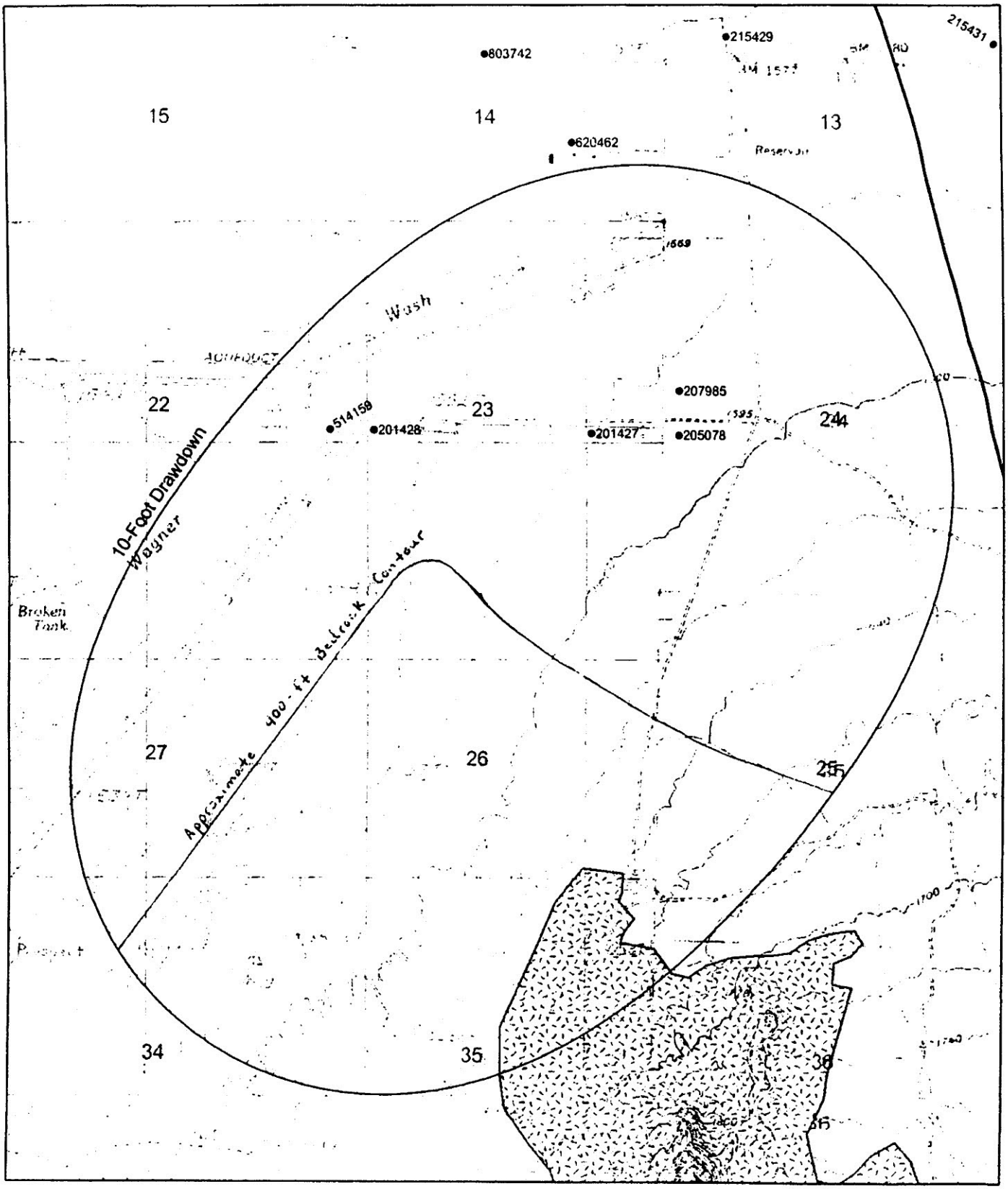
WQARF Concerns:	***none***
Subsidence Concerns:	***none***

Analyzed by: Ryan C Nit
Date: 8/8/08

Checked by: [illegible]
Date: 8-8-08

Town of Buckeye
55-205078
B (4-4) 24 CBB
T=93,500 gpd/ft
Sy=0.1
Q=1600 gpm





Sun City Festival Well #2; 55-205078, S-215444, B(4-4)24cbb

ARIZONA DEPARTMENT OF WATER RESOURCES

0 3,000 6,000 9,000 12,000 Feet

Map Scale 1:24,000

CALCULATION OF DRAWDOWN IN A HOMOGENEOUS, ISOTROPIC, CONFINED, LEAKY CONFINED OR UNCONFINED AQUIFER WITH MULTIPLE PRODUCTION AND INJECTION WELLS AND UNIFORM REGIONAL FLOW

55-205078 Predicted Drawdown After 5 Years of Pumping

********** INPUT DATA **********

UNCONFINED AQUIFER - THEIS EQUATION WITH JACOB'S CORRECTION

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 545 [ft]
TRANSMISSIVITY = 93500 [gpd/ft]

STORAGE COEFFICIENT = .1

REGIONAL FLOW GRADIENT
(positive--downwards--in flow direction) = 0

REGIONAL FLOW DIRECTION
(horizontal angle in degrees
counter-clockwise from positive x-axis) = 0

REGIONAL FLOW OFFSET AT ORIGIN
(positive in downwards direction) = 0 [ft]

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 545 [ft]

PUMPING/INJECTION WELL DATA

WELL NO. 1 (55-205078)

X-COORDINATE = 0 [ft]
Y-COORDINATE = 0 [ft]
PUMPING/INJECTION RATE = 2304317 [gpd]
TIME SINCE START PUMPING/INJECTION = 1825 [day]

WELL NO. 2 (Image Well)

X-COORDINATE = -4970 [ft]
Y-COORDINATE = -5930 [ft]
PUMPING/INJECTION RATE = 2304317 [gpd]
TIME SINCE START PUMPING/INJECTION = 1825 [day]

********** RESULTS **********

---------- Drawdown in [ft] ----------

East Edge of Radius

Y [ft]	<- X [ft] ->					
	-10000	-9800	-9600	-9400	-9200	-9000
-5600.00	8.960	9.170	9.388	9.614	9.849	10.094
-5400.00	8.976	9.186	9.404	9.629	9.864	10.108
-5200.00	8.986	9.195	9.412	9.637	9.870	10.113
-5000.00	8.989	9.198	9.413	9.636	9.868	10.108
-4800.00	8.987	9.193	9.407	9.628	9.857	10.095

South Edge of Radius

Y [ft]	<- X [ft] ->					
	-5200	-5000	-4800	-4600	-4400	-4200
-10000.00	9.847	9.881	9.905	9.919	9.924	9.918
-9800.00	10.099	10.135	10.160	10.174	10.177	10.169
-9600.00	10.363	10.401	10.427	10.440	10.441	10.431
-9400.00	10.640	10.680	10.706	10.719	10.718	10.704

North Edge of Radius

Y [ft]	<- X [ft] ->					
	-1600	-1400	-1200	-1000	-800	-600
3600.00	10.365	10.418	10.463	10.498	10.523	10.536
3800.00	10.120	10.167	10.207	10.237	10.257	10.267
4000.00	9.883	9.925	9.960	9.986	10.003	10.011
4200.00	9.655	9.692	9.722	9.745	9.759	9.765
4400.00	9.433	9.467	9.494	9.513	9.525	9.529
4600.00	9.219	9.249	9.273	9.290	9.299	9.302

Drawdown at Well

Y [ft]	<- X [ft] ->					
	-400	-200	0	200	400	600
-400.00	19.433	20.321	20.707	20.183	19.158	18.104
-200.00	20.307	22.111	23.463	21.978	20.043	18.568
0.00	20.680	23.451	50.367	23.323	20.427	18.714
200.00	20.145	21.954	23.311	21.832	19.903	18.433
400.00	19.110	20.008	20.404	19.892	18.878	17.834

East Edge of Radius

Y [ft]	<- X [ft] ->					
	3200	3400	3600	3800	4000	4200
-1200.00	11.172	10.894	10.627	10.371	10.124	9.887
-1000.00	11.209	10.925	10.653	10.392	10.141	9.900
-800.00	11.233	10.944	10.668	10.403	10.149	9.906
-600.00	11.245	10.951	10.671	10.404	10.148	9.903
-400.00	11.248	10.946	10.664	10.395	10.137	9.891

PW4-1300.PRT

♀
********** THWELLS - version 4.01 ********** PAGE 1

CALCULATION OF DRAWDOWN IN A HOMOGENEOUS, ISOTROPIC, CONFINED, LEAKY
CONFINED OR UNCONFINED AQUIFER WITH MULTIPLE PRODUCTION AND INJECTION
WELLS AND UNIFORM REGIONAL FLOW

PW-4 at 1,300 gpm T=93,500

********** INPUT DATA **********

UNCONFINED AQUIFER - THEIS EQUATION WITH JACOB'S CORRECTION

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 550 [ft]
TRANSMISSIVITY = 93500 [gpd/ft]

STORAGE COEFFICIENT = .08

REGIONAL FLOW GRADIENT
(positive--downwards--in flow direction) = 0

REGIONAL FLOW DIRECTION
(horizontal angle in degrees
counter-clockwise from positive x-axis) = 0

REGIONAL FLOW OFFSET AT ORIGIN
(positive in downwards direction) = 0 [ft]

WATER TABLE CORRECTION APPLIED

AQUIFER THICKNESS = 550 [ft]

♀
********** THWELLS - PAGE 2

PUMPING/INJECTION WELL DATA

WELL NO. 1

X-COORDINATE = 483926.6 [ft]
Y-COORDINATE = 975909.7 [ft]
PUMPING/INJECTION RATE = 1872000 [gpd]
TIME SINCE START PUMPING/INJECTION = 1825 [day]

WELL NO. 2

X-COORDINATE = 479051 [ft]
Y-COORDINATE = 962456.5 [ft]
PUMPING/INJECTION RATE = 1872000 [gpd]
TIME SINCE START PUMPING/INJECTION = 1825 [day]

♀
********** RESULTS ********** THWELLS - PAGE 3

---------- Drawdown in [ft] ----------

Y [ft]	<- X [ft] ->					
	463926.7	464326.7	464726.7	465126.7	465526.7	465926.7
955909.69	2.323	2.396	2.471	2.548	2.626	2.707
956309.69	2.363	2.438	2.515	2.594	2.675	2.758
956709.69	2.402	2.479	2.558	2.639	2.722	2.807
957109.69	2.440	2.519	2.600	2.683	2.768	2.856
957509.69	2.477	2.558	2.641	2.726	2.814	2.904
957909.69	2.514	2.596	2.681	2.768	2.858	2.950
958309.69	2.549	2.633	2.719	2.809	2.901	2.995
958709.69	2.583	2.668	2.757	2.848	2.942	3.039
959109.69	2.615	2.702	2.793	2.885	2.981	3.080
959509.69	2.646	2.735	2.827	2.921	3.019	3.120
959909.69	2.676	2.766	2.859	2.956	3.055	3.158
960309.69	2.704	2.796	2.890	2.988	3.089	3.194
960709.69	2.730	2.823	2.919	3.019	3.121	3.227
961109.69	2.755	2.849	2.947	3.047	3.151	3.259
961509.69	2.778	2.873	2.972	3.074	3.179	3.288
961909.69	2.799	2.896	2.995	3.098	3.204	3.314
962309.69	2.819	2.916	3.016	3.120	3.228	3.339
962709.69	2.836	2.934	3.035	3.140	3.248	3.360
963109.69	2.852	2.951	3.052	3.158	3.267	3.379
963509.69	2.866	2.965	3.067	3.173	3.283	3.396
963909.69	2.878	2.977	3.080	3.186	3.296	3.410
964309.69	2.888	2.987	3.091	3.197	3.307	3.421
964709.69	2.896	2.996	3.099	3.206	3.316	3.430
965109.69	2.902	3.002	3.105	3.212	3.322	3.436
965509.69	2.906	3.006	3.110	3.216	3.326	3.440
965909.69	2.909	3.009	3.112	3.218	3.328	3.442
966309.69	2.910	3.009	3.112	3.218	3.328	3.441
966709.69	2.909	3.008	3.111	3.216	3.325	3.438
967109.69	2.906	3.005	3.107	3.212	3.321	3.433
967509.69	2.902	3.000	3.102	3.206	3.314	3.426
967909.69	2.896	2.994	3.095	3.199	3.306	3.416
968309.69	2.888	2.985	3.086	3.189	3.296	3.405
968709.69	2.879	2.976	3.075	3.178	3.284	3.392
969109.69	2.868	2.964	3.063	3.165	3.270	3.378
969509.69	2.856	2.951	3.050	3.151	3.254	3.361
969909.69	2.843	2.937	3.034	3.135	3.237	3.343
970309.69	2.828	2.922	3.018	3.117	3.219	3.324
970709.69	2.812	2.905	3.000	3.098	3.199	3.303
971109.69	2.794	2.886	2.981	3.078	3.178	3.280

♀
********** THWELLS - version 4.01 ********** PAGE 4

Y [ft]	<- X [ft] ->					
	463926.7	464326.7	464726.7	465126.7	465526.7	465926.7

971509.69	2.776	2.867	2.960	3.057	3.155	3.257
971909.69	2.756	2.846	2.939	3.034	3.131	3.232
972309.69	2.735	2.824	2.916	3.010	3.106	3.205
972709.69	2.713	2.802	2.892	2.985	3.080	3.178
973109.69	2.691	2.778	2.867	2.959	3.053	3.149
973509.69	2.667	2.753	2.841	2.931	3.024	3.120
973909.69	2.642	2.727	2.814	2.903	2.995	3.089
974309.69	2.616	2.700	2.786	2.874	2.964	3.057
974709.69	2.590	2.672	2.757	2.844	2.933	3.025
975109.69	2.562	2.644	2.727	2.813	2.901	2.991
975509.69	2.534	2.614	2.697	2.781	2.868	2.956
975909.69	2.505	2.584	2.665	2.748	2.834	2.921
976309.69	2.475	2.553	2.633	2.715	2.799	2.885
976709.69	2.445	2.521	2.600	2.681	2.763	2.848
977109.69	2.414	2.489	2.566	2.646	2.727	2.810
977509.69	2.382	2.456	2.532	2.610	2.690	2.772
977909.69	2.350	2.423	2.497	2.574	2.652	2.733
978309.69	2.317	2.389	2.462	2.537	2.614	2.693
978709.69	2.284	2.354	2.426	2.500	2.575	2.652
979109.69	2.250	2.319	2.389	2.462	2.536	2.612
979509.69	2.216	2.283	2.353	2.423	2.496	2.570
979909.69	2.181	2.247	2.315	2.385	2.456	2.528
980309.69	2.146	2.211	2.278	2.345	2.415	2.486
980709.69	2.111	2.175	2.240	2.306	2.374	2.444
981109.69	2.075	2.138	2.201	2.266	2.333	2.401
981509.69	2.040	2.100	2.163	2.226	2.291	2.358
981909.69	2.004	2.063	2.124	2.186	2.249	2.314
982309.69	1.968	2.026	2.085	2.145	2.207	2.271
982709.69	1.931	1.988	2.046	2.105	2.165	2.227
983109.69	1.895	1.950	2.007	2.064	2.123	2.183
983509.69	1.858	1.912	1.967	2.024	2.081	2.139
983909.69	1.822	1.875	1.928	1.983	2.039	2.096
984309.69	1.786	1.837	1.889	1.942	1.997	2.052
984709.69	1.749	1.799	1.850	1.902	1.955	2.009
985109.69	1.713	1.761	1.811	1.861	1.913	1.965
985509.69	1.677	1.724	1.772	1.821	1.871	1.922
985909.69	1.641	1.687	1.733	1.781	1.830	1.879
986309.69	1.605	1.650	1.695	1.741	1.788	1.836
986709.69	1.569	1.613	1.657	1.702	1.747	1.794
987109.69	1.534	1.576	1.619	1.662	1.707	1.752

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********** THWELLS - version 4.01 ********** PAGE 5

