

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

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STATE ENGINEER



GARNET VALLEY (HYDROGRAPHIC BASIN 13-216)

GROUNDWATER PUMPAGE INVENTORY

CALENDAR YEAR 2013

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Report Prepared by: John Guillory, P.E.

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ABSTRACT

This inventory represents the status and pumpage of all permitted, certificated and claims of vested right groundwater rights located within Garnet Valley, Hydrographic Basin 13-216, for calendar year 2013 (January 1, 2013 through December 31, 2013). Also included is data associated with depth to groundwater.

The data presented are valid for the time period of this report, and may vary from previously published data as water rights within the basin are subject to administrative action, such as certification, cancellation, forfeiture, or withdrawal on a daily basis.

For calendar year 2013 the permitted, certificated and claims of vested right groundwater rights totaled **3,366 acre-feet**. Estimated pumpage for the calendar year was **1,484 acre-feet**. Municipal is the largest manner of use within the basin. For calendar year 2013, appropriations for municipal use totaled 2,275 acre-feet and the pumpage was 754 acre-feet. The next largest manner of use was industrial with appropriations totaling 612 acre-feet and the pumpage was 559 acre-feet. The next largest manner of use was mining & milling with appropriations totaling 284 acre-feet and the pumpage was 144 acre-feet.

HYDROGRAPHIC BASIN SUMMARY

HYDROGRAPHIC BASIN NUMBER..... 216, REGION 13

HYDROGRAPHIC BASIN NAME GARNET VALLEY

COUNTIES..... CLARK

COMMUNITIES APEX

DESIGNATED YES

DENIALS BASED UPON WATER AVAILABILITY IRRIGATION

GROUNDWATER LEVEL MEASUREMENTS NDWR, SNWA

ESTIMATED PUMPAGE INVENTORY, ACRE-FEET IN 2013 1,484*

STATE ENGINEER'S ORDERS

- [1025](#) - DESIGNATION & PREFERRED USE..... APRIL 24, 1990
- [1169](#) - FURTHER STUDY..... MARCH 8, 2002
- [1169a](#) - FURTHER STUDY..... DECEMBER 21, 2012

COMMITTED GROUNDWATER RESOURCE: 3,366 ACRE-FEET.... DATE: JUNE 2013

MUNICIPAL2,275 INDUSTRIAL 612 MINING&MILLING ... 284

QUASI-MUNICIPAL... 178 COMMERCIAL 14 DOMESTIC..... 3

NOTE: Committed groundwater resource data are accurate for June 2013. Manner of use category totals vary over time, as water rights (rights) are not necessarily static. Rights may be subject to change applications, certification, withdrawals, forfeiture and cancellations; each of these circumstances could impact the duty, diversion rate and acreage associated with a given right.

*Includes pumpage by exempt domestic wells, as defined by NRS 534.013. The domestic use estimate is based upon a count of the total domestic wells in the basin multiplied by 1 acre-foot per annum. The number of domestic wells in the basin was estimated by a query of the [Nevada Division of Water Resources' Well Log Database](#) and is estimated to be 0.

