Sky Hi Domestic Water Improvement District Preliminary Engineering Report

PAINTED SKY ENGINEERING AND SURVEY, LLC

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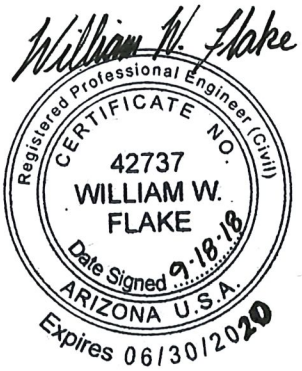
Show Low, AZ 85901
(928) 537-7218

September 18, 2018



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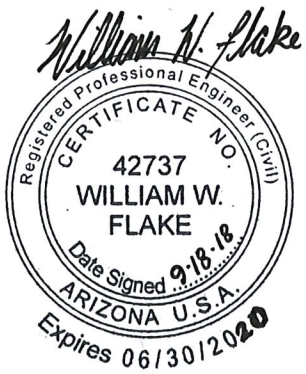


1.0 PROJECT PLANNING

The Sky Hi Domestic Water Improvement District (Sky Hi DWID) is located in eastern Arizona in a portion of the non-incorporated areas of Navajo County. The Sky Hi development is located approximately three (3) miles north of the Country Club area at the south end of Pinetop. The Sky Hi DWID water system identification number is AZ04-09028. A map showing the general location of the site is shown in Figure 1.

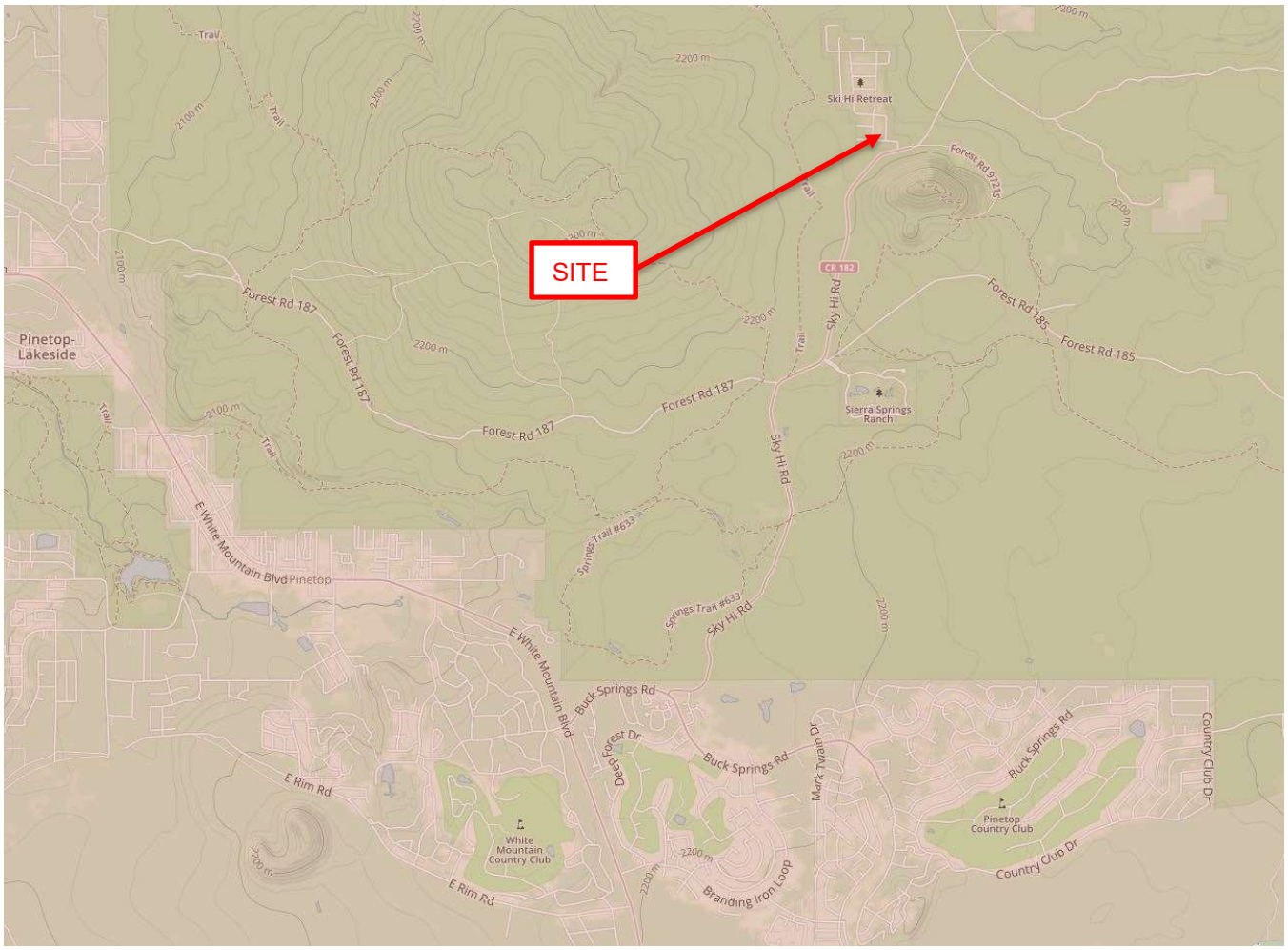


Figure 1. Location Map

The project site is located at 112 N. Aztec Circle, Pinetop, Arizona. A Site Map is shown in Figure 2 that indicates the location of the site in the Sky Hi Development. The purpose of this report is to provide the required information as required in the simplified Preliminary Engineering Report.

The site is located on two (2) parcels within the Sky Hi Development. Both parcels together comprise an area of 0.68 acres. The entire site has been disturbed when it was constructed, leaving no areas in a natural condition. An Environmental Report was completed for the project by a separate report. The site is a fenced area that has been disturbed when the water production site was constructed. It is not expected that any endangered species will be affected with the project. The Environmental Report indicates a mapped wetland on the site itself, however it appears the wetland should be located in the existing wash that flows north of the site. There is no physical evidence of wetlands on the site, therefore no wetlands will be disturbed with the project.

Figure 2. Site Map

2.0 EXISTING FACILITIES

The location of the water production site for the Sky Hi development is indicated on Figure 2. A more detailed aerial photograph of the site is shown in Figure 3.

