HOMESTAKE
Grants Project

Homestake Mining Company of California

Jesse R. Toepfer
Closure Manager

31 March 2016

ATTN: Document Control Desk
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ATTN: Mr. Jack Parrott, Sr. Project Manager
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ATTN: Mr. Kurt Vollbrecht
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RE: 2015 Annual Monitoring Report / Performance Review, In Accordance With Nuclear Regulatory Commission Docket No. 40-8903, License No. SUA 1471, and New Mexico Environment Department DP-200 Ground Water Discharge Plan

Mr. Parrott and Mr. Vollbrecht:

Pursuant to US Nuclear Regulatory Commission License SUA-1471, Docket 40-8903, License Condition 35(E) and in accordance with the ground water discharge permit DP-200 issued by the New Mexico Environment Department, please find enclosed copies of the subject Annual Performance Report for 2015 for Homestake's Grants Reclamation Project. Included in each report copy is a CD containing an electronic PDF file version of the report.

HMC noted in the past that monitoring conditions on the site are subject to change and may require periodic judgment decisions relative to the ability to supply certain data to meet the Table 2 - Groundwater Monitoring Program (8-99) requirements, as modified by NRC License provisions.

With respect to the well monitoring requirements outlined in Table 2, monitoring wells 446, 491, 492, 942 and SUB1 were not sampled in 2015; the wells are either obstructed, not accessible, or supply inadequate water for sampling. Well 647 was not sampled due to its pump being down in 2015. We are recommending, as part of the Corrective Action Program (CAP) update review, that these wells except for well 647 be replaced by alternate wells for monitoring in this area.

IE25
NMSS20

Thank you for your time and attention on this matter. If you or anyone on your staff has any questions, please contact me at the Grants office at 505.287.4456, extension 34, or call me directly on my cell phone at 505.290.3067.

Respectfully,

Jesse R. Toepfer
Closure Manager
Homestake Mining Company of California
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GRANTS RECLAMATION PROJECT

2015 ANNUAL MONITORING REPORT / PERFORMANCE REVIEW FOR HOMESTAKE'S GRANTS PROJECT PURSUANT TO NRC LICENSE SUA-1471 AND DISCHARGE PLAN DP-200

Prepared for:

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March 2016

2015 ANNUAL MONITORING REPORT / PERFORMANCE REVIEW FOR HOMESTAKE'S GRANTS PROJECT PURSUANT TO NRC LICENSE SUA-1471 AND DISCHARGE PLAN DP-200

FOR:

U.S. NUCLEAR REGULATORY COMMISSION
AND
NEW MEXICO ENVIRONMENT DEPARTMENT

BY:

HOMESTAKE MINING COMPANY OF CALIFORNIA
GRANTS, NEW MEXICO

AND

HYDRO-ENGINEERING, LLC
CASPER, WYOMING

MARCH, 2016

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3/22/2016

TABLE OF CONTENTS

GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

APPENDICES

NOTE: TABLE OF CONTENTS IS PRESENTED AFTER THE TAB FOR EACH SECTION

SECTION 1

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

Page Number

FIGURES

1.0 EXECUTIVE SUMMARY AND INTRODUCTION

1.1 EXECUTIVE SUMMARY

Homestake Mining Company of California manages a ground water restoration program as defined by Nuclear Regulatory Commission (NRC) License SUA-1471, and New Mexico Environment Department (NMED), DP-200 permit. The restoration program is a dynamic on-going strategy based on a restoration plan, which began in 1977.

Homestake's long-term goal is to restore the aquifer water quality to levels as close as practicable to the up-gradient site background levels. A ground water collection area (see yellow shaded area on Figure 2.1-1, Page 2.1-14) has been established and is bounded by a down-gradient perimeter of injection/infiltration wells and trenches. Alluvial ground water that flows beneath the tailings enters this collection area. All ground water in the alluvial aquifer that is within the collection area is eventually captured by the collection well system. Once ground-water quality restoration within the zone is complete and approved by the agencies, the site is to be transferred to the U.S. Department of Energy, which will have the responsibility for long-term site care and maintenance.

The data reported within this document represent the results of the monitoring program during 2015. This is a yearly reporting requirement. A similar report has been submitted to the agencies each year since 1983 (see footnote list in Section 1.2 and report Section 9.0).

The restoration program is designed to remove target contaminants from the ground water by flushing the alluvial and Chinle aquifers with deep-well supplied fresh water or treated water produced from the reverse osmosis (R.O.) plant or the zeolite treatment system. A series of collection wells is used to collect the contaminated water, which is currently pumped to the R.O. plant for treatment or, alternatively, reported to the evaporation ponds.

Historically, the contaminants are found in two different aquifer systems. The aquifer system of primary concern is the alluvial system, which averages approximately 100 feet in depth, and extends generally north to south encompassing the San Mateo alluvial aquifer. In addition, a second aquifer system is found within the Chinle formation underlying the San Mateo alluvium. It is comprised of three separate aquifers designated as the Upper, Middle and Lower Chinle aquifers. The Updated Corrective Action Program (CAP, Homestake 2012) and Hydro-Engineering 2003b reports should be reviewed for details of the geologic setting and aquifer conditions on the site. Two

cross sections are included that present the hydrologic setting at the Grants site and their locations are shown on Figure 1.1-1. Figure 1.1-2 presents a typical cross section which is located from within the On-Site area and extends to the south-southwest into southern Felice Acres area (see Figure 1.1-1 for location of the cross section). This typical cross section shows the alluvial aquifer relative to the three Chinle aquifers and shows the Upper and Middle Chinle aquifers subcropped with the alluvium. Figure 1.1-3 presents Cross section B-B' which shows the alluvial, Upper and Middle Chinle aquifers just south of the Large Tailings Pile (LTP) and through the Small Tailings Pile (STP). A second cross section (D-D') that runs from Section 3 in the southwest through the LTP is presented in Figure 1.1-4. The Upper and Middle Chinle aquifers subcrop beneath the alluvial system near the project site. Slight to moderately elevated concentrations of constituents of concern have been observed in the Upper, Middle and Lower Chinle aquifers near their subcrops with the overlying alluvial system.

The restoration program, as described above, is made up of injection and collection well systems. R.O. product water, or fresh water pumped from deep wells is injected in a series of wells or infiltration trenches arranged to form a continuous injection line across the site. The injection line creates a hydraulic barrier that results in containment of the contaminants within the collection area. The contaminated ground water is pumped and collected from a series of wells within the collection area. The collected aquifer water is pumped to the R.O. plant or to three large lined evaporation ponds for passive and forced (spray) evaporation. The On-site collection is near the LTP and is located to the north of where Cross section B-B' runs between wells CW-6 and CW-4. This collection would also be south of the LTP on Cross section D-D'. Historically, the Off-site collection water has been used for irrigation. In the future, Off-site collection water will be processed through the zeolite system and the treated water will be used as injection water. Collection and injection has started in the northeast portion of Section 3 with the R well field. This well field is in the Middle Chinle subcrop area and the collection is occurring from both the alluvial and Middle Chinle aquifers. The injection also occurs in both the alluvial and Middle Chinle aquifers. The R well field is located east of well CW-29 on Cross section D-D' and was operated during the first half of 2015. Saturated alluvium exists above the Middle Chinle aquifer in this location. Timing of restoration of the alluvial aquifer in the R area is important to restoration of the Middle Chinle down gradient of this area.

In the years from 1977 to the present, the combination of injection wells and the up-gradient collection system has continued the withdrawal of the contaminated ground water plume up-gradient of the current hydraulic barrier which assists in aquifer restoration of ground water concentrations to or below site background levels. Selenium concentrations are used to present the progress that has been made in the ground-water restoration program. Selenium was the parameter of most concern in the early years of the corrective action program. Figure 1.1-5 presents the alluvial selenium concentrations for 1976 prior to the start of the corrective action program for the Grants site. The red pattern in this figure shows where selenium concentrations were greater than 5 mg/l in 1976 in the Large and Small Tailings areas. The blue pattern shows where concentrations are above 1 mg/l but less than 5 mg/l with areas On-site and in Broadview Acres. The cyan color shows where concentrations were between 0.32 and 1.0 mg/l in 1976. The 1988 alluvial selenium concentration patterns are presented in Figure 1.1-6 and show that selenium had been restored in all of the subdivisions by 1988. Figures 1.1-7 and 1.1-8 give the selenium patterns for 1999 and 2015, respectively, showing only a small area in the tailings area in 1999 with selenium concentrations above 5 mg/l while no concentrations are above this level in 2015. The area in Section 3 with elevated selenium concentration in 1999 was restored prior to 2015.

Uranium became the most important parameter for restoration at the Grants site after a large portion of selenium restoration and with the establishment of new uranium standards in the mid 2000's. Figure 1.1-9 presents the 1976 alluvial uranium concentrations with the red pattern showing where concentrations exceeded 10 mg/l in the area of the LTP and STP and in the western portion of Broadview Acres. This figure also shows that there were additional areas in Broadview and Murray Acres where concentrations exceeded 1.0 and 0.5 mg/l levels in 1976. The cyan color shows where concentrations exceed 0.16 mg/l in 1976. Figure 1.1-10 shows the uranium concentrations that existed in the alluvial aquifer in 1988 with concentrations of 0.16 to 0.5 mg/l still present in Broadview and Felice Acres and concentrations above 1 mg/l in the northeast portion of Murray Acres. Uranium concentrations in the On-site area near the LTP and STP were greater than 10 mg/l. The uranium concentrations in 1999 were below the site standard in all of Broadview Acres except the southern area where concentrations were slightly above the site standard (see Figure 1.1-11). A small area in the northeast portion of Murray Acres also exceeded the site standard in 1999, but the maximum concentrations in this area were reduced to below 1.0 mg/l.

Uranium concentrations in southern Felice Acres and the northeast portion of Section 3 exceeded 1 mg/l in 1999. Concentrations exceeded 0.5 mg/l in the central portion of Section 28 in the North area while the area of concentrations exceeding the site standard extended down to the west-center portion of Section 33. The 2015 uranium concentration patterns are presented in Figure 1.1-12 and show that concentrations in southern Felice Acres and the northeast portion of Section 3 have been reduced to below 1.0 mg/l with a much smaller area of concentrations greater than 0.5 mg/l left in southern Felice Acres and the northeast portion of Section 3. The area of concentrations greater than the site standard that extended into west-central portion of Section 33 has been pulled back approximately one mile to the western portion of Section 28. The On-site area of concentrations greater than 10 mg/l is also much smaller in 2015.

The uranium concentrations for four different years are presented for the Upper Chinle aquifer in Figures 1.1-13 through 1.1-16. Collection in the Upper Chinle aquifer is mainly south of the Collection ponds in or near the Upper Chinle subcrop area and this area is shown on Cross section B-B' in the area of well CW-4.

Figures 1.1-17 through 1.1-20 give similar maps for the Middle Chinle aquifer and the sequence of measured concentrations showed some improvement in in the South Felice Acres area. Collection in the Middle Chinle in 2015 is mainly in the R well field and South Felice Acres. The hydrologic setting is shown on Cross section D-D' where the Middle Chinle sandstone subcrops with saturated alluvium.

The elevated Lower Chinle uranium concentrations were first defined in 1996 and are presented in Figure 1.1-21. The collection of water for irrigation from the Lower Chinle reduced the higher concentrations in 1999 (see Figure 1.1-22) to lower levels in 2015 (see Figure 1.1-23).

An average of 450 gallons per minute (gpm) was pumped into the On-site alluvial fresh-water injection systems in 2015. An additional 57 gpm of fresh water was injected into the On-site Upper and Middle Chinle aquifer systems. An average rate of 112 gpm of R.O. product water was injected into the alluvial aquifer in 2015, in addition to the fresh-water injection program. Production of significant quantities of R.O. product water started in July of 1999 with consistent operation from 2000 through 2015 except during equipment repair periods.

In 2015, the average collection rate for the On-site alluvial aquifer was maintained at 199 gpm. An additional 25 gpm was pumped from the alluvial aquifer and re-injected within the

collection area. The Upper Chinle aquifer collection program consisted of pumping wells CE2, CE5, CE6, CE7, CE11 and CE12 at an average composite rate of 58 gpm in 2015. The up-gradient alluvial aquifer collection system was not operated in 2015, while average rates of 20 and 17 gpm were pumped from the LTP toe drains and *in situ* tailings pile dewatering, respectively.

The continuing evaluation of the performance of the Grants restoration system, including the 2015 results, shows that sulfate, TDS, chloride, uranium, selenium and molybdenum are still the key constituents of interest at this site. Successful restoration of ground water quality with respect to these key constituents will also accomplish restoration for other constituents. The monitoring program has shown that any low levels of nitrate, radium-226, radium-228, vanadium and thorium-230 are also reduced when the key constituents are restored in a particular area.

Data relating to key constituents currently being restored at the site have been reviewed and statistically evaluated to determine upgradient site background water quality. These background water quality levels have been accepted by NRC, EPA and NMED; the NRC and NMED have set site standards based on the background water quality and accordingly amended the Radioactive Material license and DP-200 to reflect those standards. It should be noted that these site standards are utilized throughout this report for comparison purposes in discussing restoration progress.

Observed alluvial aquifer concentrations of key constituents at the Grants site were similar to those in previous years. The only areas where sulfate, TDS and chloride concentrations exceed the alluvial site standard are an area east of Valle Verde plus the large area in close proximity to the Large and Small Tailings Piles in the Grants Project area.

Uranium concentrations exceed the alluvial site standard of 0.16 mg/l within the collection area near the tailings. There is also one well in northern Felice Acres and several wells in southern Felice Acres subdivision that contain concentrations of uranium exceeding the site standard. Ground water withdrawal for treatment is planned to be used to further reduce uranium levels that exceed the standard in an area southwest of Felice Acres in Section 3 and in the western half of Section 27 and Section 28. Collection of water from one well in Murray Acres is being used to reduce uranium concentrations in that area. Uranium concentrations in the northeast portion of Section 3 were reduced in 2015 in the R well field.

Selenium concentrations also exceed the relevant site standard in the collection area near the LTP and southeast of the STP. None of the sampled subdivision wells contained selenium concentrations above the site standard.

None of the subdivision wells contain molybdenum concentrations above the site standard of 0.1 mg/l. The wells exhibiting elevated molybdenum concentrations are all located near the Large and Small Tailings Piles, to the southeast of the STP, and in an area in central Section 27. Migration of this constituent has been limited due to natural retardation within the alluvial aquifer.

Nitrate concentrations are compared to the alluvial site standard of 12 mg/l. Areas north of the LTP and to the west of the LTP contains higher nitrate concentrations above the site standard, but these levels are likely natural given their location. Nitrate concentrations in the area of the LTP and STP are likely caused by tailings seepage. A small area southeast of Valle Verde area exceeds the nitrate alluvial site standard. Water quality with respect to this constituent should easily be remediated through the ongoing restoration program.

All radium values in the alluvial aquifer outside of the tailings perimeter were less than the site standard. This demonstrates that radium is only a constituent of concern under the LTP.

One vanadium concentration west of the LTP exceeded the alluvial site standard 2015. Concentrations of this constituent have been adequately restored to below the site standard except for levels near the LTP.

Thorium levels observed in 2015 were less than the site standard except levels in the alluvium immediately under the LTP. The mobility of this constituent has been very limited and elevated activities only occur in close proximity to the tailings. However, the analytical results for this constituent vary significantly at the low observed levels as they are approaching laboratory detection limits. Slightly higher values should not be considered significant until they are supported by additional monitoring. The monitoring records for thorium indicate that it is a minor constituent of concern at the Grants site.

Fresh-water injection into Upper Chinle wells CW13 and 944, (See Figure 5.1-2), east of the East Fault, continued in 2015. This injection has maintained higher water levels in the Upper Chinle aquifer east of the East Fault which in turn has allowed continued operation of the nearby Upper Chinle collection wells.

Fresh-water injection continued in 2015 in Upper Chinle well CW5 just north of Broadview Acres and also in Upper Chinle wells CW4R and CW25. This injection has resulted in gradient reversal within the Upper Chinle, thereby forcing ground water from this area back to the north toward the tailings piles. Collection from Upper Chinle well CE2 was initiated in 1999 and continued through 2015. Collection in Upper Chinle wells CE5, CE6, CE11 and CE12 was started in 2006. Collection from Upper Chinle well CE7 started in late 2010. This collection is used in conjunction with injection wells CW4R, CW5 and CW25 to restore ground water quality in this area. Injection into well CW25 was started in 2000 and continued through 2015.

All sulfate, chloride and TDS concentrations in the Upper Chinle aquifer are below the site standards except for samples from wells near or on the LTP for all three constituents. Therefore, the Upper Chinle aquifer only requires restoration with respect to TDS, chloride and sulfate in a localized area near the LTP.

Uranium concentrations in numerous wells near the LTP and Collection ponds and four Upper Chinle wells north and in Broadview and Felice Acres exceeded the Upper Chinle site standard in 2015. Restoration of these elevated values should result from the existing and additional Upper Chinle collection wells and the CW4R, CW5 and CW25 well injection efforts.

Selenium concentrations in the Upper Chinle aquifer exceed the site standard in several wells in the mixing zone near the LTP and Collection ponds. The site standards for selenium for the Upper Chinle mixing zone and the Upper Chinle non-mixing zone are 0.14 and 0.06 mg/l, respectively.

The concentrations of molybdenum exceeded the site standard in several wells near the tailings and south of the Collection Ponds in the Upper Chinle aquifer and two more to the north and in Broadview Acres during 2015. Restoration for these locations should occur from continued additional and existing well collection and CW4R, CW5 and CW25 well injection activities.

All nitrate concentrations observed in 2015 for the Upper Chinle mixing zone were less than the nitrate site standard except for a small in the LTP area. This indicates that nitrate is not a constituent of concern in this aquifer.

Only an area in the Upper Chinle aquifer in the western portion of the LTP contain a radium-226 plus radium-228 value above 5 pCi/l. One Upper Chinle well near the LTP equaled the site standard for vanadium concentrations in the 2015 sampling. The highest measured thorium-230

concentration near the LTP in the Upper Chinle aquifer wells during 2015 was 0.3 pCi/l. This is consistent with the low observed concentrations in the overlying alluvial aquifer.

The direction and rate of ground water flow in the Middle Chinle aquifer in 2015 is very similar to that of past years except for the depression that was developed in western South Felice Acres from the pumping in the first half of 2015. Fresh-water injection into well CW14 started in December of 1997. Fresh-water injection into wells CW30 and CW46 started in 2004. The fresh water is building up a mound of ground water in this area, which will result in a reversal of the flow of Middle Chinle water back toward the alluvial subcrop. Well CW28 was added as a supply well for fresh-water injection in 2002 but was not used during 2015.

Water quality in the Middle Chinle aquifer is generally good. All sulfate concentrations are less than the site standards except for exceedance in the mixing zone area at wells CW62, WR25 and WCW. All TDS concentrations in the Middle Chinle aquifer are less than the standards except for one TDS in Broadview Acres and two in Murray Acres that are above the non-mixing zone background value and two TDS values in wells west of the West Fault. Chloride concentrations in only one well west of the West Fault and one well in Murray Acres in the Middle Chinle exceed the chloride site standard. The chloride value in well ACW increased again in 2015.

Uranium concentrations in the western portion of Felice Acres are above mixing zone site standards due to the alluvial recharge to the Middle Chinle aquifer just south of Felice Acres. Uranium concentrations in the non-mixing zone in the western portion of Broadview Acres are also above site standards. Continued pumping of this water by Homestake will reduce these elevated concentrations in western Felice Acres and Broadview Acres. The uranium background is also exceeded in several wells west of the West Fault.

The non-mixing zone selenium site standard is slightly exceeded in well 493 in Felice Acres (See Figure 6.3-14). The mixing zone selenium site standard is exceeded in wells CW17, CW56, CW61 and CW62. Molybdenum concentrations in several wells west of the West Fault in the Middle Chinle aquifer are above the mixing zone standard of 0.10 mg/l.

Nitrate, radium, vanadium and thorium-230 concentrations in the Middle Chinle aquifer are below levels of concern for each of the constituents. Hence, uranium, selenium and molybdenum are considered the important constituents relative to restoration needs for the Middle Chinle aquifer system.

Concentrations of major constituents in the Lower Chinle aquifer generally increase in the down-gradient direction due to the slow movement of water in the fractured shale. All sulfate, TDS and chloride concentrations are less than the site standards except in far-down-gradient areas, where natural concentrations exceed the non-mixing zone site standard. These exceedances are a result of the limited background data for the far-down-gradient areas of the Lower Chinle aquifer, and there is a naturally occurring deterioration of Lower Chinle water quality in the down-gradient direction.

The uranium site standards in the Lower Chinle aquifer are exceeded in several wells in Section 3. The wells where concentrations exceed the mixing zone site standard of 0.18 mg/l are located near the subcrop of the Lower Chinle aquifer with the alluvial aquifer. Concentrations in two non-mixing zone well exceed the site standard of 0.03 mg/l.

Concentrations of selenium do not exceed the standards in the two zones for the Lower Chinle aquifer. All molybdenum concentrations in the Lower Chinle aquifer are less than the site standard. None of the Lower Chinle nitrate concentrations exceed site standards or at levels of concern. All radium, vanadium and thorium-230 concentrations in the Lower Chinle aquifer in 2015 were at low levels.

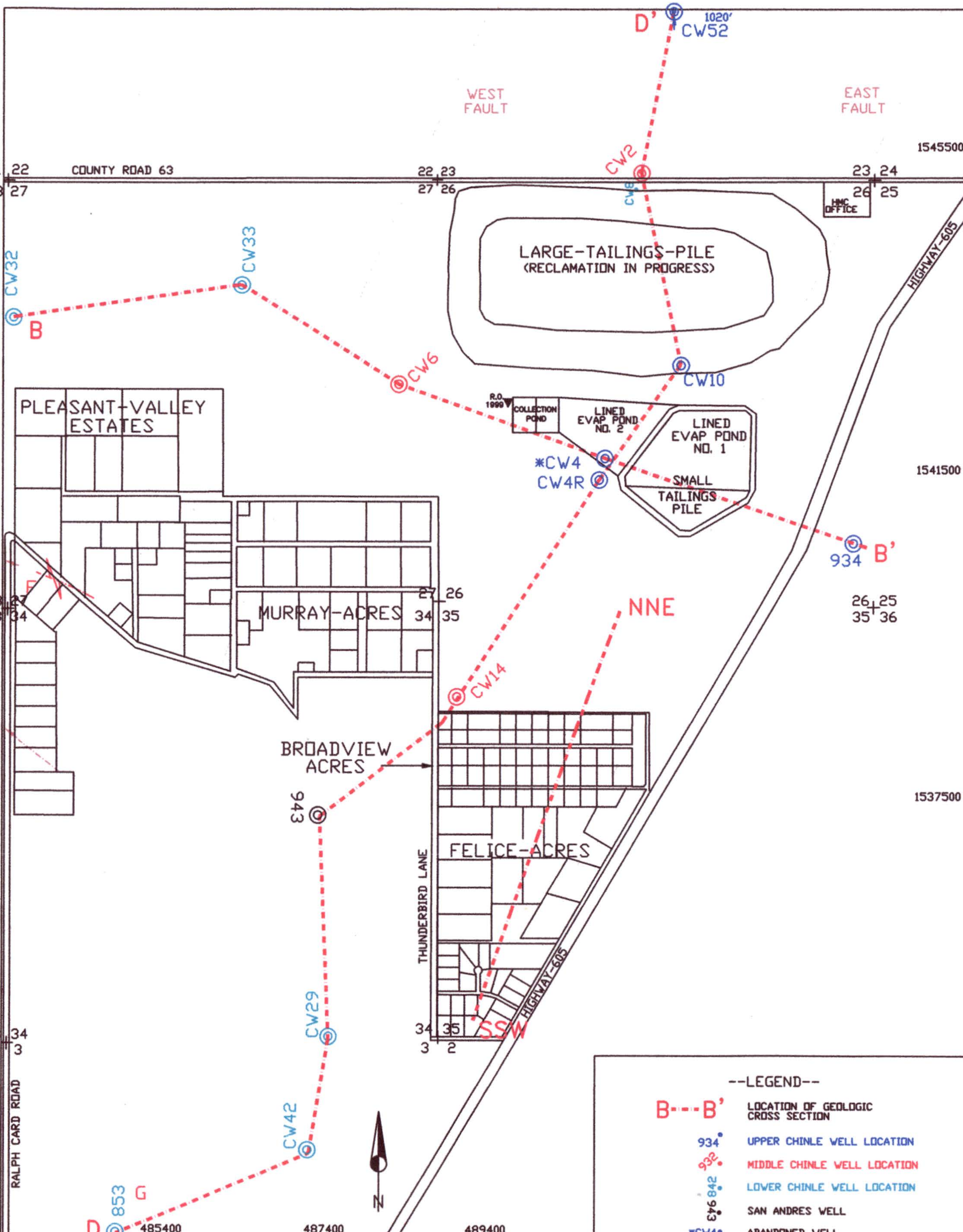

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FIGURE 1.1-1. LOCATIONS OF GEOLOGIC CROSS SECTIONS

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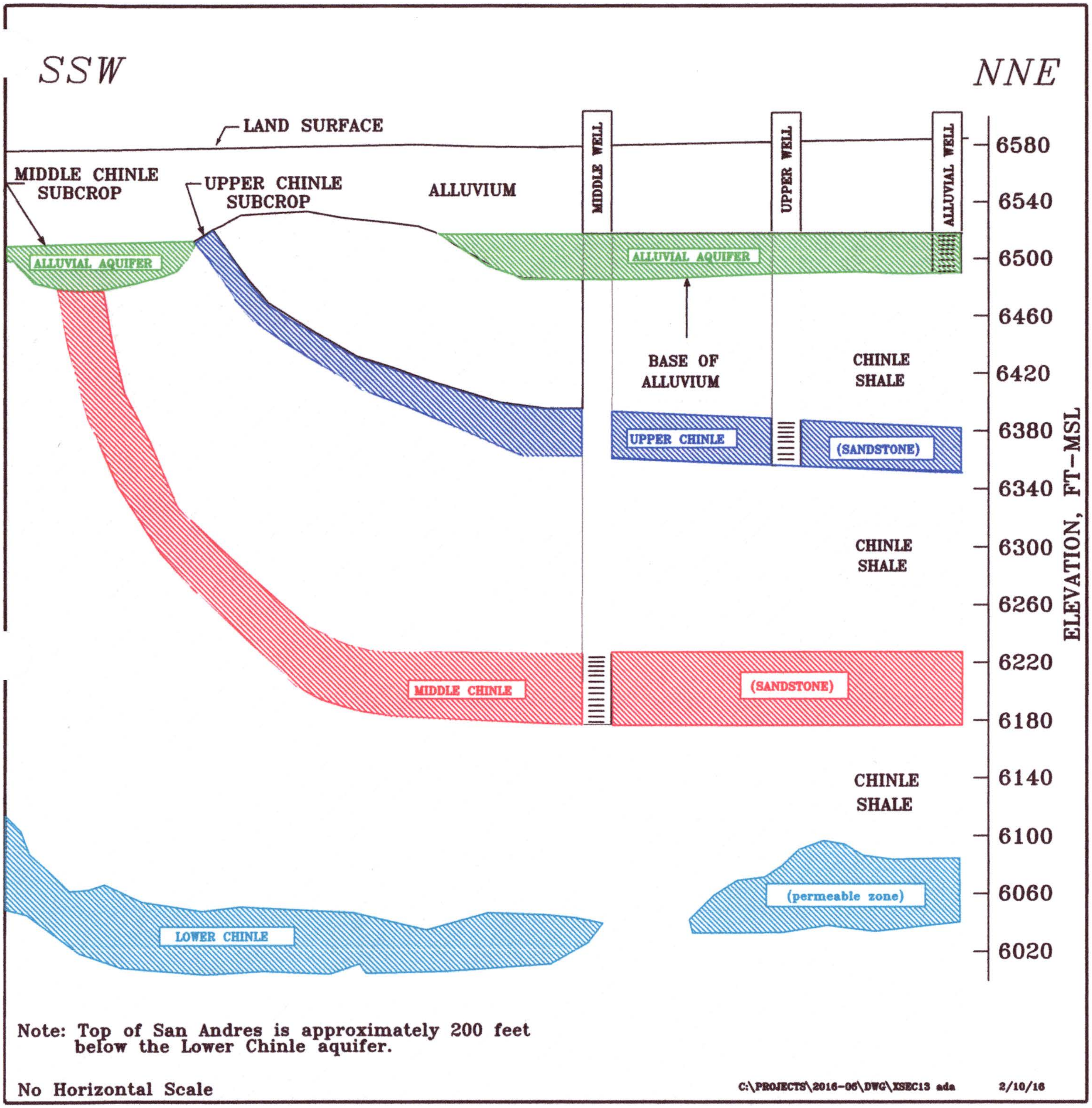

FIGURE 1.1-2. TYPICAL GEOLOGIC CROSS SECTION

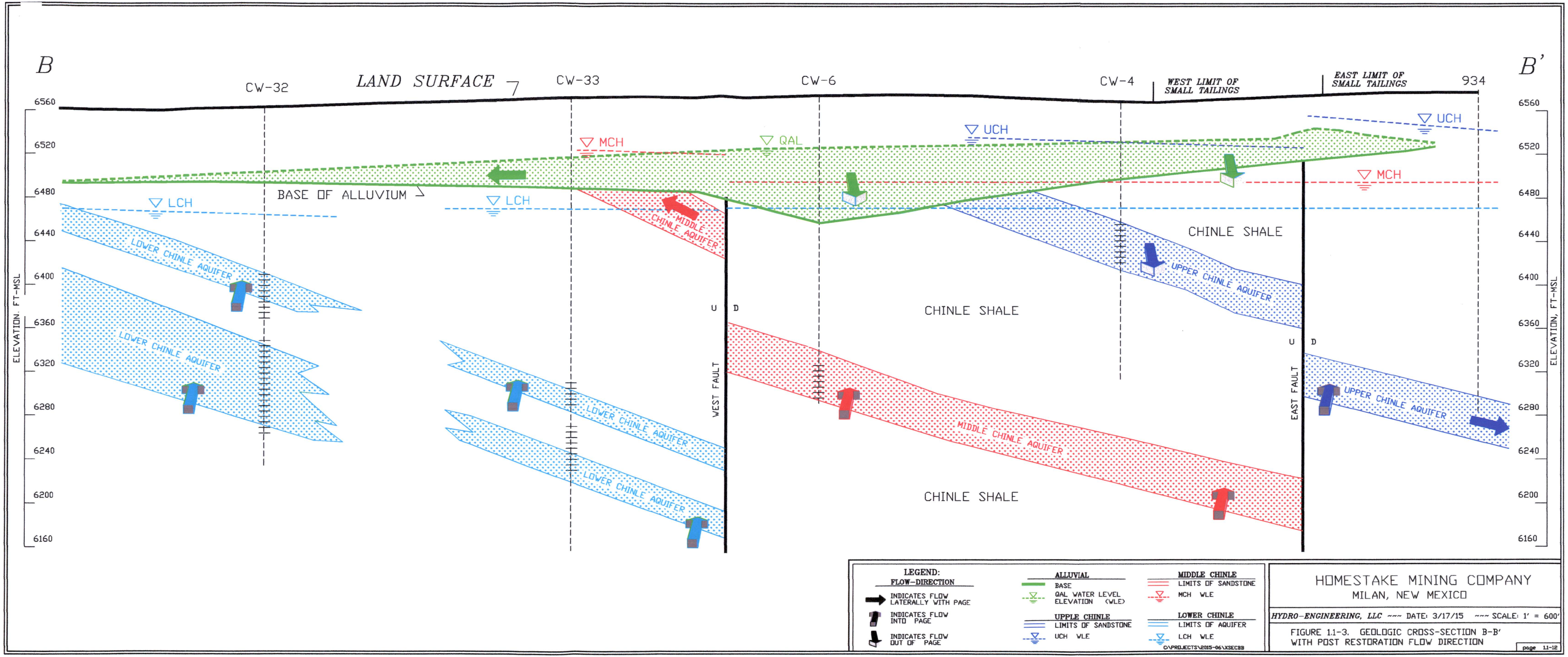

FIGURE 1.1-3. GEOLOGIC CROSS-SECTION B-B' WITH POST RESTORATION FLOW DIRECTION

HOMESTAKE MINING COMPANY
MILAN, NEW MEXICO

HYDRO-ENGINEERING, LLC ~~~ DATE: 2/23/16 ~~~ SCALE: 1' = 700'