PURPOSE AND SCOPE

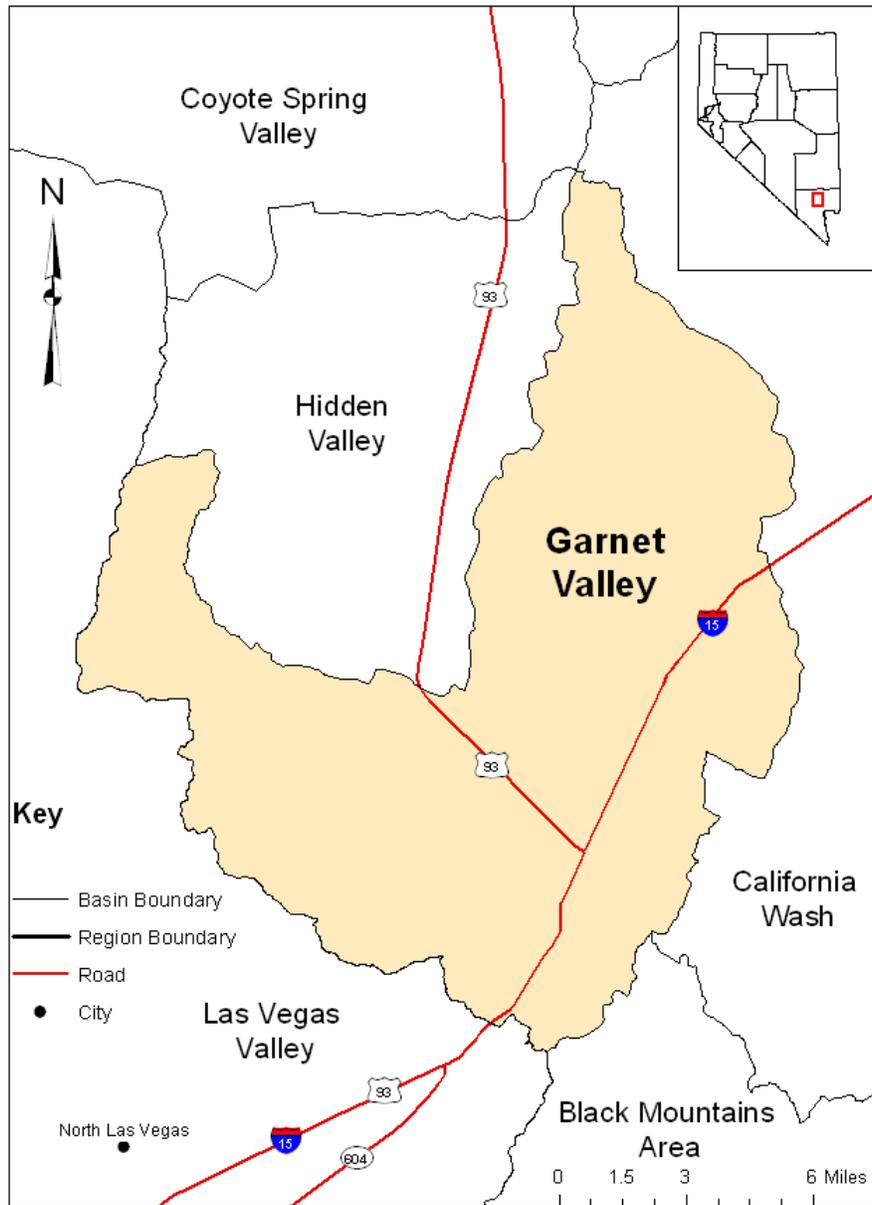
The purpose of this report is to inventory all of the groundwater resources allocated and described by the Office of the State Engineer, Nevada Division of Water Resources, and to estimate the amount of groundwater pumped within the Garnet Valley Hydrographic Basin 13-216, for the calendar year beginning January 1, 2013 and ending December 31, 2013 (hereafter referred to as calendar year 2013). This report estimates the amount of groundwater pumped under the permits and certificates issued by the State Engineer, claims of vested right, and the amount pumped by exempt domestic wells within the basin. Associated information, such as groundwater level measurements, is also presented.

DESCRIPTION OF THE STUDY AREA

Garnet Valley is a small basin located in southeastern Nevada. The valley is approximately 28 miles northeast of Las Vegas, Nevada, and is within the Colorado River Hydrographic Region. The basin is located within Clark County (see Figure 1).