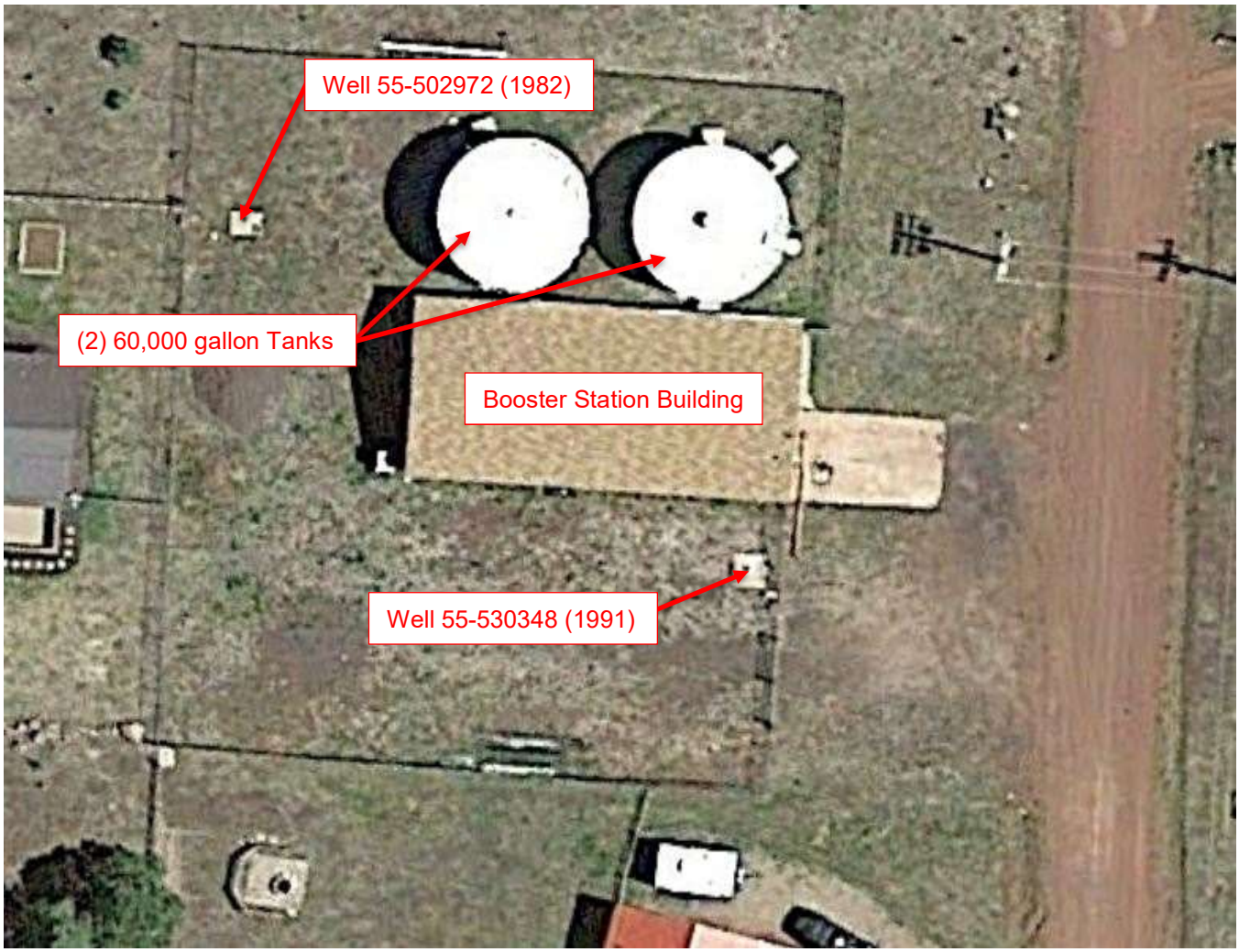


Figure 3. Existing Facilities Map

The facility has two (2) existing wells at the site. Based on ADWR records, the well on the south side of the booster station building (55-530348) is 430 feet in depth and was estimated to be constructed in 1991. The well northwest of the booster station building (55-502972) is 442 feet in depth and was constructed in 1982. The site also has two (2) 60,000 water storage tanks that provide storage for the water system. There is also a booster station building that is used to boost the pressure for the entire water system. A photo of the site taken from the southeast corner of the site is shown below in Figure 4. One of the wells can be seen in the photo along with the booster station building (green roof building).

Figure 4. Site Photo

All of the water distribution components seem to be in good working order when there is sufficient groundwater supply. The system uses the wells to fill the two 60,000 gallon water storage tanks. Each well has a pump that is capable of pumping approximately 30 gpm. From the tanks, a booster station is used to increase the pressure of the system. The system typically ranges in pressure from 50 psi to 60 psi. The booster station utilizes two (2) 15 HP booster pumps that typically alternate pumping approximately 210 gpm each. During times of high demands, both booster station pumps turn on pumping approximately 420 gpm into the system.

The District provided demand data for 2016, 2017 and the first seven months of 2018. Using the available data for these three years, the average daily demand was estimated for each month. The results are indicated in Table 2.

Table 1. Average Monthly Daily Demands

Month	Average Monthly Daily Demand (gpd)
January	8,220
February	6,807
March	9,615
April	9,539
May	10,738
June	26,757
July	22,661
August	16,214
September	15,680
October	9,397
November	9,132
December	7,673

3.0 NEED FOR PROJECT

It has been well documented that much of the Southwest United States are in drought conditions. The project area in Navajo County, Arizona is experiencing these drought conditions. A map of the current drought conditions for all of Arizona is shown on Figure 5. The information was provided by the "droughtmonitor" website.