FIGURE 1.1-4. GEOLOGIC CROSS-SECTION D-D' WITH POST RESTORATION FLOW DIRECTION

SCALE: 1"=1600'	FIGURE 1.1-5. ALLUVIAL SELENIUM CONCENTRATIONS, 1976
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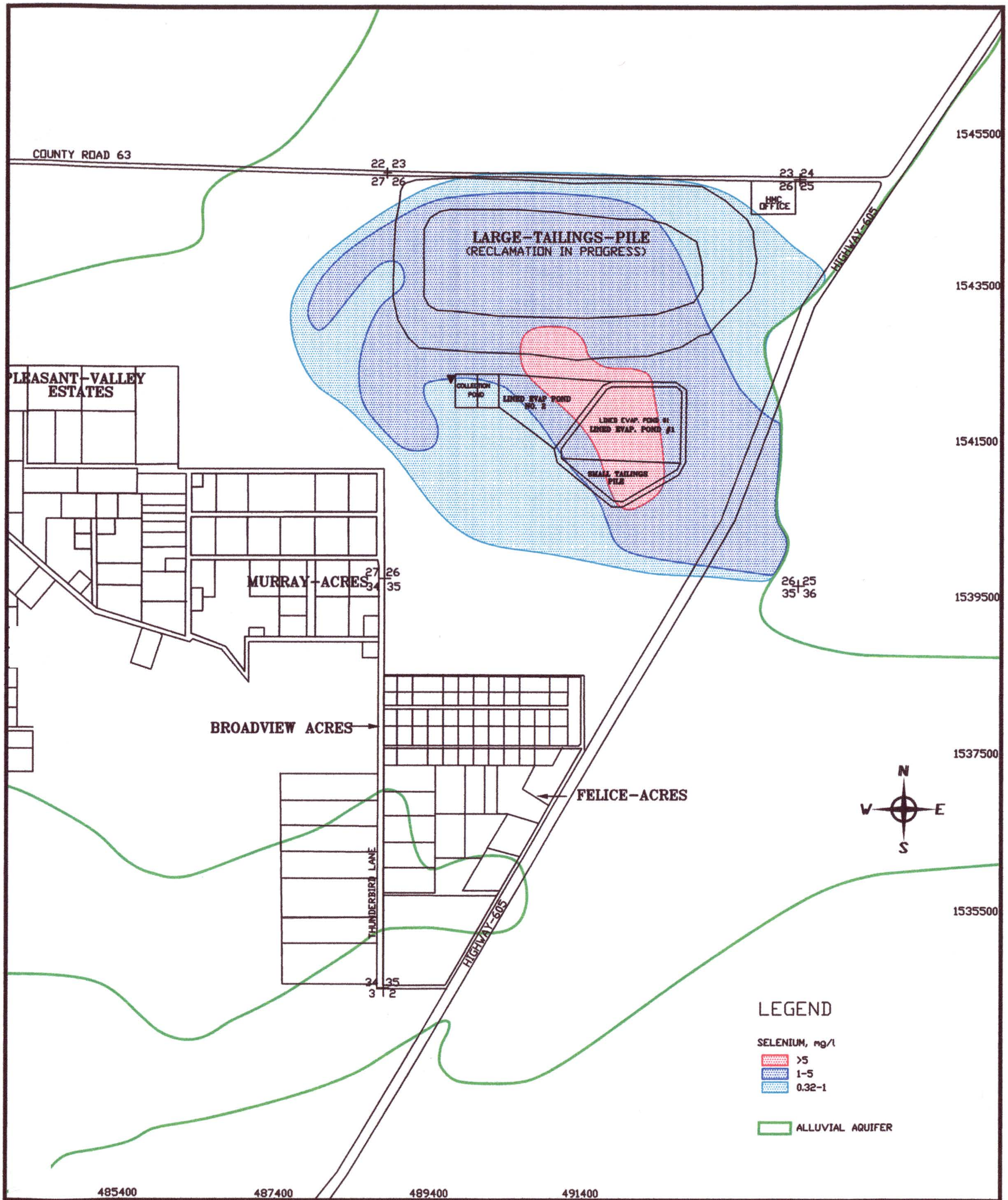

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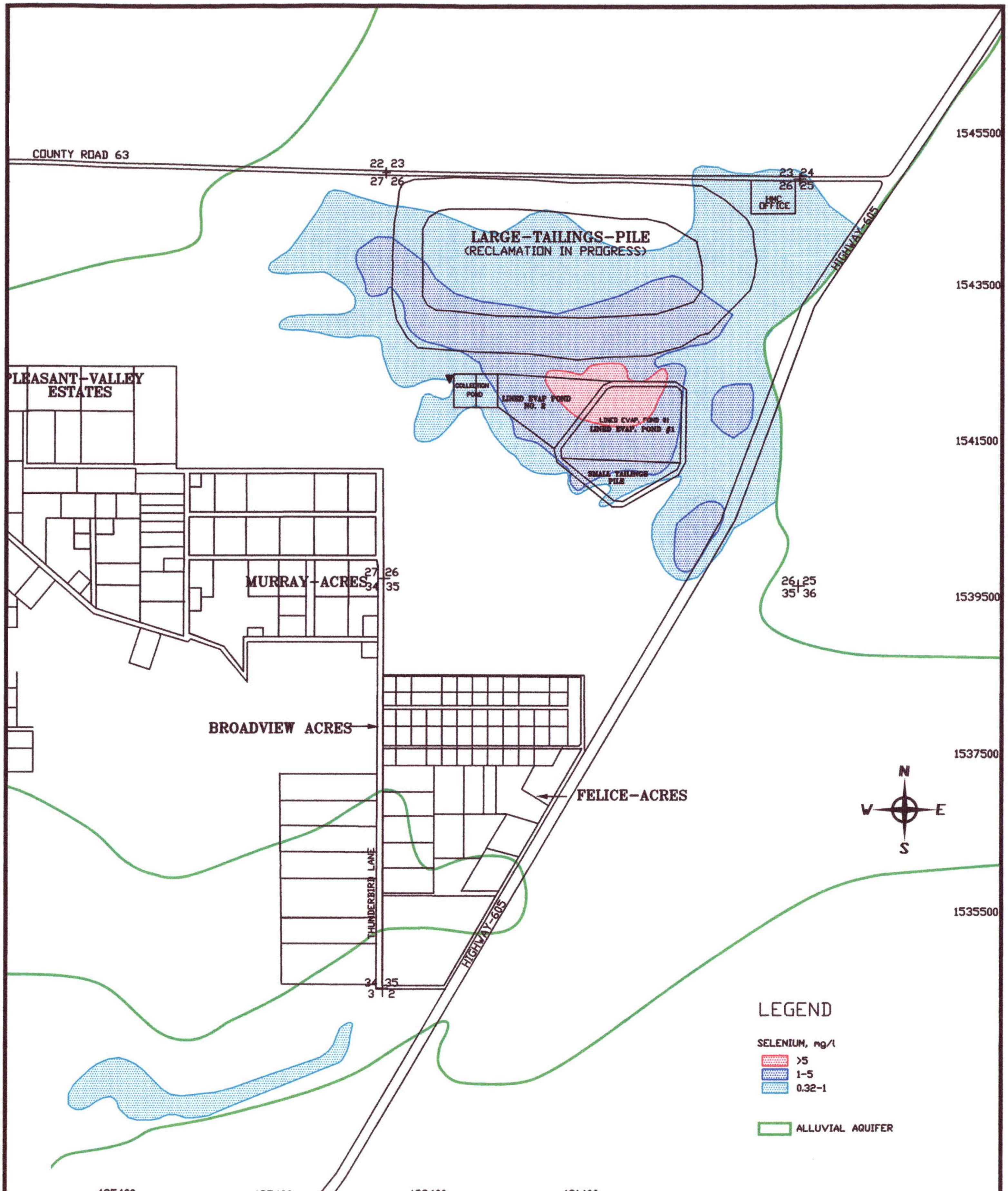
FIGURE 1.1-6. ALLUVIAL SELENIUM CONCENTRATIONS, 1988



SCALE: 1"=1600'	FIGURE 1.1-7. ALLUVIAL SELENIUM CONCENTRATIONS, 1999
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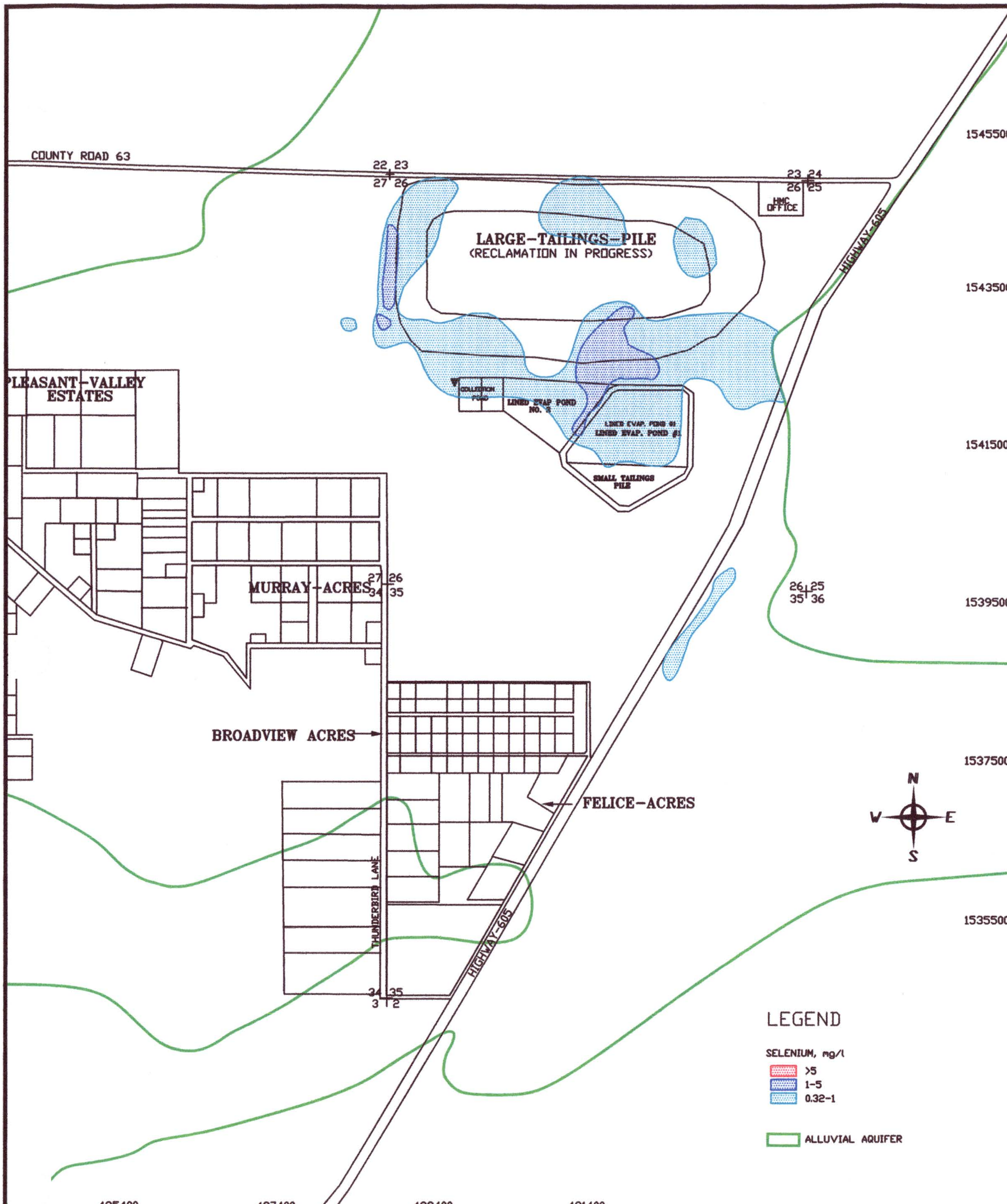

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FIGURE 1.1-8. ALLUVIAL SELENIUM CONCENTRATIONS, 2015

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FIGURE 1.1-9. ALLUVIAL URANIUM CONCENTRATIONS, 1976

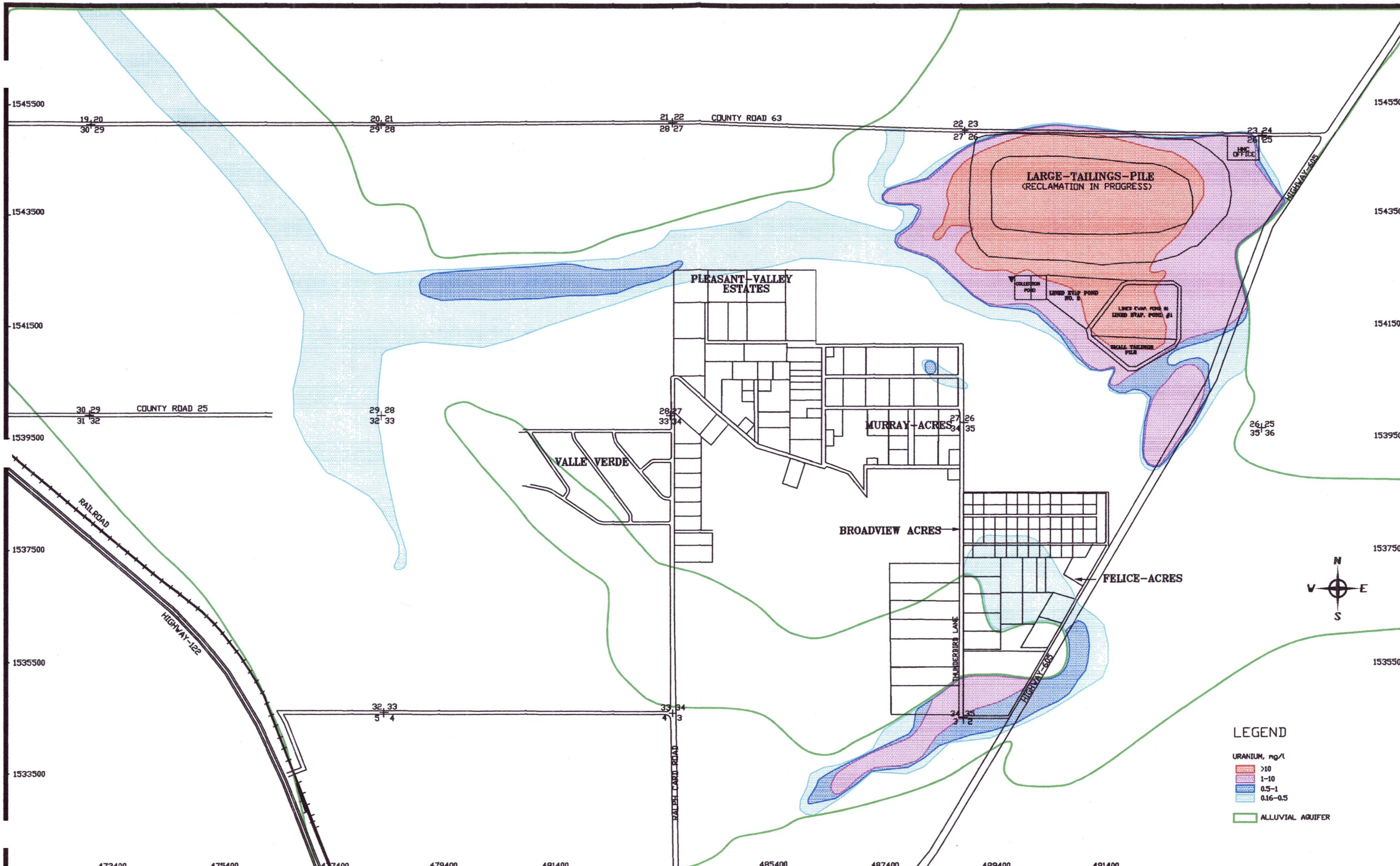

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FIGURE 1.1-11. ALLUVIAL URANIUM CONCENTRATIONS, 1999

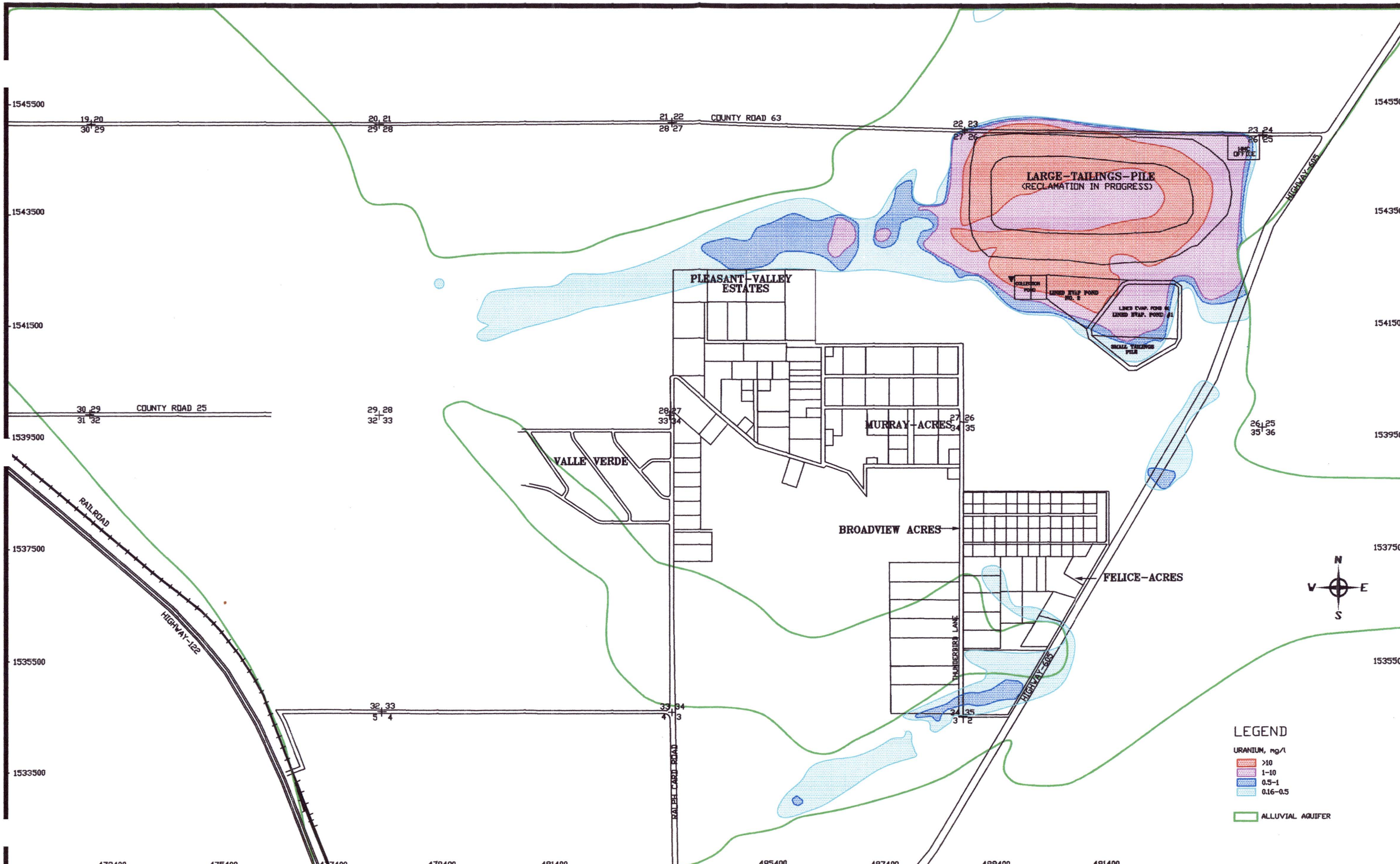

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FIGURE 1.1-12. ALLUVIAL URANIUM CONCENTRATIONS, 2015

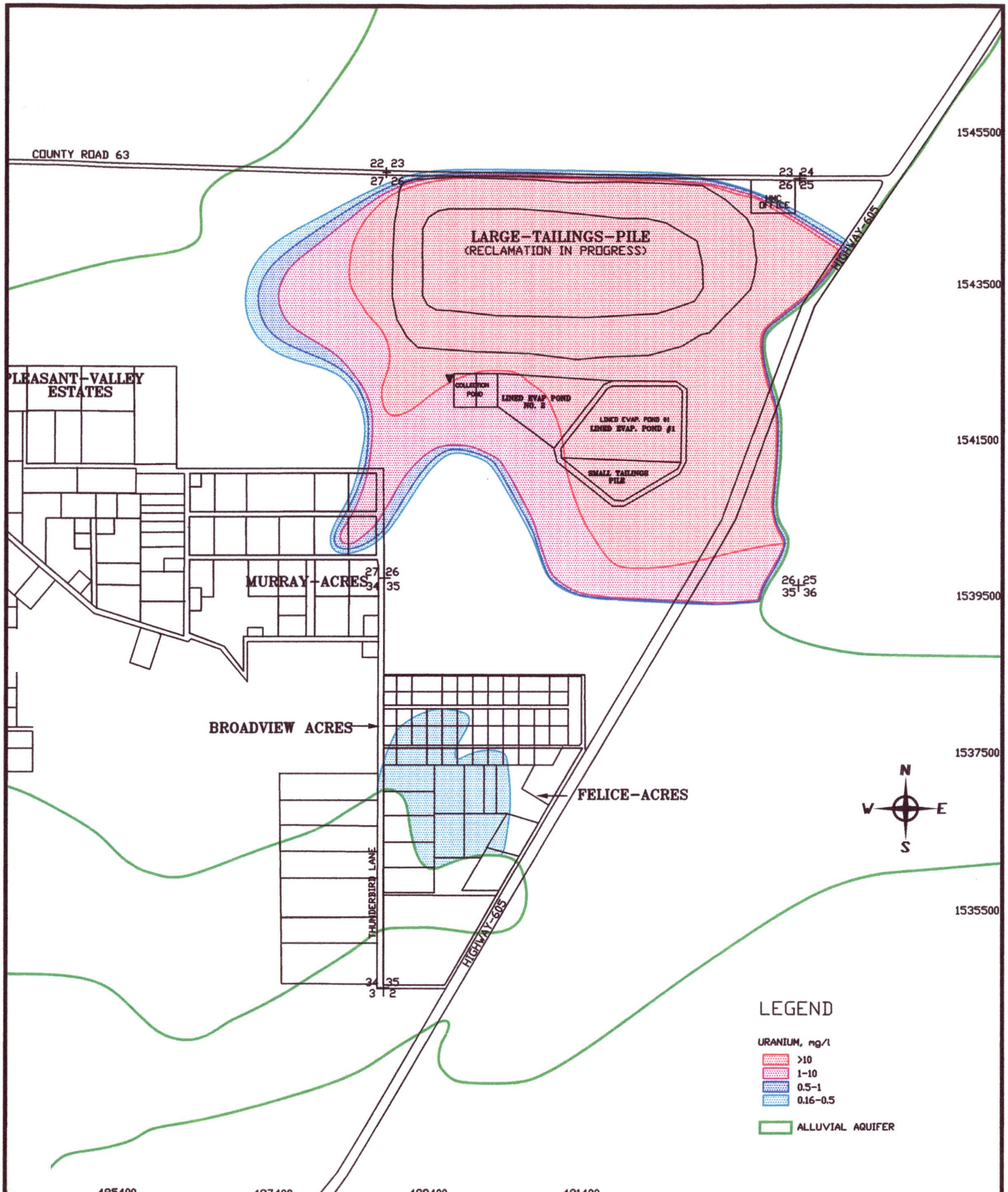

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FIGURE 1.1-10. ALLUVIAL URANIUM CONCENTRATIONS, 1988

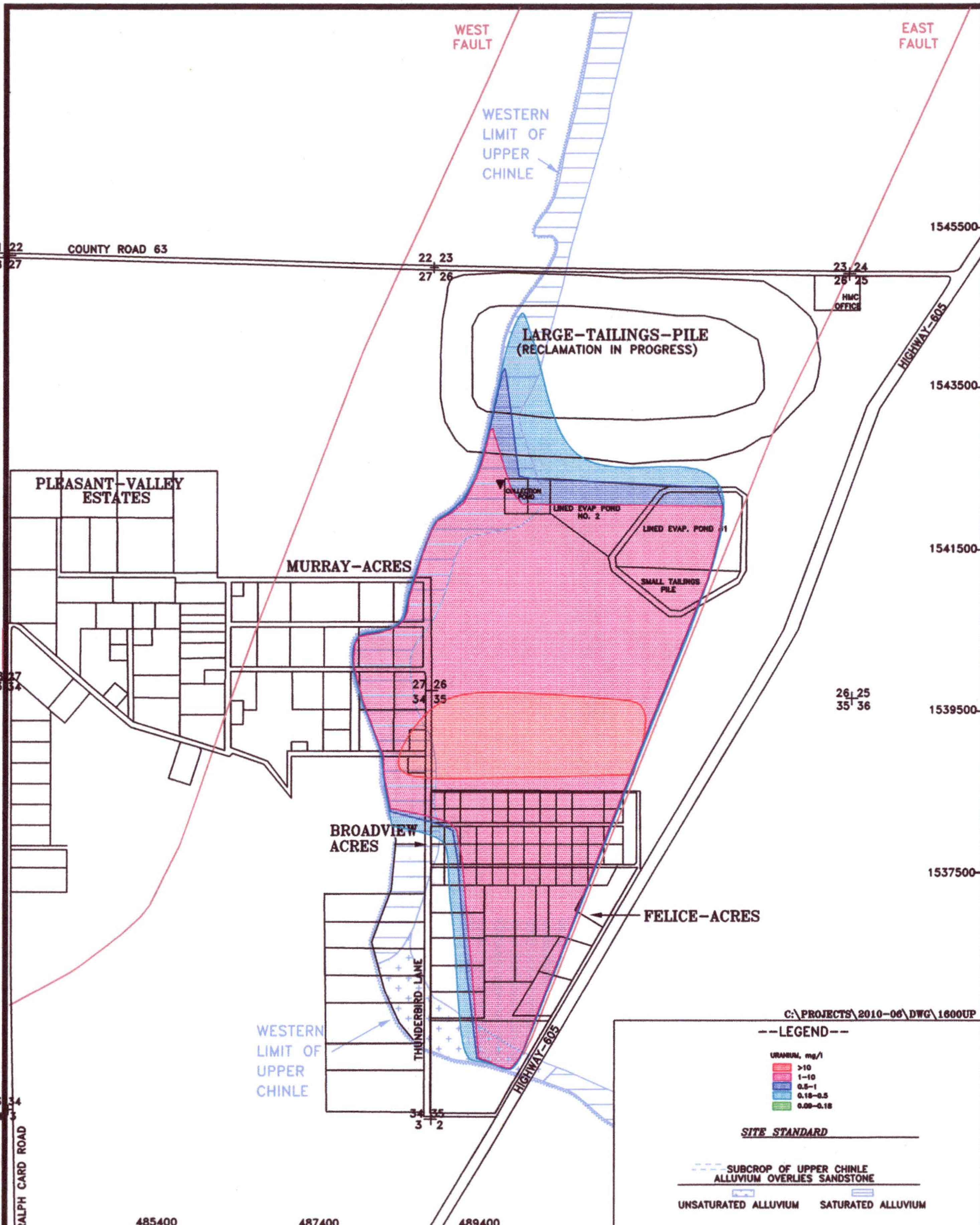

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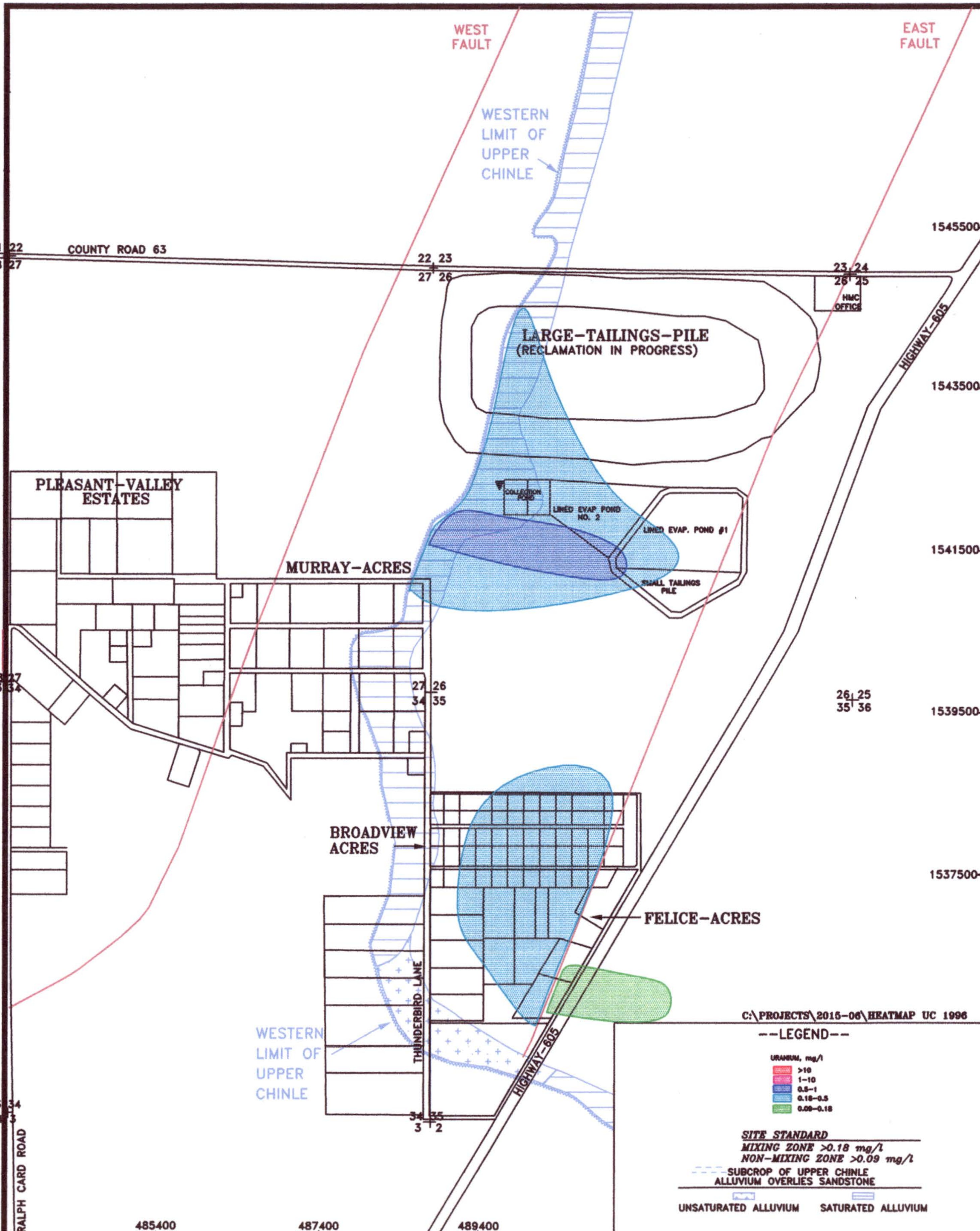
FIGURE 1.1-13. UPPER CHINLE URANIUM CONCENTRATIONS, 1982



