

Lopez, Estevan, OSE

From: Singer, Arianne, OSE
Sent: Tuesday, November 01, 2011 6:23 PM
To: Lopez, Estevan, OSE
Cc: Johnson, Mike S., OSE
Subject: FW: conjunctive navajo groundwater
Attachments: NGWSP_Conjunctive_GW_Plan_march2010.pdf

Estevan,

I am forwarding you the Navajo Nation's Conjunctive Groundwater Development Plan on the Navajo-Gallup Water Supply Project, that Peggy Barroll found online. On page 24, Table 2 lists the current and most likely aquifer sources for existing and proposed wells. They include the ~~Westwater and Menefee near Crownpoint, and Gallup, San Andreas/Glorieta, Ojo Alamao, Chinle, Point Lookout, and DeChelly.~~

Broader look

I'm not sure which of these might be in Arizona, but I hope to follow up with Mike Johnson tomorrow morning. I wasn't able to reach him today. Hopefully this gives us enough information to provide an answer for Representative Lundstrom.

If you need to reach me, my cell is 238-5092. I'll be in Albuquerque for a meeting at 8:30, and then coming up for the 11:00 Capital Outlay Meeting.

Thanks,

Arianne Singer
Special Assistant Attorney General
New Mexico Office of the State Engineer
(505) 827-6150

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From: Barroll, Peggy W., OSE
Sent: Tuesday, November 01, 2011 5:36 PM
To: Singer, Arianne, OSE
Cc: Johnson, Mike S., OSE
Subject: conjunctive navajo groundwater

This is what I could find. You should talk to Mike.

Peggy Barroll
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Conjunctive Groundwater Supply for Navajo Communities – NGWSP PR/FEIS Preferred Alternative

To characterize the ground water supply for the Navajo communities served by the Project, communities in the service area were grouped into eight municipal sub-areas. A municipal subarea is an area with common water sources and common public water systems. The sub-areas include: 1) Central Project, 2) Crownpoint, 3) Huerfano, 4) Navajo lands adjacent to the City of Gallup, 5) Rock Springs, 6) Route 491 corridor, 7) Torreon and 8) Window Rock (Figure 2). The estimated sustainable ground water supply components are presented in the *Final Draft Technical Memorandum, Navajo-Gallup Water Supply Project* (Navajo Nation Department of Water Resources et al, 2001) and are summarized in Table 2. The total conjunctive groundwater production proposed for the eight municipal subareas is approximately 3,200 AFA, which is 200 AFA more than current ground water production.

**TABLE 2
PROPOSED MUNICIPAL CONJUNCTIVE GROUNDWATER DEVELOPMENT**

MUNICIPAL SUBAREA	PROPOSED 2040 G.W. PRODUCTION (Acre-feet)	PROPOSED CONJUNCTIVE GROUNDWATER COMPONENT
1. Central	77	Burnham: 1 well at 4,000 feet in the Gallup, Dakota or Morrison at 120 gpm Lake Valley: 2 wells at 100 feet the Chaco River Alluvium at 20 gpm White Rock: 1 well at 4,000 feet in the Morrison at 100 gpm Whitehorse Lake: 2 wells at 500 feet in the Menefee Formation at 20 gpm
2. Crownpoint	752	Coyote Canyon: 2 wells at 1,500 feet in the Dalton Sandstone at 60 gpm Crownpoint: 3 wells at 2,000 feet in the Westwater Sandstone at 100 gpm Dalton Pass: 2 wells at 2,000 feet in Gallup Sandstone at 20 gpm Standing Rock: 2 wells at 2,500 feet in the Westwater at 80 gpm
3. Huerfano	46	2 wells at 1,000 feet in the Ojo Alamo Sandstone at 60 gpm
4. Gallup Area	502	Breadsprings: 2 well at 2,000 feet in the Gallup Sandstone at 50 gpm Church Rock: 2 well at 2,000 feet in the China at 30 gpm Iyanbito: 2 well at 2,000 feet in the Glorietta at 125 gpm Red Rock: 2 well at 2,000 feet in the Gallup Sandstone at 50 gpm
5. Rock Springs	169	3 wells at 1,700 feet in the Gallup Sandstone at 40 gpm
6. Route 491	795	Naschitti: 2 wells at 1,500 feet in the Point Lookout Sandstone at 80 gpm Tohatchi: 3 wells at 1,500 feet in the Point Lookout Sandstone at 150 gpm
7. Torreon	77	6 wells at 1,500 feet in the Menefee Point Lookout Sandstone at 20 gpm
8. Window Rock	767	6 wells at 750 feet in the Gallup/Dakota/Morrison at 60 gpm 6 wells at 300 feet in the C-Aquifer at 50 gpm and conveyance system
Total	3,185	

Source: Navajo Nation Department of Water Resources, City of Gallup, Northwest New Mexico Council of Governments, Bureau of Reclamation. March 16, 2001. Final Draft Technical Memorandum, Navajo-Gallup Water Supply Project.