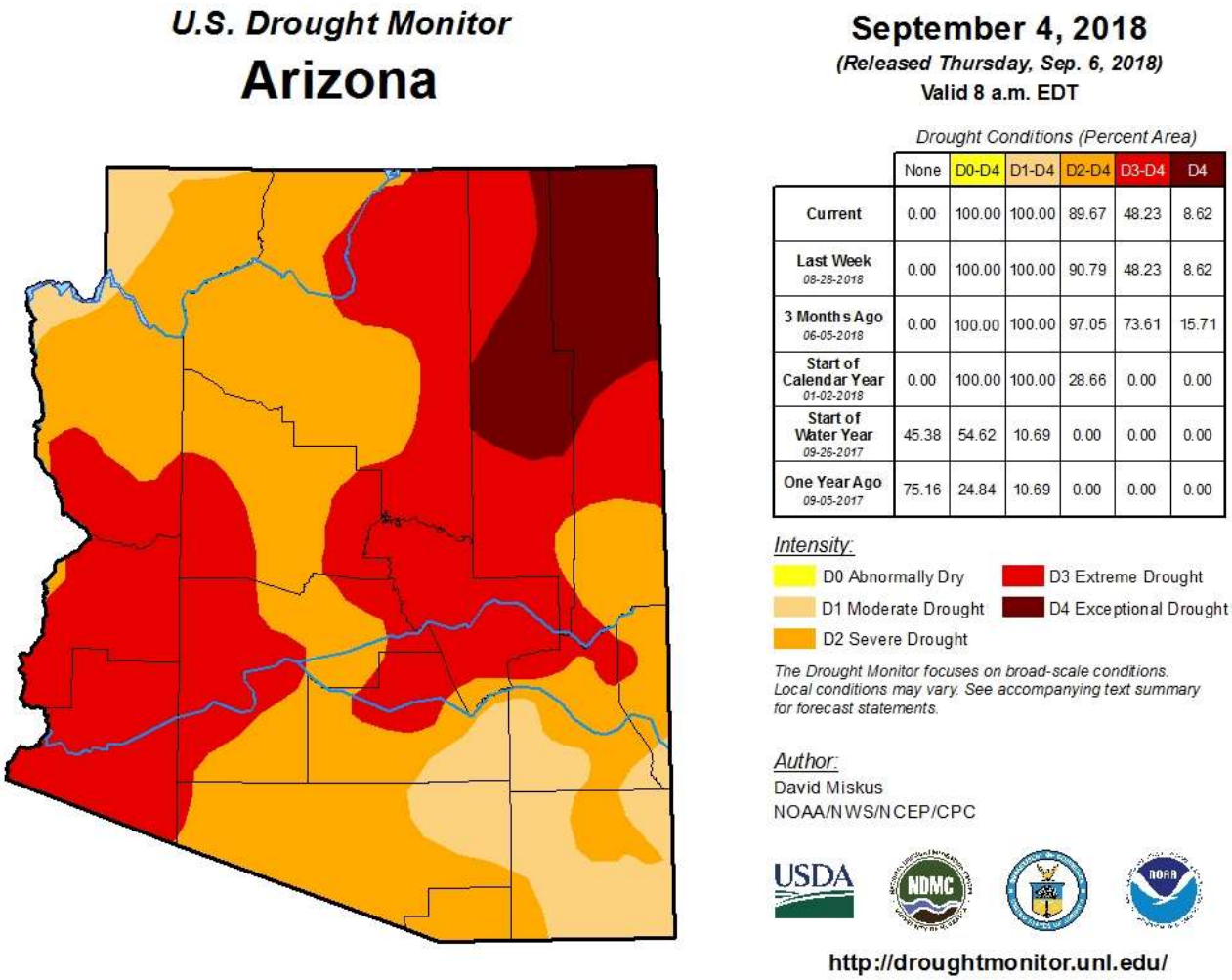


Figure 5. Arizona Drought Map

The project site is located in a "D2" area on the figure which is designated as "Severe Drought". Because the District's existing wells are relatively shallow (i.e. 120 feet and 182 feet in depth), the groundwater in the wells are highly variable. Therefore, when there are short periods of drought, the wells are affected relatively quickly. The reverse is also typically true, when there are short periods of rainfall, the wells recover quite quickly. An example of this are the months going into summer of this year (2018). Based on rainfall data for the NOAA rain guage station "Pinetop Lakeside 4.0 ESE", the monthly rainfall was as indicated in Table 2. As can be seen in the table, the monthly rainfall depths were very low as we went through spring and into summer. Because of the long period of time with little rainfall (April through June), the District had problems with their wells. When the well pumps were left to pump at the full flow rate, the groundwater in the well was reduced such that the well pumps started

pumping some air in the water. The District was monitoring the ampere readings on the well pumps. When the amps were abnormal, it was known that the wells were pumping air.

Table 2. 2018 Rainfall Data

Month	Rainfall Depth (inches)
January	1.82
February	2.82
March	1.05
April	0.04
May	0.46
June	0.69
July	5.34

Therefore the District had to throttle down the wells by partially closing a valve to create a higher pumping head which then lowered the pumping rate. Under normal operating conditions, the well pumps have a capacity of approximately 30 gpm. Based on information provided by the District operator, for a period of approximate 1.5 months this year, which included a portion of May, all of June and a portion of July, the wells were operating at half their capacity (15 gpm). To add to the issue, these months typically have some of the highest demands of the year, as can be seen in Table 1. The monthly demands for 2016, 2017 and a portion of 2018 are included in the Appendix of this report.

The District operator indicated that during a normal daily water use cycle, the water storage tanks will be drawn down approximately five feet (5'). During the early summer of 2018 when they had to lower the pumping rate of the wells, the water depth in the tanks has been drawn down to less than half full. For the 1.5 months that the wells ran at half their pumping capacity, the water level in the tanks were lowered to less than half full and were falling until a sufficient amount of rainfall fell to replenish the aquifer. During this time, the wells were not able to keep up with the demand of the system. Therefore there wasn't enough ground water, with the depth of the existing wells, to fill the storage tanks and recover from the peak demand times in the system. If the pumping capacity was kept at half, the tanks would have at some point been empty.

Information was obtained to determine the possibility of having any relief from the drought in the area. Figure 6 on the next page indicates that it is expected for most of Arizona that the drought will persist. Thefore the conditions of the drought are not expected to become better in the near future.

The Sky Hi DWID has realized the dramatic impact of the drought. On their website (https://skyhiwater.org/), the District has included a form that helps the District and the users to conserve water during these times of a shortage of water quantity due to a low quantity of ground water. A copy of the form is in the Appendix of this report. The form has different stages of drought and suggested management measures that can be met to lessen the impacts of the drought.