Y [ft] <- X [ft] ->

	463926.7	464326.7	464726.7	465126.7	465526.7	465926.7
987509.69	1.499	1.540	1.581	1.624	1.667	1.710
987909.69	1.464	1.504	1.544	1.585	1.627	1.669
988309.69	1.429	1.468	1.507	1.547	1.587	1.628
988709.69	1.395	1.432	1.470	1.509	1.548	1.588
989109.69	1.361	1.397	1.434	1.471	1.509	1.548
989509.69	1.328	1.363	1.398	1.435	1.471	1.508
989909.69	1.295	1.329	1.363	1.398	1.433	1.469
990309.69	1.262	1.295	1.328	1.362	1.396	1.431
990709.69	1.230	1.262	1.294	1.327	1.360	1.393
991109.69	1.198	1.229	1.260	1.292	1.324	1.356
991509.69	1.167	1.196	1.227	1.257	1.288	1.319
991909.69	1.136	1.165	1.194	1.223	1.253	1.283
992309.69	1.105	1.133	1.161	1.190	1.219	1.248
992709.69	1.075	1.102	1.130	1.157	1.185	1.213
993109.69	1.046	1.072	1.098	1.125	1.152	1.179
993509.69	1.017	1.042	1.068	1.093	1.119	1.145

993909.69	0.989	1.013	1.037	1.062	1.087	1.112
994309.69	0.961	0.984	1.008	1.032	1.056	1.080
994709.69	0.933	0.956	0.979	1.002	1.025	1.048
995109.69	0.906	0.928	0.950	0.973	0.995	1.018
995509.69	0.880	0.901	0.922	0.944	0.965	0.987

Y [ft] <- X [ft] ->

	466326.7	466726.7	467126.7	467526.7	467926.7	468326.7
955909.69	2.790	2.874	2.961	3.049	3.140	3.232
956309.69	2.843	2.930	3.020	3.111	3.205	3.301
956709.69	2.895	2.985	3.077	3.172	3.269	3.369
957109.69	2.946	3.039	3.134	3.232	3.332	3.435
957509.69	2.997	3.092	3.190	3.291	3.394	3.501
957909.69	3.045	3.143	3.244	3.348	3.455	3.565
958309.69	3.093	3.193	3.297	3.403	3.513	3.627
958709.69	3.138	3.241	3.347	3.457	3.570	3.686
959109.69	3.182	3.288	3.396	3.508	3.624	3.744
959509.69	3.224	3.332	3.443	3.558	3.676	3.799
959909.69	3.264	3.374	3.487	3.604	3.726	3.851
960309.69	3.302	3.413	3.529	3.648	3.772	3.900
960709.69	3.337	3.451	3.568	3.690	3.816	3.946
961109.69	3.370	3.485	3.605	3.728	3.856	3.989
961509.69	3.401	3.517	3.638	3.763	3.893	4.028
961909.69	3.428	3.546	3.669	3.795	3.927	4.063
962309.69	3.454	3.573	3.696	3.824	3.957	4.094
962709.69	3.476	3.596	3.721	3.849	3.983	4.122
963109.69	3.496	3.617	3.742	3.872	4.006	4.146

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********** THWELLS - version 4.01 ********** PAGE 6

Y [ft] <- X [ft] ->

	466326.7	466726.7	467126.7	467526.7	467926.7	468326.7
963509.69	3.513	3.634	3.760	3.890	4.025	4.165
963909.69	3.527	3.649	3.775	3.906	4.041	4.181
964309.69	3.539	3.661	3.787	3.918	4.053	4.193
964709.69	3.548	3.670	3.796	3.926	4.062	4.202
965109.69	3.554	3.676	3.802	3.932	4.067	4.206
965509.69	3.558	3.679	3.805	3.935	4.069	4.208
965909.69	3.559	3.680	3.805	3.934	4.068	4.206
966309.69	3.558	3.678	3.803	3.931	4.064	4.201
966709.69	3.554	3.674	3.798	3.925	4.057	4.193
967109.69	3.548	3.667	3.790	3.917	4.047	4.182
967509.69	3.540	3.659	3.780	3.906	4.035	4.168
967909.69	3.530	3.648	3.768	3.893	4.021	4.152
968309.69	3.518	3.634	3.754	3.877	4.004	4.134
968709.69	3.504	3.619	3.738	3.860	3.985	4.114
969109.69	3.489	3.603	3.720	3.840	3.964	4.091
969509.69	3.471	3.584	3.700	3.819	3.942	4.067
969909.69	3.452	3.564	3.679	3.796	3.917	4.041
970309.69	3.431	3.542	3.655	3.772	3.891	4.014
970709.69	3.409	3.518	3.631	3.746	3.864	3.985
971109.69	3.386	3.494	3.605	3.718	3.835	3.954
971509.69	3.361	3.467	3.577	3.689	3.804	3.922
971909.69	3.334	3.440	3.548	3.659	3.773	3.889
972309.69	3.307	3.411	3.518	3.628	3.740	3.855
972709.69	3.278	3.381	3.487	3.595	3.706	3.819
973109.69	3.248	3.350	3.454	3.561	3.670	3.782
973509.69	3.217	3.318	3.420	3.526	3.634	3.744
973909.69	3.185	3.284	3.386	3.490	3.596	3.705

974309.69	3.152	3.250	3.350	3.452	3.557	3.664
974709.69	3.118	3.214	3.313	3.414	3.517	3.623
975109.69	3.083	3.178	3.275	3.375	3.476	3.581
975509.69	3.047	3.141	3.236	3.334	3.434	3.537
975909.69	3.011	3.102	3.197	3.293	3.392	3.493
976309.69	2.973	3.063	3.156	3.251	3.348	3.447
976709.69	2.935	3.023	3.114	3.208	3.303	3.401
977109.69	2.895	2.983	3.072	3.164	3.258	3.354
977509.69	2.855	2.941	3.029	3.119	3.211	3.305
977909.69	2.815	2.899	2.985	3.073	3.164	3.256
978309.69	2.773	2.856	2.941	3.027	3.116	3.207
978709.69	2.732	2.813	2.895	2.980	3.067	3.156
979109.69	2.689	2.768	2.850	2.933	3.018	3.105

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********** THWELLS - version 4.01 ********** PAGE 7

Y [ft] <- X [ft] ->

	466326.7	466726.7	467126.7	467526.7	467926.7	468326.7
979509.69	2.646	2.724	2.803	2.885	2.968	3.053
979909.69	2.603	2.679	2.757	2.836	2.917	3.001
980309.69	2.559	2.633	2.709	2.787	2.867	2.948
980709.69	2.515	2.587	2.662	2.738	2.815	2.894
981109.69	2.470	2.541	2.614	2.688	2.763	2.841
981509.69	2.425	2.495	2.565	2.638	2.711	2.787
981909.69	2.380	2.448	2.517	2.587	2.659	2.733
982309.69	2.335	2.401	2.468	2.537	2.607	2.678
982709.69	2.290	2.354	2.420	2.486	2.554	2.624
983109.69	2.245	2.307	2.371	2.436	2.502	2.569
983509.69	2.199	2.260	2.322	2.385	2.449	2.515
983909.69	2.154	2.213	2.273	2.335	2.397	2.460
984309.69	2.109	2.166	2.225	2.284	2.345	2.406
984709.69	2.063	2.119	2.176	2.234	2.293	2.352
985109.69	2.018	2.073	2.128	2.184	2.241	2.299
985509.69	1.974	2.026	2.080	2.134	2.189	2.245
985909.69	1.929	1.980	2.032	2.085	2.138	2.192
986309.69	1.885	1.934	1.985	2.036	2.087	2.140
986709.69	1.841	1.889	1.938	1.987	2.037	2.088
987109.69	1.798	1.844	1.891	1.939	1.987	2.036
987509.69	1.754	1.799	1.845	1.891	1.938	1.985
987909.69	1.712	1.755	1.799	1.844	1.889	1.935
988309.69	1.670	1.712	1.754	1.797	1.841	1.885
988709.69	1.628	1.668	1.710	1.751	1.793	1.836
989109.69	1.587	1.626	1.666	1.706	1.746	1.787
989509.69	1.546	1.584	1.622	1.661	1.700	1.740
989909.69	1.506	1.542	1.579	1.617	1.655	1.693
990309.69	1.466	1.502	1.537	1.573	1.610	1.647
990709.69	1.427	1.461	1.496	1.531	1.566	1.601
991109.69	1.389	1.422	1.455	1.489	1.522	1.557
991509.69	1.351	1.383	1.415	1.447	1.480	1.513
991909.69	1.314	1.344	1.375	1.407	1.438	1.470
992309.69	1.277	1.307	1.337	1.367	1.397	1.427
992709.69	1.241	1.270	1.299	1.328	1.357	1.386
993109.69	1.206	1.234	1.261	1.289	1.317	1.346
993509.69	1.172	1.198	1.225	1.252	1.279	1.306
993909.69	1.138	1.163	1.189	1.215	1.241	1.267
994309.69	1.105	1.129	1.154	1.179	1.204	1.229
994709.69	1.072	1.096	1.120	1.144	1.168	1.192
995109.69	1.040	1.063	1.086	1.109	1.132	1.155

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********** THWELLS - version 4.01 ********** PAGE 8

Y [ft]	<- X [ft] ->					
	466326.7	466726.7	467126.7	467526.7	467926.7	468326.7
995509.69	1.009	1.031	1.053	1.075	1.098	1.120

Y [ft]	<- X [ft] ->					
	468726.7	469126.7	469526.7	469926.7	470326.7	470726.7
955909.69	3.327	3.423	3.522	3.622	3.724	3.827
956309.69	3.399	3.500	3.602	3.707	3.813	3.922
956709.69	3.471	3.575	3.682	3.791	3.902	4.016
957109.69	3.541	3.649	3.761	3.874	3.991	4.110
957509.69	3.610	3.723	3.838	3.956	4.078	4.202
957909.69	3.678	3.794	3.914	4.037	4.163	4.293
958309.69	3.743	3.863	3.987	4.115	4.247	4.382
958709.69	3.807	3.931	4.059	4.191	4.328	4.469
959109.69	3.868	3.995	4.128	4.264	4.406	4.552
959509.69	3.926	4.057	4.193	4.334	4.480	4.631
959909.69	3.981	4.116	4.256	4.400	4.551	4.707
960309.69	4.033	4.171	4.314	4.463	4.617	4.778
960709.69	4.082	4.222	4.369	4.520	4.679	4.843
961109.69	4.127	4.270	4.419	4.574	4.735	4.903
961509.69	4.168	4.313	4.464	4.622	4.786	4.958
961909.69	4.205	4.352	4.505	4.665	4.831	5.005
962309.69	4.238	4.386	4.541	4.703	4.871	5.047
962709.69	4.266	4.416	4.572	4.735	4.904	5.082
963109.69	4.291	4.441	4.598	4.762	4.932	5.110
963509.69	4.311	4.462	4.619	4.783	4.953	5.131
963909.69	4.327	4.478	4.635	4.799	4.969	5.147
964309.69	4.339	4.490	4.647	4.810	4.979	5.156
964709.69	4.347	4.497	4.653	4.816	4.984	5.159
965109.69	4.351	4.501	4.656	4.817	4.984	5.157
965509.69	4.351	4.500	4.654	4.813	4.978	5.149
965909.69	4.348	4.496	4.648	4.806	4.969	5.138
966309.69	4.342	4.488	4.639	4.795	4.955	5.122
966709.69	4.333	4.477	4.626	4.780	4.938	5.102
967109.69	4.320	4.463	4.610	4.762	4.918	5.079
967509.69	4.305	4.446	4.592	4.741	4.895	5.052
967909.69	4.288	4.427	4.570	4.718	4.869	5.024
968309.69	4.268	4.406	4.547	4.692	4.840	4.993
968709.69	4.246	4.382	4.521	4.664	4.810	4.960
969109.69	4.222	4.356	4.493	4.634	4.778	4.925
969509.69	4.196	4.328	4.464	4.602	4.744	4.889
969909.69	4.169	4.299	4.432	4.569	4.709	4.851
970309.69	4.139	4.268	4.400	4.534	4.672	4.812
970709.69	4.109	4.236	4.365	4.498	4.634	4.772
971109.69	4.077	4.202	4.330	4.461	4.595	4.731

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Y [ft]	<- X [ft] ->					
	468726.7	469126.7	469526.7	469926.7	470326.7	470726.7
971509.69	4.043	4.167	4.293	4.422	4.554	4.689
971909.69	4.008	4.130	4.255	4.383	4.513	4.646
972309.69	3.972	4.093	4.216	4.342	4.470	4.601
972709.69	3.935	4.054	4.175	4.300	4.426	4.556
973109.69	3.897	4.014	4.134	4.256	4.382	4.510
973509.69	3.857	3.973	4.091	4.212	4.336	4.462
973909.69	3.816	3.930	4.047	4.166	4.289	4.413

974309.69	3.774	3.887	4.002	4.120	4.240	4.364
974709.69	3.731	3.842	3.956	4.072	4.191	4.312
975109.69	3.687	3.797	3.909	4.023	4.140	4.260
975509.69	3.642	3.750	3.860	3.973	4.088	4.207
975909.69	3.596	3.702	3.811	3.922	4.035	4.152
976309.69	3.549	3.653	3.760	3.869	3.981	4.096
976709.69	3.501	3.603	3.708	3.816	3.926	4.038
977109.69	3.452	3.553	3.656	3.761	3.869	3.980
977509.69	3.402	3.501	3.602	3.705	3.812	3.920
977909.69	3.351	3.448	3.547	3.649	3.753	3.859
978309.69	3.299	3.394	3.492	3.591	3.693	3.797
978709.69	3.247	3.340	3.435	3.533	3.632	3.734
979109.69	3.194	3.285	3.378	3.473	3.571	3.670
979509.69	3.140	3.229	3.320	3.413	3.508	3.605
979909.69	3.086	3.173	3.261	3.352	3.445	3.540
980309.69	3.031	3.116	3.202	3.291	3.381	3.474
980709.69	2.975	3.058	3.143	3.229	3.317	3.407
981109.69	2.920	3.000	3.082	3.166	3.252	3.339
981509.69	2.864	2.942	3.022	3.104	3.187	3.272
981909.69	2.807	2.884	2.961	3.041	3.121	3.204
982309.69	2.751	2.825	2.901	2.977	3.056	3.136
982709.69	2.694	2.766	2.840	2.914	2.990	3.067
983109.69	2.638	2.708	2.779	2.851	2.925	2.999
983509.69	2.581	2.649	2.718	2.788	2.859	2.931
983909.69	2.525	2.591	2.657	2.725	2.794	2.864
984309.69	2.469	2.532	2.597	2.663	2.729	2.796
984709.69	2.413	2.474	2.537	2.600	2.664	2.729
985109.69	2.357	2.417	2.477	2.538	2.600	2.663
985509.69	2.302	2.360	2.418	2.477	2.537	2.597
985909.69	2.247	2.303	2.359	2.416	2.474	2.532
986309.69	2.193	2.246	2.301	2.356	2.411	2.467
986709.69	2.139	2.191	2.243	2.296	2.350	2.404
987109.69	2.086	2.136	2.186	2.237	2.289	2.341

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********** THWELLS - version 4.01 ********** PAGE 10

Y [ft] <- X [ft] ->

	468726.7	469126.7	469526.7	469926.7	470326.7	470726.7
987509.69	2.033	2.081	2.130	2.179	2.229	2.279
987909.69	1.981	2.027	2.074	2.122	2.169	2.217
988309.69	1.929	1.974	2.020	2.065	2.111	2.157
988709.69	1.879	1.922	1.966	2.009	2.053	2.098
989109.69	1.829	1.870	1.912	1.955	1.997	2.040
989509.69	1.780	1.820	1.860	1.901	1.941	1.982
989909.69	1.731	1.770	1.809	1.848	1.887	1.926
990309.69	1.684	1.721	1.758	1.796	1.833	1.871
990709.69	1.637	1.673	1.708	1.745	1.781	1.817
991109.69	1.591	1.625	1.660	1.694	1.729	1.764
991509.69	1.546	1.579	1.612	1.645	1.679	1.712
991909.69	1.501	1.533	1.565	1.597	1.629	1.661
992309.69	1.458	1.489	1.519	1.550	1.581	1.611
992709.69	1.415	1.445	1.474	1.504	1.533	1.563
993109.69	1.374	1.402	1.430	1.459	1.487	1.515
993509.69	1.333	1.360	1.387	1.415	1.442	1.469
993909.69	1.293	1.319	1.345	1.371	1.397	1.423
994309.69	1.254	1.279	1.304	1.329	1.354	1.379
994709.69	1.216	1.240	1.264	1.288	1.312	1.336
995109.69	1.179	1.202	1.225	1.248	1.271	1.294
995509.69	1.142	1.164	1.186	1.209	1.231	1.252