Garnet Valley is bounded on the east by the Dry Valley Range. The Las Vegas Range forms the south and west boundary. The northern part of Garnet Valley is dissected by the Arrow Canyon Range. The adjacent Nevada hydrographic basins are as follows: California Wash, 13-218, to the east; Black Mountains Area, 13-215, to the southeast; Las Vegas Valley, 13-212, to the south and west; and Hidden Valley, 13-217, to the north. The exterior boundary of the Garnet Valley Hydrographic Basin is as described by Designation Order 1025, issued by the Nevada State Engineer April 24, 1990. The basin covers approximately 167 square miles.

FIGURE 1 LOCATION MAP OF GARNET VALLEY HYDROGRAPHIC BASIN 13-216



GROUNDWATER LEVELS

Depths to groundwater in Garnet Valley are not measured by the Nevada Division of Water Resources (NDWR), but data are provided to NDWR by water rights holders.

Groundwater level data have been collected by the USGS in the past (data may be accessed through the USGS website <http://nevada.usgs.gov/>).

METHODS TO ESTIMATE PUMPAGE

This report estimates the amount of groundwater pumped under the permits and certificates issued by the Nevada State Engineer as well as claims of vested right and exempt domestic wells in the Garnet Valley Hydrographic Basin. The following methods were used to arrive at the estimated use:

- Where totalizing meters are in place, meter readings were taken and compared with previous data (if available).
- Where meters were not in place and the use was irrigation, pumpage was estimated by multiplying the number of hours the well was operated during the past year (determined from an hour meter reading or asking the water user) by the certificated diversion rate.
- Where meters were not in place, use was irrigation, and the number of hours the well was operated was unknown an inspection of the place of use was done to estimate the amount of acreage under cultivation. The number of acres under cultivation was then multiplied by a duty of 5 acre-feet per acre to estimate the use.
- Where meters were not present, previous data were not available, and the manner of use was not irrigation, pumpage was estimated by applying the annual duty associated with the certificate (if the water right was perfected), permit or claim, if the use was as described in the certificate, permit or claim. If the use was not as described in the certificate, permit or claim, a value was estimated based upon the circumstances of use for the subject year.
- If no water was used under the certificate, permit or claim, zero pumpage was recorded.
- Exempt domestic wells may be drilled and utilized where water service from a purveyor is not available. These types of wells do not require a permit from the State Engineer and are limited to a maximum of 2 acre-feet per year as provided by Nevada Revised Statutes (NRS) [534.180](#). [NRS 534.013](#) defines this category of domestic use as follows: “*Domestic use or domestic purposes extends to culinary and household purposes directly related to a single family dwelling, including, without limitation, the watering of a family garden and lawn and the watering of livestock and any other domestic animals or household pets.*” The number of exempt domestic wells in the basin is determined by a query of the Nevada Division of Water Resources' Well Log Database. The amount of water pumped by exempt domestic wells is estimated to be 1.0 acre-foot per well in Garnet Valley. Actual domestic well pumpage is not precisely known.

PUMPAGE BY MANNER OF USE

Note that all data herein are estimates and are subject to revision. The total estimated groundwater pumpage for calendar year 2013 was **1,484 acre-feet**. The annual duties of the certificates, permits and claims of vested right within the Garnet Valley Hydrographic Basin totaled **3,366 acre-feet**. The appropriated and actual pumped totals, categorized by manner of use, are as follows:

A. Municipal (MUN)

During calendar year 2013, appropriations for municipal purposes totaled 2,275 acre-feet in the basin. An estimated 754 acre-feet of groundwater was pumped during calendar year 2013.

B. Industrial (IND)

During calendar year 2013, appropriations for industrial purposes totaled 612 acre-feet in the basin. An estimated 559 acre-feet of groundwater was pumped during calendar year 2013.

C. Mining & Milling (MM)

During calendar year 2013, appropriations for mining & milling purposes totaled 284 acre-feet in the basin. An estimated 144 acre-feet of groundwater was pumped during calendar year 2013.

D. Quasi-Municipal (QM)

During calendar year 2013, appropriations for quasi-municipal purposes totaled 178 acre-feet in the basin. An estimated 13 acre-feet of groundwater was pumped during calendar year 2013.