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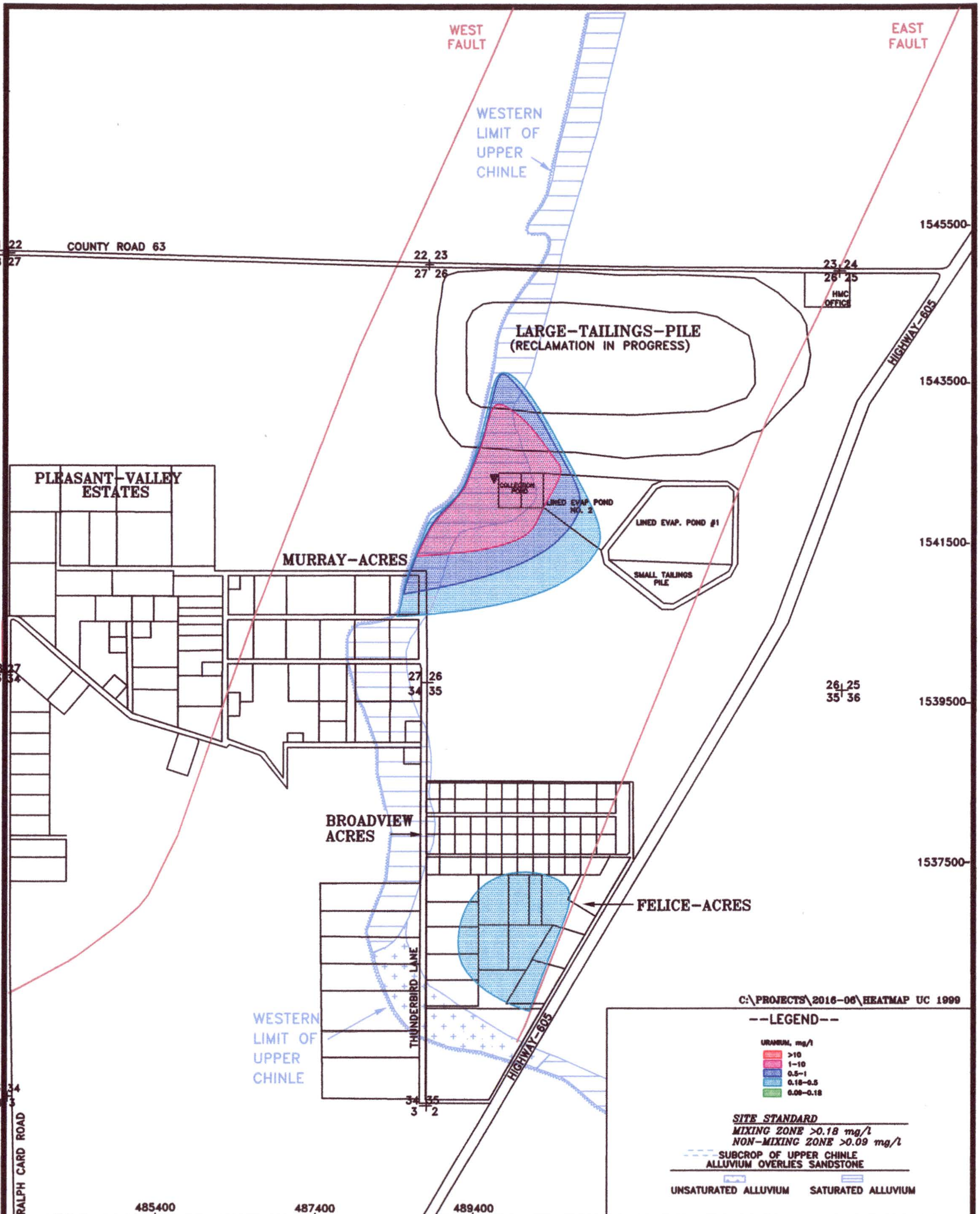
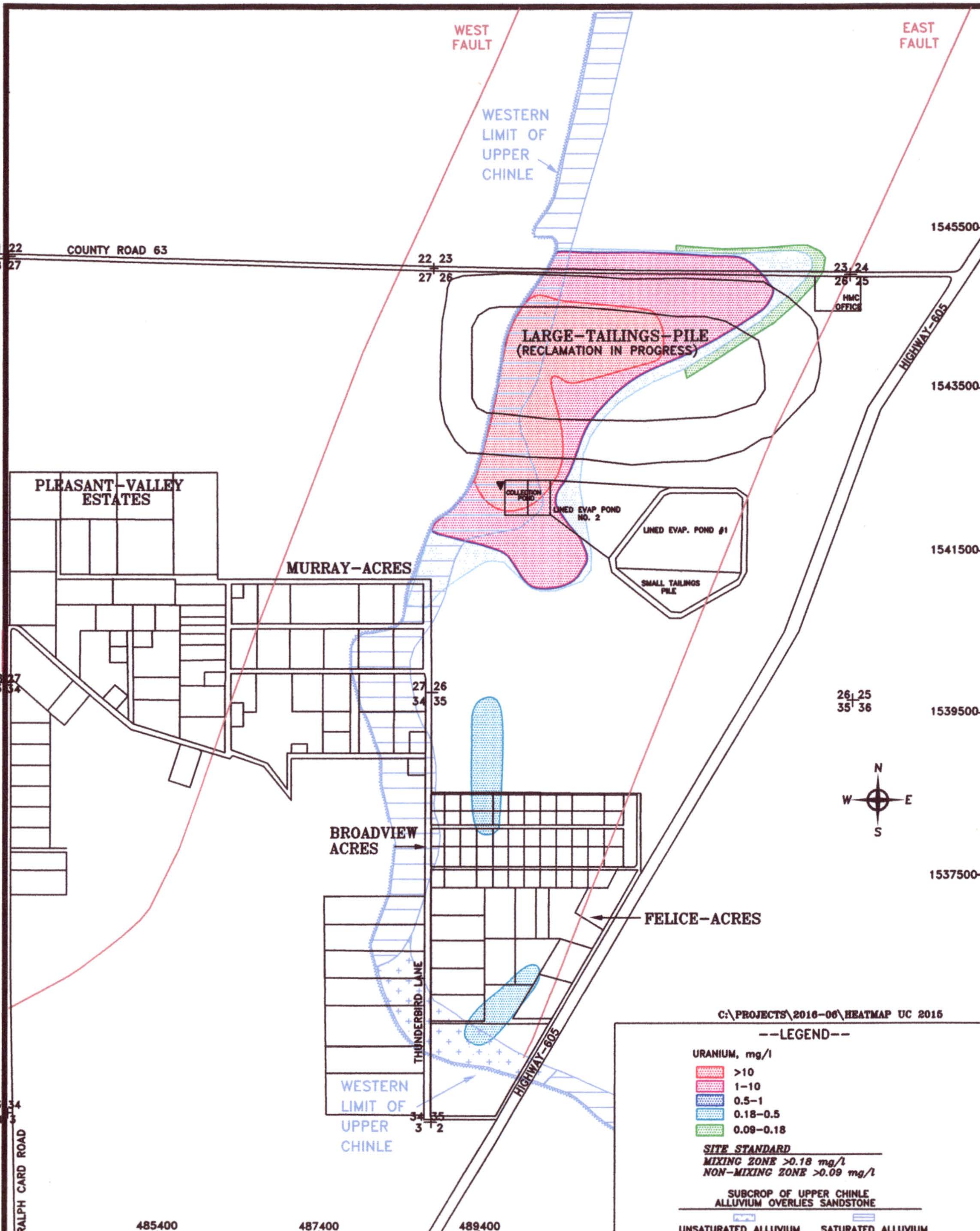
DATE: 2/10/16

FIGURE 1.1-14. UPPER CHINLE URANIUM CONCENTRATIONS, 1996

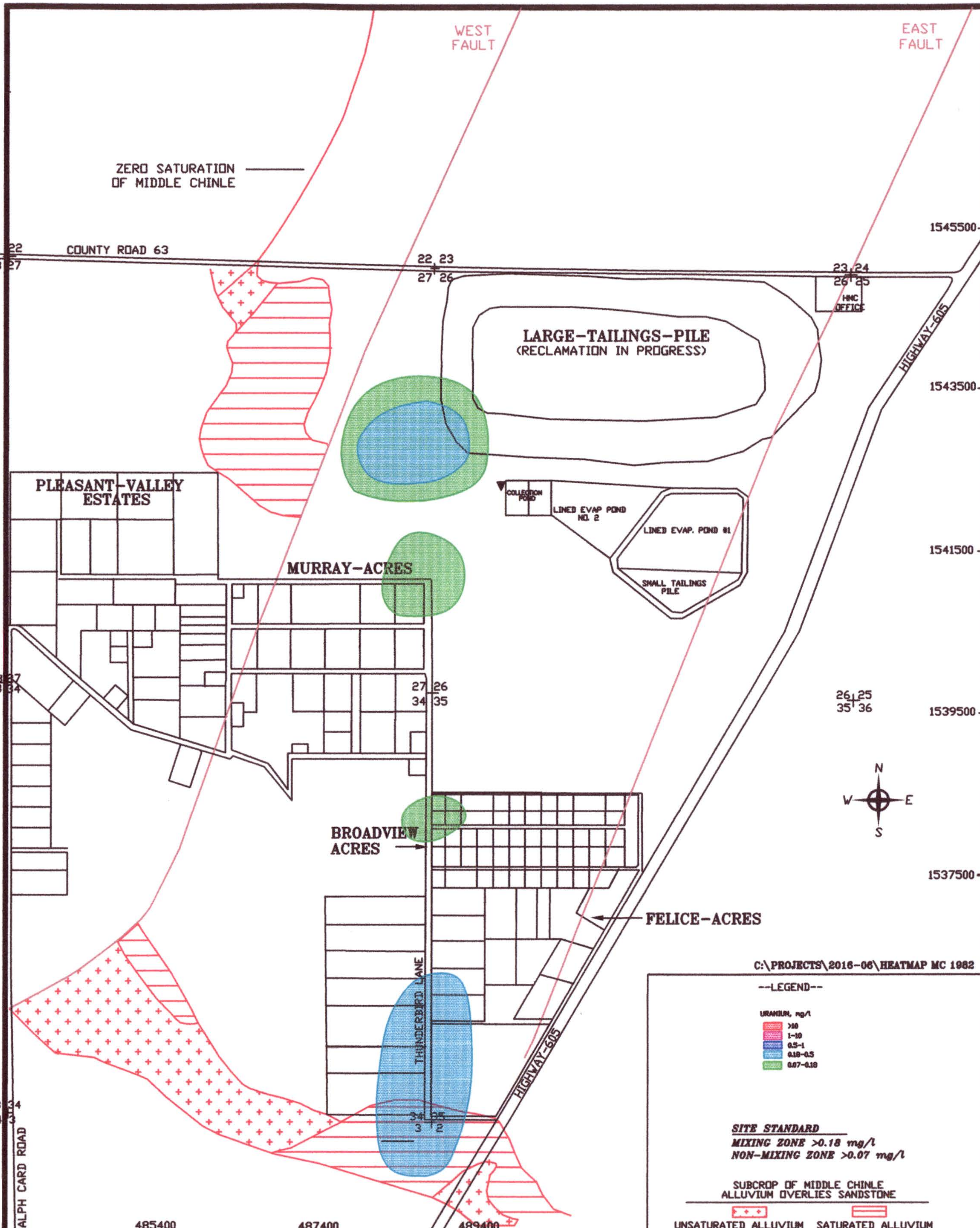
SCALE: 1"= 1600'



HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W	DATE: 2/10/16
FIGURE 1.1-15. UPPER CHINLE URANIUM CONCENTRATIONS, 1999	SCALE: 1"= 1600'
	PAGE: 1.1-24



HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W	DATE: 2/10/16
FIGURE 1.1-16. UPPER CHINLE URANIUM CONCENTRATIONS, 2015	SCALE: 1"= 1600'
	PAGE: 1.1-25

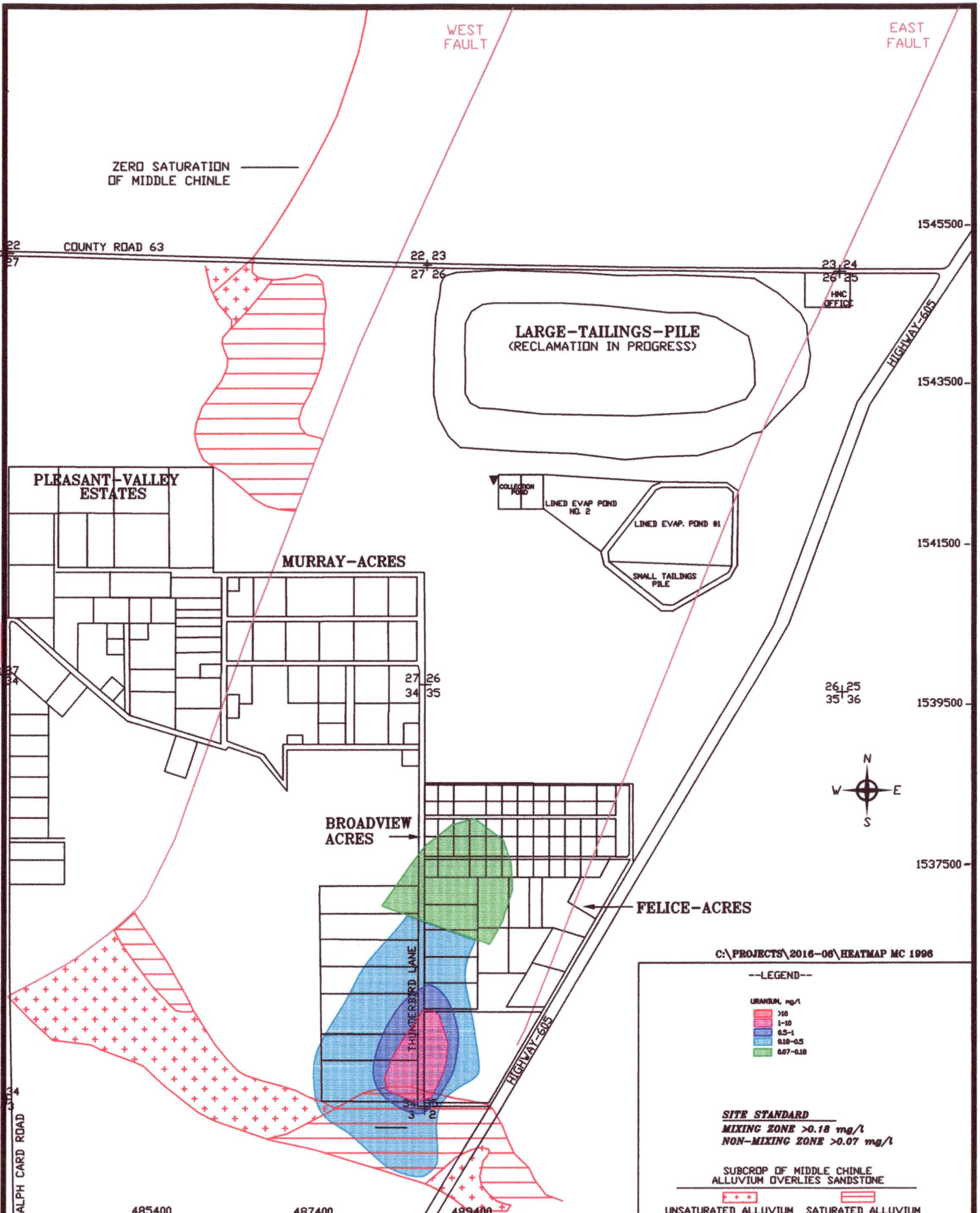


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 2/10/16

FIGURE 1.1-17. MIDDLE CHINLE URANIUM CONCENTRATIONS 1982

SCALE: 1" = 1600'



HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 2/10/16

SCALE: 1"= 1600'

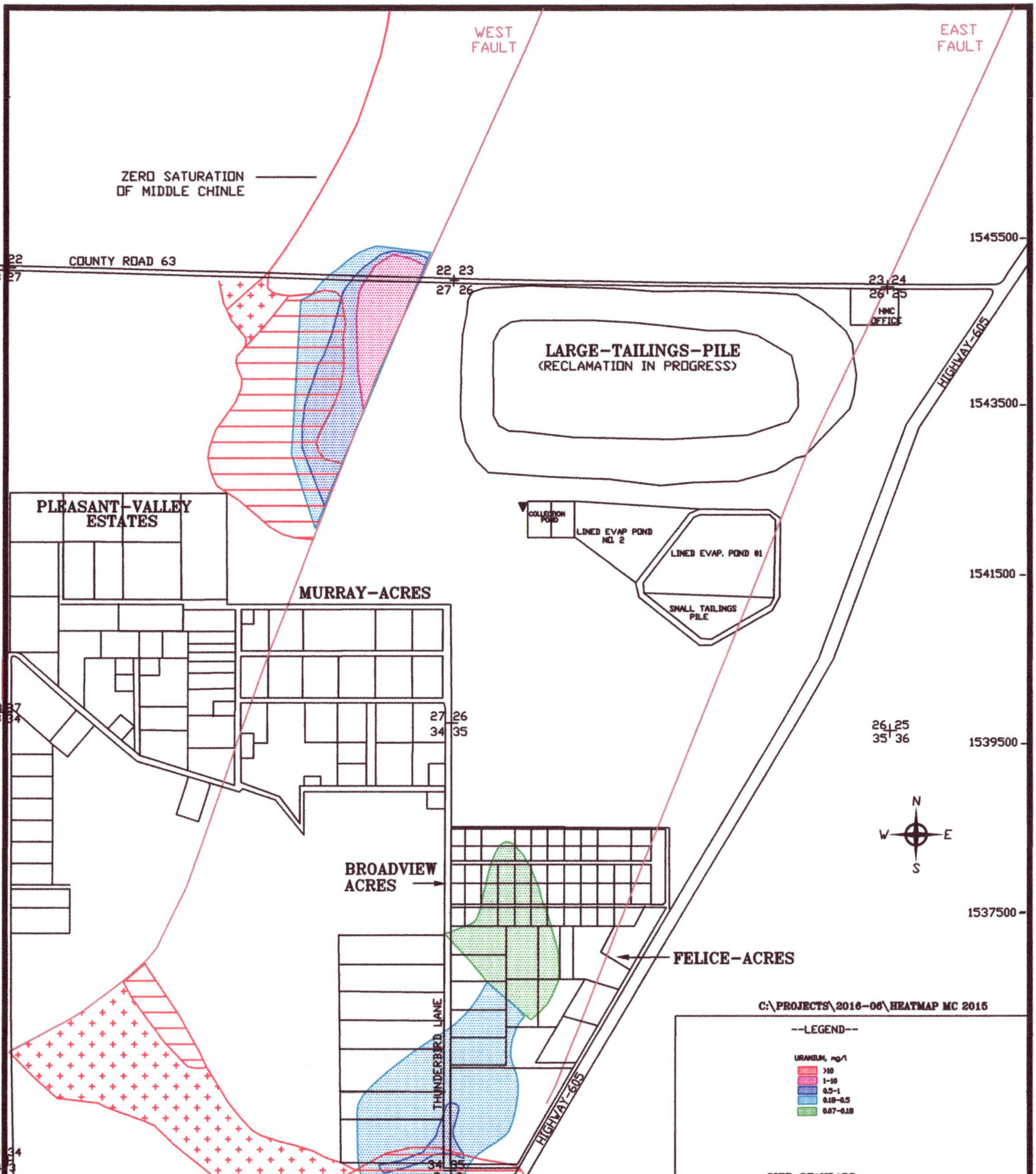
FIGURE 1.1-18. MIDDLE CHINLE URANIUM CONCENTRATIONS 1996

HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 1.1-19. MIDDLE CHINLE URANIUM CONCENTRATIONS 1999

DATE: 2/10/16

SCALE: 1"= 1600'

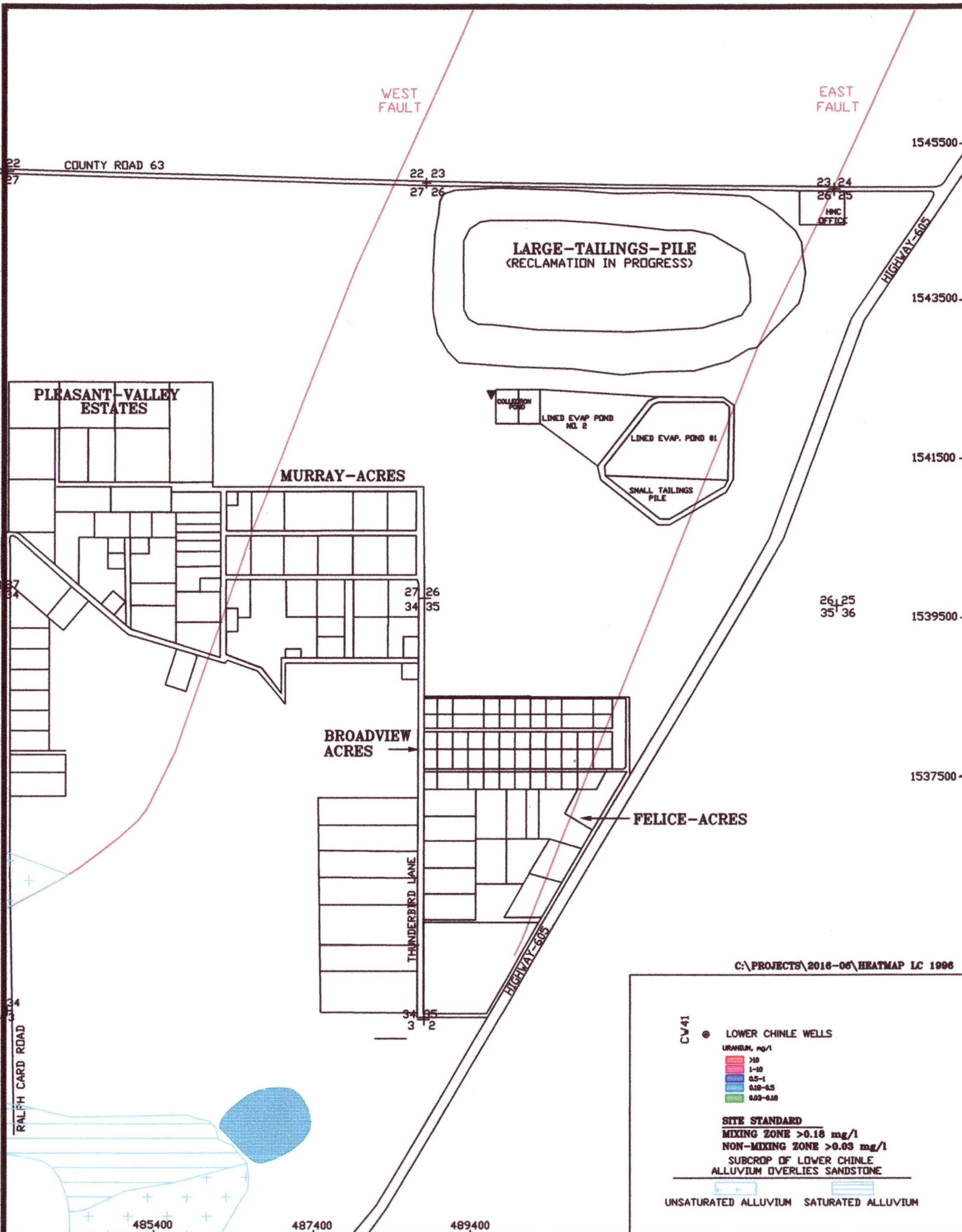


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 1.1-20. MIDDLE CHINLE URANIUM CONCENTRATIONS 2015

DATE: 2/10/16

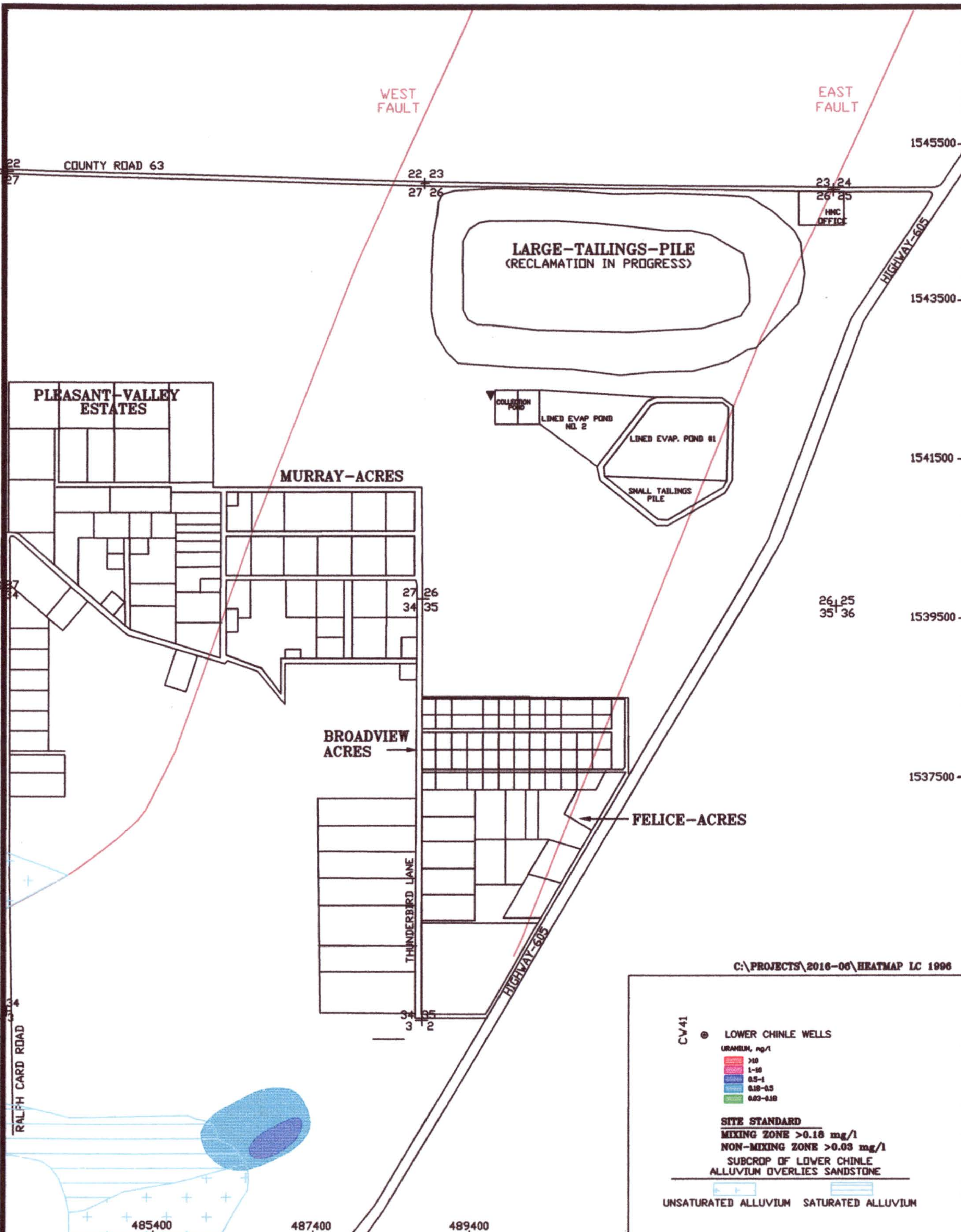
SCALE: 1"= 1600'



HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 1.1-21. LOWER CHINLE URANIUM CONCENTRATIONS 1996

DATE: 2/10/16
SCALE: 1"= 1600'
PAGE: 1.1-30

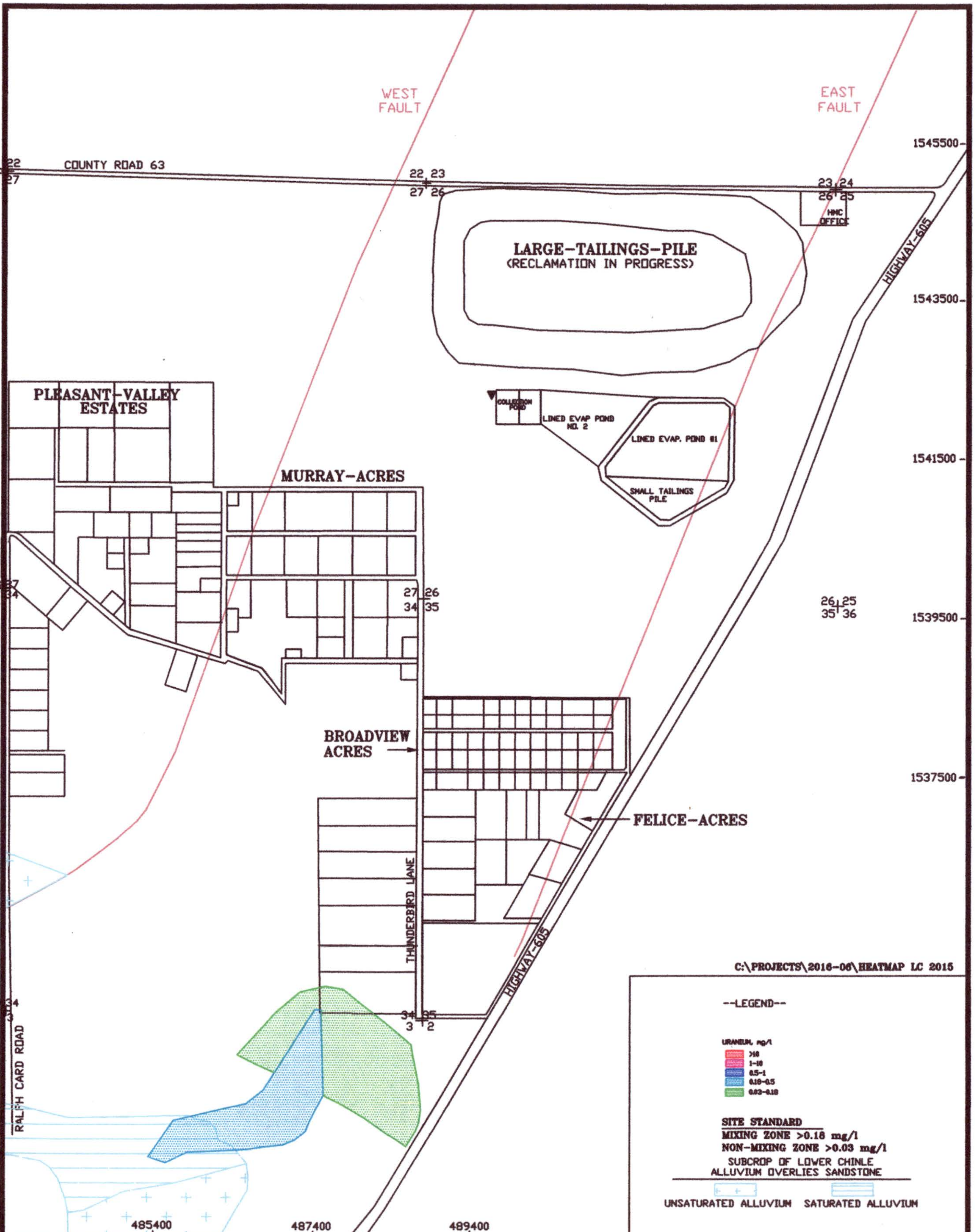


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 1.1-22. LOWER CHINLE URANIUM CONCENTRATIONS 1999

DATE: 2/10/16

SCALE: 1"= 1600'



HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 1.1-23. LOWER CHINLE URANIUM CONCENTRATIONS 2015

DATE: 2/10/16

SCALE: 1"= 1600'

1.2 INTRODUCTION

This report, as required by the New Mexico Environment Department (NMED) discharge plan DP-200 and the Nuclear Regulatory Commission (NRC) License SUA-1471, presents results of the 2015 annual ground water monitoring program at Homestake's Grants Project. Homestake Mining Company (HMC) conducted uranium milling operations five miles northeast of Milan, New Mexico from 1958 to 1990 (see Figure 1.2-1). Referred to as the Grants Project or Grants site, HMC deposited uranium tailings from the alkaline leach (high pH) Grants mills into two unlined piles (Large and Small Tailings Piles) that overlie San Mateo alluvium. The San Mateo alluvium is simply referred to as the alluvium or alluvial aquifer in this report. In 1977, due to initial concerns about ground water selenium levels, HMC installed a system of wells and pumps in order to inject fresh water into the alluvium at the property boundary and to withdraw contaminated water from the alluvium near the tailings. The ground-water restoration program has been divided into three areas: North Off-site, South Off-site and On-site. Figure 1.2-2 presents limits of these three restoration areas.

Previous monitoring reports have been published in quarterly, semi-annual and annual reports[1], which were presented to the NMED and the NRC.

Four subdivisions, Broadview Acres, Murray Acres, Felice Acres and Pleasant Valley Estates, are adjacent to the HMC site. These subdivisions are shown on many of the various figures found in this report.

Monitoring data for ground water west of the project site is included in the 1995 through 2015 reports (see Appendix A for water levels and Appendix B for water quality). This area has been designated the "West Area" and was so labeled on the figures in the annual reports prior to 2003. The 2003 through 2015 annual reports combine the project site and West Area figures on one 11 x 17 inch set of figures.