Y [ft] <- X [ft] ->

	471126.7	471526.7	471926.7	472326.7	472726.7	473126.7
955909.69	3.932	4.038	4.145	4.253	4.361	4.470
956309.69	4.032	4.144	4.257	4.372	4.487	4.603
956709.69	4.132	4.250	4.370	4.492	4.614	4.738
957109.69	4.232	4.356	4.482	4.611	4.742	4.874
957509.69	4.330	4.461	4.594	4.730	4.869	5.010
957909.69	4.427	4.564	4.705	4.849	4.996	5.146
958309.69	4.522	4.666	4.813	4.965	5.121	5.281
958709.69	4.614	4.764	4.919	5.079	5.244	5.414
959109.69	4.703	4.860	5.022	5.190	5.364	5.543
959509.69	4.788	4.951	5.120	5.296	5.479	5.669
959909.69	4.869	5.038	5.214	5.397	5.588	5.788
960309.69	4.945	5.119	5.302	5.492	5.691	5.900
960709.69	5.015	5.195	5.383	5.579	5.786	6.003
961109.69	5.079	5.263	5.456	5.659	5.872	6.097
961509.69	5.137	5.325	5.522	5.729	5.948	6.179
961909.69	5.187	5.378	5.579	5.790	6.012	6.248
962309.69	5.231	5.424	5.627	5.840	6.066	6.305
962709.69	5.267	5.461	5.666	5.881	6.108	6.348
963109.69	5.296	5.491	5.695	5.911	6.138	6.378

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Y [ft] <- X [ft] ->

	471126.7	471526.7	471926.7	472326.7	472726.7	473126.7
963509.69	5.317	5.512	5.716	5.930	6.156	6.394
963909.69	5.332	5.525	5.728	5.941	6.164	6.399
964309.69	5.340	5.532	5.732	5.942	6.161	6.392
964709.69	5.341	5.531	5.728	5.934	6.150	6.375
965109.69	5.337	5.523	5.718	5.920	6.130	6.349
965509.69	5.327	5.511	5.701	5.899	6.104	6.316
965909.69	5.312	5.492	5.679	5.872	6.071	6.277
966309.69	5.293	5.470	5.652	5.840	6.034	6.233
966709.69	5.270	5.443	5.621	5.805	5.993	6.186
967109.69	5.244	5.413	5.587	5.766	5.949	6.135
967509.69	5.214	5.381	5.551	5.725	5.902	6.083
967909.69	5.183	5.345	5.512	5.681	5.854	6.030
968309.69	5.149	5.308	5.471	5.637	5.805	5.976
968709.69	5.113	5.269	5.428	5.591	5.755	5.922
969109.69	5.075	5.229	5.385	5.544	5.705	5.868
969509.69	5.037	5.187	5.341	5.496	5.654	5.814
969909.69	4.997	5.145	5.295	5.448	5.603	5.760
970309.69	4.955	5.101	5.249	5.400	5.552	5.707
970709.69	4.913	5.057	5.203	5.351	5.502	5.654
971109.69	4.870	5.012	5.156	5.302	5.450	5.601
971509.69	4.826	4.966	5.108	5.253	5.399	5.548
971909.69	4.781	4.919	5.060	5.202	5.348	5.495
972309.69	4.735	4.871	5.010	5.152	5.295	5.442
972709.69	4.688	4.823	4.960	5.100	5.243	5.388
973109.69	4.640	4.773	4.909	5.048	5.189	5.333
973509.69	4.591	4.723	4.857	4.995	5.135	5.277
973909.69	4.541	4.671	4.804	4.940	5.079	5.221
974309.69	4.489	4.618	4.750	4.884	5.022	5.163
974709.69	4.437	4.564	4.694	4.827	4.963	5.103
975109.69	4.383	4.508	4.637	4.769	4.903	5.041
975509.69	4.328	4.452	4.578	4.708	4.842	4.978
975909.69	4.271	4.393	4.518	4.647	4.778	4.913
976309.69	4.213	4.333	4.457	4.583	4.713	4.846
976709.69	4.154	4.272	4.393	4.518	4.645	4.776

977109.69	4.093	4.210	4.329	4.451	4.576	4.705
977509.69	4.031	4.146	4.262	4.382	4.505	4.632
977909.69	3.968	4.080	4.195	4.312	4.433	4.556
978309.69	3.904	4.013	4.126	4.240	4.358	4.479
978709.69	3.839	3.946	4.055	4.167	4.282	4.400
979109.69	3.772	3.877	3.984	4.093	4.205	4.320

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********** THWELLS - version 4.01 ********** PAGE 12

Y [ft] <- X [ft] ->

	471126.7	471526.7	471926.7	472326.7	472726.7	473126.7
979509.69	3.705	3.807	3.911	4.018	4.127	4.238
979909.69	3.637	3.736	3.837	3.941	4.047	4.155
980309.69	3.568	3.664	3.763	3.864	3.966	4.072
980709.69	3.498	3.592	3.688	3.785	3.885	3.987
981109.69	3.428	3.519	3.612	3.707	3.803	3.901
981509.69	3.358	3.446	3.536	3.627	3.721	3.816
981909.69	3.287	3.373	3.460	3.548	3.638	3.730
982309.69	3.217	3.299	3.383	3.469	3.555	3.643
982709.69	3.146	3.226	3.307	3.389	3.473	3.557
983109.69	3.075	3.152	3.230	3.310	3.390	3.472
983509.69	3.005	3.079	3.154	3.231	3.308	3.386
983909.69	2.934	3.006	3.079	3.152	3.226	3.301
984309.69	2.865	2.934	3.004	3.074	3.145	3.217
984709.69	2.795	2.862	2.929	2.997	3.065	3.134
985109.69	2.726	2.790	2.855	2.920	2.986	3.052
985509.69	2.658	2.720	2.782	2.844	2.907	2.970
985909.69	2.591	2.650	2.709	2.769	2.830	2.890
986309.69	2.524	2.581	2.638	2.695	2.753	2.811
986709.69	2.458	2.513	2.567	2.623	2.678	2.733
987109.69	2.393	2.445	2.498	2.551	2.604	2.657
987509.69	2.329	2.379	2.430	2.480	2.531	2.582
987909.69	2.266	2.314	2.362	2.411	2.459	2.508
988309.69	2.203	2.250	2.296	2.343	2.389	2.435
988709.69	2.142	2.187	2.231	2.276	2.320	2.364
989109.69	2.082	2.125	2.168	2.210	2.253	2.295
989509.69	2.023	2.064	2.105	2.146	2.186	2.227
989909.69	1.965	2.005	2.044	2.083	2.122	2.160
990309.69	1.909	1.946	1.984	2.021	2.058	2.095
990709.69	1.853	1.889	1.925	1.961	1.996	2.031
991109.69	1.798	1.833	1.867	1.902	1.936	1.969
991509.69	1.745	1.778	1.811	1.844	1.876	1.909
991909.69	1.693	1.725	1.756	1.787	1.819	1.849
992309.69	1.642	1.672	1.702	1.732	1.762	1.791
992709.69	1.592	1.621	1.650	1.679	1.707	1.735
993109.69	1.543	1.571	1.599	1.626	1.653	1.680
993509.69	1.496	1.522	1.549	1.575	1.601	1.627
993909.69	1.449	1.475	1.500	1.525	1.550	1.574
994309.69	1.404	1.428	1.452	1.476	1.500	1.524
994709.69	1.359	1.383	1.406	1.429	1.452	1.474
995109.69	1.316	1.339	1.361	1.383	1.405	1.426

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********** THWELLS - version 4.01 ********** PAGE 13

Y [ft] <- X [ft] ->

	471126.7	471526.7	471926.7	472326.7	472726.7	473126.7
995509.69	1.274	1.296	1.317	1.338	1.359	1.379

Y [ft] <- X [ft] ->

	473526.7	473926.7	474326.7	474726.7	475126.7	475526.7
955909.69	4.578	4.685	4.790	4.893	4.993	5.089
956309.69	4.719	4.834	4.948	5.060	5.169	5.273
956709.69	4.862	4.986	5.109	5.231	5.350	5.465
957109.69	5.007	5.141	5.274	5.406	5.536	5.663
957509.69	5.153	5.297	5.441	5.585	5.728	5.867
957909.69	5.299	5.454	5.610	5.767	5.924	6.078
958309.69	5.444	5.611	5.780	5.952	6.123	6.294
958709.69	5.588	5.767	5.950	6.137	6.325	6.515
959109.69	5.729	5.921	6.118	6.321	6.528	6.738
959509.69	5.866	6.071	6.283	6.503	6.730	6.962
959909.69	5.996	6.214	6.442	6.679	6.927	7.184
960309.69	6.119	6.349	6.592	6.847	7.115	7.398
960709.69	6.233	6.475	6.731	7.003	7.292	7.600
961109.69	6.335	6.587	6.856	7.143	7.452	7.784
961509.69	6.424	6.685	6.964	7.265	7.589	7.942
961909.69	6.499	6.767	7.054	7.364	7.700	8.069
962309.69	6.559	6.831	7.123	7.438	7.781	8.158
962709.69	6.604	6.877	7.170	7.486	7.831	8.208
963109.69	6.633	6.904	7.196	7.509	7.849	8.220
963509.69	6.647	6.915	7.201	7.507	7.837	8.195
963909.69	6.647	6.909	7.188	7.484	7.801	8.140
964309.69	6.634	6.889	7.158	7.442	7.743	8.062
964709.69	6.610	6.857	7.115	7.386	7.670	7.966
965109.69	6.577	6.814	7.061	7.318	7.585	7.860
965509.69	6.536	6.764	7.000	7.243	7.492	7.748
965909.69	6.489	6.708	6.932	7.162	7.396	7.634
966309.69	6.438	6.647	6.861	7.079	7.299	7.520
966709.69	6.383	6.584	6.788	6.995	7.202	7.410
967109.69	6.326	6.519	6.714	6.911	7.108	7.304
967509.69	6.267	6.453	6.641	6.829	7.017	7.202
967909.69	6.208	6.388	6.569	6.750	6.929	7.107
968309.69	6.149	6.323	6.498	6.673	6.846	7.017
968709.69	6.090	6.260	6.430	6.599	6.767	6.933
969109.69	6.032	6.197	6.363	6.528	6.692	6.854
969509.69	5.975	6.137	6.299	6.461	6.621	6.780
969909.69	5.918	6.077	6.236	6.396	6.554	6.711
970309.69	5.862	6.019	6.176	6.333	6.490	6.645
970709.69	5.807	5.962	6.117	6.273	6.429	6.584
971109.69	5.753	5.906	6.060	6.215	6.370	6.525

Y [ft] <- X [ft] ->

	473526.7	473926.7	474326.7	474726.7	475126.7	475526.7
971509.69	5.698	5.850	6.004	6.158	6.313	6.469
971909.69	5.644	5.795	5.948	6.102	6.257	6.414
972309.69	5.590	5.740	5.892	6.046	6.202	6.360
972709.69	5.535	5.685	5.837	5.991	6.147	6.306
973109.69	5.480	5.629	5.780	5.935	6.092	6.252
973509.69	5.423	5.572	5.723	5.878	6.035	6.196
973909.69	5.366	5.513	5.665	5.819	5.977	6.139
974309.69	5.306	5.454	5.604	5.759	5.917	6.080
974709.69	5.246	5.392	5.542	5.696	5.854	6.017
975109.69	5.183	5.328	5.477	5.631	5.789	5.951
975509.69	5.118	5.262	5.410	5.563	5.720	5.882
975909.69	5.051	5.194	5.340	5.491	5.647	5.808
976309.69	4.982	5.123	5.268	5.417	5.571	5.731
976709.69	4.911	5.049	5.192	5.339	5.491	5.649

977109.69	4.837	4.973	5.114	5.258	5.408	5.562
977509.69	4.761	4.895	5.033	5.174	5.321	5.472
977909.69	4.683	4.814	4.949	5.087	5.230	5.378
978309.69	4.603	4.731	4.862	4.998	5.137	5.281
978709.69	4.522	4.646	4.774	4.905	5.040	5.180
979109.69	4.438	4.559	4.683	4.810	4.941	5.076
979509.69	4.353	4.470	4.590	4.714	4.840	4.970
979909.69	4.266	4.380	4.496	4.615	4.737	4.862
980309.69	4.179	4.289	4.401	4.516	4.633	4.753
980709.69	4.091	4.197	4.305	4.415	4.528	4.643
981109.69	4.002	4.104	4.208	4.314	4.422	4.531
981509.69	3.912	4.010	4.110	4.212	4.315	4.420
981909.69	3.822	3.917	4.013	4.110	4.209	4.309
982309.69	3.733	3.823	3.915	4.008	4.102	4.198
982709.69	3.643	3.730	3.818	3.907	3.997	4.087
983109.69	3.554	3.637	3.721	3.806	3.892	3.978
983509.69	3.465	3.545	3.625	3.706	3.788	3.869
983909.69	3.377	3.453	3.530	3.607	3.685	3.762
984309.69	3.290	3.363	3.436	3.510	3.583	3.657
984709.69	3.204	3.273	3.343	3.413	3.483	3.553
985109.69	3.118	3.185	3.251	3.318	3.385	3.451
985509.69	3.034	3.097	3.161	3.224	3.288	3.351
985909.69	2.951	3.012	3.072	3.133	3.193	3.252
986309.69	2.869	2.927	2.985	3.042	3.099	3.156
986709.69	2.789	2.844	2.899	2.954	3.008	3.061
987109.69	2.710	2.762	2.815	2.867	2.918	2.969

Y [ft] <- X [ft] ->

	473526.7	473926.7	474326.7	474726.7	475126.7	475526.7
987509.69	2.632	2.682	2.732	2.782	2.831	2.879
987909.69	2.556	2.604	2.651	2.699	2.745	2.791
988309.69	2.481	2.527	2.572	2.617	2.661	2.705
988709.69	2.408	2.452	2.495	2.538	2.580	2.621
989109.69	2.337	2.378	2.419	2.460	2.500	2.539
989509.69	2.267	2.306	2.346	2.384	2.422	2.459
989909.69	2.198	2.236	2.274	2.310	2.346	2.382
990309.69	2.132	2.168	2.203	2.238	2.273	2.306
990709.69	2.066	2.101	2.135	2.168	2.201	2.232
991109.69	2.002	2.035	2.068	2.099	2.130	2.161
991509.69	1.940	1.972	2.002	2.033	2.062	2.091
991909.69	1.880	1.909	1.939	1.968	1.996	2.023
992309.69	1.820	1.849	1.877	1.904	1.931	1.957
992709.69	1.763	1.790	1.817	1.843	1.868	1.893
993109.69	1.707	1.733	1.758	1.783	1.807	1.831
993509.69	1.652	1.677	1.701	1.725	1.748	1.770
993909.69	1.599	1.622	1.645	1.668	1.690	1.712
994309.69	1.547	1.569	1.591	1.613	1.634	1.654
994709.69	1.496	1.518	1.539	1.559	1.580	1.599
995109.69	1.447	1.468	1.488	1.508	1.527	1.545
995509.69	1.399	1.419	1.438	1.457	1.475	1.493

Y [ft] <- X [ft] ->

	475926.7	476326.7	476726.7	477126.7	477526.7	477926.7
955909.69	5.179	5.264	5.341	5.410	5.469	5.518
956309.69	5.373	5.466	5.552	5.628	5.694	5.749
956709.69	5.575	5.678	5.773	5.859	5.933	5.994
957109.69	5.784	5.899	6.006	6.102	6.185	6.255

957509.69	6.002	6.131	6.251	6.359	6.454	6.533
957909.69	6.229	6.373	6.508	6.632	6.741	6.832
958309.69	6.462	6.625	6.779	6.922	7.047	7.153
958709.69	6.703	6.888	7.064	7.229	7.376	7.501
959109.69	6.950	7.159	7.363	7.555	7.730	7.879
959509.69	7.200	7.438	7.674	7.901	8.111	8.293
959909.69	7.449	7.721	7.996	8.265	8.521	8.748
960309.69	7.695	8.004	8.323	8.646	8.961	9.250
960709.69	7.929	8.278	8.648	9.034	9.427	9.805
961109.69	8.143	8.533	8.958	9.417	9.908	10.411
961509.69	8.329	8.756	9.233	9.769	10.373	11.046
961909.69	8.476	8.933	9.452	10.054	10.767	11.635
962309.69	8.577	9.050	9.592	10.231	11.012	12.018
962709.69	8.628	9.100	9.641	10.276	11.048	12.032
963109.69	8.629	9.085	9.600	10.192	10.885	11.709