Table 2: Existing and Proposed Well Depths and Aquifers for Navajo-Gallup Project Navajo Chapters

	NTUA WELL NAME	CURRENT AQUIFER SOURCE	CURRENT WELL DEPTH	NGWSP SERVICE SUBAREA	PRIMARY CHAPTER WELL LOCATION	MOST LIKELY AQUIFER FOR ADDITIONAL GROUND WATER DEVELOPMENT FOR EACH NAVAJO CHAPTER	ESTIMATED DEPTH OF WELL IN FEET
1		N/A					
2	LAKE VALLEY 1	ALLUVIAL		CENTRAL	BURNHAM	POINT LOOKOUT	300
3	LAKE VALLEY 2	ALLUVIAL	68	CENTRAL	LAKE VALLEY		
4		N/A	83	CENTRAL	LAKE VALLEY	ALLUVIAL	90
5	WHITEHORSE LAK	MENEFE		CENTRAL	WHITE ROCK	ALLUVIAL AT LAKE VALLEY	90
6		N/A	404	CENTRAL	WHITEHORSE LAKE	MENEFE	500
7	COYOTE CYN 1-B			CROWNPOINT	BECENTI	WESTWATER AT CROWNPOINT	2400
8	COYOTE CYN 1	MENEFE	2520	CROWNPOINT	COYOTE CANYON		
9	CROWNPOINT 1	WESTWATER	2345	CROWNPOINT	COYOTE CANYON		2600
10	CROWNPOINT 2	WESTWATER	2377	CROWNPOINT	CROWNPOINT		
11	DZILTHNADIT 1			CROWNPOINT	CROWNPOINT	WESTWATER	2400
12	LITTLE WATER	WESTWATER	2605	CROWNPOINT	DALTON PASS	WESTWATER	2800
13	STANDING ROCK	WESTWATER	2688	CROWNPOINT	LITTLE WATER	WESTWATER	2700
14	BREAD SPRINGS	GALLUP		CROWNPOINT	STANDING ROCK	WESTWATER	2700
15		N/A	1800	GALLUP	BREAD SPRINGS	GALLUP	2000
16	CHURCHROCK A	CHINLE		GALLUP	CHICHILTAH	GALLUP AT BREAD SPRINGS	2000
17	CHURCHROCK B	CHINLE	148	GALLUP	CHURCH ROCK		
18	CHURCHROCK E	CHINLE	148	GALLUP	CHURCH ROCK		
19	CHURCHROCK UNC	CHINLE	88	GALLUP	CHURCH ROCK		
20	IYANBITO 2	SAN ANDREAS/GLORIETTA	56	GALLUP	CHURCH ROCK	ALLUVIAL	160
21	IYANBITO 1	SAN ANDREAS/GLORIETTA	1419	GALLUP	IYANBITO		
22	MARIANO LAKE 1	WESTWATER	1171	GALLUP	IYANBITO	SAN ANDREAS/GLORIETTA	1500
23	MARIANO LAKE 2	ENTRADA	1640	GALLUP	MARIANO LAKE		
24		N/A	1610	GALLUP	MARIANO LAKE	ENTRADA	1700
25	RED ROCK	GALLUP		GALLUP	PINEDALE	ENTRADA AT MARIANO LAKE	1700
26	KEYAH 1	OJO ALAMO	1534	GALLUP	RED ROCK	GALLUP	1600
27	CARSON	OJO ALAMO	709	HUERFANO	HUERFANO		
28	NAGEEZI 2	OJO ALAMO	420	HUERFANO	HUERFANO	OJO ALAMO	800
29		N/A	1055	HUERFANO	NAGEEZI	OJO ALAMO	1100
30	ROCK SPRINGS	GALLUP		ROCK SPRINGS	MANUELITO	GALLUP AT ROCK SPRINGS	1900
31	TSAYATOH	GALLUP	1760	ROCK SPRINGS	ROCK SPRINGS	GALLUP	1900
32	MEX SPGS E-2	POINT LOOKOUT	1321	ROCK SPRINGS	TSAYATOH	GALLUP	1400
33	MEX SPGS E-1A	POINT LOOKOUT	423	ROUTE 666	MEXICAN SPRINGS		
34	MEX SPGS E-1B	POINT LOOKOUT	700	ROUTE 666	MEXICAN SPRINGS		
35	MEX SPGS W-2	POINT LOOKOUT		ROUTE 666	MEXICAN SPRINGS		
36	MEX SPGS W-1	POINT LOOKOUT	345	ROUTE 666	MEXICAN SPRINGS		
37	NASCHITTI 1		802	ROUTE 666	MEXICAN SPRINGS	POINT LOOKOUT	900
38	NASCHITTI 2		1610	ROUTE 666	NASCHITTI		
39	NEWCOMB 3		1508	ROUTE 666	NASCHITTI	MENEFE	1700