E. Commercial (COM)

During calendar year 2013, appropriations for commercial purposes totaled 14 acre-feet in the basin. An estimated 14 acre-feet of groundwater was pumped during calendar year 2013.

F. Domestic (DOM)

During calendar year 2013, appropriations for domestic purposes totaled 3 acre-feet in the basin. An estimated 0 acre-feet of groundwater was pumped during calendar year 2013.

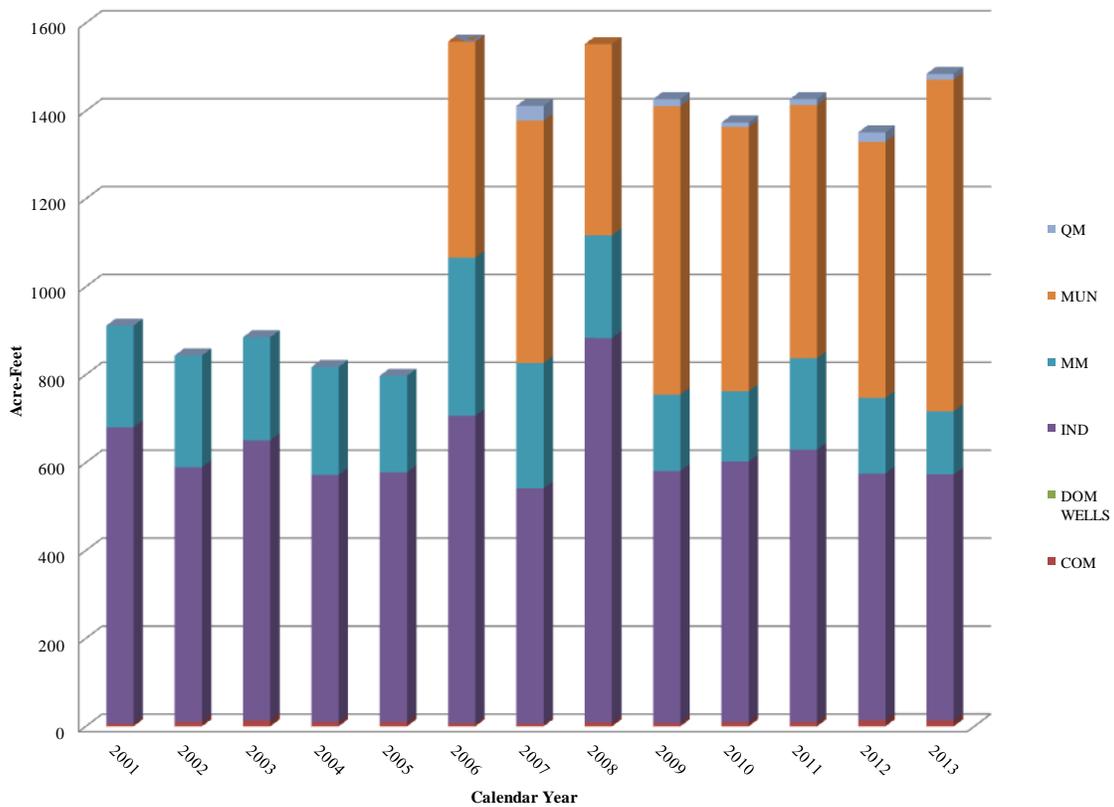
APPENDIX A

GARNET VALLEY HISTORICAL PUMPAGE

HISTORICAL GROUNDWATER PUMPAGE BY MANNER OF USE

YEAR	COM	DOM	IND	MM	MUN	QM	TOTAL
2001	7	0	674	231	0	0	912
2002	10	0	579	254	0	0	844
2003	13	0	637	234	0	0	885
2004	10	0	562	245	0	0	817
2005	10	0	568	220	0	0	797
2006	7	0	699	360	492	0	1558
2007	6	0	535	285	552	33	1412
2008	9	0	874	234	435	0	1552
2009	8	0	573	174	656	16	1427
2010	10	0	592	160	601	10	1373
2011	10	0	619	208	577	13	1427
2012	14	0	561	172	583	21	1351
2013	14	0	559	144	754	13	1484