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Y [ft] <- X [ft] ->

	475926.7	476326.7	476726.7	477126.7	477526.7	477926.7
963509.69	8.585	9.013	9.486	10.012	10.595	11.229
963909.69	8.505	8.898	9.322	9.775	10.251	10.730
964309.69	8.399	8.755	9.128	9.514	9.902	10.270
964709.69	8.276	8.596	8.924	9.253	9.572	9.863
965109.69	8.143	8.431	8.720	9.002	9.269	9.508
965509.69	8.007	8.266	8.523	8.769	8.998	9.199
965909.69	7.871	8.107	8.337	8.555	8.755	8.930
966309.69	7.740	7.956	8.164	8.360	8.539	8.695
966709.69	7.614	7.814	8.005	8.184	8.348	8.491
967109.69	7.496	7.682	7.860	8.026	8.178	8.313
967509.69	7.384	7.560	7.728	7.885	8.029	8.157
967909.69	7.280	7.448	7.608	7.758	7.896	8.021
968309.69	7.184	7.345	7.500	7.645	7.780	7.903
968709.69	7.095	7.252	7.402	7.545	7.678	7.800
969109.69	7.012	7.166	7.314	7.455	7.588	7.712
969509.69	6.936	7.088	7.235	7.376	7.510	7.636
969909.69	6.865	7.016	7.163	7.305	7.441	7.570
970309.69	6.799	6.950	7.098	7.242	7.381	7.515
970709.69	6.738	6.890	7.039	7.186	7.329	7.467
971109.69	6.680	6.833	6.985	7.135	7.283	7.427
971509.69	6.624	6.780	6.935	7.089	7.241	7.392
971909.69	6.571	6.729	6.887	7.045	7.203	7.361
972309.69	6.519	6.679	6.841	7.004	7.167	7.332
972709.69	6.467	6.630	6.795	6.963	7.132	7.305
973109.69	6.414	6.580	6.749	6.921	7.097	7.277
973509.69	6.361	6.529	6.701	6.878	7.059	7.246
973909.69	6.305	6.476	6.651	6.832	7.018	7.211
974309.69	6.247	6.419	6.597	6.781	6.972	7.171
974709.69	6.185	6.359	6.539	6.725	6.920	7.124
975109.69	6.120	6.294	6.475	6.664	6.861	7.068
975509.69	6.050	6.224	6.405	6.595	6.793	7.002
975909.69	5.975	6.149	6.330	6.519	6.717	6.927
976309.69	5.896	6.068	6.247	6.435	6.632	6.840
976709.69	5.812	5.981	6.158	6.344	6.538	6.743
977109.69	5.723	5.889	6.063	6.245	6.435	6.635
977509.69	5.629	5.792	5.962	6.139	6.324	6.518
977909.69	5.531	5.690	5.855	6.026	6.205	6.392
978309.69	5.429	5.583	5.742	5.908	6.080	6.259
978709.69	5.324	5.472	5.626	5.785	5.949	6.120
979109.69	5.215	5.358	5.505	5.657	5.814	5.976

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Y [ft]	<- X [ft] ->					
	475926.7	476326.7	476726.7	477126.7	477526.7	477926.7
979509.69	5.104	5.241	5.382	5.527	5.676	5.829
979909.69	4.991	5.122	5.256	5.394	5.535	5.679
980309.69	4.876	5.001	5.129	5.259	5.392	5.527
980709.69	4.760	4.879	5.000	5.124	5.249	5.376
981109.69	4.643	4.756	4.871	4.988	5.106	5.224
981509.69	4.526	4.634	4.743	4.852	4.963	5.074
981909.69	4.410	4.512	4.614	4.718	4.821	4.925
982309.69	4.293	4.390	4.487	4.584	4.681	4.778
982709.69	4.178	4.270	4.361	4.453	4.544	4.634
983109.69	4.064	4.150	4.237	4.323	4.408	4.492
983509.69	3.951	4.033	4.114	4.195	4.275	4.354
983909.69	3.840	3.917	3.994	4.070	4.144	4.218
984309.69	3.730	3.803	3.875	3.947	4.017	4.086
984709.69	3.622	3.691	3.759	3.827	3.892	3.957
985109.69	3.517	3.582	3.646	3.709	3.771	3.831
985509.69	3.413	3.474	3.535	3.594	3.652	3.708
985909.69	3.311	3.369	3.426	3.482	3.537	3.589
986309.69	3.212	3.266	3.320	3.373	3.424	3.474
986709.69	3.114	3.166	3.217	3.267	3.315	3.361
987109.69	3.019	3.068	3.116	3.163	3.208	3.252
987509.69	2.926	2.973	3.018	3.062	3.105	3.146
987909.69	2.836	2.880	2.923	2.964	3.004	3.043
988309.69	2.747	2.789	2.830	2.869	2.907	2.943
988709.69	2.661	2.701	2.739	2.776	2.812	2.846
989109.69	2.577	2.615	2.651	2.686	2.720	2.752
989509.69	2.496	2.531	2.565	2.599	2.630	2.661
989909.69	2.416	2.450	2.482	2.514	2.544	2.572
990309.69	2.339	2.371	2.401	2.431	2.460	2.487
990709.69	2.264	2.294	2.323	2.351	2.378	2.404
991109.69	2.190	2.219	2.247	2.273	2.299	2.323
991509.69	2.119	2.146	2.173	2.198	2.222	2.245
991909.69	2.050	2.076	2.101	2.125	2.147	2.169
992309.69	1.983	2.007	2.031	2.054	2.075	2.096
992709.69	1.917	1.941	1.963	1.985	2.005	2.025
993109.69	1.854	1.876	1.897	1.918	1.937	1.956
993509.69	1.792	1.813	1.834	1.853	1.872	1.889
993909.69	1.732	1.752	1.772	1.790	1.808	1.824
994309.69	1.674	1.693	1.712	1.729	1.746	1.762
994709.69	1.618	1.636	1.653	1.670	1.686	1.701
995109.69	1.563	1.580	1.597	1.613	1.628	1.642

Y [ft]	<- X [ft] ->					
	475926.7	476326.7	476726.7	477126.7	477526.7	477926.7
995509.69	1.510	1.526	1.542	1.557	1.572	1.585

Y [ft]	<- X [ft] ->					
	478326.7	478726.7	479126.7	479526.7	479926.7	480326.7
955909.69	5.556	5.583	5.597	5.598	5.588	5.566
956309.69	5.791	5.820	5.835	5.836	5.824	5.798
956709.69	6.041	6.073	6.089	6.090	6.075	6.044
957109.69	6.308	6.344	6.361	6.361	6.342	6.306

957509.69	6.594	6.634	6.653	6.651	6.628	6.585
957909.69	6.901	6.947	6.969	6.964	6.936	6.884
958309.69	7.234	7.287	7.311	7.304	7.268	7.205
958709.69	7.597	7.660	7.686	7.675	7.629	7.551
959109.69	7.995	8.070	8.100	8.084	8.024	7.926
959509.69	8.436	8.529	8.564	8.540	8.460	8.333
959909.69	8.929	9.048	9.090	9.053	8.944	8.778
960309.69	9.488	9.646	9.700	9.642	9.488	9.264
960709.69	10.132	10.355	10.427	10.333	10.104	9.791
961109.69	10.880	11.224	11.332	11.166	10.804	10.355
961509.69	11.752	12.345	12.539	12.204	11.585	10.926
961909.69	12.705	13.892	14.378	13.511	12.379	11.436
962309.69	13.442	15.860	18.411	14.811	12.943	11.762
962709.69	13.388	15.456	16.937	14.626	12.933	11.798
963109.69	12.677	13.656	14.024	13.378	12.421	11.561
963509.69	11.869	12.385	12.555	12.291	11.765	11.178
963909.69	11.167	11.484	11.591	11.462	11.154	10.757
964309.69	10.586	10.804	10.886	10.819	10.627	10.355
964709.69	10.104	10.270	10.339	10.306	10.183	9.992
965109.69	9.702	9.836	9.899	9.888	9.808	9.673
965509.69	9.362	9.477	9.537	9.541	9.491	9.396
965909.69	9.072	9.176	9.235	9.250	9.222	9.156
966309.69	8.824	8.920	8.981	9.005	8.993	8.950
966709.69	8.610	8.702	8.765	8.797	8.799	8.773
967109.69	8.426	8.516	8.581	8.620	8.634	8.624
967509.69	8.267	8.356	8.425	8.471	8.495	8.498
967909.69	8.129	8.220	8.293	8.346	8.380	8.395
968309.69	8.011	8.105	8.182	8.242	8.285	8.311
968709.69	7.911	8.007	8.090	8.158	8.210	8.247
969109.69	7.825	7.926	8.015	8.090	8.152	8.199
969509.69	7.752	7.859	7.954	8.038	8.110	8.168
969909.69	7.692	7.805	7.908	8.001	8.082	8.152
970309.69	7.642	7.762	7.873	7.976	8.069	8.151
970709.69	7.601	7.728	7.849	7.963	8.067	8.163
971109.69	7.567	7.704	7.834	7.959	8.077	8.187

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Y [ft] <- X [ft] ->

	478326.7	478726.7	479126.7	479526.7	479926.7	480326.7
971509.69	7.540	7.686	7.828	7.965	8.097	8.223
971909.69	7.517	7.673	7.827	7.978	8.126	8.269
972309.69	7.498	7.664	7.830	7.996	8.160	8.323
972709.69	7.479	7.656	7.835	8.017	8.199	8.382
973109.69	7.460	7.648	7.841	8.038	8.239	8.445
973509.69	7.438	7.637	7.843	8.056	8.277	8.506
973909.69	7.412	7.621	7.840	8.069	8.309	8.562
974309.69	7.379	7.598	7.828	8.071	8.330	8.607
974709.69	7.338	7.564	7.804	8.060	8.335	8.633
975109.69	7.287	7.518	7.766	8.032	8.320	8.634
975509.69	7.224	7.459	7.711	7.983	8.280	8.606
975909.69	7.148	7.385	7.639	7.913	8.212	8.542
976309.69	7.060	7.295	7.547	7.820	8.116	8.443
976709.69	6.960	7.190	7.437	7.704	7.993	8.309
977109.69	6.847	7.071	7.311	7.567	7.844	8.144
977509.69	6.723	6.939	7.168	7.412	7.673	7.953
977909.69	6.589	6.795	7.013	7.243	7.486	7.743
978309.69	6.447	6.642	6.847	7.061	7.286	7.520
978709.69	6.298	6.482	6.673	6.872	7.077	7.289
979109.69	6.144	6.316	6.494	6.677	6.864	7.055
979509.69	5.986	6.147	6.312	6.479	6.649	6.820

979909.69	5.826	5.976	6.128	6.281	6.435	6.588
980309.69	5.665	5.804	5.944	6.084	6.224	6.361
980709.69	5.504	5.632	5.761	5.889	6.016	6.139
981109.69	5.343	5.462	5.581	5.698	5.812	5.923
981509.69	5.184	5.295	5.404	5.511	5.615	5.714
981909.69	5.028	5.130	5.230	5.328	5.422	5.512
982309.69	4.874	4.968	5.060	5.150	5.236	5.318
982709.69	4.723	4.810	4.895	4.977	5.056	5.130
983109.69	4.575	4.656	4.734	4.810	4.881	4.949
983509.69	4.431	4.506	4.578	4.647	4.713	4.774
983909.69	4.290	4.359	4.426	4.490	4.550	4.607
984309.69	4.153	4.217	4.279	4.338	4.393	4.445
984709.69	4.019	4.079	4.137	4.191	4.242	4.289
985109.69	3.889	3.945	3.998	4.049	4.096	4.139
985509.69	3.763	3.815	3.865	3.911	3.955	3.995
985909.69	3.640	3.689	3.735	3.778	3.819	3.856
986309.69	3.521	3.567	3.610	3.650	3.688	3.722
986709.69	3.406	3.448	3.488	3.526	3.561	3.593
987109.69	3.294	3.334	3.371	3.406	3.438	3.468

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Y [ft] <- X [ft] ->

	478326.7	478726.7	479126.7	479526.7	479926.7	480326.7
987509.69	3.185	3.222	3.257	3.290	3.320	3.348
987909.69	3.080	3.115	3.148	3.178	3.206	3.232
988309.69	2.978	3.010	3.041	3.070	3.096	3.120
988709.69	2.879	2.910	2.938	2.965	2.990	3.012
989109.69	2.783	2.812	2.839	2.864	2.887	2.908
989509.69	2.690	2.717	2.743	2.766	2.788	2.807
989909.69	2.600	2.625	2.649	2.672	2.692	2.710
990309.69	2.512	2.537	2.559	2.580	2.599	2.616
990709.69	2.428	2.451	2.472	2.492	2.510	2.526
991109.69	2.346	2.367	2.388	2.406	2.423	2.438
991509.69	2.267	2.287	2.306	2.323	2.339	2.353
991909.69	2.190	2.209	2.227	2.243	2.258	2.272
992309.69	2.115	2.133	2.150	2.166	2.180	2.193
992709.69	2.043	2.060	2.076	2.091	2.104	2.116
993109.69	1.973	1.990	2.005	2.019	2.031	2.042
993509.69	1.906	1.921	1.935	1.948	1.960	1.971
993909.69	1.840	1.855	1.868	1.881	1.892	1.902
994309.69	1.777	1.790	1.803	1.815	1.826	1.835
994709.69	1.715	1.728	1.740	1.752	1.762	1.771
995109.69	1.656	1.668	1.680	1.690	1.700	1.708
995509.69	1.598	1.610	1.621	1.631	1.640	1.648

Y [ft] <- X [ft] ->

	480726.7	481126.7	481526.7	481926.7	482326.7	482726.7
955909.69	5.533	5.490	5.437	5.376	5.308	5.233
956309.69	5.760	5.711	5.651	5.583	5.507	5.424
956709.69	6.000	5.944	5.876	5.799	5.713	5.622
957109.69	6.255	6.189	6.112	6.024	5.928	5.826
957509.69	6.525	6.449	6.360	6.260	6.152	6.037
957909.69	6.812	6.723	6.620	6.506	6.383	6.254
958309.69	7.119	7.013	6.893	6.761	6.621	6.477
958709.69	7.446	7.320	7.179	7.026	6.867	6.704
959109.69	7.797	7.645	7.477	7.300	7.117	6.934
959509.69	8.172	7.987	7.787	7.580	7.371	7.164
959909.69	8.573	8.344	8.105	7.863	7.625	7.392

960309.69	8.998	8.714	8.427	8.145	7.874	7.614
960709.69	9.443	9.089	8.745	8.418	8.112	7.825
961109.69	9.893	9.453	9.046	8.673	8.332	8.019
961509.69	10.321	9.786	9.315	8.899	8.526	8.191
961909.69	10.678	10.056	9.533	9.082	8.686	8.334
962309.69	10.905	10.233	9.681	9.212	8.805	8.445
962709.69	10.958	10.296	9.749	9.285	8.880	8.522
963109.69	10.846	10.249	9.740	9.300	8.912	8.565