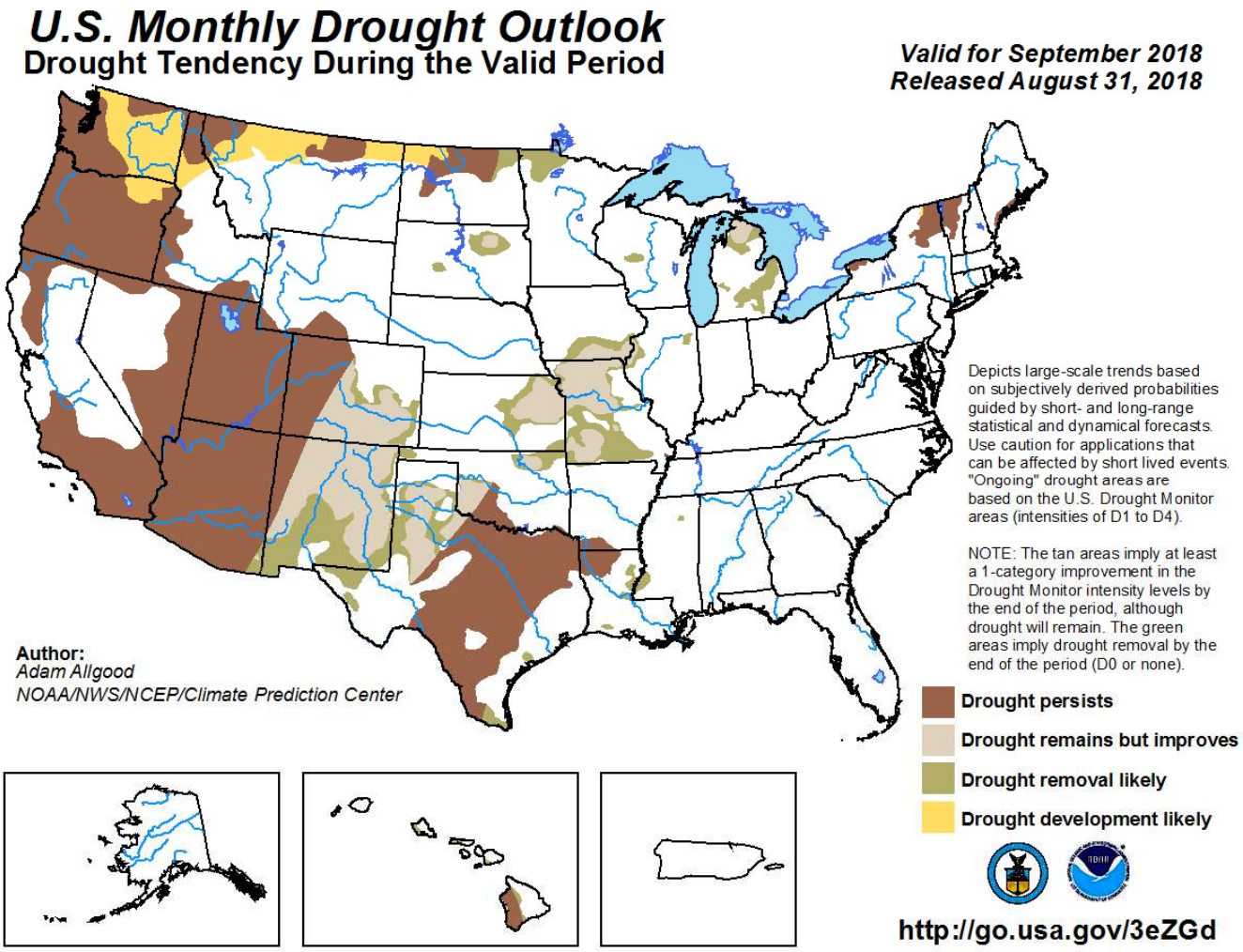


Figure 6. Drought Prediction Map

4.0 ALTERNATIVES CONSIDERED

a) Description

Several alternatives were considered. One alternative would be to interconnect to another system and purchase water from the system when the Sky Hi DWID is low on water. The nearest existing water system is approximately 1.5 miles south of Sky Hi called Sierra Springs Ranch. The Sierra Springs Ranch development only has 51 lots at full build out, therefore they have a relative small water system. The water system was designed to provide drinking water for only the development itself, therefore it does not have the capacity to also provide drinking water to Sky Hi and would be a hardship to provide water to both developments.

Hauling water was also considered. During peak water used periods which is typically when the least rainfall is received, the demand can be as high as 30,000 gallons per day. It is not feasible to haul this amount of water. There would be a high cost to purchase the equipment to haul the water and get it into the system. The District also does not have the personnel to dedicate to the time it would require to continuall haul water.

Using surface water was briefly considered, however there are no available surface waters available near the site.

Drilling an additional shallow well was also considered. As mentioned, the District has two existing shallow wells that they use to provide water to the system. During times of low rainfall and drought, these wells run low on ground water. If another well was drilled, the new well would likely have the same issues as the existing wells, therefore not solving the problem of an inadequate quantity of water.

Providing a new groundwater supply by constructing a deep well was considered. This well would be installed down into the Coconino Aquifer which is known to have an abundance of quality water. It is expected that the two existing wells will continue to be used to provide water to the system, however when an adequate quantity of groundwater is not available to run the existing wells at a maximum capacity of 30 gpm, the new deep well could be used to provide adequate water for the system.

b) Design Criteria/Compliance Issues

Criteria used for the evaluation of the alternatives was primarily based on the reliability of the alternative to actually provide additional water to the Sky Hi system. The criteria also included compliance issues as the water that is provided to the system has to meet drinking water qualities.

Each alternative that was considered was evaluated based the reliability of the alternative to actually supply water to the water system. The alternatives were analyzed to determine the reliability of the new source for quality water that will meet safe drinking water standards.

Any changes to the water system would require permitting from ADEQ. All of the alternatives would require compliance to ADEQ requirements for changes in providing water to the system.

c) Feasibility

Alternative feasibility was based on the criteria used for evaluation of each alternative. Connecting to the Sierra Springs Ranch water system would not be reliable. This water system was designed for only the 51 lots in the development. If the systems were connected, it would make both systems vulnerable to low quantity of water, and therefore would be unreliable and not feasible. (Estimated cost of $350,000)

Hauling water was also considered not feasible. The reliability of having personnel available to haul water for possibly a month or more at a time is not feasible for this small water system. (Estimated cost unknown)

Using surface water is not feasible. If there was surface water in the area, it would likely not be reliable because of the fact that it would be needed in times of drought and possibly could not be available during these times of water shortages. (Estimated cost unknown)

Drilling a shallow well instead of deep well will obviously costs less, but would only be as reliable as the existing wells the system already has in place. Therefore this alternative is not feasible, as it will not improve the water system anymore than it is now. (Estimated cost of $200,000)

Based on the information above, the only feasible alternative is to drill a deep well and utilize the large quantity of groundwater that is containted in the Coconino Aquifer that is typically between 900 – 1,200 feet below the ground surface. This aquifer is typically not as susceptible to low rainfall and drought conditions as the more shallow aquifers. The new well will be constructed in the existing District water production site, therefore no additional land or easements will be required for the new well. The well will require a permit from ADWR to drill the well and from ADEQ to connect the well to the water system. (Estimated cost of $495,685)

5.0 SELECTION OF AN ALTERNATIVE

As mentioned in Section 4.0, the only determined feasible project to provide an alternative water source to the Sky Hi DWID system is the drilling of a new deeper well. A new well will be the most reliable source of water that can be utilized when the existing wells are not capable of providing sufficient water for the system's demand. This alternative will likely provide quality drinking water to the system, in a quantity that should be sufficient to meet the demands of the system. It is expected that the existing wells will be used under normal operating conditions, as they pumping costs will be lower from these two wells. The new deep well will be exercised regularly so that it will be available to provide safe quality drinking water when the groundwater depth in the existing shallow wells isn't sufficient. This alternative will provide a long term solution to the lack of water that the District has experienced.

The well will need to be drilled down to the Coconino Aquifer. Typically this is approximately 900 feet to 1,200 feet below the ground surface. Based on discussions with other water companies in the area, they have indicated that they have wells that have actually failed (ran dry) this summer that are in the Dakota Aquifer (200' – 500') which is the same aquifer the existing Sky Hi wells are drilled to, however they also indicated that the wells that are in the Coconino Aquifer are not affected by the drought much at all. The estimated depth of the proposed well for the Sky Hi DWID of 1,100 feet below the ground surface was based on information from an experienced well driller in the area.