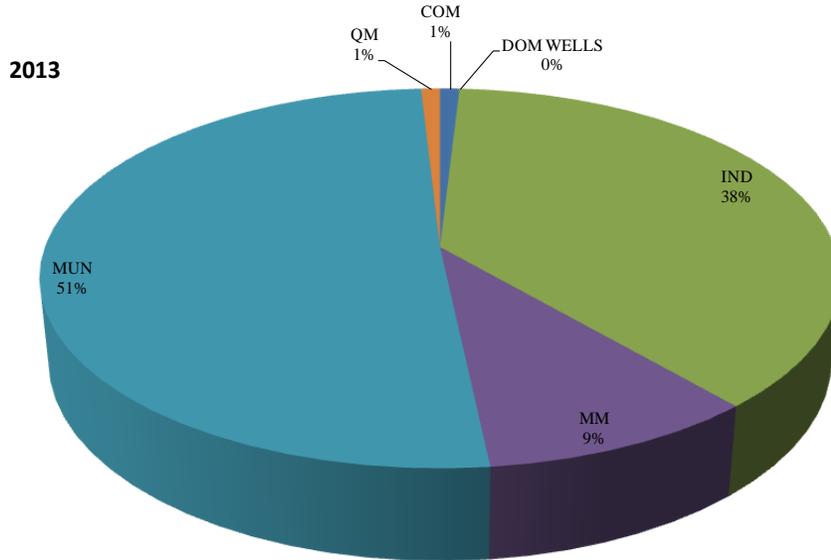
All values are in acre-feet



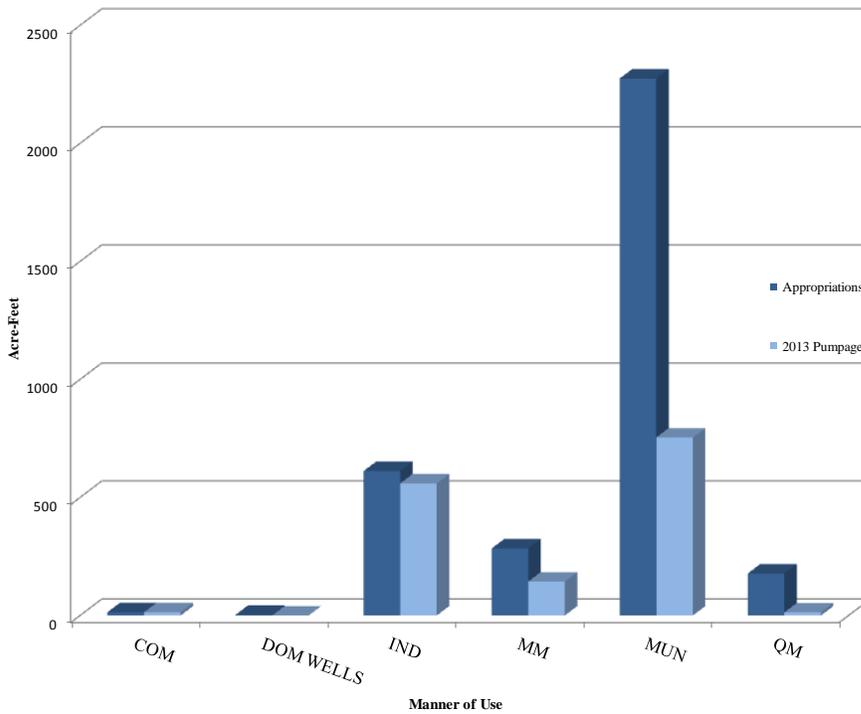
APPENDIX B

**GARNET VALLEY GROUNDWATER PUMPAGE FOR CALENDAR YEAR
2013 BY MANNER OF USE**

PERCENTAGE OF GROUNDWATER PUMPAGE FOR CALENDAR YEAR 2013 BY MANNER OF USE



GROUNDWATER PUMPAGE FOR CALENDAR YEAR 2013 APPROPRIATIONS VS. ACTUAL PUMPAGE



APPENDIX C

**GARNET VALLEY GROUNDWATER PUMPAGE INVENTORY FOR
CALENDAR YEAR 2013**

EXPLANATION OF COLUMN HEADINGS FOR GROUNDWATER PUMPAGE INVENTORY

APP NUMBER	The file number of the Application or the Vested Claim of Right.																
STATUS	Indicates if the application is a Vested Claim of Right (VST), a Permit (Permit), or a Certificate (Cert).																
OWNER OF RECORD	The owner of the water right as recorded in the files of the State Engineer. A water right may have more than one owner of record.																
QQ	The quarter quarter of the Section in which the point of diversion is located.																
QTR	The quarter of the Section in which the point of diversion is located.																
Sec	The Section in which the point of diversion is located.																
T	The Township in which the point of diversion is located.																
R	The Range in which the point of diversion is located.																
ACRES OR DUTY	The number of acres that are permitted to be irrigated or the duty if the manner of use is anything other than irrigation.																