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Y [ft] <- X [ft] ->

	480726.7	481126.7	481526.7	481926.7	482326.7	482726.7
963509.69	10.620	10.116	9.667	9.265	8.904	8.577
963909.69	10.337	9.930	9.547	9.193	8.865	8.563
964309.69	10.043	9.719	9.401	9.094	8.804	8.529
964709.69	9.759	9.505	9.243	8.982	8.728	8.482
965109.69	9.499	9.299	9.085	8.865	8.644	8.427
965509.69	9.265	9.108	8.934	8.750	8.560	8.369
965909.69	9.058	8.936	8.795	8.641	8.479	8.312
966309.69	8.878	8.783	8.670	8.543	8.405	8.260
966709.69	8.723	8.651	8.561	8.456	8.340	8.214
967109.69	8.591	8.538	8.468	8.383	8.286	8.178
967509.69	8.481	8.445	8.392	8.325	8.244	8.152
967909.69	8.391	8.370	8.333	8.281	8.216	8.138
968309.69	8.320	8.313	8.290	8.253	8.201	8.137
968709.69	8.268	8.273	8.264	8.240	8.202	8.150
969109.69	8.232	8.250	8.254	8.243	8.217	8.177
969509.69	8.213	8.244	8.260	8.262	8.249	8.221
969909.69	8.209	8.253	8.283	8.298	8.298	8.281
970309.69	8.221	8.279	8.323	8.351	8.364	8.360
970709.69	8.247	8.320	8.379	8.422	8.449	8.458
971109.69	8.287	8.376	8.452	8.512	8.555	8.578
971509.69	8.340	8.447	8.542	8.621	8.682	8.721
971909.69	8.405	8.533	8.649	8.750	8.832	8.891
972309.69	8.480	8.632	8.773	8.900	9.008	9.090
972709.69	8.564	8.742	8.913	9.071	9.210	9.322
973109.69	8.653	8.861	9.067	9.263	9.442	9.593
973509.69	8.743	8.985	9.231	9.473	9.703	9.906
973909.69	8.829	9.108	9.399	9.697	9.992	10.266
974309.69	8.903	9.221	9.562	9.924	10.301	10.675
974709.69	8.957	9.312	9.704	10.137	10.613	11.121
975109.69	8.982	9.369	9.807	10.309	10.890	11.566
975509.69	8.969	9.378	9.849	10.403	11.072	11.913
975909.69	8.911	9.329	9.813	10.386	11.092	12.007
976309.69	8.807	9.218	9.691	10.246	10.918	11.761
976709.69	8.658	9.049	9.490	9.996	10.581	11.262
977109.69	8.471	8.831	9.228	9.667	10.149	10.665
977509.69	8.254	8.578	8.926	9.296	9.682	10.066
977909.69	8.015	8.302	8.602	8.910	9.217	9.504
978309.69	7.764	8.016	8.272	8.527	8.771	8.990
978709.69	7.506	7.725	7.944	8.155	8.352	8.522
979109.69	7.247	7.438	7.624	7.801	7.960	8.095

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Y [ft] <- X [ft] ->

	480726.7	481126.7	481526.7	481926.7	482326.7	482726.7
979509.69	6.990	7.157	7.316	7.464	7.596	7.704

979909.69	6.739	6.884	7.022	7.147	7.256	7.344
980309.69	6.494	6.622	6.740	6.847	6.939	7.011
980709.69	6.258	6.369	6.473	6.564	6.642	6.703
981109.69	6.029	6.128	6.218	6.297	6.364	6.415
981509.69	5.809	5.896	5.976	6.045	6.102	6.146
981909.69	5.597	5.675	5.745	5.806	5.855	5.893
982309.69	5.394	5.463	5.525	5.579	5.622	5.655
982709.69	5.198	5.261	5.316	5.364	5.402	5.430
983109.69	5.011	5.067	5.117	5.159	5.193	5.218
983509.69	4.831	4.882	4.926	4.964	4.994	5.016
983909.69	4.658	4.704	4.744	4.778	4.805	4.824
984309.69	4.492	4.534	4.570	4.601	4.625	4.642
984709.69	4.332	4.370	4.403	4.431	4.453	4.468
985109.69	4.179	4.214	4.244	4.269	4.288	4.302
985509.69	4.031	4.063	4.091	4.113	4.131	4.144
985909.69	3.889	3.919	3.944	3.965	3.981	3.992
986309.69	3.753	3.780	3.803	3.822	3.837	3.847
986709.69	3.621	3.646	3.667	3.685	3.698	3.707
987109.69	3.494	3.517	3.537	3.553	3.565	3.574
987509.69	3.372	3.394	3.412	3.427	3.438	3.446
987909.69	3.255	3.275	3.291	3.305	3.315	3.322
988309.69	3.141	3.160	3.175	3.188	3.198	3.204
988709.69	3.032	3.049	3.064	3.075	3.084	3.090
989109.69	2.926	2.942	2.956	2.967	2.975	2.980
989509.69	2.825	2.840	2.852	2.862	2.870	2.875
989909.69	2.726	2.740	2.752	2.762	2.769	2.773
990309.69	2.631	2.645	2.656	2.664	2.671	2.675
990709.69	2.540	2.552	2.563	2.571	2.577	2.581
991109.69	2.451	2.463	2.473	2.480	2.486	2.490
991509.69	2.366	2.377	2.386	2.393	2.399	2.402
991909.69	2.284	2.294	2.302	2.309	2.314	2.317
992309.69	2.204	2.213	2.221	2.228	2.232	2.235
992709.69	2.127	2.136	2.143	2.149	2.154	2.157
993109.69	2.052	2.061	2.068	2.074	2.078	2.080
993509.69	1.980	1.988	1.995	2.000	2.004	2.007
993909.69	1.911	1.918	1.925	1.930	1.933	1.936
994309.69	1.844	1.851	1.857	1.861	1.865	1.867
994709.69	1.779	1.785	1.791	1.795	1.799	1.801
995109.69	1.716	1.722	1.728	1.732	1.735	1.737

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Y [ft] <- X [ft] ->

	480726.7	481126.7	481526.7	481926.7	482326.7	482726.7
995509.69	1.655	1.661	1.666	1.670	1.673	1.675

Y [ft] <- X [ft] ->

	483126.7	483526.7	483926.7	484326.7	484726.7	485126.7
955909.69	5.154	5.070	4.983	4.893	4.801	4.707
956309.69	5.336	5.244	5.149	5.051	4.952	4.852
956709.69	5.525	5.424	5.320	5.214	5.106	4.998
957109.69	5.718	5.607	5.494	5.379	5.263	5.147
957509.69	5.918	5.795	5.671	5.546	5.421	5.296
957909.69	6.121	5.987	5.851	5.715	5.580	5.447
958309.69	6.329	6.180	6.032	5.885	5.739	5.596
958709.69	6.539	6.376	6.214	6.054	5.898	5.745
959109.69	6.751	6.571	6.394	6.222	6.055	5.892
959509.69	6.961	6.764	6.572	6.387	6.208	6.036
959909.69	7.168	6.952	6.746	6.547	6.357	6.175

960309.69	7.368	7.134	6.912	6.701	6.500	6.309
960709.69	7.557	7.305	7.069	6.846	6.636	6.436
961109.69	7.730	7.463	7.214	6.981	6.762	6.555
961509.69	7.885	7.604	7.345	7.104	6.878	6.665
961909.69	8.016	7.727	7.460	7.213	6.982	6.765
962309.69	8.122	7.828	7.558	7.308	7.075	6.855
962709.69	8.200	7.907	7.637	7.388	7.154	6.935
963109.69	8.251	7.964	7.699	7.453	7.222	7.005
963509.69	8.277	8.001	7.744	7.504	7.279	7.065
963909.69	8.282	8.020	7.775	7.544	7.325	7.116
964309.69	8.270	8.025	7.793	7.573	7.362	7.160
964709.69	8.246	8.019	7.802	7.593	7.392	7.198
965109.69	8.214	8.006	7.804	7.608	7.417	7.231
965509.69	8.178	7.989	7.802	7.619	7.438	7.261
965909.69	8.142	7.971	7.799	7.629	7.459	7.290
966309.69	8.109	7.954	7.798	7.639	7.480	7.320
966709.69	8.081	7.942	7.799	7.652	7.503	7.351
967109.69	8.061	7.937	7.806	7.670	7.530	7.386
967509.69	8.050	7.939	7.820	7.694	7.562	7.425
967909.69	8.049	7.950	7.842	7.726	7.602	7.471
968309.69	8.060	7.973	7.874	7.766	7.650	7.525
968709.69	8.085	8.007	7.918	7.818	7.707	7.587
969109.69	8.123	8.056	7.975	7.881	7.776	7.660
969509.69	8.177	8.119	8.046	7.958	7.857	7.744
969909.69	8.248	8.199	8.132	8.050	7.953	7.841
970309.69	8.337	8.297	8.237	8.160	8.065	7.953
970709.69	8.447	8.415	8.362	8.288	8.195	8.082
971109.69	8.579	8.556	8.510	8.439	8.345	8.229

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********** THWELLS - version 4.01 ********** PAGE 24

Y [ft] <- X [ft] ->

	483126.7	483526.7	483926.7	484326.7	484726.7	485126.7
971509.69	8.736	8.724	8.684	8.615	8.519	8.398
971909.69	8.922	8.922	8.888	8.821	8.720	8.590
972309.69	9.141	9.155	9.129	9.061	8.953	8.811
972709.69	9.399	9.431	9.413	9.343	9.224	9.062
973109.69	9.703	9.759	9.752	9.678	9.540	9.350
973509.69	10.063	10.154	10.161	10.078	9.911	9.679
973909.69	10.493	10.637	10.666	10.566	10.351	10.054
974309.69	11.008	11.241	11.307	11.174	10.874	10.476
974709.69	11.623	12.021	12.162	11.958	11.498	10.934
975109.69	12.331	13.070	13.406	13.011	12.214	11.391
975509.69	13.019	14.490	15.598	14.434	12.908	11.748
975909.69	13.307	15.551	39.358	15.497	13.202	11.852
976309.69	12.869	14.343	15.454	14.294	12.771	11.615
976709.69	12.033	12.777	13.119	12.731	11.941	11.126
977109.69	11.175	11.582	11.732	11.538	11.089	10.536
977509.69	10.410	10.655	10.734	10.615	10.329	9.945
977909.69	9.745	9.905	9.949	9.866	9.669	9.390
978309.69	9.165	9.274	9.301	9.238	9.093	8.882
978709.69	8.652	8.731	8.747	8.697	8.584	8.420
979109.69	8.195	8.253	8.262	8.221	8.131	7.999
979509.69	7.782	7.826	7.831	7.796	7.722	7.613
979909.69	7.407	7.441	7.442	7.412	7.349	7.258
980309.69	7.063	7.089	7.089	7.062	7.008	6.930
980709.69	6.745	6.766	6.764	6.740	6.693	6.626
981109.69	6.450	6.467	6.464	6.442	6.401	6.342
981509.69	6.175	6.188	6.185	6.165	6.129	6.077
981909.69	5.918	5.928	5.925	5.907	5.874	5.827
982309.69	5.676	5.685	5.681	5.664	5.634	5.593

982709.69	5.448	5.455	5.451	5.436	5.409	5.371
983109.69	5.233	5.239	5.235	5.220	5.196	5.161
983509.69	5.029	5.034	5.030	5.016	4.994	4.963
983909.69	4.836	4.840	4.835	4.823	4.802	4.774
984309.69	4.652	4.655	4.651	4.639	4.620	4.594
984709.69	4.477	4.480	4.475	4.464	4.447	4.422
985109.69	4.310	4.312	4.308	4.298	4.281	4.259
985509.69	4.151	4.152	4.148	4.138	4.123	4.102
985909.69	3.998	3.999	3.995	3.986	3.972	3.953
986309.69	3.852	3.853	3.849	3.841	3.827	3.809
986709.69	3.712	3.713	3.709	3.701	3.689	3.672
987109.69	3.578	3.579	3.575	3.567	3.556	3.540

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Y [ft] <- X [ft] ->

	483126.7	483526.7	483926.7	484326.7	484726.7	485126.7
987509.69	3.450	3.450	3.446	3.439	3.428	3.413
987909.69	3.326	3.326	3.323	3.316	3.305	3.292
988309.69	3.207	3.207	3.204	3.197	3.188	3.175
988709.69	3.093	3.093	3.090	3.084	3.074	3.062
989109.69	2.983	2.983	2.980	2.974	2.965	2.954
989509.69	2.877	2.877	2.874	2.869	2.860	2.849
989909.69	2.775	2.775	2.772	2.767	2.759	2.749
990309.69	2.677	2.677	2.674	2.669	2.662	2.652
990709.69	2.583	2.582	2.580	2.575	2.568	2.559
991109.69	2.491	2.491	2.489	2.484	2.477	2.469
991509.69	2.403	2.403	2.401	2.396	2.390	2.382
991909.69	2.319	2.318	2.316	2.312	2.306	2.298
992309.69	2.237	2.236	2.234	2.230	2.224	2.217
992709.69	2.158	2.157	2.155	2.151	2.146	2.139
993109.69	2.081	2.081	2.079	2.075	2.070	2.064
993509.69	2.008	2.007	2.005	2.002	1.997	1.991
993909.69	1.937	1.936	1.934	1.931	1.926	1.921
994309.69	1.868	1.867	1.866	1.863	1.858	1.853
994709.69	1.801	1.801	1.799	1.796	1.792	1.787
995109.69	1.737	1.737	1.735	1.733	1.729	1.723
995509.69	1.675	1.675	1.673	1.671	1.667	1.662

Y [ft] <- X [ft] ->

	485526.7	485926.7	486326.7	486726.7	487126.7	487526.7
955909.69	4.613	4.518	4.423	4.328	4.233	4.139
956309.69	4.751	4.649	4.548	4.448	4.348	4.249
956709.69	4.890	4.782	4.675	4.569	4.464	4.359
957109.69	5.031	4.916	4.803	4.690	4.579	4.470
957509.69	5.173	5.051	4.930	4.812	4.695	4.580
957909.69	5.315	5.185	5.058	4.933	4.810	4.690
958309.69	5.456	5.319	5.184	5.053	4.924	4.799
958709.69	5.596	5.451	5.309	5.172	5.037	4.906
959109.69	5.734	5.581	5.433	5.288	5.148	5.012
959509.69	5.869	5.708	5.553	5.402	5.257	5.116
959909.69	6.000	5.832	5.670	5.514	5.363	5.217
960309.69	6.126	5.951	5.783	5.621	5.465	5.315
960709.69	6.246	6.064	5.891	5.724	5.564	5.409
961109.69	6.359	6.172	5.993	5.822	5.658	5.500
961509.69	6.464	6.273	6.090	5.916	5.748	5.587
961909.69	6.561	6.366	6.181	6.004	5.834	5.670
962309.69	6.649	6.452	6.265	6.086	5.915	5.749
962709.69	6.728	6.531	6.343	6.164	5.991	5.824

963109.69	6.799	6.603	6.415	6.235	6.062	5.895

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Y [ft] <- X [ft] ->

	485526.7	485926.7	486326.7	486726.7	487126.7	487526.7
963509.69	6.862	6.667	6.481	6.302	6.129	5.962
963909.69	6.917	6.726	6.542	6.364	6.193	6.026
964309.69	6.966	6.779	6.598	6.423	6.252	6.087
964709.69	7.010	6.827	6.650	6.477	6.309	6.145
965109.69	7.049	6.872	6.699	6.530	6.364	6.201
965509.69	7.087	6.915	6.747	6.580	6.417	6.256
965909.69	7.123	6.957	6.793	6.630	6.469	6.310
966309.69	7.159	6.999	6.840	6.680	6.522	6.364
966709.69	7.198	7.043	6.887	6.731	6.575	6.419
967109.69	7.239	7.089	6.937	6.784	6.630	6.475
967509.69	7.284	7.139	6.991	6.840	6.687	6.533
967909.69	7.335	7.194	7.048	6.899	6.747	6.593
968309.69	7.393	7.255	7.111	6.963	6.811	6.657
968709.69	7.459	7.323	7.180	7.032	6.880	6.724
969109.69	7.534	7.399	7.256	7.108	6.954	6.796
969509.69	7.619	7.484	7.341	7.190	7.033	6.872
969909.69	7.716	7.580	7.434	7.280	7.119	6.954
970309.69	7.827	7.688	7.538	7.378	7.212	7.040
970709.69	7.952	7.808	7.652	7.486	7.312	7.132
971109.69	8.094	7.943	7.778	7.602	7.419	7.230
971509.69	8.254	8.092	7.916	7.728	7.532	7.332
971909.69	8.435	8.259	8.067	7.863	7.653	7.438
972309.69	8.638	8.443	8.231	8.008	7.779	7.548
972709.69	8.866	8.645	8.407	8.160	7.909	7.659
973109.69	9.120	8.865	8.594	8.318	8.041	7.768
973509.69	9.402	9.101	8.789	8.477	8.170	7.873
973909.69	9.710	9.349	8.986	8.632	8.292	7.968
974309.69	10.038	9.598	9.174	8.774	8.400	8.049
974709.69	10.366	9.831	9.341	8.893	8.485	8.109
975109.69	10.658	10.021	9.466	8.976	8.538	8.142
975509.69	10.854	10.133	9.529	9.008	8.551	8.143
975909.69	10.887	10.133	9.511	8.981	8.518	8.107
976309.69	10.725	10.007	9.407	8.891	8.437	8.033
976709.69	10.400	9.771	9.223	8.740	8.310	7.922
977109.69	9.979	9.456	8.976	8.540	8.143	7.779
977509.69	9.522	9.097	8.689	8.304	7.944	7.608
977909.69	9.066	8.722	8.378	8.044	7.723	7.417
978309.69	8.628	8.349	8.060	7.771	7.487	7.212
978709.69	8.217	7.988	7.744	7.494	7.244	6.998
979109.69	7.833	7.642	7.436	7.219	6.999	6.779