The annual ALARA audit, required as an NRC license condition, is presented in Appendix C. Additionally, a report of an annual inspection of the tailings piles and pond dikes must be submitted per license condition and is presented in Appendix D. Appendix E provides an annual

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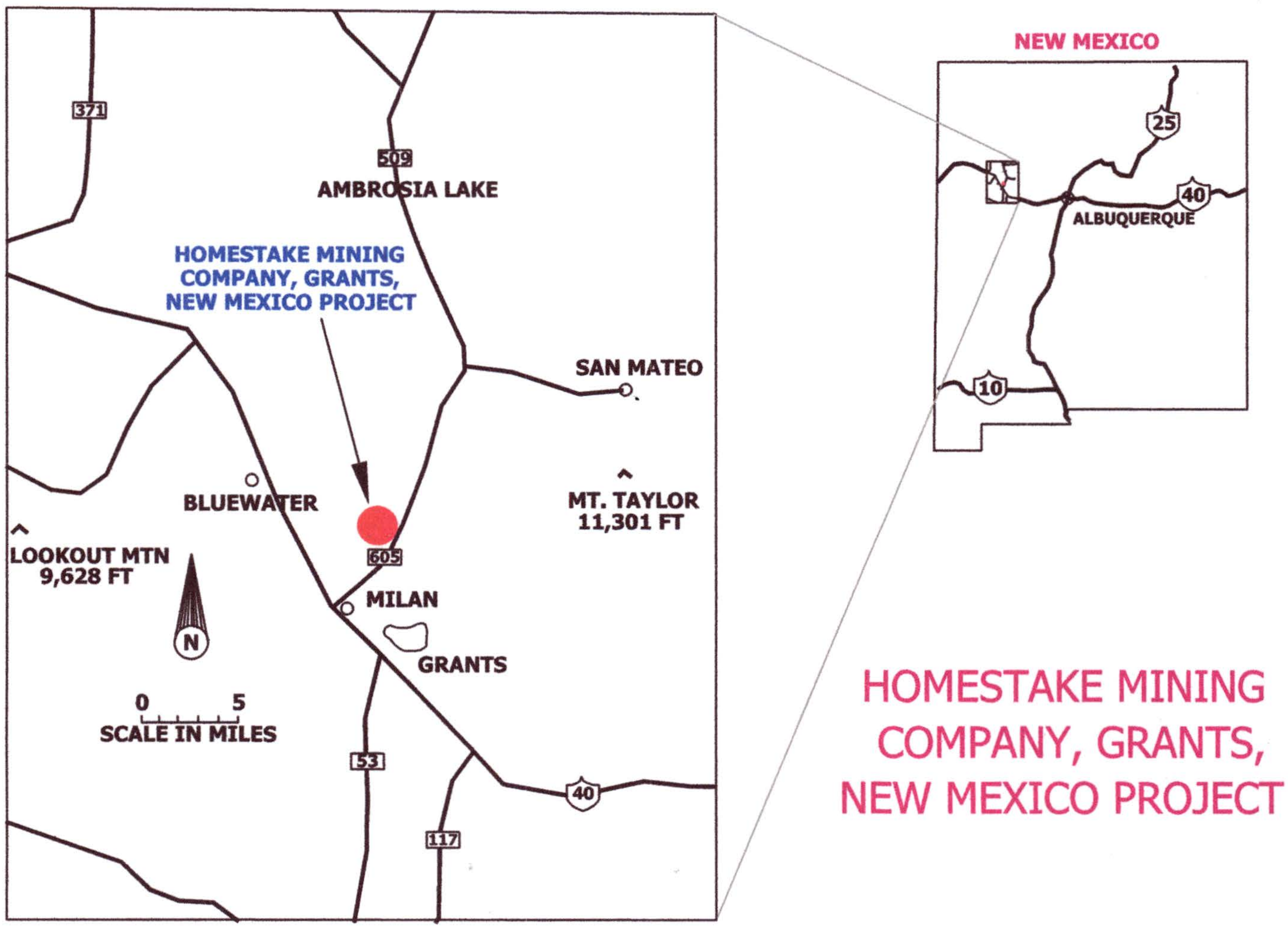
1 See Hydro-Engineering 1983b, 1983c, 1984a, 1984b, 1984c, 1985a, 1985b, 1985c, 1985d, 1986a, 1986b, 1986c, 1987a, 1987b, 1988a, 1988b,, 1990, 1991, 1992, 1993a, 1994, 1995, 1996, 1997, 1998, 1999, 2000a, 2001a, 2002, 2003a, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015.

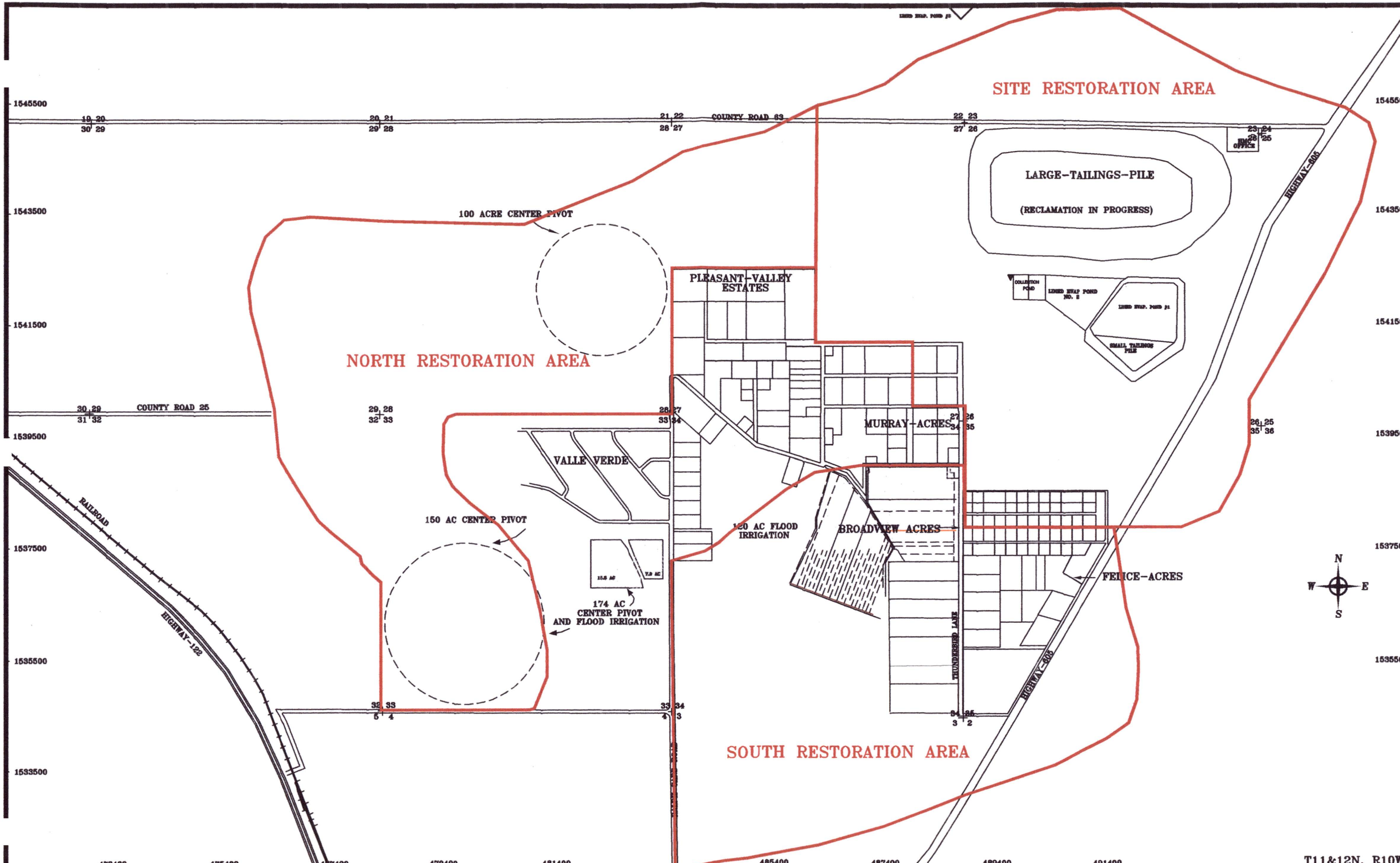
land-use survey discussion for the immediate Grants site area; this was an added license condition beginning in 2002. The annual radon flux survey report for the Large and Small Tailings Piles is presented in Appendix F of this report. Appendix G presents the soil moisture concentration plots for the irrigation area lysimeters and Appendix H gives the meteorological data for the Grants site for 2015.

A detailed table of contents is included at the front of each report section including a list of associated section figures and tables.



3/9/16
PROJECTS\2016-06\DWG\STATELOC.DWG

FIGURE 1.2-1. LOCATION OF THE GRANTS PROJECT



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DATE: 3/9/16

FIGURE 1.2-2. RESTORATION AREAS DESIGNATION MAP

SECTION 2
TABLE OF CONTENTS

GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

FIGURES

SECTION 2
TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT (continued)

Page Number

FIGURES (continued)

TABLES

2.0 OPERATIONS

2.1 CURRENT OPERATIONS SUMMARY

The annual precipitation of 14.0 inches at the Grants Project site in 2015 is above the normal precipitation for Grants, New Mexico. This above normal condition would be expected to cause water levels at the Grants site to rise. Appendix H gives the meteorological data for 2015 for the Grants site including an annual wind rose plot.

The Grants Project ground water remediation system consists of collection of contaminated ground water near the tailings piles and down-gradient injection of fresh water and R.O. product water. These collection and injection systems continued to operate in 2015, along with the reverse osmosis (R.O.) plant, which is used to treat and manage the majority of collected ground water. The R.O. plant produces product water that is of much better quality than the natural alluvial water, and it is used as injection water in some areas of the Grants Project restoration program. Figure 2.1-1 on page 2.1-14 shows the location of the present (end of 2015) injection and collection systems along with their starting dates of operation. Water collected from the site is pumped to the R.O. plant or discharged into lined collection ponds or one of three lined evaporation ponds (light blue areas).

The area where ground water flow is controlled by the fresh-water injection and collection systems is called the "Collection Area" and is shown by the yellow cross-hatched pattern on Figure 2.1-1. All of the alluvial ground water within the collection area converges to the collection wells.

2.1.1 R.O. PLANT

The R.O. plant utilizes a lime/caustic pre-treatment and clarification unit. Blowdown (sludge) from the pre-treatment unit discharges to the West Collection Pond with the treated water feeding the two 300 gpm low-pressure R.O. units. The brine from the No. 1 low-pressure unit feeds a 75-gpm high-pressure R.O. unit. The No. 2 R.O. unit is a single stage, low pressure 300 gpm system. The No. 3 600 gpm R.O. low-pressure unit was installed in late 2015 with start of testing in December. The R.O. product water from the three units is discharged to a series of injection wells. The brine from the R.O. plant is discharged to the evaporation ponds. Other miscellaneous flows

and blowdown from the R.O. plant are pumped to the West Collection Pond for recycle to the R.O. plant.

The R.O. plant inputs and output of R.O. product water for injection are listed in the following tabulation:

R.O. Plant Performance (GPM) (2000-2015)				
Year	Input		Output	
	Collection Wells	Tailings Collection	R.O. Injection	Brine
2000	274	0	204	70
2001	276	5	222	59
2002	383	5	288	100
2003	338	4	266	76
2004	293	12.2	249	64
2005	250	6.4	198	49
2006	257	2.1	184	48
2007	262	0.0	204	55
2008	264	3.1	194	60
2009	251	0.3	171	60
2010	240	0.0	166	59
2011	257	1.4	170	58
2012	267	0.0	182	50
2013	236	0.0	148	47
2014	235	0.0	165	47
2015	228	0.0	112	52

Aquifer restoration results continue to show that the R.O. product water injection is much more effective than the fresh water in reducing the uranium and molybdenum concentrations within the

alluvial aquifer. The RO plant was switched in mid-2015 from the use of sand filters to microfiltration.

2.1.2 COLLECTION

The 2015 alluvial aquifer collection rate was close to the 2014 rate. In general, the R.O. plant was operated on a single unit 300 gpm basis during 2015 except for short periods when both units were used to test operations of the two units.

Up-gradient alluvial aquifer collection north of County Road 63 from the P wells ceased after May of 2013. Collection from the South Off-Site area replaced the P wells for injection supply for the tailings injection for the first half of 2015. Upper Chinle aquifer collection continued from wells CE2, CE5, CE6, CE11 and CE12 in 2015 (gold X symbols located south of the collection ponds), and this water was used as injection supply water for the Large Tailings Pile (LTP) flushing program in the first half of 2015, described later in Section 2.1.5. These wells were pumped to the R.O. Plant in the second half of the year. Upper Chinle well CE7 was also pumped some in 2015 to the R.O. plant. None of the tailings dewatering was input to the R.O. plant in 2015.

2.1.2.1 ALLUVIAL AQUIFER

Figure 2.1-1 shows the locations of five lines of alluvial aquifer collection wells (red x symbols). The S and D-lines are adjacent to the LTP and the K and C-lines are adjacent to the Small Tailings Pile (STP). Alluvial wells M9 and MQ were added to the alluvial collection system in 2011 and continued to be used in 2015. The L-line south of the STP continued to operate in 2015 and includes collection wells 521, 522 and 639 which are located on the east side of Highway 605 (see Figure 4.1-1 for location). Alluvial water is pumped from these lines of collection wells to the R.O. plant or, depending on water quality; it is pumped to re-injection wells. Figure 2.1-2 on page 2.1-15 graphically presents collection rates for the last sixteen years at the Grants Project. The alluvial collection system operated at an average rate of 199 gpm in 2015. Additionally, an average of 25 gpm was extracted from the alluvium for re-injection in 2015.

2.1.2.2 UP-GRADIENT ALLUVIAL WATER

Collection of alluvial water up-gradient of the tailings piles started in January of 1993 and ceased after May of 2013. None of the P wells were pumped in 2015. This up-gradient water was pumped to the supply for tailings flushing. The pumping of this up-gradient water had prevented some of the alluvial water from entering the Grants Project area at the north side of the LTP and helped maintain the gradient reversal. The previous collection rates for this effort are presented in Figure 2.1-2.

2.1.2.3 UPPER CHINLE AQUIFER

Figure 2.1-2 shows the collection rate for Upper Chinle collection wells CE2, CE5, CE6, CE7, CE11 and CE12, which are located on the south side of the collection ponds. Collection from Upper Chinle well CE2 started in 1999 and is expected to continue for several years. Collection from wells CE5 and CE6 started in August 2006 while pumping from wells CE11 and CE12 was initiated in October of 2006. These wells were used to supply water to the Large Tailings Pile for the tailings flushing program and zeolite testing during the first half of 2015 and pumped to the R.O. for the second half of the year. Upper Chinle collection well CE7 was pumped to the R.O. plant some in 2011 through most of 2015. The yearly average collection rate from the Upper Chinle was 58 gpm.

2.1.2.4 OFF-SITE COLLECTION

None of the irrigation systems were operated in 2015 (see Figure 2.1-1 for locations of former irrigation areas). Some of the Section 3 and 35 South Off-site collection wells were operated in 2015 to supply water for the zeolite testing and tailings injection. Figure 2.1-1 shows the Off-Site collection wells that were used in 2015. South collection wells 866, Q2, Q3, Q5, R3, R11 and Y7 were pumped for the LTP injection. North Off-site wells were only pumped during sampling and testing during 2015. Water from the South collection wells were collected and supplied to the tailings injection.

The cumulative volume of water applied to the former irrigation (land treatment) fields from 2000 through 2012 (cyan bars) and the Off-site South collection for 2013 through 2015 (purple) are

presented in Figure 2.1-3 which shows that slightly greater than 3.2 billion gallons of water have been pumped from the Off-site collection wells. The volumes collected from the North Off-site collection wells in 2013 and 2014 were not included in the cumulative volume because it was re-injected into the North area. The volume of water prior to 2013 was applied to land treatment while the 2013 through 2015 volumes of collection are shown differently because its water was injected into the tailings. Figure 2.1-3 shows a comparison between the volumes of water pumped for the Off-site collection versus the volume of collection water of the On-site collection to the R.O. plant since 2000. The volume of Off-site collection water has been nearly 150 % of the volume of water collection On-site for the same period.

The 2013 Irrigation Report, ERG and Hydro-Engineering, LLC 2013, presents the monitoring results through 2013 for the irrigation areas while the ground-water monitoring results for 2015 in the irrigation areas is presented in this report. This data shows no effects on the uranium and selenium concentrations in the underlying ground water from the HMC irrigation/land treatment program. Appendix G presents the plots of the soil moisture concentrations from the lysimeters.

2.1.2.5 QUANTITY OF CONSTITUENTS COLLECTED FROM THE ALLUVIAL AQUIFER

Table 2.1-1 (page 2.1-27) presents the quantities of chemical constituents extracted from the On-site ground water system, the tailings piles and the toe drains. The ground water collection system has produced an average pumping rate of 255 gpm for the entire period between 1978 and 2015. The portion of the collection water that has been re-injected into the alluvial aquifer is not included in the values in Table 2.1-1. The quantity of constituents removed in 2015 was computed by multiplying the average concentration of a particular constituent for each source of water (ground water, toe drains and tails collection) by the volume of water pumped for each during that year. The quantities of constituents collected by aquifer and area are presented in Table 2.1-2 for 2015. This table lists the total for the On-site and the sum of the Off-site quantities.

Figure 2.1-4 presents the volume of water and the pounds of uranium removed by the On-site and Off-site collection systems from 2000 through 2015. The light blue, purple and green bars show the comparison of the volumes for area for each year while the red, brown and gold bars present the

pounds of uranium removed respectively by the Off-site and On-site collection. The figure shows that the volume of water collected from the Off-site wells is very important and generally larger than the On-site collection but the pounds of uranium are small in this Off-site collection compared to the pounds removed by the On-site collection.

2.1.3 INJECTION

The fresh-water and R.O. injection systems, which aid in the reversal of the ground water gradients back toward the collection wells, consist of lines of injection wells and infiltration lines, which are oriented generally along the east, south and west perimeter of the two tailings piles and evaporation pond complex (see green and blue circles and infiltration lines on Figure 2.1-1).

In 2003, approximately 2100 feet of four-inch corrugated slotted polyethylene pipe was installed at a depth of approximately 6 feet below land surface west of the Large Tailings Pile to serve as a horizontal infiltration line (see green line on Figure 2.1-1). A filter sock was placed over the pipe thus negating the need for a sandpack. Water is currently being injected into this injection line (S injection line) at three locations. The 2015 injection rate for this horizontal injection line is included in the Broadview and Murray Acres injection rates, and was 101 gpm for the year.

In July 2004, two 250 foot sections of injection line (EBA1 and EBA2) were added south of collection well 522 east of Highway 605 (see Figure 2.1-1 for location). The average injection rate for these two lines is estimated at 20 gpm and is included in the Broadview and Murray Acres injection rate.

A 400-foot extension to the S injection line was added on the north end of this line in 2005. Five EMA injection lines were added southwest of the Large Tailings while three ETA injection lines were added east of the Large Tailings in 2005 (see Figure 2.1-1).

2.1.3.1 BROADVIEW AND MURRAY ACRES

The Broadview Acres injection system started in 1977 with the G line on the north side of this subdivision. Injection into the majority of the G-line wells was discontinued in mid-April of 2000 in order to supply more water to injection wells near the collection area. The J-line, wells X1 through X10, and wells X28 through X31 are also considered part of the Broadview Acres injection

system. Alluvial fresh-water injection wells 523 and 524 were added to the Broadview Acres injection system in 2002 (see Figure 4.1-1).

All wells adjacent to the northeast corner and to the north and east of Murray Acres are included in the Murray Acres injection system. This system includes all of the M and WR series injection wells. The M line of the Murray Acres injection system was initially used in 1983. Injection into the M-line west of well WR1R was discontinued at the end of September of 2000, and injection into the WR-line, north of WR10, began at this time. The horizontal injection line, west of the Large Tailings Pile, (S. Inj. Line) was added to this system on August 25, 2003. Fresh-water injection into lines ETA1, ETA2 and ETA3 started in July of 2005 but were not used in 2015. Injection into EMA1 with fresh water started in December, 2005 and continued in 2015.

Figure 2.1-5 (page 2.1-18) presents fresh-water injection rates for the last sixteen years. An average of 450 gpm, or a total of 231 million gallons, was injected during 2015.

2.1.3.2 R.O. PRODUCT

The R.O. product water injection system currently supplies water to the EMA 2-5 infiltration lines to the south and west of the collection ponds. Until October, 2005, R.O. product water was discharged into the X line and injected into wells X1 through X10, X28 through X31 and into wells K2, K6, KA through KE, KM, KN, C4, C13, C5, C3R and PM. Fresh-water injection was commenced after that date for these wells. R.O. product was switched to injection lines EMA2 through EMA5 in October 2005. Figure 2.1-5 shows the rates of R.O. product water injection, which averaged 112 gpm in 2015 for a total of 57 million gallons. Table 2.1-3 presents the water quality results for the R.O. clarifier input and the injection monitoring point, SP2 (monitors mixture of R,O, product, fresh water and zeolite treated water prior to injection).

2.1.3.3 UPPER CHINLE AQUIFER

Hydro-Engineering 2003b and the Updated Corrective Action Program 2012 should be reviewed for a detail discussion of the geologic setting for the Chinle aquifers. From 1984 through early 1995, the Upper Chinle injection system consisted of injecting fresh water into Upper Chinle well CW5, located on the north side of Broadview Acres. This effort restored

most of the area in the Upper Chinle aquifer between the two faults. Injection into well CW5 was resumed in April of 1997 and continues at present to complete the restoration of this aquifer.

In order to maintain head in the Upper Chinle aquifer east of the East Fault, injection of fresh water into well CW13, an Upper Chinle well, was begun in June, 1996. Injection into Upper Chinle well CW25, located on the western edge of the Upper Chinle outcrop east of Murray Acres, began in 2000. Injection into CW25 will increase the head in the Upper Chinle aquifer and force flow in the Upper Chinle back toward collection well CE2. Injection into Upper Chinle well 944 started in June of 2002, and injection into well CW4R started in 2003. The red squares on Figure 2.1-5 present monthly average injection rates into Upper Chinle wells 944, CW4R, CW5, CW13 and CW25, with an overall 2015 average of 49 gpm.

2.1.3.4 MIDDLE CHINLE AQUIFER

Injection of San Andrès fresh water into Middle Chinle well CW14 was started in December of 1997. This injection was initiated to prevent northward movement of alluvial water that recharges the Middle Chinle on the south side of Felice Acres. The injection rate averaged 8 gpm in 2015 (see Figure 2.1-5). This injection has prevented the movement of constituents further to the north and allows up-gradient collection from well Y7.

2.1.3.5 SECTIONS 28 AND 29

A test of fresh-water injection was initiated in late 1999 and continued through January of 2000 by pumping San Andres well 951, which is located in Section 20, (see Figure 2.1-1 for location of supply well 951). This water was subsequently injected into alluvial wells 682, 656, 894, 633 and 655 (see Figure 4.1-1 for location). This fresh-water injection in Sections 28 and 29 was resumed in March of 2002 to impede movement of ground water with modest contaminant concentrations in Section 28 until North Off-site water extraction can reduce these low concentrations. Eight infiltration lines were added in 2005 in Sections 27 and 28 to replace the injection wells and adjust the location of this injection. Injection into lines NPV1 through NPV5 (5 of the 8 infiltration lines) was started on July 27, 2005 while injection into NPV6 was started in December 2005. Fresh water injection into alluvial wells 633 and 655 was restarted in June of 2010. Three additional fresh water infiltration lines (NPV9, NPV10, and NPV11) were added in 2011 to better contain the front of the Section 28 uranium plume. San Andres well 951

was replaced by San Andres well 951R as the fresh water supply in April of 2012. This injection rate averaged 498 gpm for 2015 with a total injected volume of 256 million gallons. Figure 2.1-5 presents the monthly injection rates into wells and infiltration lines located in Sections 28 and 29.

2.1.3.6 SECTIONS 35 AND 3

Fresh-water injection in the southwestern quarter of Section 35 was initiated in late 2002 utilizing production from Upper Chinle well CW18 and Middle Chinle well CW28. This water was injected into alluvial wells 641, 642, 848 and 868 (see Figure 4.1-1 for location).

Fresh-water injection into alluvial wells 643, 863, 865 and 866, located in the northeast portion of Section 3 was initiated in 2003. Injection into Middle Chinle wells CW30 and CW46 was added to this program in 2004 (see Figure 2.1-1). Seven infiltration lines in Section 3 and two infiltration lines in Felice Acres were also added in 2004. Two additional infiltration lines, FA1 in central Felice Acres and WFA1 west of Felice Acres, were added in 2005. These injection wells and lines were supplied with water from San Andres well 943 in 2015. No pumping from well CW28 occurred in 2015 to supply injection water for wells 848 and 868. Injection into three additional infiltration lines (FA2, RCR8, and RCR9) was started in 2011 while injection into infiltration lines FA3 and FA4 were started in 2013.

Figure 2.1-5 presents the combined monthly injection rates for Sections 34, 35 and 3 fresh-water injection lines and wells (see brown diamond symbols on Figure 2.1-5). This injection effort is associated with the ground water restoration of the Sections 3 and 35 areas. Water collected from wells in Section 3 and 35 was used for the zeolite testing and the tailings flushing programs. During 2015, the yearly average injection rate in Sections 34, 35 and 3 was 325 gpm.

2.1.4 RE-INJECTION

Alluvial water containing relatively low concentrations of contaminants is collected and is then injected into areas of the alluvial aquifer near the Large Tailings Pile with higher concentrations of contaminants in order to enhance restoration in this area. This aspect of the restoration plan at the Grants sites is referred to as the collection for re-injection program. The lower-concentration water will be as effective (see sulfate, uranium, selenium and molybdenum

concentrations in plots for wells T and TA – see report Sec. 4.3) as fresh water during the initial stages of restoration, and therefore, re-injection is a beneficial use of this slightly contaminated ground water. Water collected from the L-line to the south of the Small Tailings Pile and wells 521, 522 and 639 was used for re-injection into the alluvial aquifer in 2015. The total collection for re-injection rate in 2015 averaged 25 gpm. Re-injection into alluvial wells X11, X12, D2 through D4, DAA, DAB, DL, DW, DY, DF, DG and DX were used in 2015. The monthly re-injection rates are depicted on Figure 2.1-2 as collection for re-injection use (COL/RE-INJ).

2.1.5 TAILINGS CONDITIONS

Tailings wells were installed in the Large Tailings Pile beginning in 1994, and wells have been periodically added through 2014. No additional tailings injection or dewatering wells were drilled in 2015. Data collected from tailings wells has been used to estimate the amount of drainable water in the re-contoured, stabilized tailings. The tailings wells are also a primary component of the tailings dewatering program. With the exception of some testing of dewatering options in 1999, no dewatering of the tailings occurred in 1998 and 1999 due to limited available capacity in the evaporation ponds. The complete dewatering program was restarted in 2000 and operated through mid-April 2002. Dewatering rates were reduced through the remainder of 2002 and 2003 due to limited available storage in the evaporation ponds. The dewatering wells were operated near capacity starting in April of 2004 and throughout 2005 and 2006. Dewatering rates were restricted in 2007, 2008, 2009 and 2010 due to limited available storage in the evaporation ponds. The dewatering wells were operated near their capacity in 2011 and 2012 and reduced for a portion of 2013 due to evaporation capacity. Rates of tailings dewatering wells in 2014 and 2015 were limited by the numbers of dewatering wells that were operational and were down during the fourth quarter of 2015 for pipeline connections to the R.O. plant.

Figure 2.1-6 (page 2.1-19) shows the locations of tailings wells that were available for pumping in 2015. The cumulative volume of tailings water pumped from 1995 through 2015 is presented on Figure 2.1-7. A total volume of 490 million gallons of water had been removed from the tailings via dewatering wells by the end of 2015. Of that total, 8.6 million gallons were pumped

from the tailings in 2015. The yearly average collection rate from the tailings wells was 17 gpm in 2015.

Wells CE2, CE5, CE6, CE11 and CE12 and some South collection wells have been used to supply water for flushing the Large Tailings Pile in first half of 2015. A total of 41 million gallons were injected into the tailings through early July of 2015 from these wells, which is an average rate of 80 gpm for the year of 2015. This injection for tailings flushing allowed larger extraction rates from the tailings dewatering wells and reduces contaminant concentrations in the tailings. The tailings flushing ceased in early July of 2015.

The volume of water collected from the tailings dewatering wells (light blue bars) and the toe drains (green bars) are also presented on Figure 2.1-8 to show the variations of the collection water each year. This figure also shows the pounds of uranium removed with the tailings dewatering wells (red bars) and the toe drains (gold bars) for each year. The pounds of uranium removed from the toe drains are expected to continue to decrease, as they have the last couple of years, as the concentration from the toe drains decline due to the flushing program. The annual pounds of uranium removed are also expected to decline from the 2015 value with time due to the ceasing of the flushing program.

Table 2.1-1 presents the quantity of constituents collected from the tailings wells since dewatering began in 1995. Tables B.1-1 and B.1-2 of Appendix B present chemical analyses of tailings well water during 2015. Uranium is a key water quality parameter for the tailings solution. Four uranium figures are presented to convey the changes in uranium in the LTP with time. Figure 2.1-9 presents the uranium concentrations in the tailing solution in 2000 shortly after the start of the flushing program. The red pattern shows where uranium concentrations were greater than 40 mg/l while the magenta gives the area where 30 to 40 mg/l concentration existed. The green pattern shows the area of 20 to 30 mg/l and the cyan color shows where uranium concentrations are less then 10 mg/l. Figures 2.1-10, 2.1-11 and 2.1-12 present the tailings uranium solution concentrations for additional times in 2004, 2008 and 2015, respectively. These figures show the decline in uranium concentrations with time. The 2015 contours generally show declining concentrations in the outer sand dikes from the flushing activities that ceased in early July of 2015. Declines in uranium

concentrations in the slime core area also occurred in 2015. The area where the tailings uranium concentrations are less than 2 mg/l is shown with a white pattern.

2.1.6 TOE DRAIN CONDITIONS

A series of toe drains have been installed around the Large Tailings Pile to intercept perched ground water seeping from the tailings into the alluvium. The locations of the toe drains and their associated sumps are shown on Figure 2.1-6. Nine sumps are located around the perimeter of the Large Tailings Pile that are utilized for collection of toe seepage. Two of these sumps are tied to the old tailings decant towers (East and West reclaim sumps).

Figure 2.1-7 shows that 394 million gallons of water have been pumped from the toe drains. An average rate of 19.9 gpm of water was collected from the toe drains in 2015, which is similar to the 2014 rate. This steady rate is due to the larger injection rate into the tailings in 2014.

Table 2.1-1 also presents the 2015 quantity of constituents collected from the toe drains (see Tables B.2-1 and B.2-2 of Appendix B for toe drain sump water-quality results for 2015).

2.1.7 LINED EVAPORATION PONDS

The use of lined evaporation collection ponds (East Collection Pond and West Collection Pond) began in October of 1986 when the two ponds were constructed. The No. 1 Evaporation Pond, located on the Small Tailings Pile, began receiving water in November of 1990. Usage of the No. 2 Evaporation Pond began in March of 1996. The No.3 Evaporation pond began operation in December of 2010.

The water from the well collection system and some water from the tailings dewatering wells and toe drains are pumped to the R.O. plant as feed water. The majority of the extracted tailings water is reported directly to the No. 2 Evaporation Pond for subsequent evaporation. Excess water is transferred from the East Collection Pond to the No. 2 Evaporation Pond. When necessary, water is transferred from the No. 2 Evaporation Pond to the No. 1 Evaporation Pond. This transfer is mainly through the turbo mister forced evaporation spray system. The No. 1 and No.2 Evaporation ponds use spray systems to enhance evaporation while two turbo misters were added to the No. 3 Evaporation Pond in 2013 but were removed in 2014 due to maintenance required. A total of 57

million gallons (average rate of 111 gpm) of water was delivered to the evaporation pond system in 2015 in addition to the 28 million gallons (average rate of 54 gpm) of natural precipitation added to the pond. The net evaporation from the evaporation system averaged 184 gpm in 2015, compared to 188 gpm in 2014.

Water quality samples results collected from the No. 1 and No. 2 Evaporation Ponds, the East Collection Pond (E COLL POND), and the West Collection Pond (W COLL POND) are presented in Tables B.3-1 and B.3-2 of Appendix B.