ACRES IRR OR USE	<p>The number of acres irrigated or the manner of use of the appropriated water. The types of manner of use may include:</p> <table border="0" style="width: 100%;"> <tr> <td>COM - Commercial</td> <td>CON - Construction</td> </tr> <tr> <td>DOM - Domestic</td> <td>ENV - Environmental</td> </tr> <tr> <td>IND - Industrial</td> <td>IRR - Irrigation</td> </tr> <tr> <td>MM - Mining & Milling</td> <td>MUN - Municipal</td> </tr> <tr> <td>OTH - Other</td> <td>PWR - Power</td> </tr> <tr> <td>QM - Quasi-Municipal</td> <td>REC - Recreation</td> </tr> <tr> <td>STK - Stockwater</td> <td>STO - Storage</td> </tr> <tr> <td>WLD - Wildlife</td> <td></td> </tr> </table>	COM - Commercial	CON - Construction	DOM - Domestic	ENV - Environmental	IND - Industrial	IRR - Irrigation	MM - Mining & Milling	MUN - Municipal	OTH - Other	PWR - Power	QM - Quasi-Municipal	REC - Recreation	STK - Stockwater	STO - Storage	WLD - Wildlife	
COM - Commercial	CON - Construction																
DOM - Domestic	ENV - Environmental																
IND - Industrial	IRR - Irrigation																
MM - Mining & Milling	MUN - Municipal																
OTH - Other	PWR - Power																
QM - Quasi-Municipal	REC - Recreation																
STK - Stockwater	STO - Storage																
WLD - Wildlife																	
USED (AF)	The amount of water used during the calendar year, in acre-feet, as determined by review of records and/or field investigation.																
REMARKS	Notes pertaining to field investigation and/or review of records.																