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Y [ft] <- X [ft] ->

	485526.7	485926.7	486326.7	486726.7	487126.7	487526.7
979509.69	7.475	7.315	7.138	6.950	6.756	6.559
979909.69	7.142	7.005	6.852	6.689	6.517	6.341
980309.69	6.831	6.713	6.580	6.436	6.284	6.127
980709.69	6.540	6.437	6.321	6.194	6.058	5.917
981109.69	6.267	6.177	6.074	5.961	5.840	5.713
981509.69	6.010	5.930	5.839	5.738	5.630	5.514
981909.69	5.768	5.697	5.616	5.525	5.427	5.323
982309.69	5.540	5.476	5.403	5.321	5.232	5.137

982709.69	5.323	5.266	5.200	5.126	5.045	4.958
983109.69	5.118	5.066	5.006	4.939	4.865	4.786
983509.69	4.923	4.876	4.821	4.760	4.692	4.620
983909.69	4.737	4.694	4.644	4.588	4.526	4.459
984309.69	4.561	4.521	4.475	4.423	4.366	4.305
984709.69	4.392	4.355	4.313	4.265	4.213	4.156
985109.69	4.230	4.197	4.158	4.114	4.065	4.012
985509.69	4.076	4.045	4.009	3.968	3.923	3.874
985909.69	3.928	3.899	3.866	3.828	3.786	3.741
986309.69	3.787	3.760	3.728	3.693	3.655	3.612
986709.69	3.651	3.626	3.597	3.564	3.528	3.488
987109.69	3.520	3.497	3.470	3.439	3.405	3.368
987509.69	3.395	3.373	3.348	3.319	3.288	3.253
987909.69	3.274	3.254	3.230	3.203	3.174	3.142
988309.69	3.158	3.139	3.117	3.092	3.064	3.034
988709.69	3.047	3.029	3.008	2.985	2.958	2.930
989109.69	2.939	2.922	2.903	2.881	2.856	2.830
989509.69	2.836	2.820	2.802	2.781	2.758	2.733
989909.69	2.736	2.721	2.704	2.684	2.663	2.639
990309.69	2.640	2.626	2.610	2.591	2.571	2.548
990709.69	2.547	2.534	2.519	2.501	2.482	2.461
991109.69	2.458	2.445	2.431	2.414	2.396	2.376
991509.69	2.372	2.360	2.346	2.331	2.313	2.294
991909.69	2.289	2.277	2.264	2.250	2.233	2.215
992309.69	2.208	2.197	2.185	2.171	2.156	2.139
992709.69	2.131	2.120	2.109	2.096	2.081	2.065
993109.69	2.056	2.046	2.035	2.022	2.009	1.994
993509.69	1.983	1.974	1.964	1.952	1.939	1.924
993909.69	1.913	1.905	1.895	1.883	1.871	1.857
994309.69	1.846	1.837	1.828	1.817	1.806	1.793
994709.69	1.780	1.773	1.764	1.754	1.742	1.730
995109.69	1.717	1.710	1.701	1.692	1.681	1.670

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********** THWELLS - version 4.01 ********** PAGE 28

Y [ft] <- X [ft] ->

	485526.7	485926.7	486326.7	486726.7	487126.7	487526.7
995509.69	1.656	1.649	1.641	1.632	1.622	1.611

Y [ft] <- X [ft] ->

	487926.7	488326.7	488726.7	489126.7	489526.7	489926.7
955909.69	4.046	3.954	3.862	3.772	3.683	3.595
956309.69	4.151	4.054	3.959	3.865	3.772	3.681
956709.69	4.257	4.156	4.056	3.958	3.861	3.766
957109.69	4.362	4.257	4.153	4.050	3.950	3.851
957509.69	4.468	4.357	4.249	4.143	4.038	3.936
957909.69	4.572	4.457	4.345	4.234	4.126	4.021
958309.69	4.676	4.557	4.440	4.325	4.214	4.104
958709.69	4.779	4.655	4.533	4.415	4.300	4.187
959109.69	4.880	4.751	4.626	4.504	4.385	4.269
959509.69	4.979	4.846	4.716	4.591	4.468	4.349
959909.69	5.075	4.938	4.805	4.676	4.550	4.428
960309.69	5.169	5.028	4.892	4.759	4.630	4.505
960709.69	5.260	5.116	4.976	4.840	4.708	4.580
961109.69	5.348	5.200	5.057	4.919	4.785	4.654
961509.69	5.432	5.282	5.136	4.995	4.859	4.725
961909.69	5.513	5.360	5.213	5.069	4.930	4.795
962309.69	5.590	5.436	5.286	5.141	5.000	4.863
962709.69	5.663	5.508	5.357	5.210	5.067	4.928

963109.69	5.733	5.577	5.424	5.277	5.132	4.992
963509.69	5.800	5.643	5.490	5.341	5.196	5.054
963909.69	5.864	5.706	5.553	5.403	5.257	5.114
964309.69	5.925	5.768	5.614	5.463	5.316	5.173
964709.69	5.984	5.827	5.673	5.522	5.374	5.230
965109.69	6.041	5.885	5.731	5.579	5.431	5.285
965509.69	6.097	5.941	5.787	5.636	5.487	5.340
965909.69	6.152	5.997	5.843	5.691	5.542	5.394
966309.69	6.207	6.052	5.898	5.746	5.596	5.447
966709.69	6.263	6.108	5.954	5.801	5.650	5.500
967109.69	6.319	6.164	6.010	5.856	5.704	5.553
967509.69	6.378	6.222	6.067	5.912	5.758	5.605
967909.69	6.438	6.281	6.125	5.968	5.813	5.658
968309.69	6.500	6.342	6.184	6.026	5.868	5.711
968709.69	6.566	6.406	6.245	6.084	5.923	5.764
969109.69	6.635	6.472	6.308	6.144	5.980	5.817
969509.69	6.708	6.541	6.373	6.205	6.037	5.871
969909.69	6.784	6.613	6.440	6.267	6.095	5.924
970309.69	6.865	6.687	6.509	6.330	6.153	5.977
970709.69	6.949	6.765	6.579	6.394	6.211	6.030
971109.69	7.038	6.844	6.651	6.459	6.269	6.081

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Y [ft] <- X [ft] ->

	487926.7	488326.7	488726.7	489126.7	489526.7	489926.7
971509.69	7.129	6.925	6.723	6.522	6.325	6.131
971909.69	7.223	7.007	6.794	6.585	6.379	6.178
972309.69	7.317	7.089	6.864	6.645	6.431	6.222
972709.69	7.411	7.168	6.931	6.701	6.478	6.262
973109.69	7.502	7.243	6.993	6.752	6.519	6.296
973509.69	7.586	7.311	7.047	6.795	6.554	6.323
973909.69	7.661	7.369	7.092	6.830	6.580	6.342
974309.69	7.721	7.414	7.125	6.853	6.596	6.352
974709.69	7.763	7.442	7.143	6.863	6.600	6.351
975109.69	7.782	7.450	7.143	6.858	6.590	6.339
975509.69	7.773	7.436	7.125	6.836	6.567	6.314
975909.69	7.735	7.397	7.085	6.797	6.528	6.276
976309.69	7.667	7.333	7.025	6.740	6.474	6.225
976709.69	7.569	7.244	6.945	6.666	6.405	6.161
977109.69	7.443	7.133	6.845	6.575	6.322	6.084
977509.69	7.295	7.002	6.728	6.470	6.226	5.996
977909.69	7.128	6.855	6.596	6.351	6.119	5.898
978309.69	6.948	6.695	6.453	6.222	6.001	5.791
978709.69	6.758	6.525	6.300	6.084	5.876	5.676
979109.69	6.562	6.348	6.140	5.939	5.743	5.555
979509.69	6.363	6.168	5.976	5.789	5.606	5.429
979909.69	6.164	5.986	5.810	5.636	5.465	5.299
980309.69	5.966	5.804	5.642	5.481	5.323	5.166
980709.69	5.771	5.624	5.475	5.326	5.179	5.033
981109.69	5.581	5.446	5.309	5.172	5.034	4.898
981509.69	5.395	5.271	5.146	5.018	4.891	4.764
981909.69	5.213	5.100	4.985	4.867	4.749	4.630
982309.69	5.038	4.934	4.827	4.719	4.608	4.498
982709.69	4.867	4.772	4.673	4.573	4.470	4.367
983109.69	4.702	4.614	4.523	4.430	4.335	4.238
983509.69	4.543	4.462	4.377	4.291	4.202	4.112
983909.69	4.388	4.313	4.235	4.155	4.072	3.987
984309.69	4.239	4.170	4.097	4.022	3.945	3.866
984709.69	4.095	4.031	3.963	3.893	3.821	3.747
985109.69	3.956	3.896	3.834	3.768	3.701	3.631

985509.69	3.822	3.766	3.708	3.647	3.583	3.518
985909.69	3.692	3.640	3.585	3.528	3.469	3.408
986309.69	3.567	3.518	3.467	3.414	3.358	3.301
986709.69	3.446	3.400	3.353	3.302	3.250	3.196
987109.69	3.329	3.286	3.242	3.194	3.146	3.095

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********** THWELLS - version 4.01 ********** PAGE 30

Y [ft] <- X [ft] ->

	487926.7	488326.7	488726.7	489126.7	489526.7	489926.7
987509.69	3.216	3.176	3.134	3.090	3.044	2.996
987909.69	3.107	3.069	3.030	2.988	2.945	2.900
988309.69	3.001	2.966	2.929	2.890	2.849	2.807
988709.69	2.899	2.866	2.831	2.794	2.756	2.716
989109.69	2.801	2.770	2.737	2.702	2.666	2.628
989509.69	2.705	2.676	2.645	2.612	2.578	2.542
989909.69	2.613	2.586	2.556	2.525	2.493	2.459
990309.69	2.524	2.498	2.470	2.441	2.411	2.379
990709.69	2.438	2.413	2.387	2.360	2.331	2.300
991109.69	2.355	2.331	2.307	2.281	2.253	2.225
991509.69	2.274	2.252	2.229	2.204	2.178	2.151
991909.69	2.196	2.175	2.153	2.130	2.105	2.079
992309.69	2.121	2.101	2.080	2.058	2.035	2.010
992709.69	2.048	2.029	2.009	1.988	1.966	1.943
993109.69	1.977	1.959	1.941	1.921	1.900	1.878
993509.69	1.909	1.892	1.874	1.855	1.835	1.814
993909.69	1.843	1.827	1.810	1.792	1.773	1.753
994309.69	1.779	1.764	1.748	1.731	1.713	1.694
994709.69	1.717	1.703	1.687	1.671	1.654	1.636
995109.69	1.657	1.643	1.629	1.613	1.597	1.580
995509.69	1.599	1.586	1.572	1.558	1.542	1.526

Y [ft] <- X [ft] ->

	490326.7	490726.7	491126.7	491526.7	491926.7	492326.7
955909.69	3.509	3.423	3.339	3.257	3.175	3.096
956309.69	3.591	3.502	3.415	3.330	3.246	3.163
956709.69	3.673	3.581	3.491	3.403	3.316	3.231
957109.69	3.755	3.660	3.567	3.475	3.386	3.298
957509.69	3.836	3.738	3.642	3.548	3.455	3.365
957909.69	3.917	3.816	3.717	3.620	3.525	3.432
958309.69	3.998	3.893	3.791	3.691	3.593	3.498
958709.69	4.077	3.969	3.864	3.762	3.661	3.563
959109.69	4.155	4.045	3.937	3.831	3.728	3.628
959509.69	4.232	4.119	4.008	3.900	3.795	3.692
959909.69	4.308	4.192	4.079	3.968	3.860	3.754
960309.69	4.383	4.264	4.148	4.035	3.924	3.816
960709.69	4.455	4.334	4.216	4.100	3.987	3.877
961109.69	4.527	4.403	4.282	4.164	4.049	3.937
961509.69	4.596	4.470	4.347	4.227	4.110	3.996
961909.69	4.663	4.535	4.410	4.288	4.169	4.053
962309.69	4.729	4.599	4.472	4.348	4.227	4.109
962709.69	4.793	4.661	4.532	4.407	4.284	4.164
963109.69	4.855	4.722	4.591	4.464	4.339	4.218

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********** THWELLS - version 4.01 ********** PAGE 31

Y [ft] <- X [ft] ->

	490326.7	490726.7	491126.7	491526.7	491926.7	492326.7
963509.69	4.916	4.781	4.649	4.520	4.394	4.270
963909.69	4.974	4.838	4.704	4.574	4.446	4.321
964309.69	5.032	4.894	4.759	4.627	4.498	4.371
964709.69	5.088	4.949	4.812	4.679	4.548	4.420
965109.69	5.142	5.002	4.865	4.730	4.597	4.468
965509.69	5.196	5.055	4.916	4.779	4.646	4.514
965909.69	5.249	5.106	4.966	4.828	4.693	4.560
966309.69	5.301	5.157	5.015	4.875	4.739	4.604
966709.69	5.352	5.207	5.063	4.922	4.784	4.647
967109.69	5.404	5.256	5.111	4.968	4.828	4.690
967509.69	5.454	5.305	5.158	5.013	4.871	4.731
967909.69	5.505	5.354	5.204	5.057	4.913	4.771
968309.69	5.555	5.402	5.250	5.101	4.954	4.810
968709.69	5.606	5.449	5.295	5.143	4.994	4.848
969109.69	5.656	5.496	5.339	5.185	5.033	4.884
969509.69	5.706	5.543	5.382	5.225	5.070	4.919
969909.69	5.755	5.588	5.425	5.264	5.106	4.952
970309.69	5.804	5.633	5.465	5.301	5.140	4.983
970709.69	5.851	5.676	5.504	5.336	5.172	5.012
971109.69	5.897	5.717	5.541	5.369	5.202	5.039
971509.69	5.941	5.756	5.576	5.400	5.229	5.062
971909.69	5.983	5.792	5.607	5.427	5.252	5.083
972309.69	6.020	5.824	5.634	5.450	5.272	5.100
972709.69	6.053	5.852	5.657	5.469	5.288	5.113
973109.69	6.081	5.874	5.675	5.484	5.299	5.121
973509.69	6.102	5.890	5.687	5.492	5.305	5.125
973909.69	6.116	5.900	5.693	5.495	5.306	5.124
974309.69	6.121	5.901	5.691	5.491	5.300	5.117
974709.69	6.117	5.894	5.682	5.480	5.288	5.103
975109.69	6.102	5.877	5.664	5.462	5.269	5.084
975509.69	6.076	5.851	5.638	5.435	5.243	5.058
975909.69	6.039	5.815	5.603	5.401	5.209	5.026
976309.69	5.990	5.768	5.558	5.359	5.169	4.988
976709.69	5.930	5.712	5.505	5.309	5.121	4.943
977109.69	5.859	5.646	5.444	5.251	5.067	4.891
977509.69	5.778	5.571	5.374	5.186	5.006	4.834
977909.69	5.688	5.488	5.297	5.114	4.939	4.771
978309.69	5.590	5.397	5.212	5.036	4.866	4.703
978709.69	5.484	5.300	5.122	4.952	4.788	4.630
979109.69	5.372	5.197	5.027	4.863	4.705	4.553

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********** THWELLS - version 4.01 ********** PAGE 32

Y [ft] <- X [ft] ->

	490326.7	490726.7	491126.7	491526.7	491926.7	492326.7
979509.69	5.256	5.089	4.927	4.770	4.619	4.472
979909.69	5.136	4.978	4.824	4.674	4.529	4.388
980309.69	5.013	4.864	4.717	4.575	4.436	4.301
980709.69	4.889	4.747	4.609	4.473	4.341	4.212
981109.69	4.763	4.630	4.499	4.370	4.244	4.121
981509.69	4.637	4.512	4.388	4.266	4.146	4.029
981909.69	4.511	4.394	4.277	4.161	4.047	3.935
982309.69	4.387	4.276	4.166	4.056	3.948	3.842
982709.69	4.263	4.159	4.055	3.951	3.849	3.748
983109.69	4.141	4.043	3.945	3.847	3.750	3.654
983509.69	4.020	3.928	3.836	3.744	3.652	3.560
983909.69	3.902	3.815	3.728	3.641	3.554	3.468
984309.69	3.786	3.704	3.622	3.540	3.458	3.375
984709.69	3.672	3.595	3.518	3.440	3.362	3.284
985109.69	3.561	3.489	3.416	3.342	3.268	3.194