40	NEWCOMB 2	MENEFE	1420	ROUTE 666	NEWCOMB		
41	NEWCOMB 1		1140	ROUTE 666	NEWCOMB		
42	SANOSTEE N	WESTWATER	1440	ROUTE 666	NEWCOMB	POINT LOOKOUT	1500
43	TOCITO	WESTWATER	1490	ROUTE 666	SANOSTEE		
44	SANOSTEE S	WESTWATER	2125	ROUTE 666	SANOSTEE		
45	SANOSTEE W	WESTWATER	1530	ROUTE 666	SANOSTEE		
46	RED VALLEY S	DAKOTA	1751	ROUTE 666	SANOSTEE		
47	LITTLEWATER	DAKOTA	1287	ROUTE 666	SANOSTEE		
48	WASHINGTON PASS	MENEFE	796	ROUTE 666	SANOSTEE	WESTWATER	1900
49	SHEEP SPGS S	MENEFE	2713	ROUTE 666	SHEEPSPRINGS		
50	SHEEP SPGS N	POINT LOOKOUT	1278	ROUTE 666	SHEEPSPRINGS		
51	TOHATCHI	POINT LOOKOUT	1448	ROUTE 666	SHEEPSPRINGS	MENEFE	1400
52	BUFFALO SPS 1	GALLUP	1760	ROUTE 666	TOHATCHI		
53	BUFFALO SPS 2	GALLUP	1580	ROUTE 666	TOHATCHI	POINT LOOKOUT	1900
54	TWIN LAKES	WESTWATER		ROUTE 666	TOHATCHI	WESTWATER	3500
55	TOADLENA 2	ALLUVIAL	3246	ROUTE 666	TWIN LAKES		
56	TOADLENA 3	DECHELLY	16	ROUTE 666	TWO GREY HILLS		
57	TOADLENA 1	DECHELLY	997	ROUTE 666	TWO GREY HILLS		
58	OJO ENCINO N	OJO ALAMO	850	ROUTE 666	TWO GREY HILLS	DECHELLY	1100
59	TORREON 4	OJO ALAMO	1057	TORREON	COUNSELOR	OJO ALAMO	1100
60	TORREON 1	OJO ALAMO		TORREON	OJO ENCINO		
61	TORREON 2	OJO ALAMO	787	TORREON	OJO ENCINO		
62	TORREON 3	OJO ALAMO	758	TORREON	OJO ENCINO		
63			1009	TORREON	OJO ENCINO	OJO ALAMO	1200
64				TORREON	PUEBLO PINTADO	CLIFF HOUSE	500
65	BONITO 5	ALLUVIAL		TORREON	TORREON	OJO ALAMO AT OJO ENCINO	1200
66	BONITO 4	ALLUVIAL	39	WINDOW ROCK	FORT DEFIANCE		
67	COALMINE G-2	GALLUP	33	WINDOW ROCK	FORT DEFIANCE		
68	COALMINE G-4	GALLUP	1680	WINDOW ROCK	FORT DEFIANCE		
69	COALMINE G-5	GALLUP	1750	WINDOW ROCK	FORT DEFIANCE		
70	SLICK ROCK F-3	GALLUP	856	WINDOW ROCK	FORT DEFIANCE		
71	SLICK ROCK A-1	GALLUP	865	WINDOW ROCK	FORT DEFIANCE		
72	SLICK ROCK A-2	GALLUP	1184	WINDOW ROCK	FORT DEFIANCE		
73	BLACK CREEK 1	DECHELLY	1390	WINDOW ROCK	FORT DEFIANCE		
74	BLACK CREEK 3	ALLUVIAL	957	WINDOW ROCK	FORT DEFIANCE		
75	BLACK CREEK 4	ALLUVIAL	81	WINDOW ROCK	FORT DEFIANCE		
76	BLACK CREEK 5	ALLUVIAL	141	WINDOW ROCK	FORT DEFIANCE		
77	BLACK CREEK 2	ALLUVIAL	89	WINDOW ROCK	FORT DEFIANCE		
78	BONITO CYN C-1	ALLUVIAL	80	WINDOW ROCK	FORT DEFIANCE		
79	BONITO CYN C-2	ALLUVIAL	39	WINDOW ROCK	FORT DEFIANCE		
80	BONITO 3	ALLUVIAL	32	WINDOW ROCK	FORT DEFIANCE		
81	WINDOW ROCK 1	ALLUVIAL	27	WINDOW ROCK	FORT DEFIANCE	GALLUP	1900
82	WINDOW ROCK 2	DECHELLY	746	WINDOW ROCK	SAINT MICHEALS		
83	WINDOW ROCK 3	DECHELLY	802	WINDOW ROCK	SAINT MICHEALS		
84	HUNTERS POINT	SHINARUMP	290	WINDOW ROCK	SAINT MICHEALS	DECHELLY	900