2.1.8 YEARLY OPERATIONAL RATES

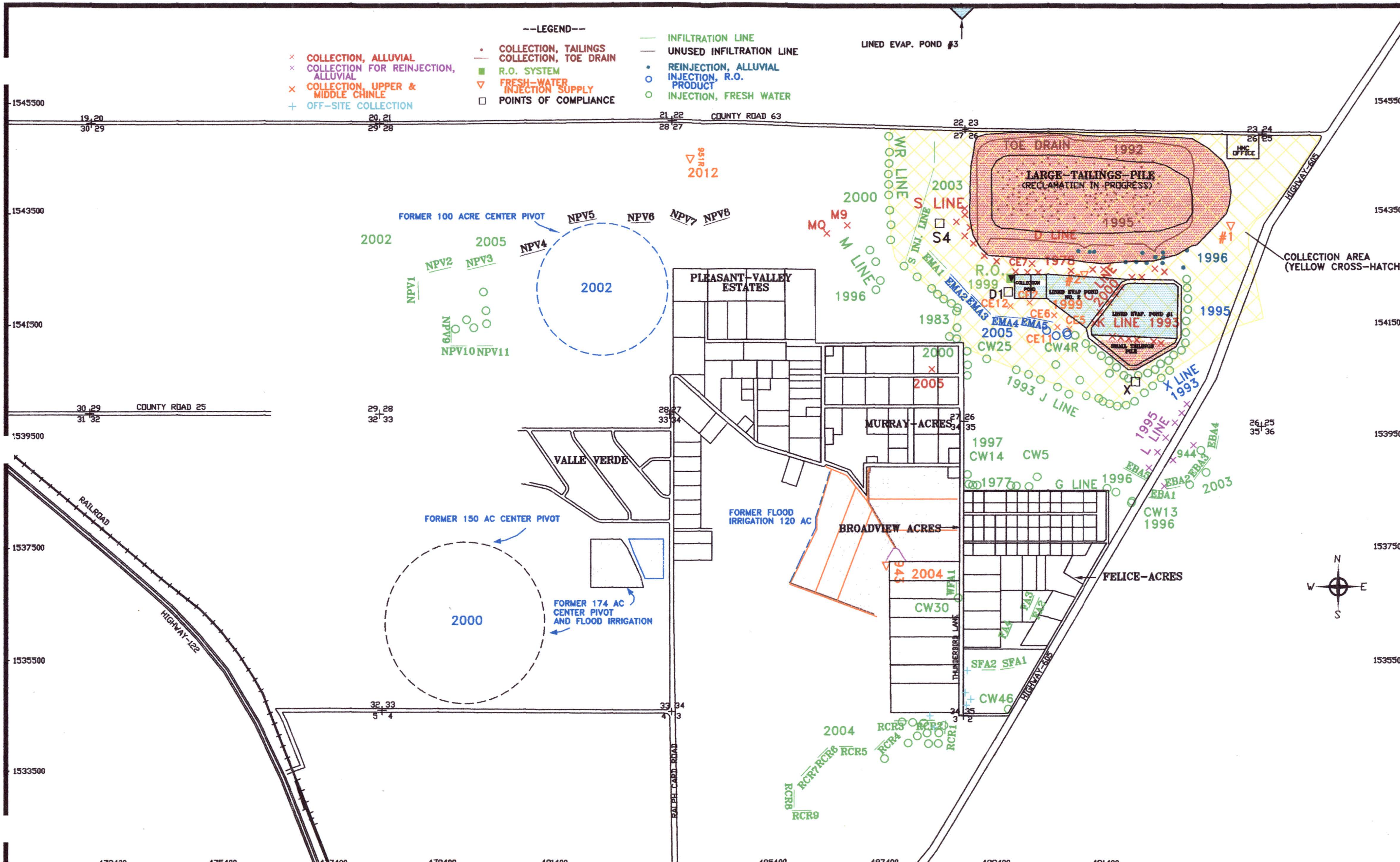
A tabulation of yearly operational rates and volumes is presented below, and a summary of the yearly operational rates is also presented in Figure 2.1-13. This figure gives the average yearly rates for each aquifer on the left side and shows where the quantity of water was pumped in 2015. Injection rates into the LTP and the combined toe drain and dewatering rates from the LTP are shown under the source control. Estimated seepage and change in saturated storage are also given for the LTP. The RO plant inputs and discharges, zeolite system inputs and discharges, and the input and removal rates from the Collection Ponds rates are presented in Figure 2.1-13.

Major Collection and Injection Flows and Volumes During 2015

Aquifer System	Injection		Collection		Seepage from LTP	
	Rate (gpm)	Volume (gallons)	Rate (gpm)	Volume (gallons)	Rate (gpm)	Volume (gallons)
Alluvial	1304	696,650,000	217	115,930,000	102	54,490,000
Upper Chinle	49	26,180,000	58	30,990,000	--	--
Middle Chinle	88	47,010,000	17	9,080,000	--	--
Lower Chinle	--	--	--	--	--	--
San Andres	--	--	1329	710,000,000	--	--
Tailings	80	42,740,000	37	19,770,000	--	--

Major Treatment and Disposal Flows and Volumes During 2015

Treatment/Disposal System	Feed/Input Rate		Treated Water Discharge		Evap/Disposal Discharge	
	Rate (gpm)	Volume (gallons)	Rate (gpm)	Volume (gallons)	Rate (gpm)	Volume (gallons)
Reverse Osmosis	228	121,810,000	112	59,830,000	52	27,780,000
Zeolite	11	5,880,000	10	5,340,000	0.6	320,000
Evaporation Ponds	111	59,300,000	--	--	184	98,300,000
Collection Ponds	64	34,190,000	--	--	22	11,750,000



SCALE: 1"=1600'
C:\PROJECTS\2016-06 08COLL-INJ.DWG
DATE: 2/11/16

FIGURE 2.1-1. LOCATION OF PRESENT INJECTION AND COLLECTION SYSTEMS WITH START OF OPERATION DATES, 2015

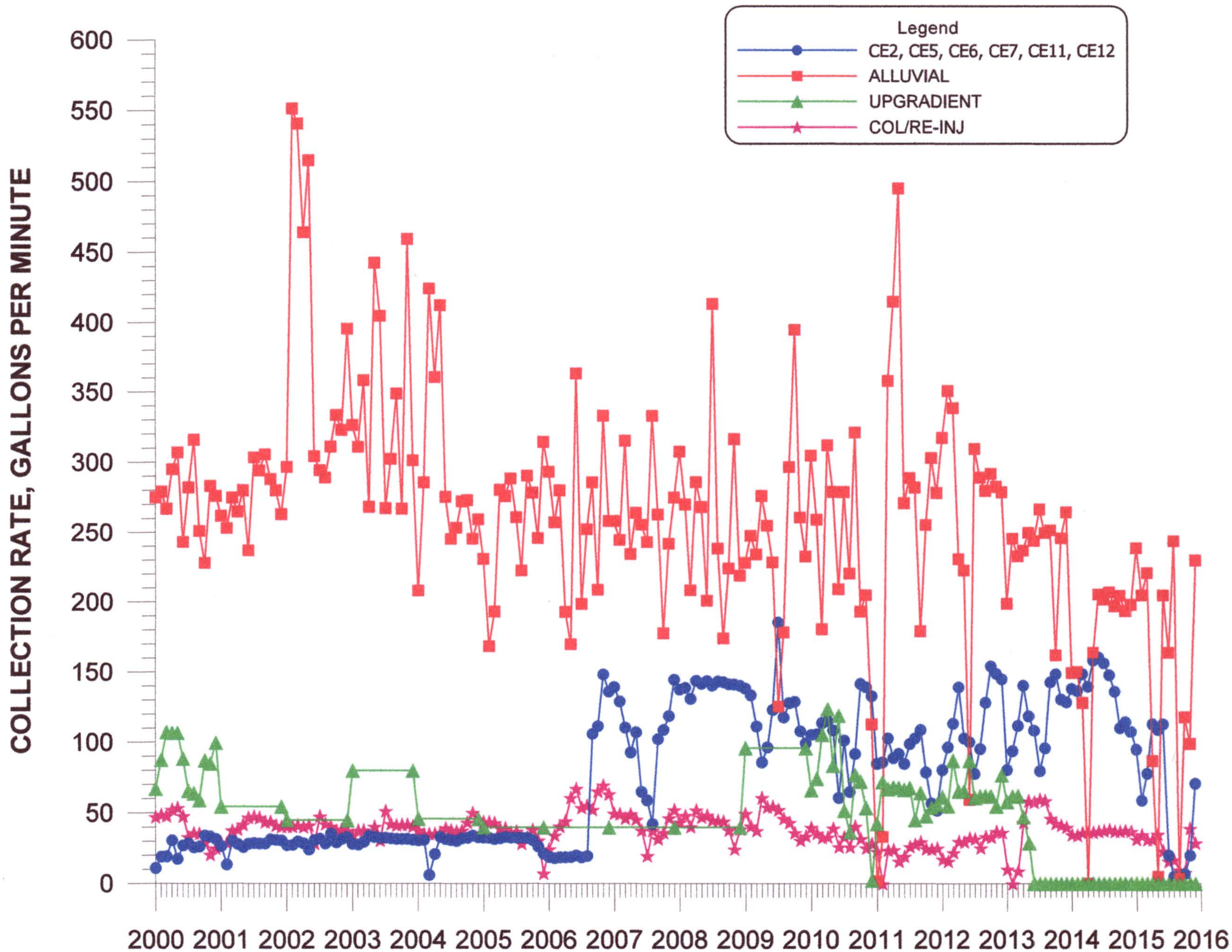


FIGURE 2.1-2. AVERAGE MONTHLY COLLECTION RATES FOR THE ALLUVIAL AND UPPER CHINLE AQUIFERS.

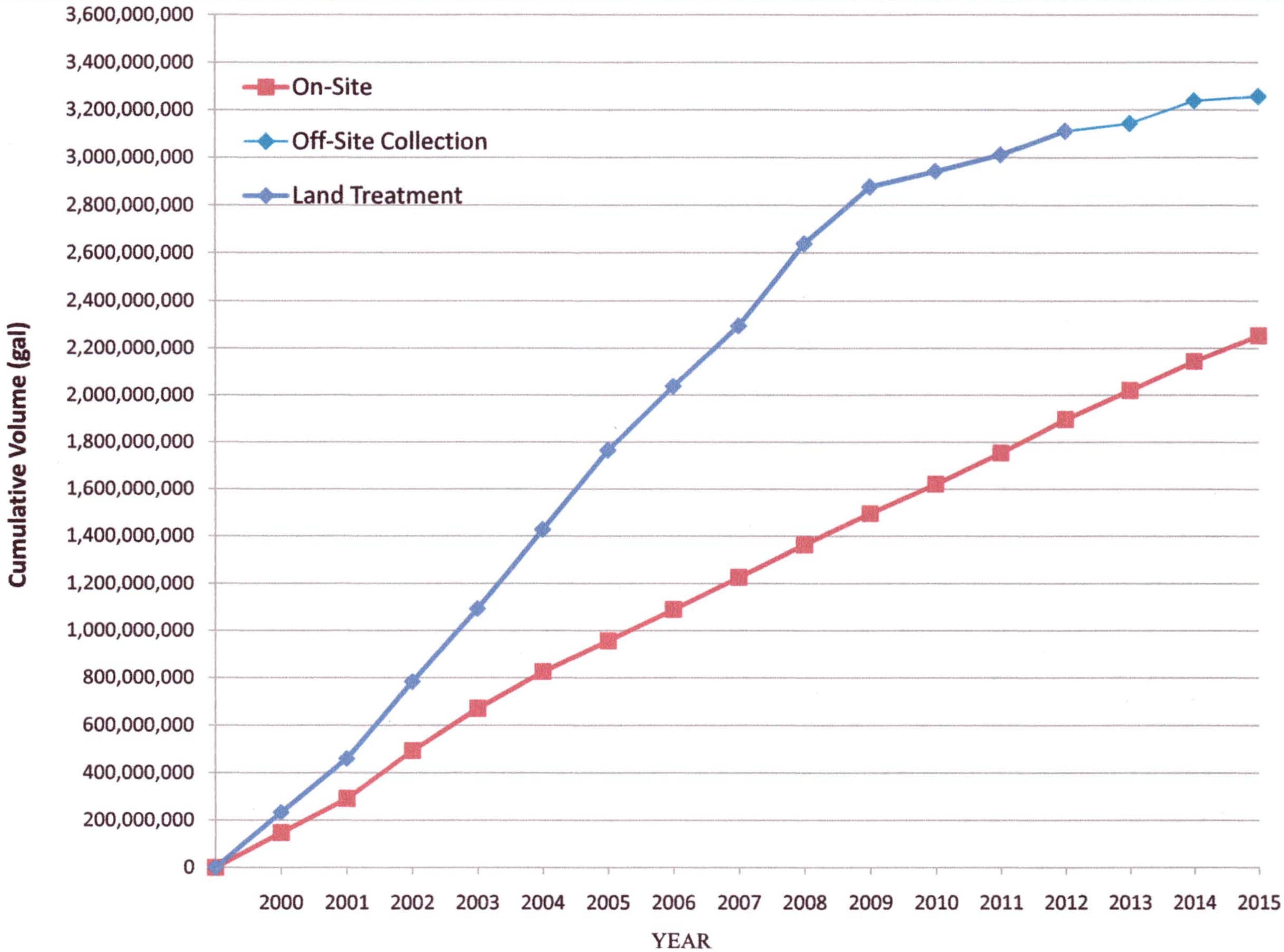


Figure 2.1-3. Cumulative Volume of Land Treatment, On-Site and Off-Site Collection from 2000 to Present

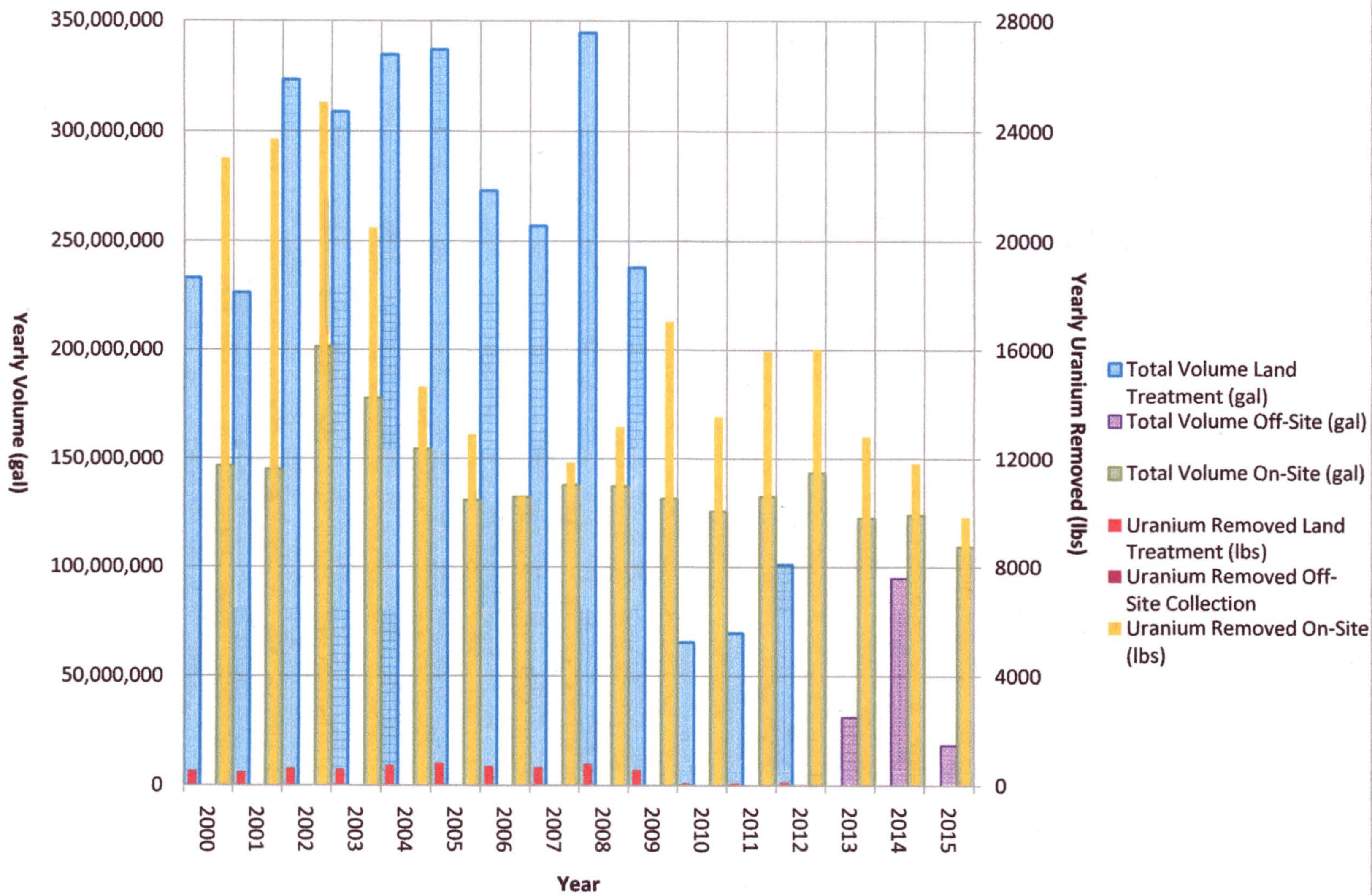


Figure 2.1-4. Yearly Quantity of Water and Uranium Removed

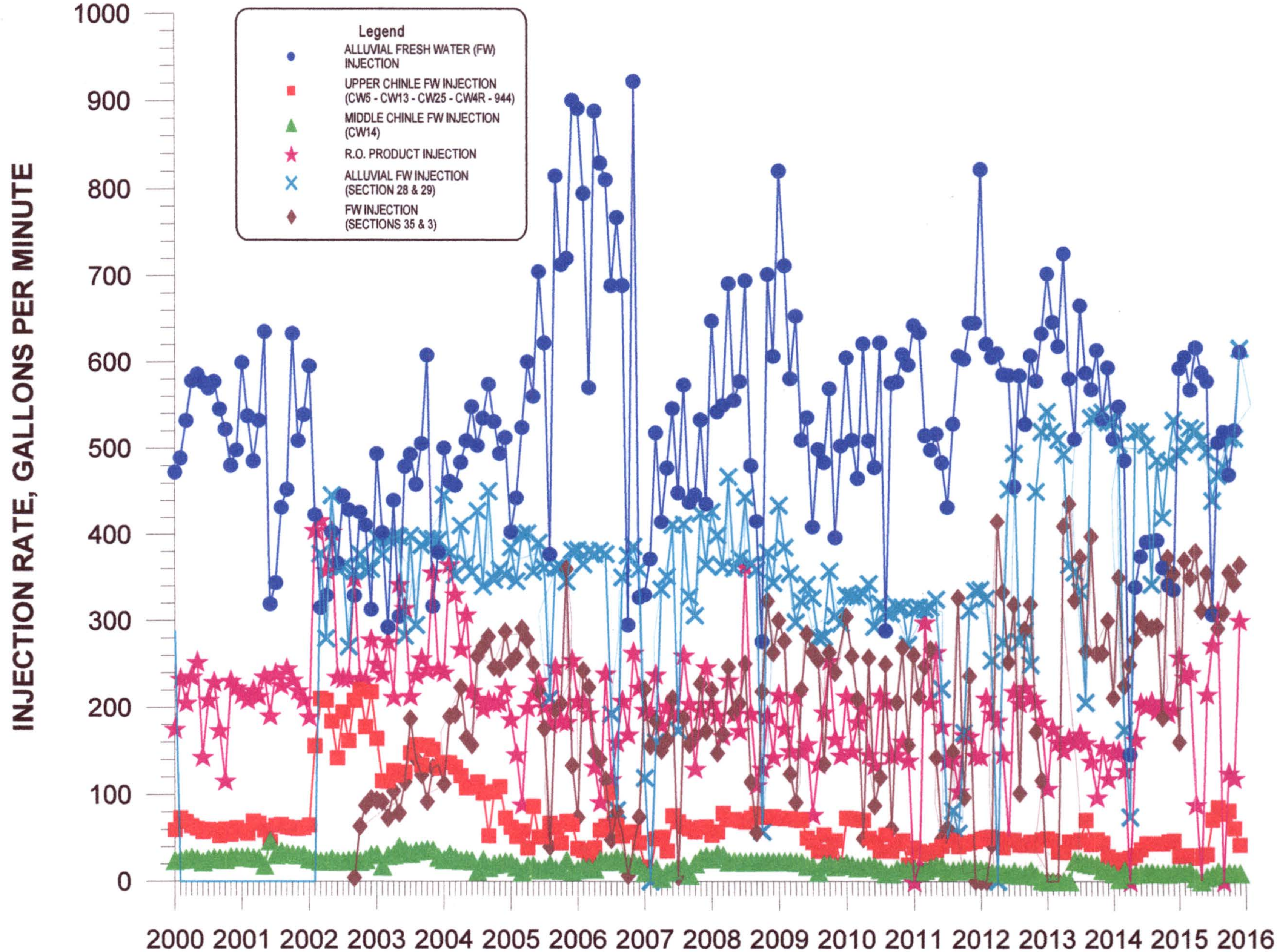


FIGURE 2.1-5. AVERAGE MONTHLY INJECTION RATES FOR THE ALLUVIAL UPPER CHINLE AND MIDDLE CHINLE AQUIFERS.

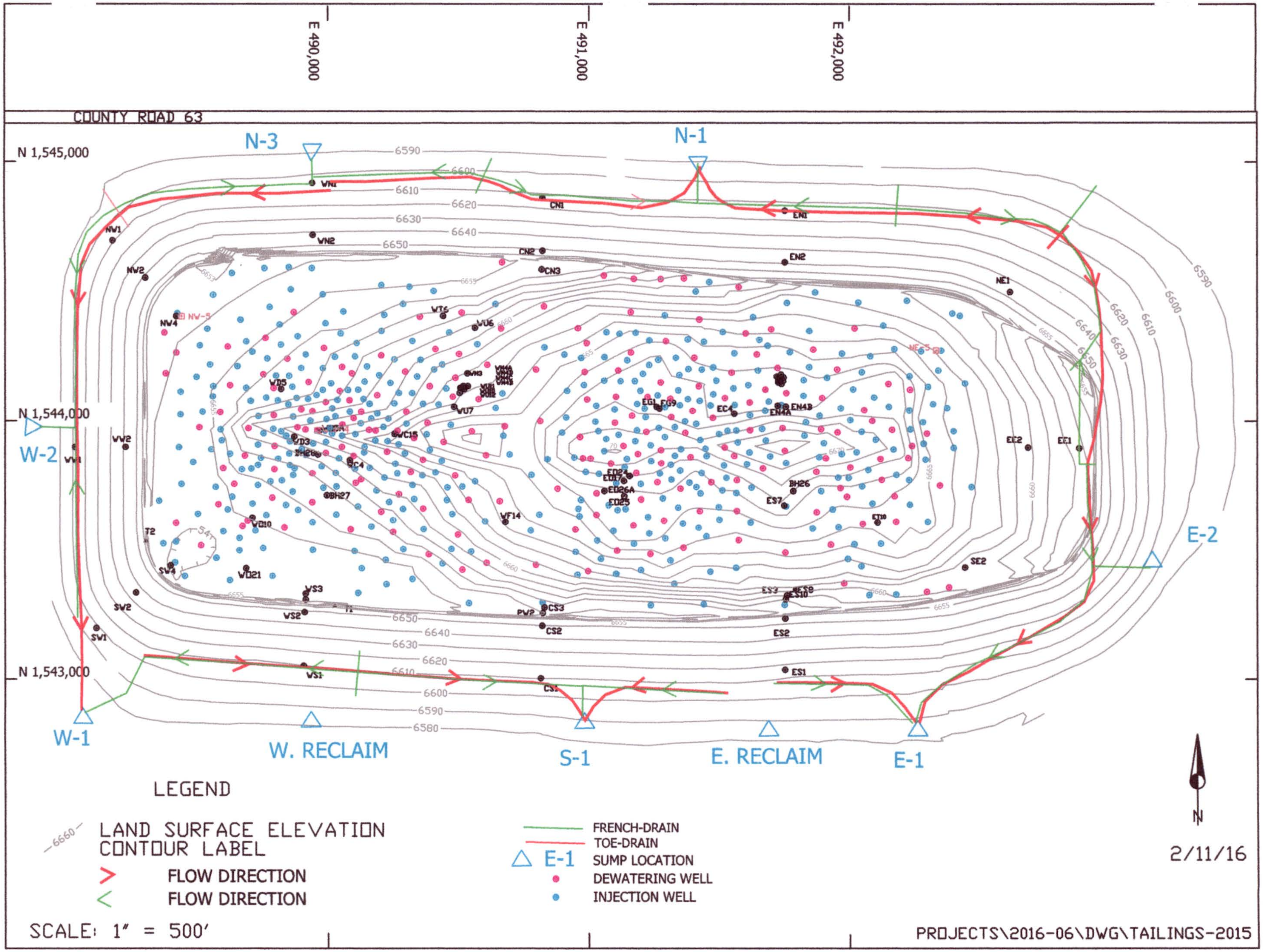


FIGURE 2.1-6. LOCATIONS OF TAILINGS DEWATERING WELLS, TOE DRAINS AND SUMPS

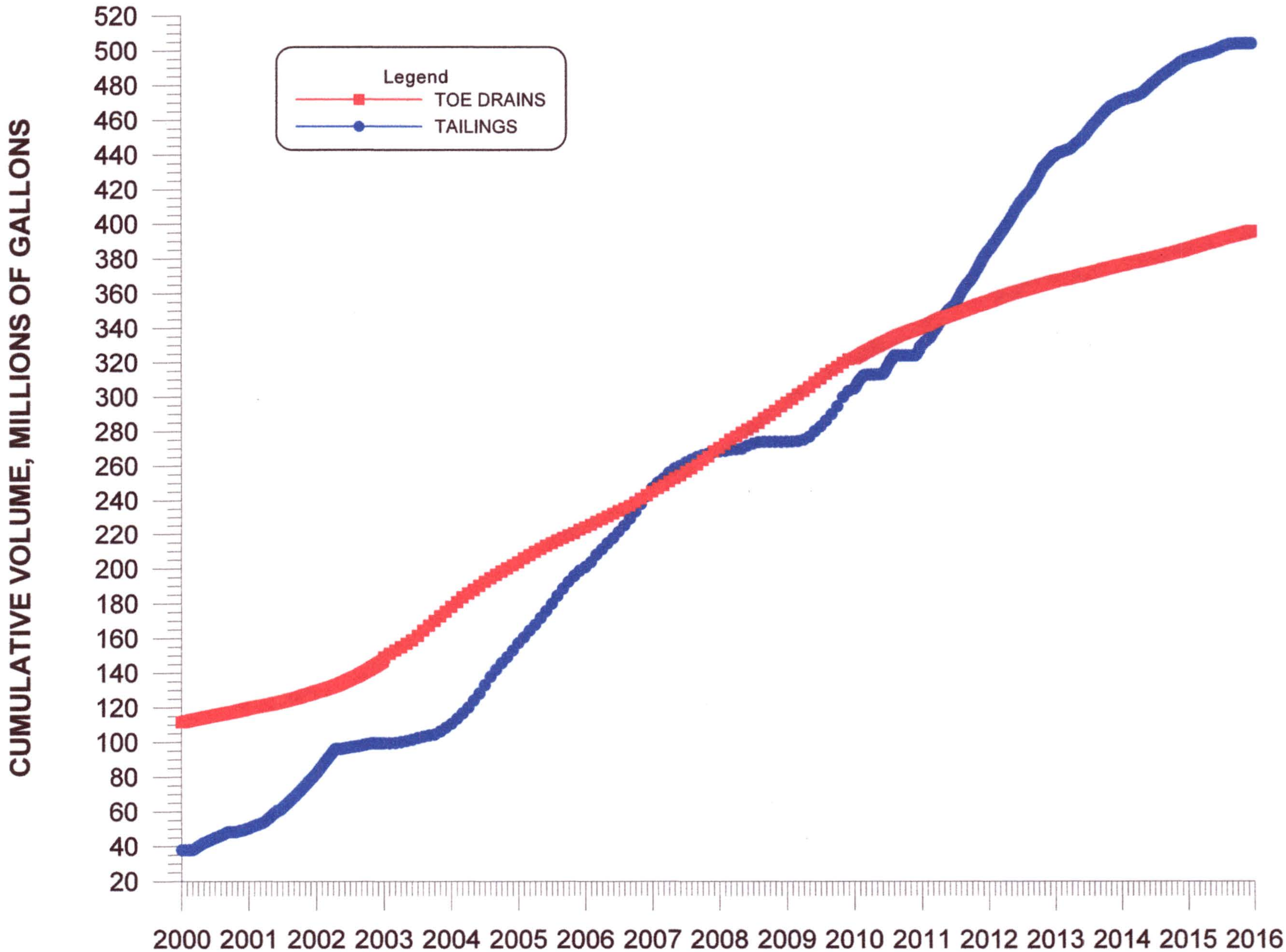


FIGURE 2.1-7. CUMULATIVE VOLUME OF COLLECTION WATER FROM TAILINGS DEWATERING WELLS AND TOE DRAINS.