985509.69	3.452	3.384	3.315	3.246	3.176	3.106
985909.69	3.346	3.282	3.217	3.151	3.085	3.018
986309.69	3.242	3.182	3.121	3.058	2.996	2.933
986709.69	3.141	3.084	3.026	2.968	2.908	2.848
987109.69	3.043	2.989	2.934	2.879	2.822	2.766
987509.69	2.947	2.896	2.844	2.792	2.738	2.684
987909.69	2.853	2.806	2.757	2.707	2.656	2.605
988309.69	2.763	2.718	2.671	2.624	2.576	2.527
988709.69	2.674	2.632	2.588	2.543	2.498	2.451
989109.69	2.589	2.548	2.507	2.464	2.421	2.377
989509.69	2.505	2.467	2.428	2.387	2.346	2.305
989909.69	2.424	2.388	2.351	2.313	2.274	2.234
990309.69	2.345	2.311	2.276	2.240	2.203	2.165
990709.69	2.269	2.236	2.203	2.169	2.133	2.097
991109.69	2.195	2.164	2.132	2.099	2.066	2.032
991509.69	2.123	2.093	2.063	2.032	2.000	1.968
991909.69	2.053	2.025	1.996	1.967	1.936	1.905
992309.69	1.985	1.958	1.931	1.903	1.874	1.845
992709.69	1.919	1.894	1.868	1.841	1.814	1.786
993109.69	1.855	1.831	1.806	1.781	1.755	1.728
993509.69	1.793	1.770	1.747	1.722	1.698	1.672
993909.69	1.732	1.711	1.689	1.666	1.642	1.618
994309.69	1.674	1.653	1.632	1.610	1.588	1.565
994709.69	1.617	1.598	1.578	1.557	1.535	1.513
995109.69	1.562	1.544	1.525	1.505	1.484	1.463

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Y [ft] <- X [ft] ->

	490326.7	490726.7	491126.7	491526.7	491926.7	492326.7
995509.69	1.509	1.491	1.473	1.454	1.435	1.415

Y [ft] <- X [ft] ->

	492726.7	493126.7	493526.7	493926.7	494326.7	494726.7
955909.69	3.017	2.940	2.864	2.790	2.716	2.645
956309.69	3.082	3.002	2.924	2.848	2.773	2.699
956709.69	3.147	3.065	2.985	2.906	2.828	2.753
957109.69	3.212	3.127	3.045	2.964	2.884	2.806
957509.69	3.276	3.190	3.105	3.021	2.940	2.860
957909.69	3.340	3.251	3.164	3.078	2.995	2.913
958309.69	3.404	3.312	3.223	3.135	3.049	2.966
958709.69	3.467	3.373	3.281	3.191	3.104	3.018
959109.69	3.529	3.433	3.339	3.247	3.157	3.069
959509.69	3.591	3.492	3.396	3.302	3.210	3.120
959909.69	3.651	3.551	3.453	3.356	3.263	3.171
960309.69	3.711	3.608	3.508	3.410	3.314	3.221
960709.69	3.770	3.665	3.563	3.463	3.365	3.270
961109.69	3.828	3.721	3.616	3.514	3.415	3.318
961509.69	3.884	3.775	3.669	3.565	3.464	3.365
961909.69	3.940	3.829	3.721	3.615	3.512	3.411
962309.69	3.994	3.881	3.772	3.664	3.559	3.457
962709.69	4.047	3.933	3.821	3.712	3.606	3.501
963109.69	4.099	3.983	3.870	3.759	3.651	3.545
963509.69	4.150	4.032	3.917	3.805	3.695	3.587
963909.69	4.199	4.080	3.963	3.849	3.738	3.629
964309.69	4.248	4.127	4.009	3.893	3.780	3.669
964709.69	4.295	4.172	4.053	3.935	3.821	3.709
965109.69	4.341	4.217	4.095	3.977	3.860	3.747
965509.69	4.386	4.260	4.137	4.017	3.899	3.784

965909.69	4.430	4.302	4.178	4.056	3.936	3.820
966309.69	4.472	4.343	4.217	4.093	3.973	3.855
966709.69	4.514	4.383	4.255	4.130	4.008	3.888
967109.69	4.554	4.422	4.292	4.165	4.041	3.920
967509.69	4.594	4.459	4.328	4.199	4.074	3.951
967909.69	4.632	4.496	4.362	4.232	4.104	3.980
968309.69	4.669	4.530	4.395	4.263	4.134	4.008
968709.69	4.704	4.564	4.427	4.293	4.162	4.034
969109.69	4.738	4.596	4.456	4.320	4.188	4.059
969509.69	4.771	4.626	4.484	4.347	4.212	4.081
969909.69	4.801	4.654	4.511	4.371	4.235	4.102
970309.69	4.830	4.680	4.535	4.393	4.255	4.121
970709.69	4.856	4.704	4.556	4.413	4.273	4.137
971109.69	4.880	4.726	4.576	4.430	4.289	4.151

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********** THWELLS - version 4.01 ********** PAGE 34

Y [ft] <- X [ft] ->

	492726.7	493126.7	493526.7	493926.7	494326.7	494726.7
971509.69	4.901	4.744	4.592	4.445	4.302	4.163
971909.69	4.919	4.760	4.606	4.457	4.312	4.172
972309.69	4.933	4.772	4.616	4.465	4.319	4.178
972709.69	4.944	4.781	4.623	4.470	4.323	4.181
973109.69	4.950	4.785	4.626	4.472	4.324	4.181
973509.69	4.952	4.785	4.625	4.470	4.321	4.177
973909.69	4.949	4.781	4.620	4.464	4.314	4.170
974309.69	4.941	4.772	4.610	4.454	4.304	4.159
974709.69	4.927	4.758	4.595	4.439	4.289	4.145
975109.69	4.908	4.739	4.576	4.420	4.271	4.126
975509.69	4.882	4.714	4.552	4.397	4.248	4.104
975909.69	4.851	4.684	4.523	4.369	4.221	4.078
976309.69	4.814	4.648	4.489	4.337	4.190	4.049
976709.69	4.772	4.608	4.451	4.300	4.155	4.015
977109.69	4.723	4.562	4.407	4.259	4.116	3.978
977509.69	4.669	4.511	4.359	4.213	4.072	3.937
977909.69	4.610	4.456	4.307	4.164	4.026	3.893
978309.69	4.546	4.396	4.250	4.110	3.976	3.845
978709.69	4.478	4.331	4.190	4.054	3.922	3.795
979109.69	4.406	4.264	4.126	3.994	3.865	3.741
979509.69	4.330	4.193	4.060	3.931	3.806	3.685
979909.69	4.251	4.119	3.990	3.865	3.744	3.627
980309.69	4.170	4.042	3.918	3.797	3.680	3.566
980709.69	4.086	3.963	3.844	3.727	3.614	3.504
981109.69	4.000	3.883	3.768	3.655	3.546	3.440
981509.69	3.913	3.800	3.690	3.582	3.477	3.374
981909.69	3.825	3.717	3.612	3.508	3.407	3.307
982309.69	3.737	3.634	3.532	3.433	3.335	3.240
982709.69	3.648	3.549	3.452	3.357	3.263	3.171
983109.69	3.559	3.465	3.372	3.281	3.191	3.102
983509.69	3.470	3.380	3.292	3.204	3.118	3.033
983909.69	3.381	3.296	3.211	3.128	3.045	2.964
984309.69	3.294	3.212	3.131	3.051	2.972	2.894
984709.69	3.206	3.129	3.052	2.976	2.900	2.825
985109.69	3.120	3.047	2.973	2.900	2.828	2.756
985509.69	3.035	2.965	2.895	2.825	2.756	2.688
985909.69	2.952	2.885	2.818	2.752	2.685	2.620
986309.69	2.869	2.805	2.742	2.678	2.615	2.552
986709.69	2.788	2.727	2.667	2.606	2.546	2.486
987109.69	2.708	2.651	2.593	2.535	2.477	2.420

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********** THWELLS - version 4.01 ********** PAGE 35

Y [ft]	<- X [ft] ->					
	492726.7	493126.7	493526.7	493926.7	494326.7	494726.7
987509.69	2.630	2.575	2.520	2.465	2.410	2.355
987909.69	2.553	2.501	2.449	2.396	2.344	2.291
988309.69	2.478	2.428	2.379	2.328	2.278	2.228
988709.69	2.405	2.357	2.310	2.262	2.214	2.166
989109.69	2.333	2.288	2.242	2.197	2.151	2.105
989509.69	2.262	2.219	2.176	2.133	2.089	2.045
989909.69	2.194	2.153	2.112	2.070	2.028	1.986
990309.69	2.126	2.088	2.048	2.009	1.969	1.929
990709.69	2.061	2.024	1.986	1.949	1.911	1.872
991109.69	1.997	1.962	1.926	1.890	1.854	1.817
991509.69	1.935	1.901	1.867	1.833	1.798	1.763
991909.69	1.874	1.842	1.809	1.777	1.743	1.710
992309.69	1.815	1.784	1.753	1.722	1.690	1.658
992709.69	1.757	1.728	1.698	1.668	1.638	1.608
993109.69	1.701	1.673	1.645	1.616	1.587	1.558
993509.69	1.646	1.620	1.593	1.566	1.538	1.510
993909.69	1.593	1.568	1.542	1.516	1.490	1.463
994309.69	1.541	1.517	1.493	1.468	1.443	1.417
994709.69	1.491	1.468	1.444	1.421	1.397	1.372
995109.69	1.442	1.420	1.398	1.375	1.352	1.329
995509.69	1.394	1.373	1.352	1.330	1.308	1.286

Y [ft]	<- X [ft] ->					
	495126.7	495526.7	495926.7	496326.7	496726.7	497126.7
955909.69	2.574	2.505	2.438	2.371	2.306	2.243
956309.69	2.626	2.556	2.486	2.418	2.351	2.286
956709.69	2.678	2.606	2.534	2.464	2.396	2.329
957109.69	2.730	2.655	2.582	2.511	2.441	2.372
957509.69	2.782	2.705	2.630	2.557	2.485	2.415
957909.69	2.833	2.754	2.677	2.602	2.529	2.457
958309.69	2.883	2.803	2.725	2.648	2.573	2.499
958709.69	2.934	2.852	2.771	2.693	2.616	2.541
959109.69	2.983	2.899	2.817	2.737	2.659	2.582
959509.69	3.033	2.947	2.863	2.781	2.701	2.623
959909.69	3.081	2.994	2.908	2.824	2.743	2.663
960309.69	3.129	3.040	2.953	2.867	2.784	2.703
960709.69	3.176	3.085	2.996	2.909	2.825	2.742
961109.69	3.223	3.130	3.039	2.951	2.865	2.780
961509.69	3.268	3.174	3.082	2.992	2.904	2.818
961909.69	3.313	3.217	3.123	3.032	2.942	2.855
962309.69	3.357	3.259	3.164	3.071	2.980	2.891
962709.69	3.400	3.301	3.204	3.109	3.017	2.927
963109.69	3.442	3.341	3.243	3.146	3.053	2.961

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Y [ft]	<- X [ft] ->					
	495126.7	495526.7	495926.7	496326.7	496726.7	497126.7
963509.69	3.483	3.380	3.280	3.183	3.088	2.995
963909.69	3.523	3.419	3.317	3.218	3.122	3.028
964309.69	3.562	3.456	3.353	3.253	3.155	3.060
964709.69	3.599	3.493	3.388	3.287	3.187	3.090
965109.69	3.636	3.528	3.422	3.319	3.218	3.120
965509.69	3.672	3.562	3.455	3.350	3.248	3.149

965909.69	3.706	3.595	3.486	3.380	3.277	3.177
966309.69	3.739	3.627	3.517	3.409	3.305	3.203
966709.69	3.771	3.657	3.546	3.437	3.331	3.228
967109.69	3.802	3.686	3.573	3.464	3.357	3.252
967509.69	3.831	3.714	3.600	3.489	3.380	3.275
967909.69	3.859	3.740	3.625	3.512	3.403	3.296
968309.69	3.885	3.765	3.648	3.535	3.424	3.316
968709.69	3.910	3.788	3.670	3.555	3.443	3.334
969109.69	3.933	3.810	3.690	3.574	3.461	3.351
969509.69	3.954	3.830	3.709	3.592	3.477	3.366
969909.69	3.973	3.848	3.726	3.607	3.492	3.380
970309.69	3.990	3.863	3.740	3.621	3.504	3.391
970709.69	4.005	3.877	3.753	3.632	3.515	3.401
971109.69	4.018	3.889	3.763	3.642	3.524	3.409
971509.69	4.028	3.898	3.772	3.649	3.530	3.415
971909.69	4.036	3.905	3.777	3.654	3.534	3.418
972309.69	4.041	3.909	3.781	3.656	3.536	3.420
972709.69	4.043	3.910	3.781	3.657	3.536	3.419
973109.69	4.042	3.908	3.779	3.654	3.533	3.416
973509.69	4.038	3.904	3.774	3.649	3.528	3.411
973909.69	4.031	3.896	3.766	3.641	3.520	3.403
974309.69	4.020	3.885	3.756	3.630	3.509	3.392
974709.69	4.005	3.871	3.742	3.617	3.496	3.379
975109.69	3.988	3.854	3.725	3.600	3.480	3.364
975509.69	3.966	3.833	3.705	3.581	3.461	3.346
975909.69	3.941	3.809	3.682	3.559	3.440	3.325
976309.69	3.913	3.782	3.655	3.534	3.416	3.302
976709.69	3.881	3.751	3.626	3.506	3.389	3.277
977109.69	3.845	3.717	3.594	3.475	3.360	3.249
977509.69	3.807	3.681	3.559	3.442	3.328	3.219
977909.69	3.765	3.641	3.521	3.406	3.294	3.186
978309.69	3.720	3.598	3.481	3.367	3.258	3.152
978709.69	3.672	3.553	3.438	3.327	3.219	3.115
979109.69	3.621	3.505	3.393	3.284	3.178	3.076

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********** THWELLS - version 4.01 ********** PAGE 37

Y [ft] <- X [ft] ->

	495126.7	495526.7	495926.7	496326.7	496726.7	497126.7
979509.69	3.568	3.455	3.345	3.239	3.135	3.035
979909.69	3.513	3.403	3.295	3.192	3.091	2.993
980309.69	3.456	3.348	3.244	3.143	3.045	2.949
980709.69	3.397	3.292	3.191	3.092	2.997	2.904
981109.69	3.336	3.235	3.136	3.041	2.948	2.857
981509.69	3.274	3.176	3.081	2.988	2.897	2.809
981909.69	3.210	3.116	3.024	2.934	2.846	2.760
982309.69	3.146	3.055	2.966	2.878	2.793	2.710
982709.69	3.081	2.993	2.907	2.823	2.740	2.659
983109.69	3.016	2.931	2.848	2.766	2.686	2.608
983509.69	2.950	2.868	2.788	2.709	2.632	2.556
983909.69	2.884	2.805	2.728	2.652	2.577	2.504
984309.69	2.818	2.742	2.667	2.594	2.522	2.452
984709.69	2.751	2.679	2.607	2.536	2.467	2.399
985109.69	2.685	2.616	2.547	2.479	2.412	2.346
985509.69	2.620	2.553	2.487	2.421	2.357	2.293
985909.69	2.555	2.490	2.427	2.364	2.302	2.241
986309.69	2.490	2.428	2.367	2.307	2.247	2.188
986709.69	2.426	2.367	2.308	2.250	2.193	2.136
987109.69	2.363	2.306	2.250	2.194	2.139	2.084
987509.69	2.300	2.246	2.192	2.138	2.085	2.033
987909.69	2.239	2.187	2.135	2.083	2.032	1.982