The Sky Hi DWID plans to install a well pump capable of providind a maximum of 100 gpm. At times when there is sufficient ground water, the demand requires both wells running at the same time. Each well can pump approximately 30 gpm, providing a flow of 60 gpm. The booster station has two booster pumps, each capable of approximately 210 gpm. When the demand requires more flow than this, both booster pumps will run are a rate of approximately 420 gpm. To try and keep up more closely with the demand and provide more of a factor of safety, the District would like to install a well pump capable of 100 gpm.

6.0 PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

a) Description

The proposed project includes the construction of a new well. It is expected that the well will be drilled between 900 – 1,100 feet in depth. The new well will be constructed inside the existing water production site within the Sky Hi development. The site has an existing fenced yard that contain the existing wells, storage tanks, and the booster station building. The well will be drilled and connected to existing piping in the booster station building to pump into the system.

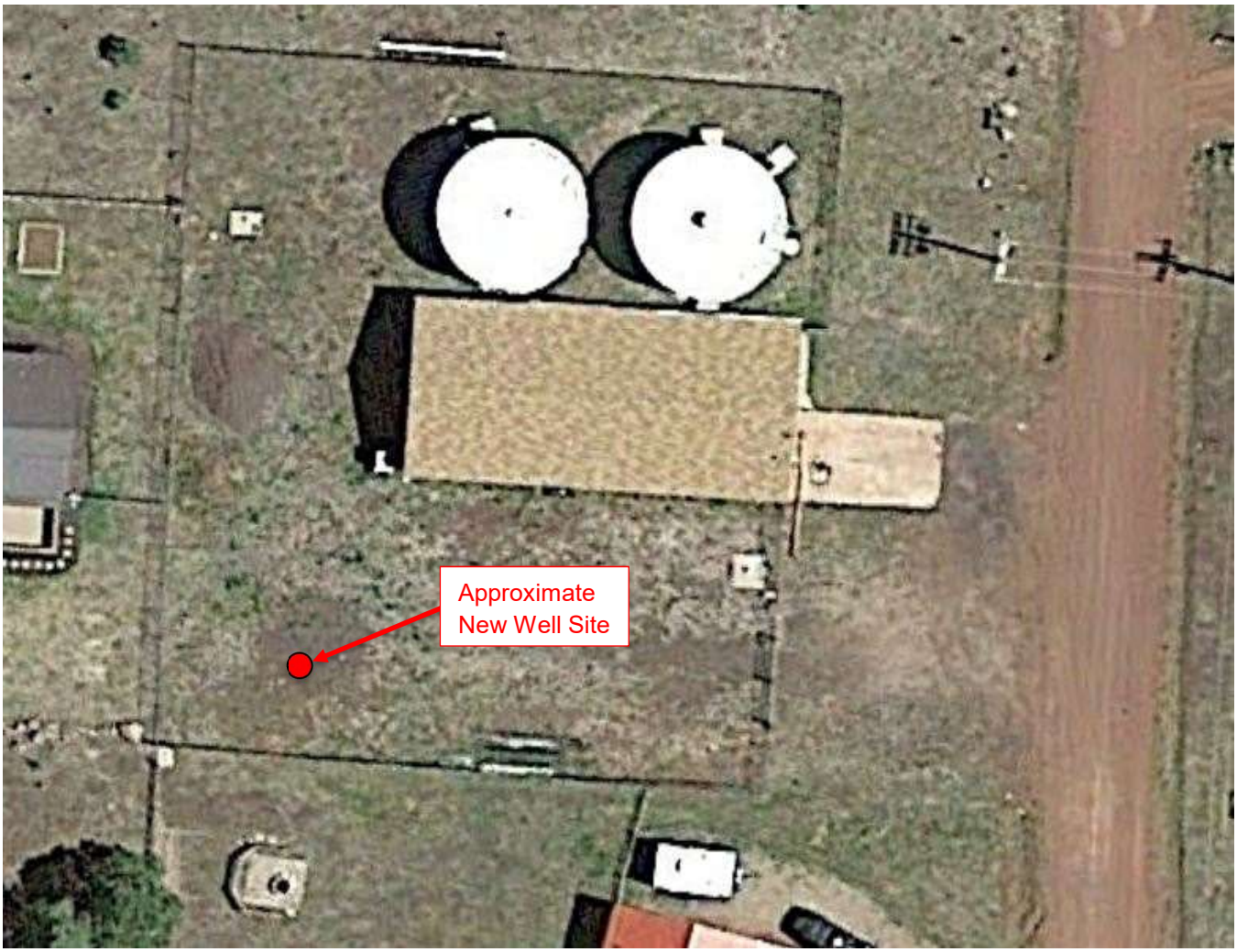


Figure 7. Proposed Layout Map

b) Total Project Cost Estimate

The total anticipated project costs are shown in Table 1.

Table 3. Construction Cost Estimate

Item	Description	Quantity	Unit	Unit Price	Total
1	Mobilization/Demobilization	1	LS	$ 12,000	$ 12,000
2	Borehole Construction	1,100	FT	$ 230	$ 253,000
3	Casing	1,100	FT	$ 60	$ 66,000
4	Well Development	1	LS	$ 18,000	$ 18,000
5	Pump & Motor Capable of 100 gpm	1	EA	$ 20,000	$ 20,000
6	Pump Cable	1,000	FT	$ 28	$ 28,000
7	Connection to Water System	1	LS	$ 8,000	$ 8,000
8	Well Seal	1	EA	$ 850	$ 1,000
9	10% Contingency	1	LS	$ 40,600	$ 41,000
				Total	**$ 447,000**

Using the total construction costs in Table 2, the total project costs were estimated. The estimated total project costs are indicated in Table 3.

Table 4. Total Estimate Project Costs

Item	Description	Quantity	Unit	Unit Price	Total
1	Construction	1	LS	$ 447,000	$ 447,000
2	Permits	1	LS	$ 1,250	$ 1,500
3	Preliminary Engineering	1	LS	$ 6,200	$ 6,200
4	Legal/Administration Costs	1	LS	$ 1,800	$ 2,000
5	Engineering Design	1	LS	$ 26,500	$ 26,500
6	Engineering - Bidding Assistance & Construction Services	1	LS	$ 15,300	$ 15,300
				Total	**$ 498,500**

7.0 CONCLUSIONS AND RECOMMENDATIONS

The Sky Hi Domestic Water Improvement District has experienced a low volume of groundwater at times, leading to lower production of their existing wells. It is my professional opinion that the community has experienced a significant decline in the quantity of water that is attributable to the current drought conditions and that the proposed project is necessary to alleviate this problem. By constructing a new well that is deeper in the auifer, they water system will have additional water during dry times in the year.