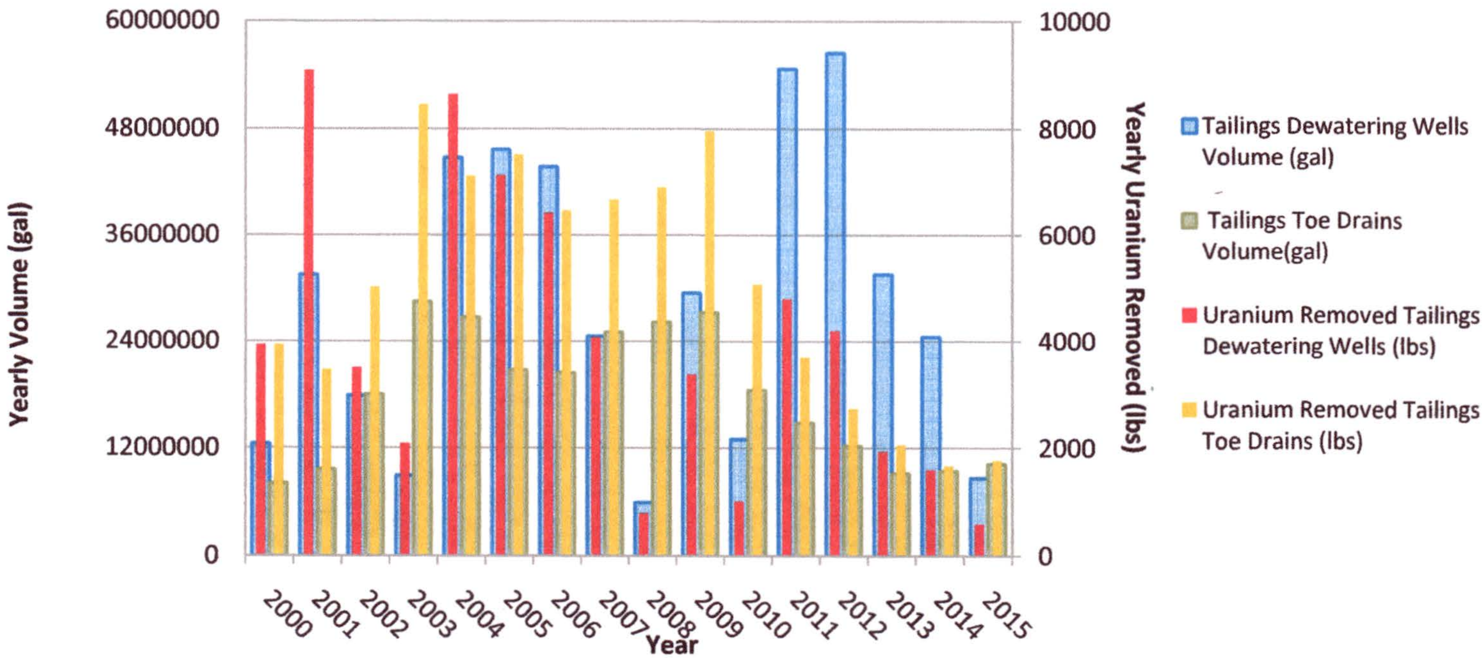


Figure 2.1-8. Yearly Quantity of Tailings Water and Uranium Removed

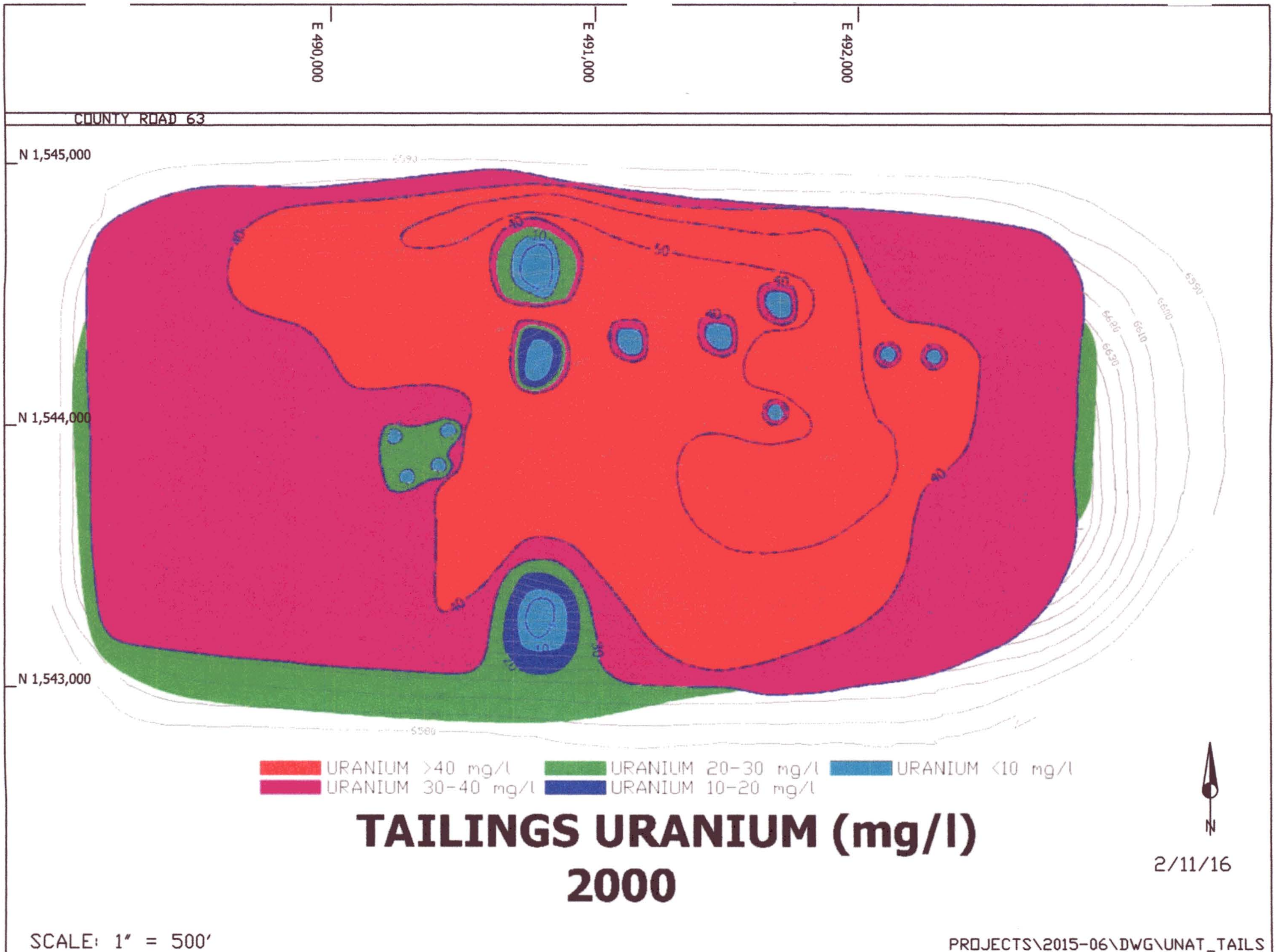


FIGURE 2.1-9. TAILINGS SOLUTION URANIUM CONCENTRATION, 2000

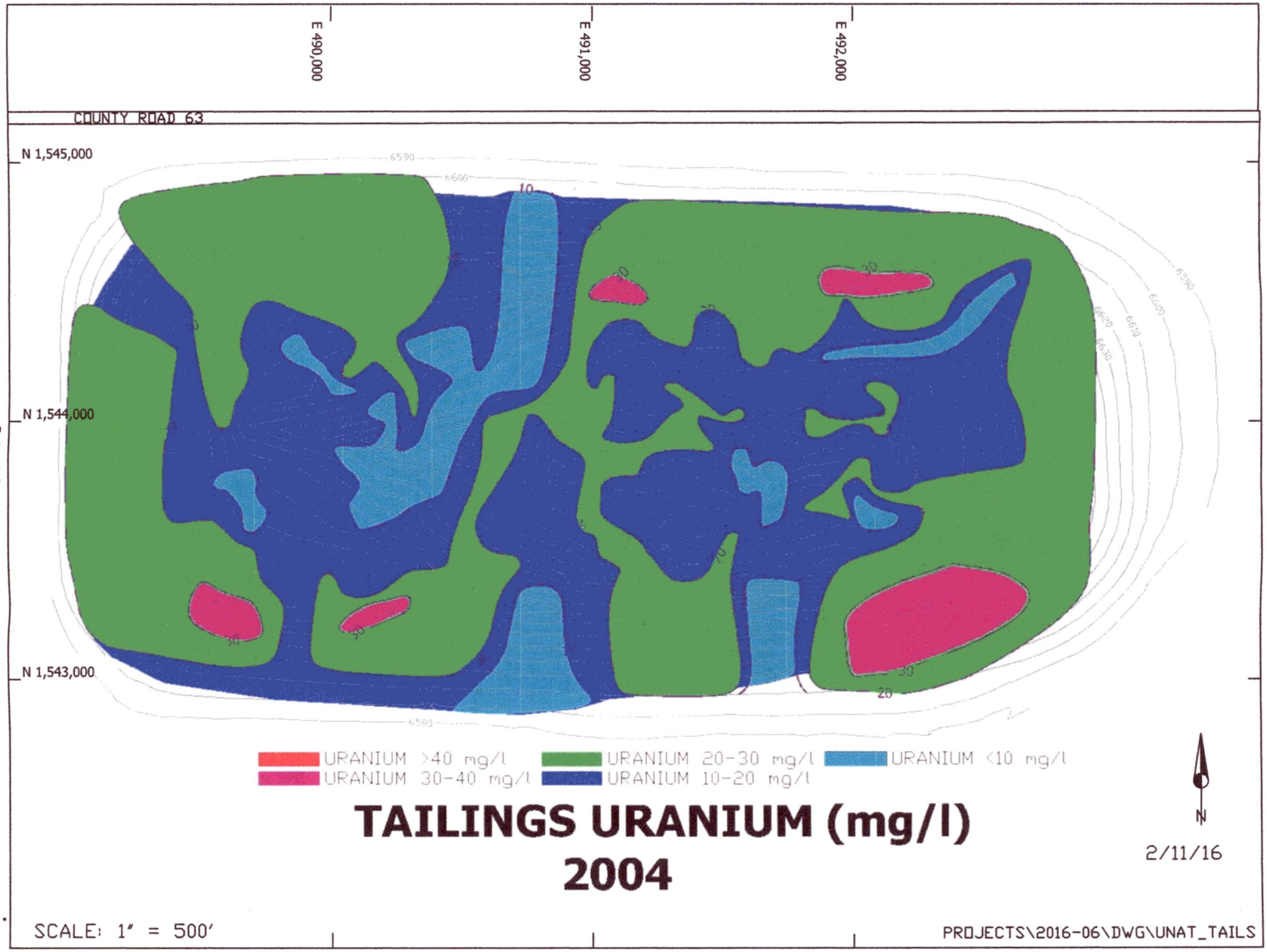


FIGURE 2.1-10. TAILINGS SOLUTION URANIUM CONCENTRATION, 2004

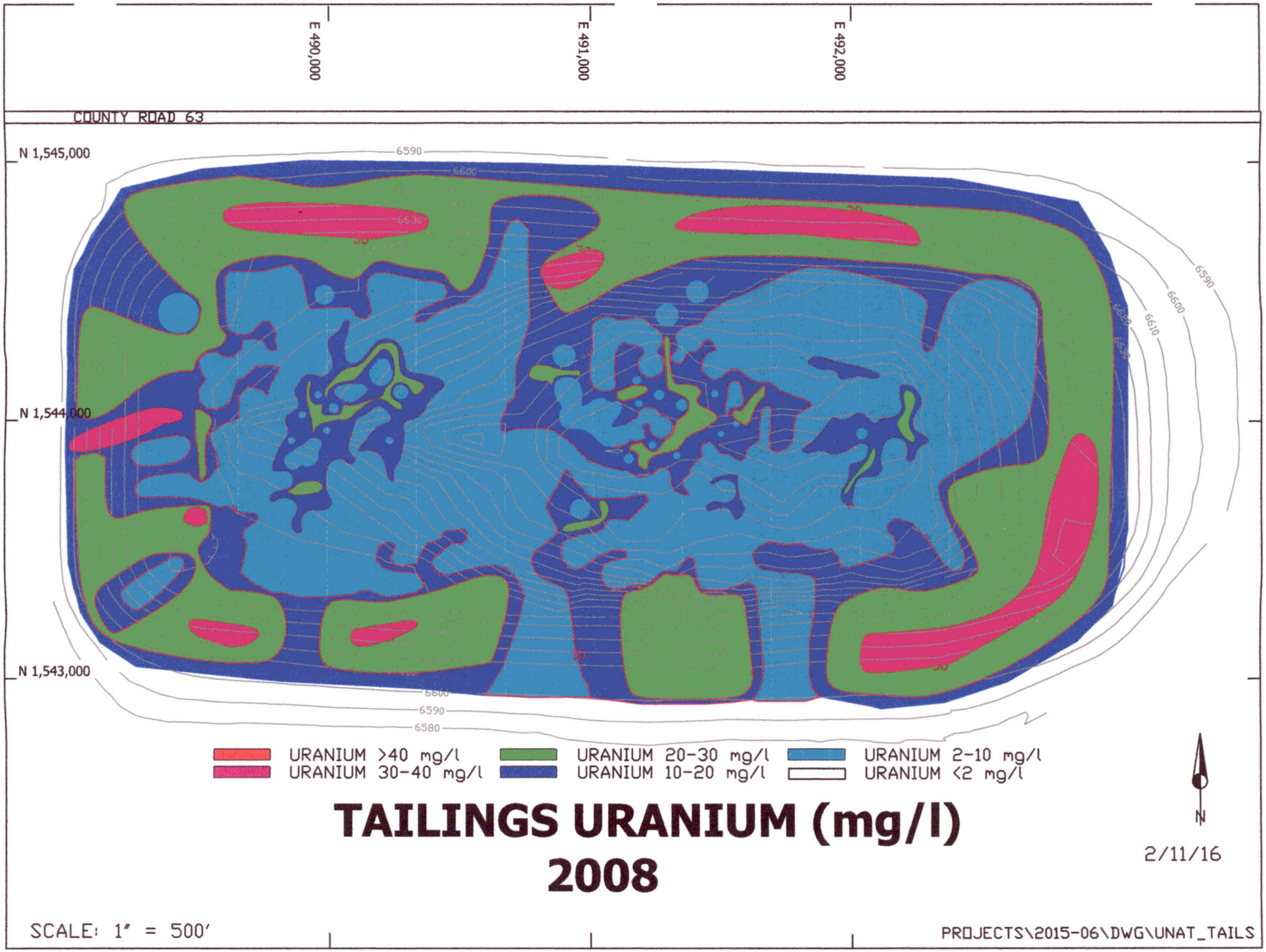


FIGURE 2.1-11. TAILINGS SOLUTION URANIUM CONCENTRATION, 2008

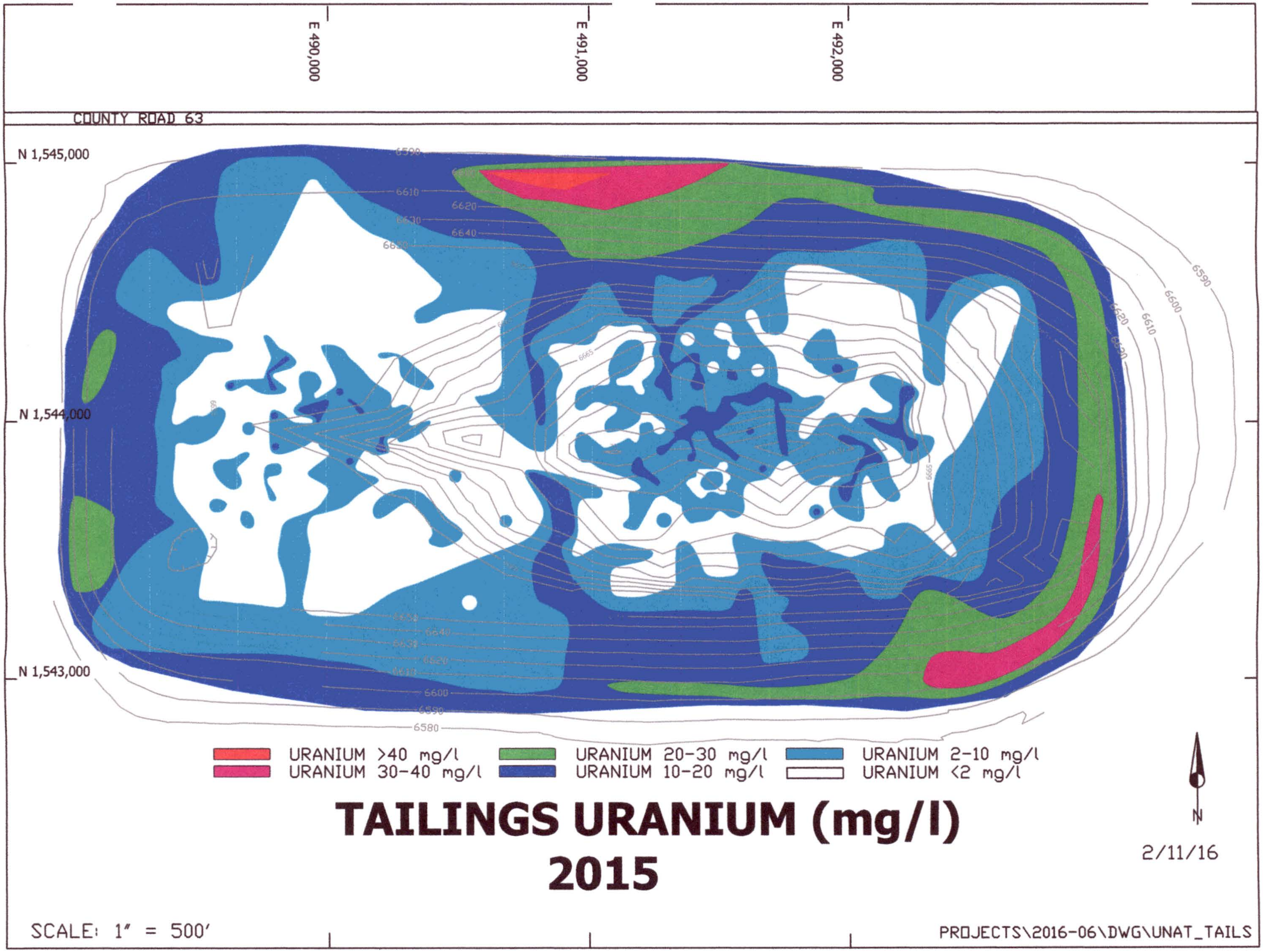
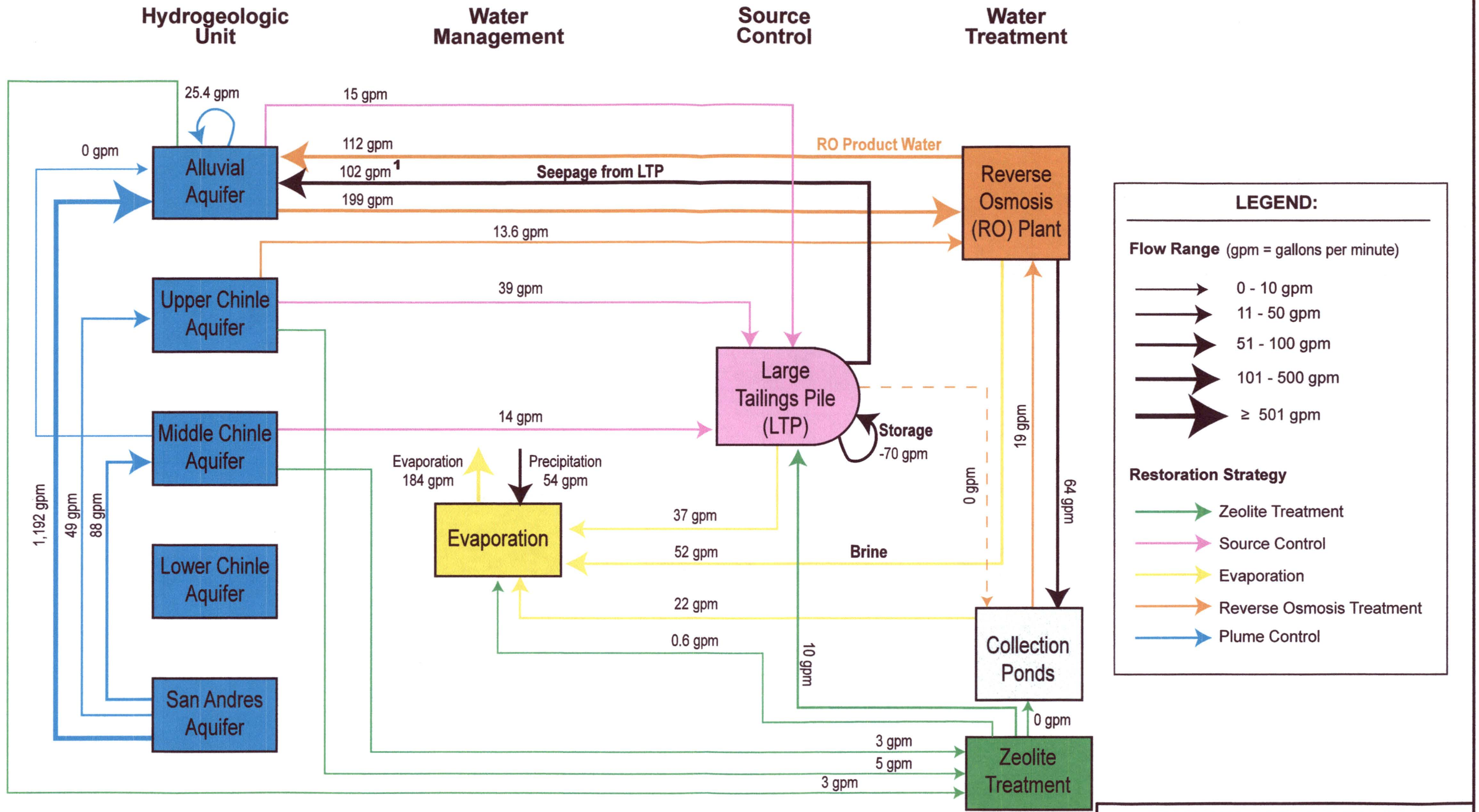


FIGURE 2.1-12. TAILINGS SOLUTION URANIUM CONCENTRATION, 2015



Note:

1 LTP seepage were estimated based on the mixing model.

GRANTS RECLAMATION PROJECT
Annual Performance Report

FIGURE 2.1-13
2015 MAJOR OPERATIONAL FLOWS

K:\AO000120_Grants\Illustrators\2015 Annual Performance Report\Figure 2.1-13 2015 Major Operational Flows.ai @ 02/11/2016 PREPARED BY: JC

TABLE 2.1-1. QUANTITIES OF CONSTITUENTS COLLECTED.

YEAR	SOURCE	TOTAL VOLUME PUMPED	SULFATE (SO4) CONC.	AMT.	URANIUM (U) CONC.	AMT.	MOLYBDENUM (MO) CONC.	AMT.	SELENIUM (SE) CONC.	AMT.
		(GAL)	(MG/L)	(LB)	(MG/L)	(LB)	(MG/L)	(LB)	(MG/L)	(LB)
1978	G.W.	27670033	5200	1200620	35	8081	40	9236	2	462
1979	G.W.	46371629	5200	2012095	35	13543	40	15478	2	774
1980	G.W.	39385860	5200	1708978	35	11503	40	13146	2	657
1981	G.W.	91613183	5200	3975155	35	26756	40	30578	2	1529
1982	G.W.	159848025	5200	6935910	35	46684	40	53353	2	2668
1983	G.W.	167018540	5200	7247043	35	48778	40	55746	2	2787
1984	G.W.	203258522	5200	8819519	35	59362	40	67842	2	3392
1985	G.W.	194074421	5200	8421015	35	56680	40	64777	2	3239
1986	G.W.	199326030	5200	8648886	35	58214	40	66530	2	3326
1987	G.W.	180881740	5200	7848576	35	52827	40	60374	2	3019
1988	G.W.	166460826	5200	7222843	35	48615	40	55560	2	2778
1989	G.W.	175780800	5200	7627243	35	51337	40	58671	2	2934
1990	G.W.	164378919	5200	7132508	35	48007	40	54865	2	2743
1991	G.W.	171497720	5200	7441397	35	50086	40	57242	2	2862
1992	G.W.	128398849	4925	5276234	27.2	29134	35.9	38419	1.60	1718
1992	TOE	8544670	12117	864006	53.2	3793	106.5	7595	1.73	123
1993	G.W.	115795020	5011	4841203	28.1	27130	45.4	43885	1.47	1425
1993	TOE	18357680	12117	1856262	53.2	8150	106.5	16315	1.73	265
1994	G.W.	98294087	4423	3624762	26.0	21146	27.3	22349	1.42	1162
1994	TOE	18337680	12117	1854240	53.2	8141	106.5	16299	1.73	264
1995	G.W.	108306398	3256	2942827	16.1	14553	19.2	17355	1.65	1491
1995	TOE	17711370	11370	1680500	54.6	8069	94.4	13952	2.25	332
1995	TAILS	5905740	8191	403680	36.1	1778	89.7	4420	0.15	7
1996	G.W.	122064160	3899	3967919	20.9	21225	26.8	27259	1.92	1950
1996	TOE	15431810	11537	1484295	46.4	5970	105.0	13509	1.29	166
1996	TAILS	9181390	9434	722129	40.2	3077	108.0	8236	0.18	14
1997	G.W.	94465562	4955	3836678	26.9	20892	33.4	25887	3.17	2456
1997	TOE	12029390	11094	1113808	41.8	419	100.0	10040	0.81	81
1997	TAILS	21292900	10284	1827575	45.8	8139	92.4	16420	0.14	25
1998	G.W.	74459130	5088	3161866	29.6	18385	34.8	21625	1.85	1151
1998	TOE	10321780	9870	850257	42.5	3665	95.2	8203	0.73	63
1999	G.W.	117752408	3363	3305027	16.6	16314	14.8	14545	2.06	2024
1999	TOE	8809890	11560	849976	54.3	3993	106.0	7794	0.46	34
1999	TAILS	120550	9420	9478	40.9	41	111.5	112	0.19	0
2000	G.W.	146609842	3358	4108868	18.8	23004	20.6	25206	1.94	2374
2000	TOE	8032870	9734	652590	58.6	3929	118.0	7911	0.34	23
2000	TAILS	12446810	9710	1008685	37.8	3927	127.0	13193	0.30	31
2001	G.W.	144925056	2770	3350438	19.6	23707	21.4	25884	1.65	1996
2001	TOE	9606280	9935	796529	43.1	3455	95.7	7673	0.78	63
2001	TAILS	31465370	8688	2281555	34.6	9086	89.2	23425	0.19	50
2002	G.W.	201357360	2748	4618092	14.9	25040	16.7	28065	1.23	2067
2002	TOE	17975520	9210	1381718	33.4	5011	88.7	13307	0.76	114
2002	TAILS	17817840	7670	1140588	23.5	3495	40.8	6067	0.12	18
2003	G.W.	177727419	2417	3585168	13.8	20470	15.5	22991	0.73	1083
2003	TOE	28418871	9457	2243048	35.6	8444	78.9	18714	4.35	1032
2003	TAILS	8890076	9800	727126	28.0	2078	92.0	6826	0.30	22
2004	G.W.	154422720	2272	2931913	11.3	14633	16.6	21386	0.79	1017
2004	TOE	26720928	8007	1787722	31.9	7115	67.6	15102	2.78	622
2004	TAILS	44745696	6360	2377848	23.1	8637	60.9	22769	0.20	75
2005	G.W.	130810679	2478	2705346	11.8	12883	15.5	16922	0.59	644
2005	TOE	20704320	8228	1421784	43.5	7517	87.5	15120	2.63	454
2005	TAILS	45685786	4389	1673497	18.7	7130	56.3	21467	0.18	69
2006	G.W.	132406109	1990	2199072	9.6	10609	14.3	15802	0.73	807
2006	TOE	20374782	7432	1263796	38.0	6462	76.2	12958	1.09	185
2006	TAILS	43707760	4278	1560550	17.6	6420	51.9	18932	0.14	51
2007	G.W.	137707200	2420	2781316	10.3	11838	16.7	19193	0.52	598
2007	TOE	25037779	6829	1427024	31.9	6666	67.3	14063	1.20	251
2007	TAILS	24561680	4130	846616	19.9	4079	61.1	12525	0.15	31
2008	G.W.	137145174	2672	3058408	11.5	13163	16.5	18886	0.61	698
2008	TOE	26140850	7847	1711992	31.6	6894	68.5	14945	1.58	345
2008	TAILS	5950324	4671	231968	16.0	795	42.8	2126	0.24	12
2009	G.W.	131564160	3145	3453318	15.5	17020	19.1	20660	0.85	933
2009	TOE	27238830	7792	1771396	35.0	7957	69.9	15891	0.81	184
2009	TAILS	29403070	3850	944782	13.7	3362	38.6	9472	0.24	59
2010	G.W.	125785118	2793	2932099	12.9	13542	16.6	17427	0.64	672
2010	TOE	18444330	6848	1054156	32.9	5065	52.1	8020	0.51	79
2010	TAILS	12953960	3018	326287	9.4	1016	33.5	3622	0.19	21
2011	G.W.	132573855	2908	3217590	14.4	15933	22.5	24895	1.23	1361
2011	TOE	14777020	6747	832101	29.9	3688	53.2	6561	0.44	54
2011	TAILS	54713150	2887	1318308	10.5	4795	33.5	15297	0.18	82
2012	G.W.	143304728	3070	3671785	13.4	16027	16.8	20093	0.62	742
2012	TOE	12201316	6476	659465	26.8	2729	48.9	4980	0.43	44
2012	TAILS	56486600	2632	1240823	8.9	4196	26.2	12352	0.17	80
2013	G.W.	122813790	2793	2862836	12.5	12813	16.2	16605	0.73	748
2013	TOE	9211575	6453	496105	26.7	2053	53.3	4098	0.35	27
2013	TAILS	31489800	2448	643368	7.5	1958	23.6	6202	0.12	32
2014	G.W.	124070324	2570	2661212	11.4	11805	15.8	16361	0.63	652
2014	TOE	9427490	5683	447149	21.2	1668	46.0	3619	0.15	12
2014	TAILS	24487100	2788	569782	7.8	1594	27.1	5538	0.16	33
2015	G.W.	109360371	3100	2829437	10.8	9857	14.1	12869	0.83	758
2015	TOE	10222310	5252	448076	20.7	1766	41.2	3515	0.30	26
2015	TAILS	8644000	2891	208565	8.2	592	28.0	2020	0.11	8
SUM G.W.		5,099,685,767		168,165,203		1,001,593		1,197,969		63,697
SUM TOE		394,079,341		28,947,996		122,617		260,182		4,841
SUM TAILS		489,949,602		20,063,212		76,194		211,022		718
COMBINED SUM		5,983,714,710		217,176,412		1,200,404		1,669,173		69,256

NOTE: Average concentrations for 1978 to 1991 were used in calculating the quantities of constituents removed.
Concentrations from the collection wells have gradually decreased from 1978 through 1991.
G.W. = Ground water; TOE = Toe drains on edge of tailings; TAILS = Large tailings collection wells

TABLE 2.1-2. QUANTITIES OF CONSTITUENTS COLLECTED BY AQUIFER

YEAR	SOURCE	TOTAL VOLUME PUMPED (GAL)	SULFATE (SO4) CONC. (MG/L)	SULFATE (SO4) AMT. (LB)	URANIUM (U) CONC. (MG/L)	URANIUM (U) AMT. (LB)	MOLYBDENUM (MO) CONC. (MG/L)	MOLYBDENUM (MO) AMT. (LB)	SELENIUM (SE) CONC. (MG/L)	SELENIUM (SE) AMT. (LB)
				ON-SITE						
2014	ALLUVIAL	122,493,914	2534	2,590,165	11.21	11,463	15.58	15,927	0.63	643
2014	UPPER CHINLE	1,576,410	5400	71,046	26	342	33	434	0.7	9
2014	MIDDLE CHINLE	0	0	0	0	0	0	0	0	0
2015	ALLUVIAL	102,369,081	3311	2,828,827	11.53	9,851	15.05	12,858	0.65	555
2015	UPPER CHINLE	6,991,488	3483	203,236	15.29	892	17.06	995	0.55	32
2015	MIDDLE CHINLE	0	0	0	0	0	0	0	0	0
				OFF-SITE						
2014	SOUTH ALLUVIAL	56,040,044	681	318,511	0.45	210	0.03	14	0.03	14
2014	SOUTH UPPER CHINLE	167,400	717	1,002	0.09	0	0.03	0	0.19	0
2014	SOUTH MIDDLE CHINLE	38,493,556	728	233,883	0.31	100	0.03	10	0.04	13
2014	SOUTH LOWER CHINLE	0	0	0	0	0	0	0	0	0
2014	NORTH ALLUVIAL	0	0	0	0	0	0	0	0	0
2015	SOUTH ALLUVIAL	9,579,680	737	58,925	0.65	52	0.03	2	0.04	3
2015	SOUTH UPPER CHINLE	0	0	0	0	0	0	0	0	0
2015	SOUTH MIDDLE CHINLE	8,852,320	727	53,712	0.5	37	0.03	2	0.06	4
2015	SOUTH LOWER CHINLE	0	0	0	0	0	0	0	0	0
2015	NORTH ALLUVIAL	0	0	0	0	0	0	0	0	0
SUM ON-SITE		233,430,893		5,693,275		22,548		30,215		1,240
SUM OFF-SITE		113,133,000		666,031		399		28		35
COMBINED SUM		346,563,893		6,359,306		22,947		30,243		1,274

Table 2.1-3 RO Clarifier Feed And RO SP2 Water Quality Data

Sample Point Name	Date	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	U (mg/l)	Mo (mg/l)	NO3 (mg/l)	Se (mg/l)	Ra226 (pCi/l)
RO CLAR FEED	2/11/2015	386	2740	5290	11.3	15	6.5	1.1	0.68
RO CLAR FEED	3/18/2015	--	--	--	11.1	15	--	--	--
RO CLAR FEED	4/10/2015	--	--	--	7.9	12.4	--	--	--
RO CLAR FEED	8/5/2015	--	3460	6920	12.9	--	--	0.573	--
RO SP2	1/13/2015	--	--	--	0.164	0.14	--	--	--
RO SP2	2/11/2015	140	438	1170	0.020	0.07	1.7	0.007	0.18
RO SP2	3/18/2015	198	622	1630	0.027	<0.03	1.6	0.005	0.21
RO SP2	4/10/2015	--	--	--	0.029	0.04	--	--	--
RO SP2	5/27/2015	--	--	--	0.049	0.28	--	--	--
RO SP2	6/9/2015	211	696	1830	0.042	0.031	1.9	0.007	--
RO SP2	7/14/2015	--	--	--	0.019	<0.03	--	--	--
RO SP2	8/5/2015	--	--	--	--	--	--	--	--
RO SP2	9/17/2015	--	320	779	0.278	0.25	--	0.014	--
RO SP2	9/17/2015	101	327	793	0.287	0.28	--	0.015	--
RO SP2	10/6/2015	--	336	823	0.100	0.14	--	0.008	--
RO SP2	10/6/2015	109	337	815	0.097	0.14	--	0.007	--
RO SP2	11/10/2015	151	737	1640	0.103	0.067	1.2	0.006	0.2
RO SP2	12/3/2015	120	397	975	0.060	0.09	1.2	0.006	0.14

2.2 FUTURE OPERATION

Ground water quality restoration in 2016 will continue as a combination of fresh-water, zeolite treated water, and R.O. product injection to maintain the overall piezometric gradient reversal between the lines of injection (M Line, WR Line, J Line and X Line) and contaminated water collection near the tailings piles. The reverse osmosis (R.O.) plants are rated at a capacity of 1200 gpm but is projected to operate at approximately 1000 gpm averaged over the entire year in 2016 with the new plant addition. The sand filters in the R.O. plant were replaced with microfiltration in the first half of 2015. The second 600 gpm R.O. unit was added at the end of 2015. When the plants are operated at full capacity, approximately 860 gpm of R.O. product would be produced for injection into the alluvium and approximately 220 gpm of brine reject would be discharged to the evaporation ponds. A larger collection rate and use of the high quality R.O. product for injection will continue to enhance the restoration progress. Additional alluvial collection wells near the tailings are planned to be added in 2016.