988309.69	2.178	2.128	2.078	2.029	1.980	1.931
988709.69	2.118	2.070	2.023	1.975	1.928	1.882
989109.69	2.059	2.013	1.968	1.922	1.877	1.832
989509.69	2.001	1.957	1.914	1.870	1.827	1.784
989909.69	1.944	1.902	1.861	1.819	1.777	1.736
990309.69	1.889	1.848	1.808	1.768	1.728	1.689
990709.69	1.834	1.796	1.757	1.719	1.680	1.642
991109.69	1.780	1.744	1.707	1.670	1.633	1.597
991509.69	1.728	1.693	1.657	1.622	1.587	1.552
991909.69	1.676	1.643	1.609	1.575	1.541	1.508
992309.69	1.626	1.594	1.562	1.529	1.497	1.464
992709.69	1.577	1.546	1.515	1.484	1.453	1.422
993109.69	1.529	1.499	1.470	1.440	1.410	1.380
993509.69	1.482	1.454	1.425	1.397	1.368	1.340
993909.69	1.436	1.409	1.382	1.355	1.327	1.300
994309.69	1.391	1.365	1.339	1.313	1.287	1.261
994709.69	1.348	1.323	1.298	1.273	1.248	1.223
995109.69	1.305	1.281	1.258	1.234	1.209	1.185

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********** THWELLS - version 4.01 ********** PAGE 38

Y [ft]	<- X [ft] ->					
	495126.7	495526.7	495926.7	496326.7	496726.7	497126.7
995509.69	1.264	1.241	1.218	1.195	1.172	1.149

Y [ft]	<- X [ft] ->					
	497526.7	497926.7	498326.7	498726.7	499126.7	499526.7
955909.69	2.180	2.119	2.059	2.001	1.943	1.887
956309.69	2.222	2.159	2.098	2.038	1.979	1.922
956709.69	2.264	2.199	2.137	2.075	2.015	1.957
957109.69	2.305	2.239	2.175	2.112	2.051	1.991
957509.69	2.346	2.279	2.213	2.149	2.086	2.025
957909.69	2.387	2.318	2.251	2.185	2.121	2.059
958309.69	2.427	2.357	2.289	2.222	2.156	2.092
958709.69	2.467	2.396	2.326	2.257	2.191	2.125
959109.69	2.507	2.434	2.363	2.293	2.225	2.158
959509.69	2.546	2.472	2.399	2.328	2.258	2.191
959909.69	2.585	2.509	2.435	2.362	2.292	2.223
960309.69	2.623	2.546	2.470	2.396	2.324	2.254
960709.69	2.661	2.582	2.505	2.430	2.357	2.285
961109.69	2.698	2.618	2.539	2.463	2.388	2.315
961509.69	2.734	2.653	2.573	2.495	2.419	2.345
961909.69	2.770	2.687	2.606	2.527	2.450	2.375
962309.69	2.805	2.720	2.638	2.558	2.479	2.403
962709.69	2.839	2.753	2.669	2.588	2.508	2.431
963109.69	2.872	2.785	2.700	2.617	2.537	2.458
963509.69	2.904	2.816	2.730	2.646	2.564	2.485
963909.69	2.936	2.846	2.759	2.674	2.591	2.510
964309.69	2.966	2.876	2.787	2.701	2.617	2.535
964709.69	2.996	2.904	2.814	2.727	2.642	2.559
965109.69	3.025	2.931	2.840	2.752	2.666	2.582
965509.69	3.052	2.958	2.866	2.776	2.689	2.604
965909.69	3.078	2.983	2.890	2.799	2.711	2.625
966309.69	3.104	3.007	2.913	2.821	2.732	2.645
966709.69	3.128	3.030	2.935	2.842	2.752	2.664
967109.69	3.151	3.052	2.955	2.862	2.771	2.682
967509.69	3.172	3.072	2.975	2.880	2.788	2.699
967909.69	3.192	3.091	2.993	2.898	2.805	2.714
968309.69	3.211	3.109	3.010	2.914	2.820	2.729

968709.69	3.229	3.126	3.025	2.928	2.834	2.742
969109.69	3.244	3.140	3.039	2.941	2.846	2.753
969509.69	3.259	3.154	3.052	2.953	2.857	2.764
969909.69	3.271	3.165	3.063	2.963	2.867	2.773
970309.69	3.282	3.175	3.072	2.972	2.875	2.780
970709.69	3.291	3.184	3.080	2.979	2.881	2.786
971109.69	3.298	3.190	3.086	2.984	2.886	2.791

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********** THWELLS - version 4.01 ********** PAGE 39

Y [ft] <- X [ft] ->

	497526.7	497926.7	498326.7	498726.7	499126.7	499526.7
971509.69	3.303	3.195	3.090	2.988	2.890	2.794
971909.69	3.306	3.198	3.092	2.990	2.891	2.795
972309.69	3.307	3.198	3.093	2.990	2.891	2.795
972709.69	3.306	3.197	3.091	2.988	2.889	2.793
973109.69	3.303	3.193	3.087	2.985	2.885	2.789
973509.69	3.297	3.188	3.082	2.979	2.880	2.784
973909.69	3.289	3.180	3.074	2.972	2.872	2.776
974309.69	3.279	3.170	3.064	2.962	2.863	2.767
974709.69	3.267	3.158	3.052	2.951	2.852	2.757
975109.69	3.252	3.143	3.038	2.937	2.839	2.744
975509.69	3.234	3.127	3.022	2.922	2.824	2.730
975909.69	3.215	3.108	3.004	2.904	2.807	2.714
976309.69	3.193	3.087	2.984	2.885	2.789	2.696
976709.69	3.168	3.063	2.962	2.863	2.768	2.676
977109.69	3.142	3.038	2.937	2.840	2.746	2.655
977509.69	3.113	3.010	2.911	2.815	2.722	2.632
977909.69	3.082	2.981	2.883	2.788	2.697	2.608
978309.69	3.049	2.949	2.853	2.760	2.669	2.582
978709.69	3.014	2.916	2.821	2.730	2.641	2.554
979109.69	2.977	2.881	2.788	2.698	2.610	2.525
979509.69	2.938	2.844	2.753	2.664	2.579	2.495
979909.69	2.898	2.806	2.717	2.630	2.545	2.464
980309.69	2.856	2.766	2.679	2.594	2.511	2.431
980709.69	2.813	2.725	2.640	2.557	2.476	2.397
981109.69	2.769	2.683	2.599	2.518	2.439	2.362
981509.69	2.723	2.639	2.558	2.479	2.402	2.327
981909.69	2.676	2.595	2.516	2.439	2.363	2.290
982309.69	2.629	2.550	2.473	2.397	2.324	2.253
982709.69	2.581	2.504	2.429	2.356	2.284	2.215
983109.69	2.532	2.457	2.384	2.313	2.244	2.176
983509.69	2.482	2.410	2.339	2.270	2.203	2.137
983909.69	2.432	2.362	2.294	2.227	2.161	2.097
984309.69	2.382	2.314	2.248	2.183	2.119	2.057
984709.69	2.332	2.266	2.202	2.139	2.077	2.017
985109.69	2.281	2.218	2.156	2.095	2.035	1.976
985509.69	2.231	2.170	2.109	2.050	1.992	1.935
985909.69	2.180	2.121	2.063	2.006	1.950	1.895
986309.69	2.130	2.073	2.017	1.961	1.907	1.854
986709.69	2.080	2.025	1.971	1.917	1.865	1.813
987109.69	2.030	1.977	1.925	1.873	1.822	1.772

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********** THWELLS - version 4.01 ********** PAGE 40

Y [ft] <- X [ft] ->

	497526.7	497926.7	498326.7	498726.7	499126.7	499526.7
987509.69	1.981	1.930	1.879	1.829	1.780	1.732
987909.69	1.932	1.882	1.834	1.786	1.738	1.692

988309.69	1.883	1.836	1.789	1.742	1.697	1.652
988709.69	1.835	1.790	1.744	1.700	1.655	1.612
989109.69	1.788	1.744	1.700	1.657	1.615	1.572
989509.69	1.741	1.699	1.657	1.615	1.574	1.533
989909.69	1.695	1.654	1.613	1.574	1.534	1.495
990309.69	1.649	1.610	1.571	1.533	1.494	1.457
990709.69	1.604	1.567	1.529	1.492	1.455	1.419
991109.69	1.560	1.524	1.488	1.452	1.417	1.382
991509.69	1.517	1.482	1.447	1.413	1.379	1.345
991909.69	1.474	1.440	1.407	1.374	1.341	1.309
992309.69	1.432	1.400	1.368	1.336	1.305	1.273
992709.69	1.391	1.360	1.329	1.299	1.268	1.238
993109.69	1.351	1.321	1.291	1.262	1.233	1.204
993509.69	1.311	1.283	1.254	1.226	1.198	1.170
993909.69	1.272	1.245	1.218	1.191	1.164	1.137
994309.69	1.234	1.208	1.182	1.156	1.130	1.104
994709.69	1.197	1.172	1.147	1.122	1.097	1.072
995109.69	1.161	1.137	1.113	1.089	1.065	1.041
995509.69	1.126	1.102	1.079	1.056	1.033	1.010

Y [ft] <- X [ft] ->

	499926.7	500326.7	500726.7	501126.7	501526.7	501926.7
955909.69	1.833	1.779	1.727	1.675	1.625	1.577
956309.69	1.866	1.811	1.758	1.705	1.654	1.604
956709.69	1.899	1.843	1.788	1.735	1.683	1.632
957109.69	1.932	1.875	1.819	1.764	1.711	1.659
957509.69	1.965	1.907	1.849	1.794	1.739	1.686
957909.69	1.998	1.938	1.880	1.823	1.767	1.713
958309.69	2.030	1.969	1.909	1.851	1.795	1.740
958709.69	2.062	2.000	1.939	1.880	1.822	1.766
959109.69	2.093	2.030	1.968	1.908	1.849	1.792
959509.69	2.125	2.060	1.997	1.936	1.876	1.818
959909.69	2.155	2.090	2.026	1.963	1.902	1.843
960309.69	2.186	2.119	2.054	1.990	1.928	1.868
960709.69	2.215	2.147	2.081	2.016	1.954	1.892
961109.69	2.245	2.175	2.108	2.042	1.978	1.916
961509.69	2.273	2.203	2.135	2.068	2.003	1.940
961909.69	2.301	2.230	2.160	2.093	2.027	1.963
962309.69	2.329	2.256	2.186	2.117	2.050	1.985
962709.69	2.356	2.282	2.210	2.141	2.073	2.007
963109.69	2.382	2.307	2.234	2.164	2.095	2.028

♀

Y [ft] <- X [ft] ->

	499926.7	500326.7	500726.7	501126.7	501526.7	501926.7
963509.69	2.407	2.331	2.258	2.186	2.116	2.048
963909.69	2.432	2.355	2.280	2.208	2.137	2.068
964309.69	2.455	2.378	2.302	2.229	2.157	2.088
964709.69	2.478	2.400	2.323	2.249	2.176	2.106
965109.69	2.500	2.421	2.343	2.268	2.195	2.124
965509.69	2.521	2.441	2.363	2.286	2.212	2.141
965909.69	2.541	2.460	2.381	2.304	2.229	2.157
966309.69	2.561	2.478	2.398	2.321	2.245	2.172
966709.69	2.579	2.496	2.415	2.337	2.260	2.186
967109.69	2.596	2.512	2.430	2.351	2.274	2.200
967509.69	2.612	2.527	2.445	2.365	2.287	2.212
967909.69	2.626	2.541	2.458	2.378	2.300	2.224
968309.69	2.640	2.554	2.471	2.389	2.311	2.234

♀
********** THWELLS - version 4.01 ********** PAGE 44

Y [ft]	<- X [ft] ->			
	502326.7	502726.7	503126.7	503526.7
971509.69	2.202	2.127	2.055	1.985
971909.69	2.202	2.127	2.055	1.985
972309.69	2.201	2.126	2.054	1.984
972709.69	2.199	2.124	2.052	1.982
973109.69	2.195	2.121	2.048	1.978
973509.69	2.190	2.116	2.044	1.974
973909.69	2.184	2.110	2.038	1.969
974309.69	2.177	2.103	2.032	1.962
974709.69	2.169	2.095	2.024	1.955
975109.69	2.159	2.086	2.015	1.946
975509.69	2.149	2.076	2.005	1.937
975909.69	2.136	2.064	1.994	1.926
976309.69	2.123	2.051	1.982	1.914
976709.69	2.109	2.038	1.969	1.902
977109.69	2.093	2.023	1.954	1.888
977509.69	2.077	2.007	1.939	1.874
977909.69	2.059	1.990	1.923	1.858
978309.69	2.040	1.972	1.906	1.842
978709.69	2.020	1.953	1.887	1.824
979109.69	1.999	1.933	1.868	1.806
979509.69	1.978	1.912	1.849	1.787
979909.69	1.955	1.890	1.828	1.767
980309.69	1.931	1.868	1.806	1.747
980709.69	1.907	1.845	1.784	1.725
981109.69	1.882	1.821	1.761	1.703
981509.69	1.856	1.796	1.738	1.681
981909.69	1.829	1.771	1.713	1.658
982309.69	1.802	1.745	1.689	1.634
982709.69	1.775	1.718	1.663	1.610
983109.69	1.746	1.691	1.637	1.585
983509.69	1.718	1.664	1.611	1.560
983909.69	1.689	1.636	1.585	1.535
984309.69	1.659	1.608	1.558	1.509
984709.69	1.630	1.579	1.531	1.483
985109.69	1.600	1.551	1.503	1.456
985509.69	1.570	1.522	1.475	1.430
985909.69	1.539	1.493	1.447	1.403
986309.69	1.509	1.464	1.420	1.376
986709.69	1.478	1.434	1.391	1.349
987109.69	1.448	1.405	1.363	1.322

♀
********** THWELLS - version 4.01 ********** PAGE 45

Y [ft]	<- X [ft] ->			
	502326.7	502726.7	503126.7	503526.7
987509.69	1.417	1.376	1.335	1.295
987909.69	1.387	1.347	1.307	1.268
988309.69	1.356	1.317	1.279	1.241
988709.69	1.326	1.288	1.251	1.214
989109.69	1.296	1.259	1.223	1.188
989509.69	1.266	1.230	1.195	1.161
989909.69	1.236	1.202	1.168	1.134
990309.69	1.207	1.173	1.140	1.108
990709.69	1.178	1.145	1.113	1.082

991109.69	1.149	1.117	1.086	1.056
991509.69	1.120	1.090	1.060	1.030
991909.69	1.092	1.062	1.033	1.005
992309.69	1.064	1.035	1.007	0.980
992709.69	1.036	1.009	0.981	0.955
993109.69	1.009	0.982	0.956	0.930
993509.69	0.982	0.956	0.931	0.906
993909.69	0.955	0.931	0.906	0.882
994309.69	0.929	0.905	0.882	0.859
994709.69	0.904	0.881	0.858	0.835
995109.69	0.879	0.856	0.834	0.813
995509.69	0.854	0.832	0.811	0.790

♀

CLEAR CREEK ASSOCIATES

Practical Solutions
In Groundwater Science

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ARIZONA DEPARTMENT
OF WATER RESOURCES

6155 East Indian School Rd.
Suite 200
Scottsdale, Arizona 85251
480-659-7131 office
480-659-7143 fax
www.clearcreekassociates.com

November 10, 2015

Arizona Department of Water Resources
Water Management Division
3550 North Central Avenue
Phoenix, Arizona 85012

Festival Ranch Well PW-4 Permit Application Submittal
Buckeye, Arizona

To Whom It May Concern:

Enclosed is the permit application package for the Festival Ranch Well PW-4. We anticipate drilling to begin in January 2016. If you have any questions, please feel free to contact us at (480) 659-7131.

Sincerely,

CLEAR CREEK ASSOCIATES, PLC

Geno Mammini, R.G.
Senior Project Hydrogeologist

Attachments

Printed: 12/3/2015 10:54:53 AM

Arizona Department of Water Resources

3550 N Central Ave.
Phoenix AZ 85012

Customer:

CLEAR CREEK ASSOCIATES PLC
6155 E. INDIAN SCHOOL RD SUITE
200
SCOTTSDALE, AZ 85251

Receipt #: 16-42805
Office: MAIN OFFICE
Receipt Date: 12/03/2015
Sale Type: IN_PERSON
Cashier: WRSAM

Item No.	Index	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
70610	15245	4439-TT	Application for permit to drill non-exempt wel in an active management area	225583	1	180.00	180.00
						RECEIPT TOTAL:	**180.00**

Payment type: CHECK
Amount Paid: $180.00
Payment Received Date: 12/03/2015

Check # 20876

Notes: FROM TTA.

No refund without valid receipt