APPENDIX

SKY HI DWID WATER DEMANDS

Month	Total Demand (gallons)	Percent Loss[c]	Average Monthly Daily Demand (gallons/day)	Total Demand (gallons)	Percent Loss[c]	Average Monthly Daily Demand (gallons/day)	Total Demand (gallons)	Percent Loss[c]	Average Monthly Daily Demand (gallons/day)	Average Monthly Daily Demand (gallons/day)
	2018			2017			2016			
January	265,700	28%*	8,571	179,960	26%	5,805	318,800	13.3%	10,284	8,220
February	a			a			190,600	26%	6,807	6,807
March	315,900	7.8%	10,190	334,700	18.8%	10,797	243,600	24.0%	7,858	9,615
April	316,800	7.8%	10,560	172,720	22.0%	5,757	369,000	b	12,300	9,539
May	460,100	7.4%	14,842	264,810	7.2%	8,542	273,700	15.8%	8,829	10,738
June	873,200	6.2%	29,107	750,070	8.9%	25,002	768,500	8.2%	25,617	26,575
July	844,400	8.9%	27,239	570,540	7.1%	18,405	692,500	1.7%	22,339	22,661
August				501,237	7.4%	16,169	504,000	13.7%	16,258	16,214
September				572,600	21.0%	19,087	368,200	10.6%	12,273	15,680
October				a			291,300	3.5%	9,397	9,397
November				283,700	28.1%	9,457	264,200	17.6%	8,807	9,132
December				295,400	29.0%	9,529	180,300	13.8%	5,816	7,673
									Average Monthly Daily Demand =	12,687

a - No data was available for this month

b - District had a master meter failure, therefore percent loss wasn't recorded.

c - Percent Loss was calculated as follows: [(Quantity Pumped - Quantity Sold)/Quantity Pumped] x 100 = % Loss

* - System well had a leaking check valve, therefore much more water was pumped than was used.

SKY HI DWID DROUGHT CONTINGENCY FORM

Simplified drought stages and management measures for small water systems
Listed below are sample drought stages and measures to reduce water use. It is recommended that water providers choose two or more options for each stage to complete their drought preparedness plan.
Providers are not restricted to the options listed below.
Providers are not limited to three drought stages.

***EXAMPLE* Drought Stage Number**	***EXAMPLE* Management measures**
Stage 0 (Normal conditions)	Meter water use at the source and all connections Ensure meters are working properly Implement leak detection and repair programs Control evaporation from storage tanks Eliminate illegal connections Encourage low water use landscaping Develop water rate structures that encourage efficient water use (higher rates for higher use) Develop arrangements for alternative/back-up water supplies should they become necessary
Stage 1	Increase system-wide leak detection efforts and expedite repairs Monitor water levels of wells more frequently Communicate drought conditions to customers (include in water bills, post in public places) Establish times and days for outdoor watering (for example, two times per week, between 8 p.m. and 8 a.m.) Encourage use of commercial car washing facilities instead of washing at home Include water-saving tips in water bills Advise customers to check homes for leaks and repair immediately Request that customers reduce water usage by x% Continue actions from previous stage
Stage 2	Communicate drought conditions to customers (include in water bills, post in public places) Confirm arrangements for emergency supplies should they become necessary Restrict water use during peak demand hours Restrict non-essential outdoor water use, such as pool filling, car washing Request that customers reduce water use by x% (more than in Stage 1) Continue actions from previous stage

Contact information: Arizona Department of Water Resources
Community Water Planning - Drought Program
(602) 771-8442, ecws@azwater.gov

ADWR WELL 55-502972 INFORMAITON

EXEMPT WELL
FILING FEE: $3.00

DEPARTMENT OF WATER RESOURCES
NOTICE OF INTENTION TO DRILL OR DEEPEN
AN EXEMPT WELL

EXEMPT WELL

RECEIVED
MAY 27 1982
DEPT. OF
WATER RESOURCES

Section 45-596, Arizona Revised Statutes, provides: A person may not drill or cause to be drilled any well or deepen or replace an existing well without first filing a Notice of Intention to Drill with the Department on a form prescribed and furnished by the Department. The well shall be completed within one year after the date of Notice. An exempt well means a well having a pump with a maximum design capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An exempt well may include the non-commercial irrigation of not more than 1 acre of land.

North
West — NW¼ — NE¼ — East
X
SW¼ — SE¼
South

Indicate Well Location by X
(Above diagram represents one 640 acre section)

WELL/LAND LOCATION:
1. Township 10 N
2. Range 23 E
3. Section 22
4. ___ ¼ ___ ¼ ___ ¼
10 acre sub-division
5. County Apache
6. Owner of Well:
Sky Hi Water Company
Name
PO Box 1502
Address
Pinetop Az 85935
City State Zip
7. Owner of Land:
Sky Hi Water Company
Name
PO Box 1502
Address
Pinetop AZ 85935
City State Zip

DESCRIPTION OF WELL:
8. Diameter 8"
Depth 700'
9. Type of Casing Steel
10. Principal use of Water.
Domestic
11. Other uses Intended
None
(If for non-commercial irrigation, state approximate area being cultivated.)
12. Construction will start about:
May 1982
Month Year

03

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
FILE NO. A(10-23)22bdd
FILED 5-27-82 BY EK
INPUT 6-9-82 BY
DUPLICATE MAILED 6-7-82 BY
REGISTRATION NO 55-502972
AMA NON EXPANSION AREA —

MICROFILMED

PLACE OF USE:
13. Township 10 N
14. Range 23E
15. Section 22
16. Legal description of land water is to be used on:
Same as above
17. Design Pump Capacity
35 GPM
18. Action Requested:
Drill X
Deepen
Replace
19. This notice filed by:
Owner
Lessee
Driller X
Bulfer Pump Service Inc.
Name
PO Box 704
Address
Parks, Az 86018
City State Zip
20. Drillers Name:
Charles A Bulfer
Name
P. O. Box 704
Address
Parks Az. 86018
City State Zip
T-29
Department License Number

1. Fill out this form in duplicate and mail to P.O. Box 2600, Phoenix, Arizona, 85002, or deliver to 99 East Virginia, Suite 100, Phoenix, Arizona 85004.
2. If the Exempt Well is in fact a replacement (or deepening) well, state the registration number of the existing well. ___
3. Construction standards for new and replacement wells and the deepening and abandonment of existing wells, shall be in accordance with Department Rules and Regulations.

I, Charles A. Bulfer, state that the construction will be under the direct and personal supervision of the well driller designated on this form and that the designated driller holds a contractors license pursuant to ARS 45-595.