Water collected from the alluvial and Chinle aquifers, where there are relatively low levels of selenium and uranium, will continue to be selectively collected and used for re-injection in the initial phase of restoration of some areas. This re-injection will occur in the alluvium, where concentrations are greater than those of the injected water, until such time as injection with San Andres fresh water or treated water will better complete the restoration. Use of the low-concentration re-injection water will be limited to the collection area as shown in Figure 2.1-1. For the purpose of this document, the reversal zone is called the collection area. To date, re-injection has occurred in wells X5 through X27, 1A, C4, D2 through D4 and DAA, DAB, DL, DW, DY, DF, DG, DQ, DX and K and a few tailings pile wells.

Collection from Upper Chinle wells CE2, CE5, CE6, CE7, CE11 and CE12 will continue to intercept contaminants in this aquifer. Injection into Upper Chinle wells 944, CW4R, CW5, CW13 and CW25 is planned to continue to control the direction of flow in these areas of the Upper Chinle aquifer. Additional Upper Chinle collection wells near the LTP are planned to be added to the collection program in 2016.

Injection into well CW14 will be continued in order to build the head in this area of the Middle Chinle aquifer. This will prevent alluvial water from flowing into this portion of the Middle Chinle aquifer.

Off-site collection of water from Sections 3, 27, 28 and 35 is planned to be continued in 2016. Operation of the South five spot patterns in the northeast portion of Section 3 should continue in 2016. The North Off-site operation of five spot patterns should be started in the first half of 2016. Treated and fresh-water injection will mainly be into the injection wells in the five spot areas but some injection into other injection wells and infiltration lines will continue to be utilized in 2016 to restore these areas of low level aquifer contamination. Fresh-water injection will be continued in Sections 35 and 3 in 2016 to complement the collection of water with elevated uranium concentrations and assist in final aquifer restoration in this area. Water treated with alternative technologies (e.g. zeolite) that meets all the site standards is expected to reduce reliance on San Andres water for injection.

The zeolite treatment capacity is being expanded and will provide water treatment for increased collection rates from Off-site areas. The zeolite treatment may also be used for treatment of selected collection waters from the On-site area. Zeolite treated water will be combined with R.O. product water and fresh water for injection into the alluvial and Chinle aquifers. Other alternative restoration technologies (pump and treat and *insitu*) for managing contaminated water with small concentrations will continue to be evaluated in 2016. *Insitu* treatment will be tested to evaluate the treatment of ground water in the aquifer; phosphate precipitation will be tested to evaluate the removal of small concentrations from the ground water.

SECTION 3

TABLE OF CONTENTS

**GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT**

FIGURES

TABLES

3.0 SITE STANDARDS AND BACKGROUND CONDITIONS

3.1 ALLUVIAL SITE STANDARDS

Ten water-quality site standards (U, Se, Mo, SO4, Cl, TDS, NO3, Ra226 + Ra228, Th230 and V) have been set for the alluvial aquifer at the Homestake site by the United States Nuclear Regulatory Commission (NRC) and the New Mexico Environmental Department (NMED) and the site Radioactive Materials License was amended accordingly. These site standards were established on the basis of defining the full range in alluvial aquifer background concentration values for these constituents. The site standards and background values, as well as the procedures used to establish them were reviewed and approved by the NRC, the EPA and NMED, 2008. Adjustment of the site standards to account for the full range in natural background concentrations was important in assuring that appropriate site standards are set in relation to background concentrations.

The NRC and NMED alluvial aquifer site standards are shown in Table 3.1-1. Alluvial site standards for the Grants Project are applicable at three points of compliance; these Point of Compliance (POC) wells are S4, D1, and X (see Figure 3.2-1 for locations); these wells are situated west and south of the tailings site locations.

TABLE 3.1-1. GRANTS PROJECT ALLUVIAL SITE STANDARDS.

Constituents	NRC License Site Standards	New Mexico Site Standards*
Uranium	0.16	0.16
Selenium	0.32	0.32
Molybdenum	0.10	1.0**
Vanadium	0.02	-----
RA-226 + Ra-228	5	30
Thorium-230	0.3	-----
Sulfate	1500	1500
Chloride	250	250
TDS	2734	2734
Nitrate	12	12

NOTE: All concentrations are in mg/l except: Ra-226 + Ra-228 and Th-230, which are in pCi/l.
* = NMED renewal of DP-200 Discharge Plan
** = New Mexico Irrigation Standard

3.2 ALLUVIAL BACKGROUND WATER QUALITY

Background alluvial aquifer water-quality conditions at the Grants site are those found up-gradient or north of the Large Tailings Pile (see Figure 3.2-1). These conditions in the San Mateo alluvium have been monitored since 1976. Ground water flow in the San Mateo alluvial system is generally from the northeast to the southwest. Lobo Creek joins San Mateo Creek in the Felice Acres subdivision area at the Homestake site, although neither creek has a well-defined surface flow channel in this area. Surface-water flow occurs only after extreme precipitation events and then generally only within some reaches of the channels.

Hydrographs of up-gradient wells that have been used to define the background hydrologic conditions of the alluvial aquifer are presented in Section 4 of this report. Wells DD, DD2, P, P1, P2, P3, P4, Q, R and ND, located just north of the Large Tailings Pile, have been used for monitoring alluvial background water quality and are called the near up-gradient wells. An additional near up-gradient well, DD2, was drilled in 2008.

Additional alluvial background wells located farther north have also been sampled (wells 914, 920, 921, 922 and 950, see Figure 3.2-1 for locations). Information gathered from these wells has been used to further define the piezometric surface and water-quality conditions in the up-gradient alluvial aquifer and these wells are referred to as the far up-gradient wells.

Figure 3.2-1 presents the latest 2015 water-quality data for the near and far-up-gradient alluvial background wells for six parameters: sulfate, uranium, selenium, chloride, TDS and nitrate. Sulfate concentrations for the wells varied from 748 to 1970 mg/l in 2015. Uranium concentrations also varied over a large range, from 0.01 to 0.23 mg/l. The new upgradient monitoring well DD2 has the highest near upgradient uranium concentration and would have resulted in a higher site standard if its values had been used in setting the standard. Selenium concentrations also varied over a large range, from less than 0.005 to 0.61 mg/l.

Chloride concentrations in water sampled in 2015 from the up-gradient wells ranged from a low of 42 mg/l to a high of 90 mg/l. The TDS concentrations varied from 1410 to 3210 mg/l. Nitrate concentrations also vary naturally over a large range in the alluvial aquifer, and ranged from less than 0.1 to 18 mg/l in 2015. Molybdenum concentrations were less than 0.03 mg/l.

Concentration versus time plots for near up-gradient wells DD, DD2, ND, P, Q and R are presented later in Section 4.3 of this report.

The 95th percentile of the historical background alluvial aquifer water-quality data for the Grants site was defined by ERG (1999a and 1999b). These documents, along with a hydrologic support document (Hydro-Engineering 2001c), were submitted to the NRC in 2001 with a request to adjust some of the site standards based on the full range of natural background conditions. The 95th percentile was used to define the upper limit of background. Background data for a ten year period of 1995 through 2004 was used to determine the 95th percentile values. The cumulative database for all of the background wells more adequately defines background concentrations, and this expanded database, based on near-up-gradient wells, was utilized in the two ERG (1999a and 1999b) studies. A tabulation of alluvial standards for the Grants Project area constituents is included in Figure 3.2-1.

The range in concentrations in the alluvial up-gradient wells[1] sampled during 2015 is tabulated in Table 3.2-1 with a list of the site standards. These site standards were established from data from the near up-gradient wells[2]. The following table (Table 3.2-1) summarizes the 2015 data for near up-gradient and far up-gradient wells for constituents of concern where site standards have been set for the Grants site. As shown by the present data, there is a large natural areal variability in the background water quality. Naturally occurring background variation is illustrated by the uranium concentrations, where concentrations in 2015 varied from 0.01 to 0.19 mg/l in the near up-gradient wells.

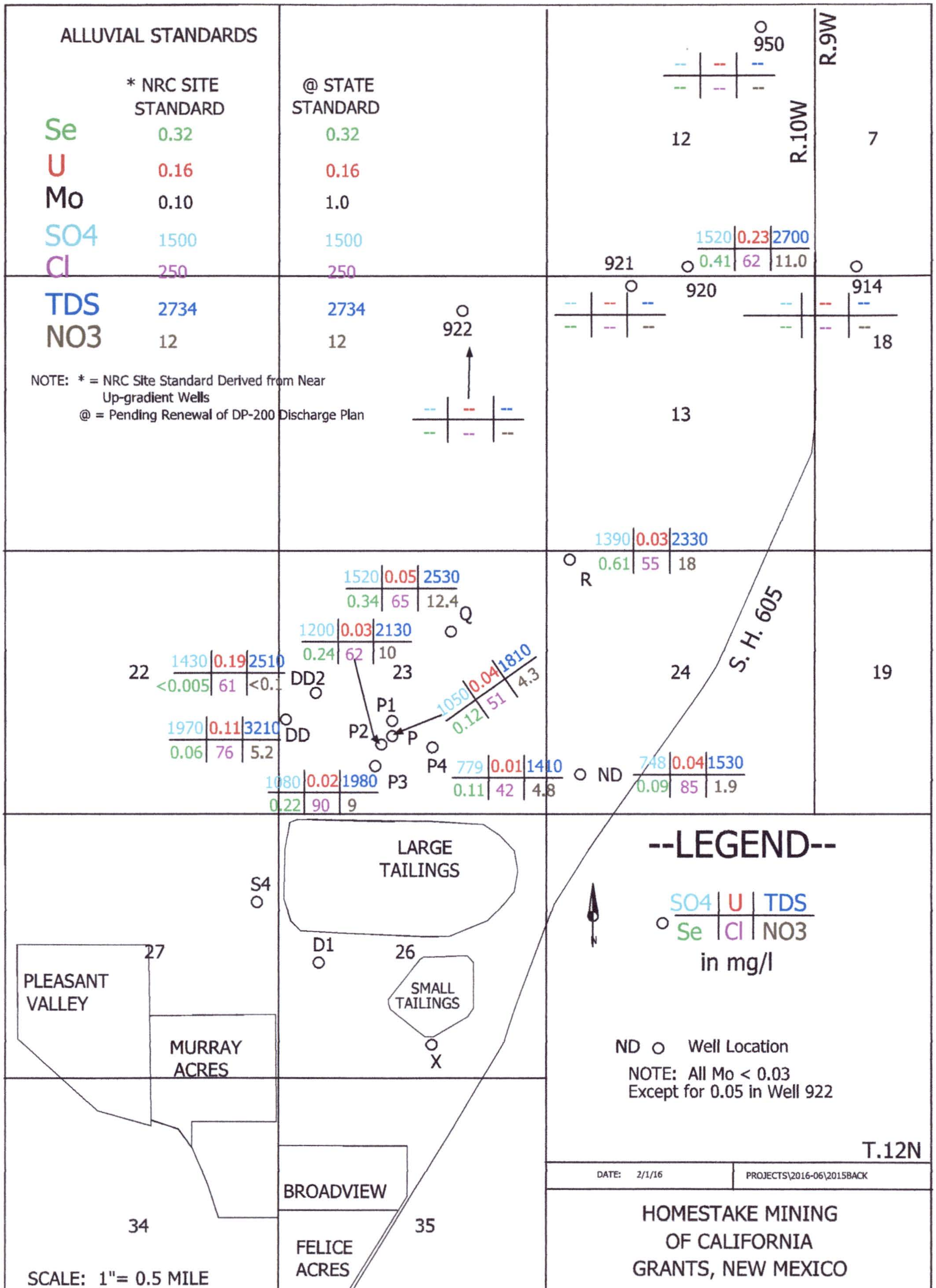


FIGURE 3.2-1. ALLUVIAL BACKGROUND GROUND WATER QUALITY, 2015

TABLE 3.2-1 2015 BACKGROUND WELL DATA - ALLUVIUM							
	PARAMETERS						
	Se	U	Mo	SO4	Cl	TDS	NO_3
NRC Site Standard	0.32	0.16	0.10	1500	250	2734	12
Pending NMED Standard	0.32	0.16	1.0	1500	250	2734	12
NEAR UP-GRADIENT WELLS							
DD	0.06	0.11	<0.03	1970	76	3210	5.2
DD2	<0.005	0.19	<0.03	1430	61	2510	<0.1
ND	0.09	0.04	<0.03	748	85	1530	1.9
P	0.12	0.04	<0.03	1050	51	1810	4.3
P2	0.24	0.03	<0.03	1200	62	2130	10.0
P3	0.22	0.02	<0.03	1080	90	1980	9.0
P4	0.11	0.01	<0.03	779	42	1410	4.8
Q	0.34	0.05	<0.03	1520	65	2530	12.4
R	0.61	0.03	<0.03	1390	55	2330	18.0
FAR UP-GRADIENT WELLS							
914	-	-	-	-	-	-	-
920	0.41	0.23	<0.03	1520	62	2700	11.0
921	-	-	-	-	-	-	-
922	-	-	-	-	-	-	-
950	-	-	-	-	-	-	-

[1] Wells DD, DD2, ND, P, P2, P3, P4, Q, R and 920 are up-gradient wells sampled in 2015.
[2] Wells DD, ND, P, P1, P2, P3, P4, Q and R were used to establish site standards.

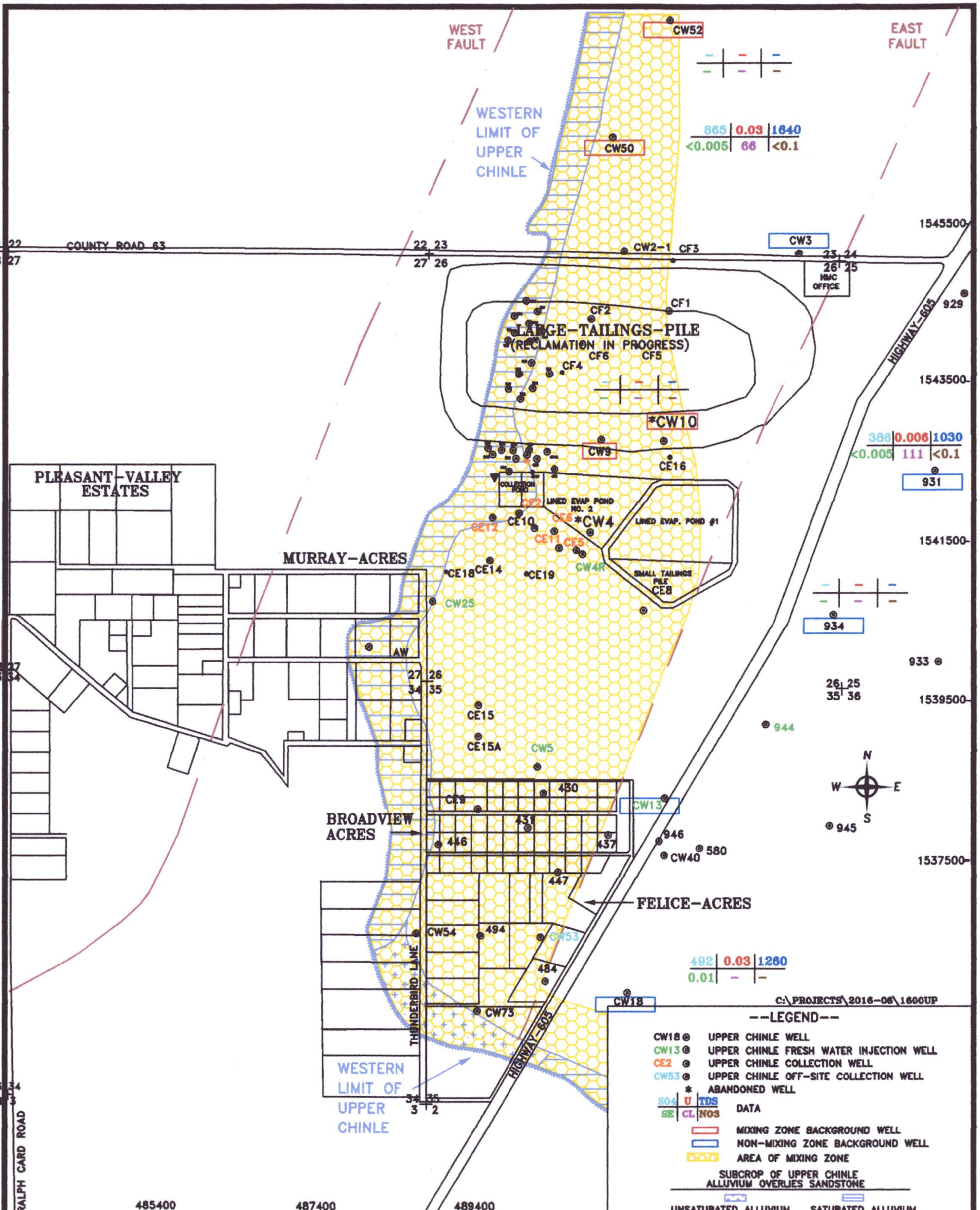
3.3 CHINLE SITE STANDARDS

Eight water quality site standards (U, Se, Mo, SO4, Cl, TDS, NO3, and V) have been set for the Chinle aquifers at the Homestake site by the NRC and NMED. The site standards were also established based on the full range of background concentration in the Chinle aquifers for these constituents. The procedures accepted and used to establish these site standards can result in a minor amount of observed natural concentrations exceeding the site standards.

Site standards have been established for the Chinle mixing zone, Upper Chinle non-mixing zone, Middle Chinle non-mixing zone and Lower Chinle non-mixing zone. Separate site standards exist for each of these four Chinle aquifer zones. Figures 3.3-1 through 3.3-3 show the Upper Chinle, Middle Chinle and Lower Chinle aquifers with the portion of the aquifer in the mixing zone and the remainder that is in the non-mixing zone. Figure 3.3-1 presents the location of the Upper Chinle mixing-zone (yellow pattern) and the wells used in the analysis of background values. Wells within the mixing zone that were used in the mixing-zone background calculations have a red box around the well name. Wells used to define the Upper Chinle non-mixing zone are indicated by a light blue rectangular box around their name.

The mixing zone is the area in and near the subcrop area where alluvial water has entered the Chinle aquifer and changed the type of water in the mixing zone. The mixing zone has a higher calcium concentration and is similar to the alluvial aquifer calcium concentration. The Chinle formation still has the ability to change the water type as the alluvial water moves farther down gradient into the non-mixing zone.

Table 3.3-1 below presents the Chinle site standards for the four Chinle aquifer zones.

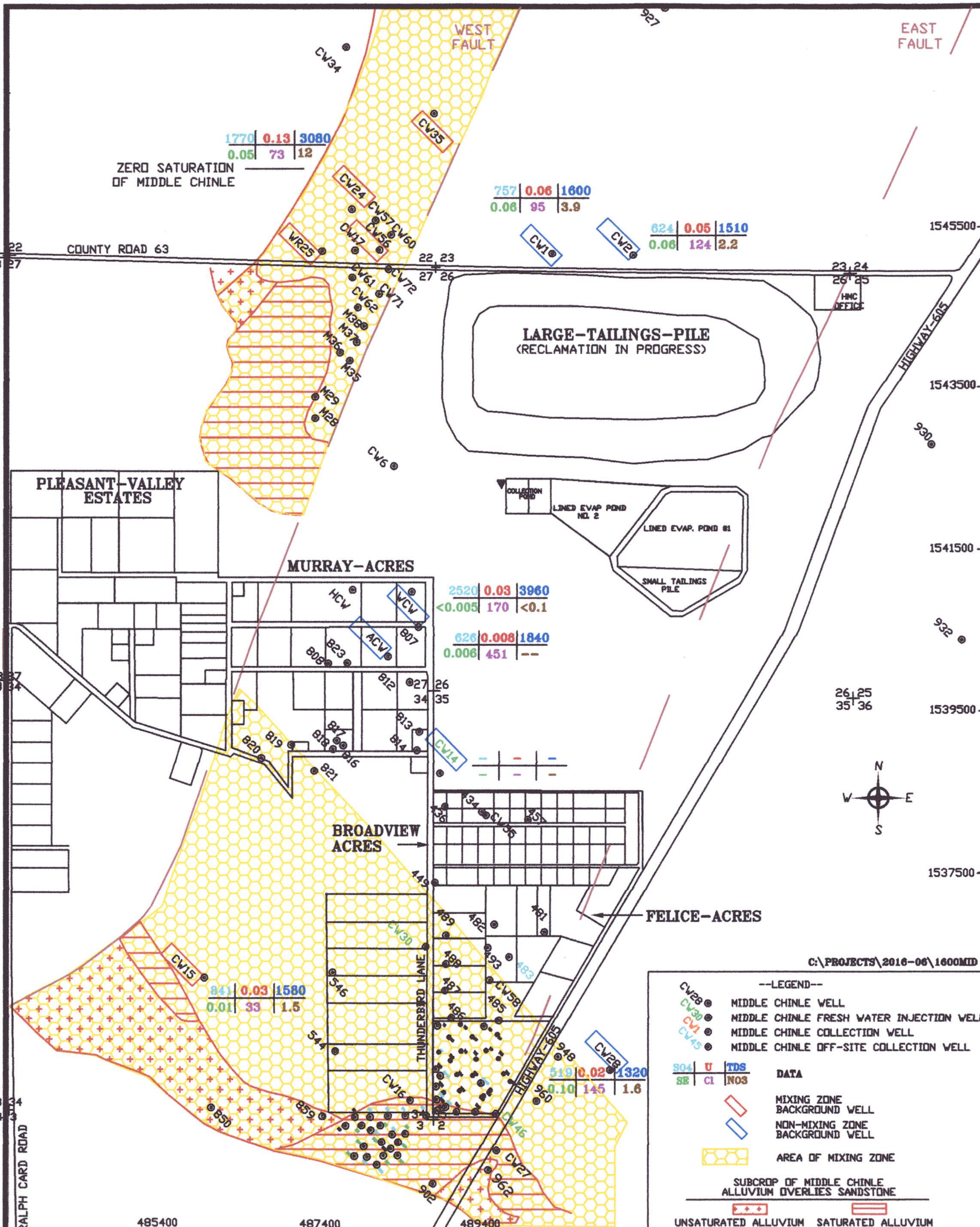


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 2/1/16

FIGURE 3.3-1. UPPER CHINLE MIXING ZONE AND 2015 GROUND WATER QUALITY

SCALE: 1"= 1600'

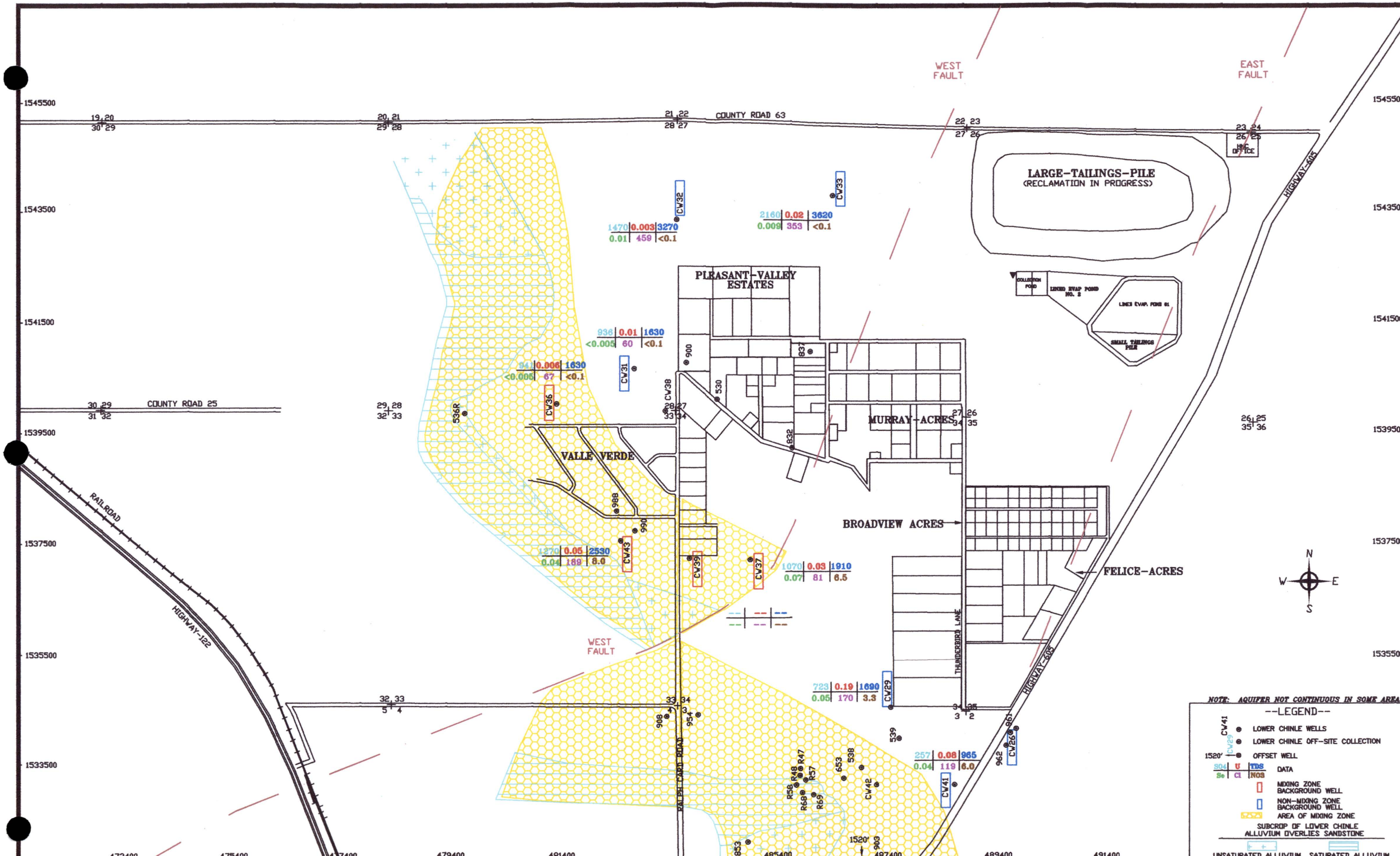


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 2/1/16

SCALE: 1"=1600'

FIGURE 3.3-2. MIDDLE CHINLE MIXING ZONE AND 2015 GROUND WATER QUALITY



SCALE: 1" = 1600'
C:\PROJECTS\2016-06\1600LOW
DATE: 2/1/16

FIGURE 3.3-3. LOWER CHINLE MIXING ZONE AND 2015 GROUND WATER QUALITY

TABLE 3.3-1. GRANTS PROJECT - CHINLE SITE STANDARDS

Aquifer Zone	CONSTITUENT, concentrations in mg/l except Thorium-230 and Ra226+Ra228 in pCi/l.									
	Selenium	Uranium	Molybdenum	TDS	Sulfate	Chloride	Nitrate	Vanadium	Thorium-230	Ra-226 +Ra-228
Chinle Mixing	0.14	0.18	0.10	3140	1750	250	15	0.01	*	*
Upper Chinle Non-Mixing	0.06	0.09	0.10	2010	914	412	*	0.01	*	*
Middle Chinle Non-Mixing	0.07	0.07	0.10	1560	857	250	*	*	*	*
Lower Chinle Non-Mixing	0.32	0.03	0.10	4140	2000	634	*	*	*	*

* Background water quality analyses for constituent determined that site standard is not necessary.

3.4 CHINLE BACKGROUND WATER QUALITY

The Chinle aquifer background water quality has been analyzed and presented to the NRC and NMED in Hydro-Engineering 2003b and ERG 2003. The background concentrations for the mixing zones in the Upper, Middle and Lower Chinle aquifers were grouped together to develop a mixing zone background level. The non-mixing zone water chemistry data for each of the three aquifers were analyzed separately. Table 3.4-1 presents the site standards that resulted from the analysis and related discussions with NRC, EPA and NMED concerning agreement on the standards. Figure 3.3-1 also presents the 2015 data collected from these background wells for selected parameters of sulfate, uranium, TDS, selenium, chloride and nitrate. This data is presented in a format similar to that used for the alluvial background data. The data for wells CW3, CW17 and WR25 are not presented on Figure 3.3-1 and 3.3-2 because concentrations are not natural in these wells for 2015. Table 3.4-1 also presents the 2015 data for the Chinle mixing zone background wells and the Upper, Middle and Lower Chinle non-mixing zone wells separated by their category.

The Upper Chinle mixing zone is presented in Figure 3.3-1 with a yellow pattern. Four wells have a red box around their name in the Upper Chinle mixing zone, and these wells were included with the Middle Chinle and Lower Chinle mixing-zone wells in establishing the mixing-zone background values. Four wells shown on Figure 3.3-1 were used to establish the Upper Chinle non-mixing zone background levels. This figure also presents the 2015 data (CW50, CW18 and 931).

The Middle Chinle mixing zone is presented in Figure 3.3-2 with a yellow pattern. Five wells are shown with a red box in the Middle Chinle mixing zone, and these wells were included with the Upper Chinle and Lower Chinle mixing-zone wells in establishing the mixing-zone background values. Six wells shown on Figure 3.3-2 were used to establish the Middle Chinle non-mixing zone background levels. This figure also presents the 2015 data collected for background wells CW24, CW15, CW1, CW2, CW28, ACW and WCW.

Figure 3.3-3 presents the Lower Chinle mixing zone in a yellow pattern. This figure also shows which wells were used to establish the background concentrations in the mixing and non-mixing zones of the Lower Chinle aquifer. The 2015 data for the Lower Chinle wells previously used to define background concentrations are also presented on Figure 3.3-3. The Lower Chinle non-mixing zone background levels are somewhat problematic, because the water quality tends to deteriorate naturally as the ground water moves down-gradient. Therefore, the expected natural water quality deterioration is a function of the distance from the Lower Chinle subcrop.

TABLE 3.4-1. 2015 BACKGROUND WELL DATA – CHINLE

	CONSTITUENT, concentrations in mg/l							
Aquifer Zone	Selenium	Uranium	Molybdenum	TDS	Sulfate	Chloride	Nitrate	Vanadium
CHINLE SITE STANDARDS								
Chinle Mixing	0.14	0.18	0.10	3140	1750	250	15	0.01
Upper Chinle Non-Mixing	0.06	0.09	0.10	2010	914	412	*	0.01
Middle Chinle Non-Mixing	0.07	0.07	0.10	1560	857	250	*	*
Lower Chinle Non-Mixing	0.32	0.03	0.10	4140	2000	634	*	*
CHINLE MIXING ZONE WELLS								
CW9	-	-	-	-	-	-	-	-
CW50	<0.005	0.03	<0.03	1640	865	66	<0.1	-
CW52	-	-	-	-	-	-	-	-
CW15	0.01	0.03	<0.03	1580	841	33	1.5	-
CW24	0.05	0.13	<0.03	3080	1770	73	12.0	-
CW35	-	-	-	-	-	-	-	-
CW36	<0.005	0.006	<0.03	1780	941	67	<0.1	-
CW37	0.07	0.03	<0.03	1910	1070	81	6.5	-
CW39	-	-	-	-	-	-	-	-
CW43	0.04	0.05	<0.03	2530	1270	189	8.0	-
UPPER CHINLE NON-MIXING ZONE WELLS								
931	<0.005	0.006	<0.03	1030	386	111	<0.1	-
934	-	-	-	-	-	-	-	-
CW18	0.01	0.03	<0.03	1260	492	-	-	-
MIDDLE CHINLE NON-MIXING ZONE WELLS								
ACW	0.006	0.008	<0.03	1840	626	451	-	-
CW1	0.06	0.06	<0.03	1600	757	95	3.9	-
CW2	0.06	0.05	<0.03	1510	624	124	2.2	-
CW28	0.10	0.02	<0.03	1320	519	145	1.6	-
WCW	<0.005	0.005	0.03	3960	2520	170	<0.1	-
LOWER CHINLE NON-MIXING ZONE WELLS								
CW26	-	-	-	-	-	-	-	-
CW29	0.05	0.19	<0.03	1690	723	170	3.3	-
CW31	<0.005	0.01	<0.03	1630	936	60	<0.1	-
CW32	0.01	0.003	<0.03	3270	1470	459	<0.1	-
CW33	0.009	0.02	<0.03	3620	2160	353	<0.1	-
CW41	0.04	0.08	<0.03	965	257	119	6.0	-

* Background water quality analyses for constituent determined that site standard is not necessary.