**GROUNDWATER PUMPAGE INVENTORY
GARNET VALLEY, NO. 216
2013**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS	
			QQ	Qtr	Sec	T	R					
18140	Cert	State of NV - Highways	SW	SW	21	17	64	3.00	DOM	0.00	Old rest stop, not in use.	
54073	Permit	LVVWD	CLARK COUNTY					450.21	MUN	26.09	54073: WV, no works 04-26-12 Plotted POD is in the SW SW of Section 32 17S 63E; well drilled in Section 4 18S 63E.	
68822	Permit		LINCOLN COUNTY									
72798	Abr		NYE COUNTY									
73149	Abr		WHITE PINE COUNTY									
73150	Abr											
73151	Abr											
78954-T	Exp											
56855	Cert	Georgia Pacific Corp.	SE	NE	34	18	63	144.15	IND	145.73	S/N 69045705 New Meter RD - 01084200 - 04-09-10 RD - 45442600 - 04-08-11	
63261	Cert	Chemical Lime Co.	NE	NE	14	18	63	100.00	MM	80.16	S/N - 1595764-H001 East meter RD - 123431060 - 04-09-10 RD - 153965280 - 04-08-11 S/N - 108818-H001 West meter RD - 065329330 - 04-09-10 RD - 087830310 - 04-08-11 meters on water tank	
64880	Cert		SW	SE	23	18	63	133.81	MM	63.59		
63348	Cert	Western Mining & Milling	NE	SW	13	18	63	4.00	COM	3.80		S/N 97800120 RD - 18757100 - 04-09-10 RD - 19996700 - 04-08-11
66784	Permit	Dry Lake Water LLC	NE	NE	27	18	63	178.00	QM	13.22		Industrial Properties Development 66784: No meter, well not in use 66785: WV, no works 72098 & 79948: S/N 003216 RD - 05446800 - 04-08-11 RD - 09717700 - 04-11-12
66785	Permit		NE	NE	32	17	63					
72098	Cert		SE	SW	13	18	63					
74064	Permit											
77389	Permit											
79948	Permit											

**GROUNDWATER PUMPAGE INVENTORY
GARNET VALLEY, NO. 216
2013**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
										74064: WNV; 77389: WNV	
67711	Permit	Republic Environ. Tech.	SW	NE	18	18	64	468.00	IND	339.13	S/N 53172198 Well 1
67712	Permit		SW	NE	18						RD - 01746100 - 05-22-08
67713	Permit		SE	SE	7						S/N 70177000 Well 2
67714	Permit		NE	NW	20						RD - 44457200 - 05-22-08
67715	Permit		SE	SE	7						S/N None Well 3
67716	Permit		NW	NE	19						RD - 1459730 - 05-22-08
67717	Permit		SW	NE	18						S/N 70155806 Well 5
67718	Permit		SE	SW	19						RD - 45882400 - 05-22-08
67719	Permit		SW	NE	18						S/N 70155512 Well 6
67720	Permit		SE	SE	7						RD - 17769300 - 05-22-08
81009-T	Exp									S/N 49631323 Well 7 RD - 0068760 - 05-22-08	
74399	Cert	Nevada Power Co.	NW	SW	21	17	64	74.57	IND	74.60	Harry Allen Plant. Harvey Well S/N 0870128188
77745	Permit	City of North Las Vegas	NW	NW	16	18	63	10.02	COM	9.81	S/N F1031916000 new meter RD - 4957659 - 01-01-13 RD - 78916619 - 12-31-13 + 256,680 gallons flush water
79001	Permit	LVVWD			12	17	63	1400.00	MUN	728.03	Mirant, Silverhawk, and Chuck
79002	Permit				13						Lenzie power plant facilities.
79003	Permit				35						79001 & 79006: No S/N
79004	Permit				24						RD - 192920000 - 04-26-12
79005	Permit				25						well not in use
79006	Permit				36						
79007	Permit				7	17	64				79002 & 79007: No S/N
79008	Permit				18						RD - 19733140 - 04-26-12
79009	Permit				19						

**GROUNDWATER PUMPAGE INVENTORY
GARNET VALLEY, NO. 216
2013**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
79010	Permit				30					79004 & 79009: S/N 106102725 RD - 26264300 - 04-26-12	
					31						
					1	18	63				
					2						
			SE	NE	5					79005 & 79010: S/N 0860188417 RD - 18919742 - 04-26-12	
			NE	SE	5						
			SE	SW	5					79003 & 79008: same POD as 74399 (RW-1 well)	
			E2	NE	15						
			E2	SE	15						
TOTAL									1484.15	Permitted rights	