5-23-82
Date

Charles A. Bulfer
Signature of Person Filing

Bulfer Pump Service
Box 704
Parks AZ

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIVED

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	502971
	THRU
55	502972

For: Blann/Sky Hi Water CO

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing fee for Notice of Intention to Drill	3.00	6.00
					(2) Exempt Wells		
					File NO:A(22-6)26cda J. Blann Reg.#55-502971		
					A(10-23)22bddSky High Water Co		
					Reg.#55-502972		

WRITER: PAYMENT
GUEST: 3
CHK NO 4503
55-I 6.00
TAX 0.00
TOTL 6.00
GEN.CHEK 6.00

8755 A 13:02

Check #4503

TOTAL $ 6.00

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Sky Hi Water Co
Name
P O Box 1502 Pinetop AZ 85935
Address

2. Lessee or Operator
Name
Address

3. Driller Charles A. Bulfer
Name
P.O. Box 704 Parks Az 86018
Address

4. Location of well: T10N R23E S22

5. Permit No. (if issued)

DESCRIPTION OF WELL

6. Total depth of hole 442 ft.
7. Type of Casing Steel
8. Diameter and length of casing 6 5/8 in. from -1½ to 442, in from to .
9. Method of sealing at reduction points
10. Perforated from 402 to 442, from to , from to
11. Size of cuts 1/8 X 3" Number of cuts per foot 12
12. If screen was installed: Length N/A ft. Diam in. Type
13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 5 (Month) 27 (day) 82 (year)
15. Date completed 7 (Month) 13 (day) 82 (year)
16. Depth to water 224 ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. ground
18. If flowing well, state method of flow regulation
19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-502972
Received By
Entered 8-2-82 By
File No. A(10-23)22bdd

MICROFILMED

(Well log to appear on Reverse side)

JUL 1982
DEPARTMENT OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	8	Valley fill
8	78	Malapai
78	92	Cinders
92	100	Malapai
100	101	Malapai
101	105	Scoria, Cinders & Red Clay
105	110	Scoria & Malapai
110	122	Malapai
122	128	Brown Clay & Cinder
128	137	Cinders lost circulation
137	185	Cinders a few hard spots (less than 6" thick)
185	193	Scoria & Malapai (4" crack @ 188'-lost circulation)
193	201	Malapai
201	205	Cinders No circulation
205	208	Malapai
208	236	Malapai & Scoria
236	253	Cinders & Clay
253	276	Malapai
276	283	Cinders & Clay
283	285	Malapai
285	293	Malapai
293	307	Cinders
307	308½	Malapai
308½	324	Clay & Cinders
324	340	Scoria & Clay
340	350	Malapai
350	408	Malapai & clay filling in cracks
408	409	Crack clay filled (possible water)
409	415	Malapai many cracks - small amount water pressure came up 50#
415	439	Cinders lots of water
439	442	Solid Malapai

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Charles A. Buffington
Name

P.O. Box 1704 Parks Az 86018
Address

2-73

Date

DEPARTMENT OF WATER RESOURCES
99 East Virginia
Phoenix, Arizona 85004

RECEIVED
JUL 30 1982
DEPT. OF
WATER RESOURCES

Registration No. 55-502972
Owner of
Well Site Sky Hi Water Co

File No. A(10-23)22bdd

COMPLETION REPORT

1. Completion Report to be filed with the Department within 30 days after installation of pump equipment.

2. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

3. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.

4. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.

LOCATION OF THE WELL

T 10N R 23E S 22 .

Date Well Completed _____ Depth of Well 442

1. Well Test:
Test Pumping Capacity 40 GPM (Gal. per min.) Date Well Tested 6-7-82

Method of Discharge Measurement orifice (weir, orifice, current meter, etc.)

Static Groundwater Level 224 ft. Drawdown 14.4 ft.

Total Pumping Lift 238.4 ft. Drawdown _____ lbs. (Flowing Well)

2. Equipment Installed:

Kind of Pump Submersible (turbine, centrifugal, etc.)

Kind of Power Electric (Elec., Nat. Gas, Etc.) H.P. Rating of Motor 5

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

Charles A. Burgess
Signature

P.O. Box 704
Address

Parks Az 86018
City State Zip

_____, 19___
Date

MICROFILMED

8-2-82

ADWR WELL 55-530348 INFORMAITON

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

MAR 18 1991

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Sky High Retreat
Name
Box 527 Pinetop AZ 85935
Mailing Address

2. Driller H.E. Beeman Dick
Name
P.O. Box 1498 Show Low AZ 85901
Mailing Address

3. Location of well: NE, SW, SW

4. Permit No. _____
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 430 ft.

6. Type of casing Steel

7. Diameter and length of casing 6 in. from 0 to 430 in from ____ to ____.

8. Method of sealing at reduction points welded

9. Perforated from 340 to 430, from ____ to ____, from ____ to ____.

10. Size of cuts 1/4x6 Number of cuts per foot 12

11. If screen was installed: Length ____ ft. Diam ____ in. Type _____

12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc

13. Date started Dec (Month) 16 (Day) 90 (Year)

14. Date completed Jan (Month) 30 (Day) 91 (Year)

15. Depth to water 227 ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available _____

17. If flowing well, state method of flow regulation: _____

18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-530348
File No. A(9-23)22 CCA
Entered ENTERED MAR 22 1991

MICROFILMED

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	28	Red clay & Cinders
28	80	malapai
80	90	Cinders
90	105	MA/APAI
105	110	Cinders
110	130	MA/APAI
130	140	Cinders & Brown clay
140	190	Cinder w/ scattered layers of firm malapai
190	220	MA/APAI
220	230	Cinders Some (lost circulation)
230	250	Cinders & clay
250	300	MA/APAI
300	305	Cinders
305	310	malapai
310	340	MA/APAI w/ some Cinder layers
340	420	Cinders (water @ 390)
420	430	malapai

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Paul Wyatt
Name

P.O. Box 1498
Address

Show Low AZ 85901
City State Zip

Date feb 28/90

DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

Registration No. 55-530348

File No. A9-23)22CCA

COMPLETION REPORT

1. Per **A.R.S. §45-600**, the Completion Report is to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.
3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

LOCATION OF THE WELL:

9N	23E	S22	NE SW SW
Township	Range	Section	¼ ¼ ¼

EQUIPMENT INSTALLED:

Kind of pump Turbine
Turbine, centrifugal, etc.

Kind of power Electric H.P. Rating of Motor 5
Electric, natural gas, gasoline, etc.

Pumping Capacity 50 Date pump installed: 1-20-91
Gallons per minute

WELL TEST:

Test pumping capacity 50 Date Well Tested: 1-20-91
Gallons per minute

Method of Discharge Measurement 5 Gallon Bucket
Weir, orifice, current meter, etc.

Static Groundwater Level 260 ft. Drawdown 265 ft.

Total Pumping Lift 265 ft. Drawdown _____ lbs.
(Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

MICROFILMED

Sky High Retreat
Print Well Owner's Name

Aug 19/91, 19__ Sky-Hi Domestic Water Improvement Distrie
Chairman
Date Signature of Well Owner or Agent

Box 527
Address

Pinetop AZ 85935
City State Zip

RECEIVED
OCT 16 1991
OPERATIONS DIV.

DWR-55-56-2/88

ENTERED OCT 17 1991


HOWARD E. ROSE
HC 62
BOX 33203
PINETOP, AZ. 85935

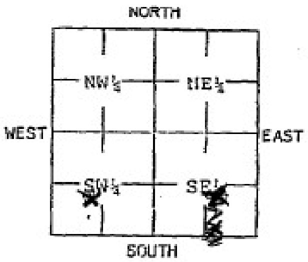
FILING FEE $10.00

DEPARTMENT OF WATER RESOURCES (DWR)
NOTICE OF INTENTION TO DRILL
A WELL OUTSIDE OF AN ACTIVE MANAGEMENT AREA

FILING FEE $10.00

DEC 1 7 1990

Section § 45-596, Arizona Revised Statutes, provides: In an area not subject to Active Management, a person may not drill, deepen, or modify any well, without first filing a Notice of Intention to Drill with the Department.



INDICATE WELL LOCATION BY X
(Above diagram represents one 640 acre section)

DESCRIPTION OF WELL
8. Diameter 6 inches
Depth 450 feet
9. Type of Casing Steel
10. Design Pump Capacity: 50 gallons per minute
11. Estimate of total annual pumping: 1 acre feet
12. Principal use of water: Domestic (Be Specific)
13. Other uses intended: (Be Specific)
14. If use includes irrigation, state the number of acres to be irrigated: acres
15. Construction will start about: Dec (Month) 90 (Year)

PLACE OF USE
16. Township 9 N/S
17. Range 23 E/W
18. Section 22
19. Legal description of land: SW, SE, SE; NE, SW, SW
20. Type well: Exempt X Non-exempt
21. Action Requested: X Drill Deepen Replace Modify
55-
22. APPLICANT: X Owner Lessee
Sky High Retreat
Name
Box 527
Mailing Address
Pinetop AZ 85935
City State Zip
Telephone (602) 369-0501
23. Drilling Firm:
H.E. Bowman Drlg
Firm Name
P.O. Box 1998
Mailing Address
Showlow AZ 85901
City State Zip
453
DWR License Number
A-4 C-53
Type of Contractor License

WELL/LAND LOCATION
1. Township 9N N/S
2. Range 23 E/W
3. Section 22
4. NE ¼ SW, SE, SW
(10 acre sub-division)
5. County Navajo
6. Owner of well: SkyHigh Retreat D.W.I.D.
Name
Box 527
Mailing Address
Pinetop AZ 85935
City State Zip
Telephone (602) 369-0501
7. Owner of land: Same
Name
Mailing Address
City State Zip
Telephone

DO NOT WRITE IN THIS SPACE
Office Record
File No. A(9-23)22 CCA
Filed 12-14-90 By EL
Input ENTERED DEC 18 1990
Duplicate
Mailed 12-18-90 By EL
Registration No. 55-530348
INA
W/S 03 S/B

24. Is the proposed wellsite within 100 feet of a septic system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials? Yes ___ No X

GENERAL INSTRUCTIONS

1. Fill out this form in DUPLICATE and send WITH $10.00 FEE to 15 South 15th Ave., Phoenix, AZ 85007.
2. For specific instructions, limitations and conditions, see the reverse side of this form.
3. This form is to be used to drill, deepen, replace or modify a well outside of an Active Management Area.
4. If the well is a replacement, deepening or modification of an existing well, provide the registration number of the existing well in Item 21.
5. Construction standards for wells, including abandonment, shall be in accordance with Department Rules and Regulations.

MICROFILMED

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 and that I understand the limitations under which I must operate this well as set forth on the reverse side of this form

12/12/90
Date

Howard L. Ross 12/12/90
Signature of well owner/lessee
542-1581
CHRM. OF BOARD

DWR 55-40-8/89

12-17-90

Sky High Retreat
Box 527
Pinetop, AZ. 85935

File No. A(9-23)22 CCA

Registration No. 55-530348

ARIZONA
DEPARTMENT
OF WATER
RESOURCES

Rose Mofford, Governor
N. W. Plummer
Director

15 South 15th Avenue
Phoenix, Arizona 85007

Dear Applicant:

Enclosed is a copy of the Notice of Intention (NOI) to drill a well. This NOI, which was recently filed with this Department, is being returned to you as evidence of your compliance with ARS §45-596. The enclosed Completion Report is to be submitted when pump equipment is installed. The Drilling Card and Well Drilling Report form have been sent to your driller. He may not begin drilling until he has received the Drilling Card and it must be displayed on the rig during drilling. If you change drillers, you must supply this Department with the new driller's identity. Please ensure that the driller you select is licensed to drill the type of well you require. All well drillers must pass an examination proving they understand the drilling methods for that particular license, and are familiar with the laws and regulations which govern well construction in Arizona.

If it is necessary to change the location of the proposed well, obtain written permission from the Department before proceeding with the drilling. A properly signed, amended Drilling Card must be in the posession of the driller before drilling commences at a different location than originally authorized. In no case may the replacement well be more than 660 feet from the well it is replacing.

ARS §45-600 requires the registered well owner to submit a completion report within thirty (30) days after the installation of pumping equipment. It also requires the driller to furnish this Department a complete and accurate log of the well within thirty (30) days after completion of drilling. You should insist, and ensure, that both of these are done.

If in the course of drilling a new well, it is determined that the well needs to be abandoned, then a Well Abandonment Completion Report must be submitted per R12-15-816.F.

Per ARS §45-593, the person to whom a well is registered shall notify this Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. We have enclosed a Change of Well Information Form should it be needed in the future.

Sincerely,

Richard A. Gessner
Chief, Operations Division

RAG:dl
Enclosures
DWR-55-47-9/90(Revised)

THIS IS NOT A BILL

Paul or Pandy Wyatt
P.O. Box 1498
Show Low, AZ. 85901

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
OPERATIONS DIVISION
15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007

RECEIPT

KIND ENTRY 55
FILE REFERENCE NO. 530348 THRU

Sky High Retreat

ITEM DESCRIPTION	RATE	AMOUNT
FILING FEE FOR NOI		10.00
REG. NO.55-530348		
FILE NO.A(9-23)22 CCA		

PAID

CHECK NO 6054 RECEIVED BY EL DATE 12/17/90 TOTAL $ 10.00