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

Page Number

FIGURES

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

Page Number

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES (continued)

SECTION 4

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

TABLES

4.0 ALLUVIAL AQUIFER MONITORING

This section presents 2015 monitoring results for the alluvial aquifer. The alluvial aquifer immediately underlies the Grants Project site and is therefore the most important ground water system at the Grants Project site. The section describing well completions is presented first, and is followed by several report sections presenting water-level and water-quality information. Three additional alluvial maps have been added to present the well information in areas where data is too dense for the initial 1" = 1600' map. The scale of the additional maps are 1" = 500'. The locations of the additional maps are shown on the 1600 scale map (Figure 4.1-1) and they are the On-Site (OS, Figure 4.1-1A), South Off-Site (SOS, Figure 4.1-1B) and North Off-Site (NOS, Figure 4.1-1C). OS, SOS and NOS have been added to these figure titles. The boundaries of the restoration areas are presented on Figure 1.2-2. The edges of the OS, SOS and NOS maps are not set the same as the restoration boundaries.

4.1 ALLUVIAL WELL COMPLETIONS

Two hundred and eight new alluvial wells were drilled and no new additional infiltration lines installed during 2015. Fifty six new alluvial wells were drilled on top of the LTP. Seven of the C new alluvial wells were drilled to the south of the LTP while sixteen new M alluvial wells were drilled to the west of the LTP. Fifty six alluvial wells were added to the west of the LTP for the TTP testing area. Ten additional alluvial wells were drilled in the L area southeast of the LTP. Twenty new alluvial wells (Q wells) were drilled in Felice Acres, while thirty wells were drilled in the NOS area in the western half of Section 27. Operational status and other characteristics of the new and previously installed alluvial wells and infiltration lines are discussed in this section. Figure 4.1-1 shows the locations of the alluvial wells near the Homestake Grants Project with the operational status for each well and infiltration line for 2015. Figure 4.1-1A shows the wells in the OS area while Figure 4.1-1B and 4.1-1C show the SOS and NOS area wells respectively. Wells labeled in black were used only for monitoring and black labeled infiltration lines were not used in 2015. Figure 4.1-1is plotted at a scale of 1" = 1600' while the other figures are plotted at a scale of 1" =500'. Alluvial wells 914, 920, 921, 922 and 950 are located outside, and north of, the area presented on Figure 4.1-1. These upgradient wells are shown on Figure 3.2-1 in the previous report section.

The currently active injection and collection wells are labeled with different colors on Figures 4.1-1, 4.1-1A, 4.1-1B and 4.1-1C so that they can be distinguished from monitoring wells. This figure also shows the wells used for the Off-site collection during the 2015. Figure 4.1-1B shows that South collection alluvial wells 866, Q2, Q3, Q5, R3 and R11 were pumped in 2015. This water was pumped for injection into the LTP in the first half of the year. Table 4.1-1 presents basic well data for alluvial wells located on the Grants Project that have been used to define the alluvial ground water hydrology. Many additional alluvial wells outside of the Grants Project have also been used for that purpose. The basic well data table presents the location, well depth, casing diameter, water-level information, depth to the base of the alluvium and casing perforation intervals for each well.

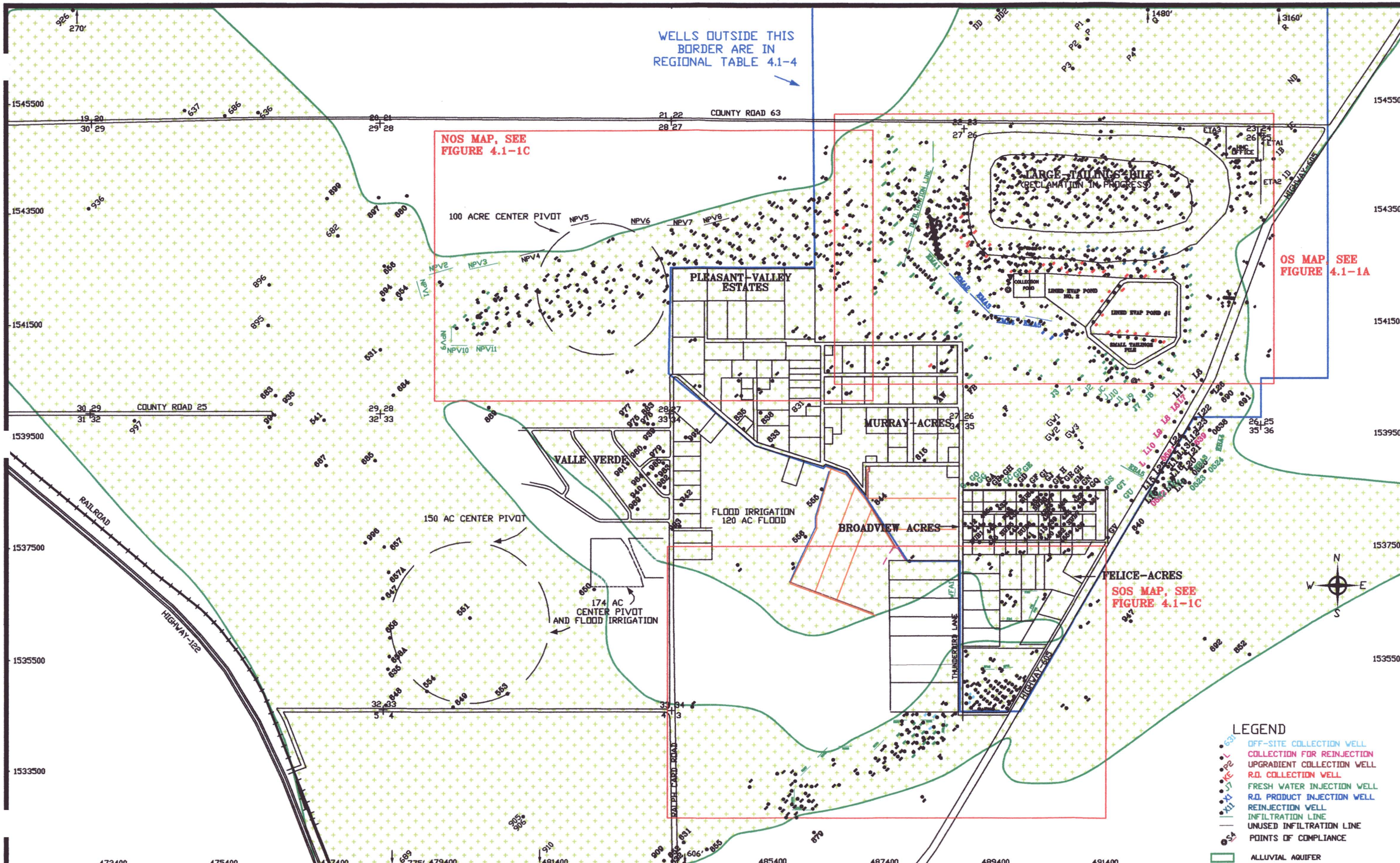
Table 4.1-2 presents the same type of basic well data for alluvial wells in the Broadview and Felice Acres subdivisions. These two subdivisions are located just south of the Homestake property. Figure 4.1-1 shows the locations of the subdivision wells. Table 4.1-3 presents similar basic data for alluvial wells located in Murray Acres and Pleasant Valley Estates subdivisions.

Table 4.1-4 presents data for regional wells located outside of the subdivisions and the immediate Homestake property around the tailings sites (Grants Project). Wells outside the area delineated with a heavy blue boundary line on Figure 4.1-1 are considered to be regional wells; data for these wells are presented in this table. Over 200 alluvial wells are included on the regional table, which brings the total number of alluvial wells used to characterize this site to more than 600. The wells are listed in numerical or alphabetical order based on their well names.

The elevation of the base of the alluvium has been used in determining required depths for alluvial wells. This elevation is the same as the elevation of the top of the Chinle Formation except in the far western portion of the area. Figure 4.1-2 presents the base of the alluvium with data points used to define these elevation contours. The deepest portion of the San Mateo alluvium exists in the western portion of the LTP and extends to the west central portion of Section 28 where the San Mateo alluvium joins the Rio San Jose alluvium. An additional San Mateo channel exists in Section 3 that joins the Rio San Jose in Section 4. The base of the alluvium was adjusted in South Felice Acres area with the additional drilling in this area.

The green line in Figures 4.1-1 and 4.1-2 shows the limits of the alluvial aquifer with alluvial saturation existing inside these limits where the base of the alluvium is lower. The 2014

alluvial water level elevation was used in drawing the aquifer limits. The aquifer limits were updated with the 2014 water-level elevations because additional wells changed the limits of the alluvial aquifer in South Felice Acres area.



SCALE: 1"=1600'
C:\PROJECTS\2016-06
1600QAL15
DATE: 3/1/16

FIGURE 4.1-1 ALLUVIAL WELL LOCATIONS

SCALE: 1"=500'

C:\PROJECTS\2016-06

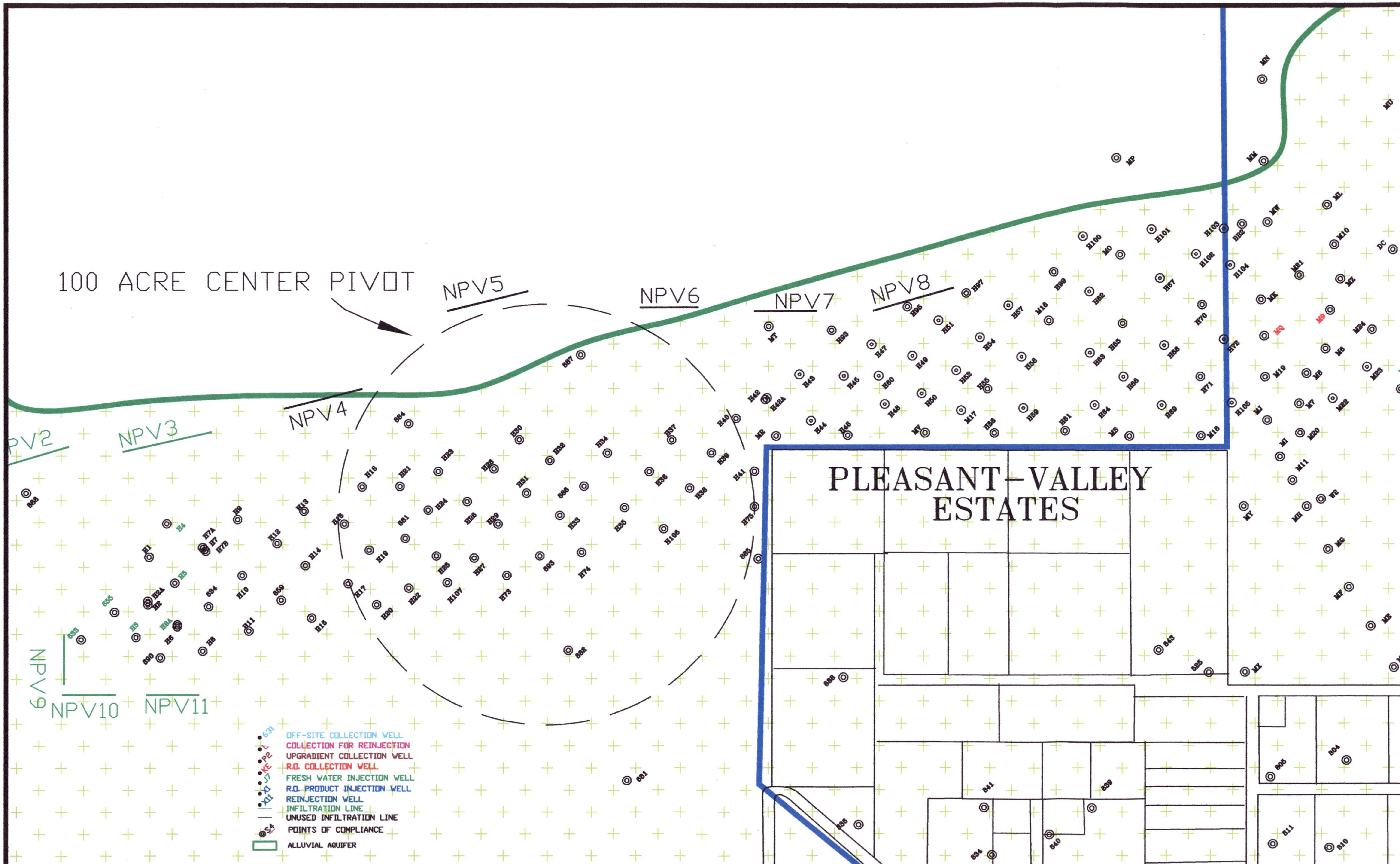
1600GAL15

DATE: 2/11/16

FIGURE 4.1-1A. ALLUVIAL WELL LOCATIONS, OS

SCALE: 1"=500'
C:\PROJECTS\ 2016-06
1600QAL15
DATE: 3/1/16

FIGURE 4.1-1B. ALLUVIAL WELL LOCATIONS, SOS



SCALE: 1"=500'
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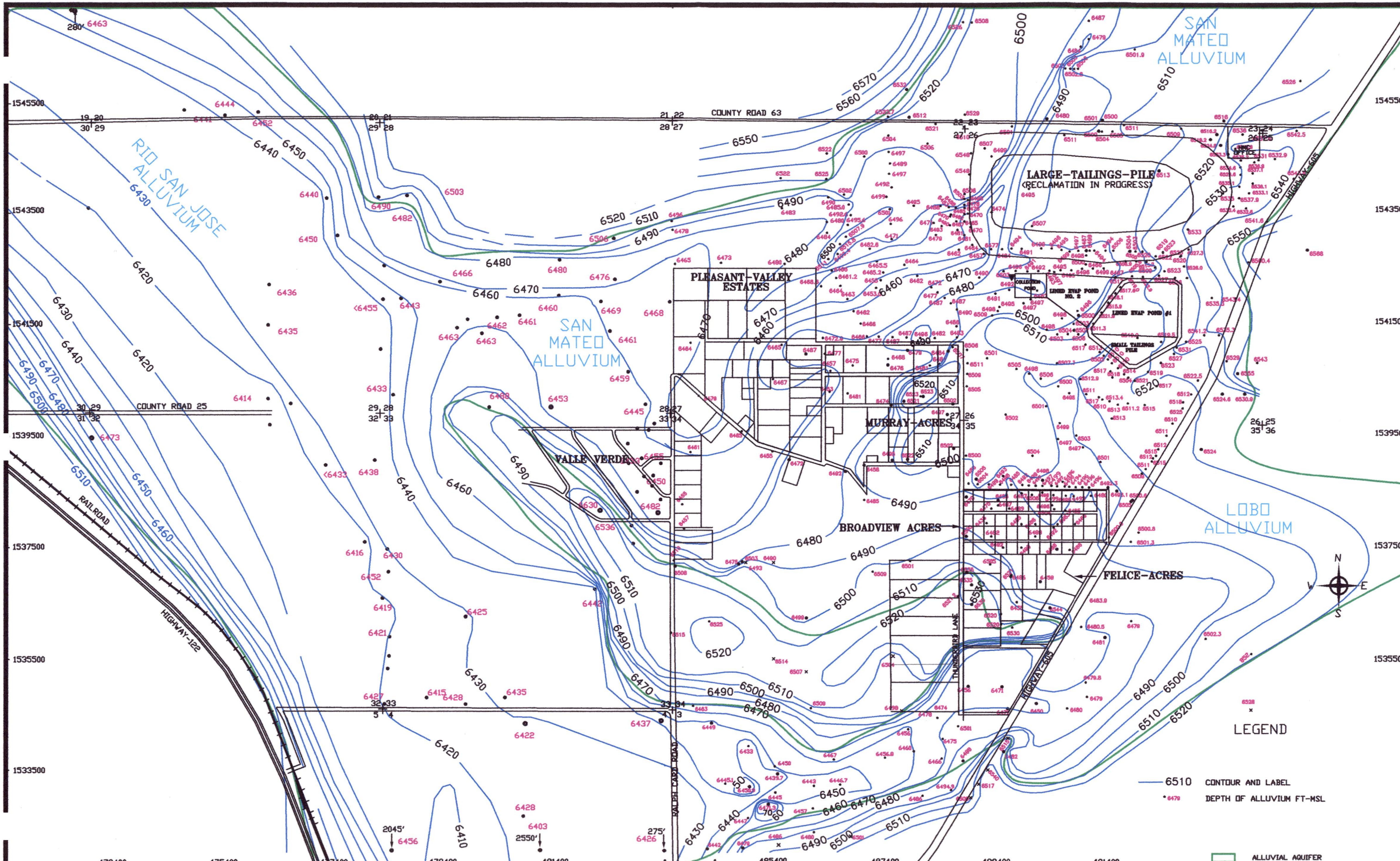
1600QAL15
DATE: 3/1/16

FIGURE 4.1-1C. ALLUVIAL WELL LOCATIONS, NOS



SCALE: 1"=1600'

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DATE: 2/11/16

FIGURE 4.1-2 ELEVATION OF BASE OF THE ALLUVIUM, FT-MSL

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0690	1540279	493465	65.0	5.0	12/1/2015	34.48	6547.58	2.5	6582.06	55	6524.6 A	25-65	23.0
0691	1540276	493860	66.0	5.0	12/1/2015	41.35	6547.46	2.9	6588.81	55	6530.9 A	26-66	16.6
0891	1540904	493751	54.0	5.0	2/19/2013	32.46	6548.66	2.1	6581.12	50	6529.0 A	24-54	19.6
0892	1540954	494317	50.0	5.0	11/30/2015	38.30	6548.91	2.0	6587.21	42	6543.2 A	30-50	5.7
1A	1543790	493768	61.0	5.0	4/16/2012	38.29	6547.14	2.9	6585.43	47	6535.5 A	39-51	11.6
1B	1544502	494412	51.8	5.0	10/30/2001	38.70	6545.72	1.5	6584.42	50	6532.9 A	20-50	12.8
1C	1545018	494799	52.9	5.0	11/30/2015	38.83	6549.16	2.5	6587.99	43	6542.5 A	34-54	6.7
1D	1544142	494752	42.9	5.0	12/3/2005	26.42	6559.55	2.2	6585.97	40	6543.8 A	22-42	15.8
1E	1544481	494116	51.4	5.0	4/16/2012	36.80	6547.51	2.1	6584.31	43	6539.2 A	34-54	8.3
1F	1544952	493831	61.8	5.0	4/16/2012	40.96	6546.42	1.8	6587.38	54	6531.6 A	30-60	14.8
1G	1545034	494170	57.5	5.0	11/14/2012	39.28	6547.79	2.3	6587.07	48	6536.8 A	35-55	11.0
1H	1543363	494266	55.4	5.0	11/30/2015	30.43	6555.96	1.8	6586.39	43	6541.6 A	25-55	14.4
1I	1542627	493928	49.8	5.0	11/30/2015	35.30	6563.05	1.3	6598.35	35	6562.1 A	27-47	1.0
1J	1541986	493695	50.3	5.0	4/17/2012	37.80	6547.60	1.8	6585.40	40	6543.6 A	30-50	4.0
1K	1541992	493275	55.6	5.0	11/14/2012	35.20	6548.93	1.0	6584.13	47	6536.1 A	30-55	12.8
1L	1541256	493416	53.4	5.0	11/4/2008	27.46	6551.15	3.1	6578.61	40	6535.5 A	35-55	15.6
1M	1541327	493133	43.1	5.0	11/14/2012	26.12	6549.41	1.3	6575.53	33	6541.2 A	25-54	8.2
1N	1543100	494396	45.6	5.0	11/30/2015	29.00	6561.85	2.4	6590.85	25	6563.5 A	15-44	0.0
1O	1542592	494175	44.0	5.0	11/30/2015	43.95	6550.99	0.8	6594.94	29	6565.1 A	14-34	0.0
1P	1541902	493924	52.8	5.0	11/30/2015	29.10	6556.14	2.6	6585.24	35	6547.6 A	20-40	8.5
1Q	1541993	493619	56.0	5.0	2/4/2015	28.02	6555.09	1.9	6583.11	56	6525.2 A	36-56	29.9
1R	1542071	493623	56.0	5.0	2/3/2015	29.31	6556.68	1.3	6585.99	56	6528.7 A	36-56	28.0
1S	1541920	493614	56.0	5.0	4/17/2012	35.80	6546.19	1.5	6581.99	56	6524.5 A	36-56	21.7
1T	1541990	493656	56.0	5.0	2/4/2015	27.18	6557.73	1.7	6584.91	56	6527.2 A	36-56	30.5
1U	1542001	493542	44.2	4.0	2/3/2015	30.30	6555.92	3.2	6586.22	—	--- A	-	—
1V	1541982	493579	61.4	5.0	2/4/2015	28.70	6556.24	1.7	6584.94	—	--- A	-	—
* A1	1542365	491539	55.6	4.0	1/12/1994	45.29	6527.86	1.1	6573.15	55	6517.1 A	37-57	10.8
* A2	1542356	491539	46.4	4.0	12/23/1991	47.98	6525.42	1.1	6573.40	—	--- A	27-47	—
B	1541684	489311	68.6	4.0	12/28/2015	32.10	6538.80	2.4	6570.90	60	6508.5 A	49-69	30.3
B1	1542071	489370	90.9	5.0	11/30/2015	32.40	6539.25	0.6	6571.65	82	6489.1 A	62-82	50.2
B2	1542475	489515	83.0	5.0	10/17/2006	42.08	6532.17	2.0	6574.25	72	6500.3 A	55-75	31.9
B3	1542480	489731	87.0	5.0	7/14/2008	68.00	6506.29	2.6	6574.29	77	6494.7 A	58-78	11.6
B4	1542471	489942	88.8	5.0	7/14/2008	64.98	6509.68	7.4	6574.66	82	6485.3 A	63-83	24.4
B5	1542474	490141	91.0	5.0	7/14/2008	57.60	6515.86	1.4	6573.46	81	6491.1 A	62-82	24.8
B6	1542478	490341	90.0	5.0	12/5/2000	48.94	6528.75	2.0	6577.69	80	6495.7 A	63-83	33.1
B7	1542488	490540	87.0	5.0	11/23/2013	47.36	6527.04	2.2	6574.40	77	6495.2 A	53-78	31.8

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
B8	1542488	490734	87.0	5.0	6/12/2015	36.20	6539.55	2.3	6575.75	77	6496.5 A	53-78	43.1
B9	1542514	490935	86.0	5.0	6/15/2005	40.03	6536.14	2.2	6576.17	76	6498.0 A	51-78	38.2
B10	1542517	491133	84.8	5.0	7/14/2008	48.91	6527.86	2.3	6576.77	75	6499.5 A	51-78	28.4
B11	1542517	491329	84.9	5.0	7/14/2008	53.00	6524.39	2.2	6577.39	77	6498.2 A	42-80	26.2
B12	1542524	488915	100.0	5.0	11/24/2015	32.62	6540.40	2.2	6573.02	91	6479.8 A	30-100	60.6
B13	1541841	490223	80.0	5.0	11/30/2015	28.77	6541.27	3.1	6570.04	72	6494.9 A	30-80	46.3
B14	1542733	489579	120.0	4.5	4/22/2014	34.46	6541.19	2.0	6575.65	68	6505.7 A	60-120	35.5
B15	1542708	489749	120.0	4.5	4/23/2014	35.09	6541.22	2.0	6576.31	72	6502.3 A	60-120	38.9
B16	1542705	489900	120.0	4.5	---	---	---	2.0	6575.37	83	6490.4 A	60-120	---
B18	1542652	489634	120.0	4.5	9/5/2014	38.48	6537.65	2.0	6576.13	70	6504.1 A	60-120	33.5
B19	1542605	489936	120.0	4.5	9/11/2014	39.79	6534.22	2.0	6574.01	90	6482.0 A	60-120	52.2
B20	1542444	489847	120.0	4.5	10/9/2014	40.11	6534.33	2.0	6574.44	90	6482.4 A	60-120	51.9
B21	1542315	489619	80.0	4.5	9/11/2014	38.45	6535.57	2.0	6574.02	80	6492.0 A	50-80	43.5
B25	1542644	488917	90.0	4.5	9/8/2014	35.77	6537.90	2.0	6573.67	90	6481.7 A	50-90	56.2
B27	1542667	489204	90.0	4.5	9/8/2014	36.57	6537.47	2.0	6574.04	90	6482.0 A	50-90	55.4
B28	1542538	489095	90.0	4.5	9/8/2014	36.43	6537.55	2.0	6573.98	80	6492.0 A	50-90	45.6
B30	1542568	489281	90.0	4.5	9/5/2014	35.38	6539.35	2.0	6574.73	90	6482.7 A	50-90	56.6
B31	1542710	490103	120.0	4.5	4/24/2014	37.57	6538.39	2.0	6575.96	83	6491.0 A	60-100	47.4
B32	1542598	490201	120.0	4.5	4/24/2014	36.91	6538.48	2.0	6575.39	93	6480.4 A	60-120	58.1
B34	1542601	490388	90.0	4.5	9/5/2014	37.12	6538.57	2.0	6575.69	90	6483.7 A	50-90	54.9
B35	1542714	490393	90.0	4.5	9/5/2014	38.12	6538.74	2.0	6576.86	90	6484.9 A	50-90	53.9
B37	1542711	490543	80.0	4.5	9/11/2014	35.60	6540.73	2.0	6576.33	80	6494.3 A	40-80	46.4
B38	1542607	490662	80.0	4.5	9/5/2014	35.76	6539.91	2.0	6575.67	80	6493.7 A	40-80	46.2
B39	1542667	490816	80.0	4.5	9/10/2014	37.49	6539.11	2.0	6576.60	80	6494.6 A	40-80	44.5
B40	1542595	490850	80.0	4.5	9/10/2014	38.64	6537.25	2.0	6575.89	80	6493.9 A	40-80	43.4
B42	1542679	491060	80.0	4.5	9/10/2014	38.77	6540.20	2.0	6578.97	80	6497.0 A	40-80	43.2
B43	1542610	491235	80.0	4.5	9/5/2014	35.49	6541.47	2.0	6576.96	80	6495.0 A	40-80	46.5
B44	1542665	491360	80.0	4.5	9/8/2014	37.95	6540.65	2.0	6578.60	80	6496.6 A	40-80	44.0
B45	1542423	491434	80.0	4.5	10/9/2014	35.31	6541.61	2.0	6576.92	80	6494.9 A	40-80	46.7
B46	1542539	491507	80.0	4.5	9/10/2014	37.87	6541.39	2.0	6579.26	80	6497.3 A	40-80	44.1
B47	1542695	491639	80.0	4.5	9/8/2014	35.51	6543.45	2.0	6578.96	80	6497.0 A	40-80	46.5
B49	1542521	491966	80.0	4.5	9/10/2014	34.86	6545.00	2.0	6579.86	80	6497.9 A	40-80	47.1
BA	1541835	489440	86.0	5.0	12/28/2015	32.89	6538.69	1.7	6571.58	76	6493.9 A	64-78	44.8
BB2	1543791	486213	56.6	4.0	11/15/2002	53.36	6520.44	0.6	6573.80	---	--- A	42-62	---
BC	1543655	487910	82.8	4.0	11/24/2015	32.75	6541.86	2.6	6574.61	75	6497.0 A	63-83	44.9
BP	1541882	489841	85.4	4.0	11/14/2012	38.43	6533.87	3.0	6572.30	75	6494.3 A	40-85	39.6

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
* C	1541762	490854	79.7	4.0	5/16/1994	41.50	6529.34	0.3	6570.84	75	6495.5 A	59-79	33.8
C1	1541533	490780	76.0	5.0	11/13/2012	30.91	6540.95	0.8	6571.86	67	6504.1 A	41-68	36.9
C2	1541630	490566	76.0	5.0	11/13/2012	25.68	6539.34	0.9	6565.02	66	6498.1 A	42-67	41.2
* C3	1541344	490481	75.0	5.0	6/20/1994	36.20	6532.33	0.9	6568.53	65	6502.6 A	45-67	29.7
C3R	1541338	490472	75.0	5.0	3/7/2002	18.00	6551.29	2.0	6569.29	66	6501.3 A	43-68	50.0
C4	1541348	490675	75.0	5.0	10/2/2000	39.66	6531.18	1.3	6570.84	66	6503.5 A	46-66	27.6
C5	1541344	490869	72.0	5.0	11/14/2012	27.70	6542.15	0.8	6569.85	62	6507.1 A	43-63	35.1
C6	1541533	491142	80.8	5.0	10/1/2015	49.96	6534.93	1.6	6584.89	72	6511.3 A	34-74	23.6
C7	1541734	491280	72.4	5.0	10/1/2015	55.50	6528.94	1.5	6584.44	61	6521.9 A	25-65	7.0
C8	1541906	491415	78.1	5.0	10/1/2015	51.48	6533.01	1.6	6584.49	67	6515.9 A	31-71	17.1
C9	1542075	491545	77.0	5.0	10/1/2015	48.28	6536.27	1.5	6584.55	65	6518.1 A	27-67	18.2
C10	1542182	491629	71.6	5.0	6/11/2015	43.60	6541.66	2.7	6585.26	65	6517.6 A	30-70	24.1
C11	1542376	491844	68.2	5.0	10/1/2015	32.97	6548.41	2.4	6581.38	60	6519.0 A	35-65	29.4
C12	1542375	492029	63.5	5.0	10/1/2015	24.01	6556.54	2.6	6580.55	55	6523.0 A	34-64	33.6
C13	1541394	490655	63.0	5.0	11/9/2005	30.00	6540.01	2.0	6570.01	63	6505.0 A	36-70	35.0
C14	1541413	490713	63.0	5.0	11/9/2005	29.95	6539.74	2.0	6569.69	63	6504.7 A	36-70	35.0
C15	1541574	490209	70.0	4.5	—	—	—	0.5	6570.62	70	6500.1 A	30-70	—
C16	1541579	489993	70.0	4.5	—	—	—	0.5	6570.39	70	6499.9 A	30-70	—
C17	1541607	489798	70.0	4.5	—	—	—	0.5	6570.74	70	6500.2 A	30-70	—
C18	1541616	489614	120.0	4.5	—	—	—	0.5	6571.10	60	6510.6 A	40-120	—
C19	1541648	489392	120.0	4.5	—	—	—	0.5	6569.91	80	6489.4 A	40-120	—
C20	1541673	489187	110.0	4.5	—	—	—	0.5	6570.16	70	6499.7 A	50-110	—
C21	1541747	488996	100.0	4.5	—	—	—	0.5	6571.99	90	6481.5 A	40-100	—
* D	1542127	490118	89.7	4.0	7/5/2011	37.10	6535.79	0.8	6572.89	90	6482.1 A	71-91	53.7
D1	1542140	489615	89.4	4.0	7/15/2015	34.59	6536.31	1.0	6570.90	80	6489.9 A	58-90	46.4
D2	1542641	492107	70.0	5.0	6/18/2014	46.20	6533.97	3.0	6580.17	62	6515.2 A	40-70	18.7
D3	1542646	491917	80.0	5.0	11/29/1999	0.50	6579.63	2.5	6580.13	72	6505.6 A	40-80	74.0
D4	1542652	491724	78.0	5.0	11/29/1999	0.50	6578.93	2.5	6579.43	70	6506.9 A	48-78	72.0
DA	1542864	489488	99.1	5.0	12/4/1997	61.40	6524.15	3.0	6585.55	90	6492.6 A	50-100	31.6
DA2	1542881	489656	82.1	5.0	1/13/1995	51.11	6536.18	2.8	6587.29	83	6501.5 A	64-74	34.7
DA3	1542664	489390	81.0	5.0	6/11/2015	39.28	6535.08	2.6	6574.36	72	6499.8 A	30-81	35.3
DA4	1542598	489756	81.0	5.0	6/26/2002	76.50	6497.47	1.7	6573.97	71	6501.3 A	31-81	0.0
DAA	1542733	492411	62.7	5.0	12/5/2000	2.00	6578.60	2.2	6580.60	54	6524.4 A	30-60	54.2
DAB	1542633	492399	65.1	5.0	12/5/2000	0.50	6579.38	2.3	6579.88	56	6521.6 A	30-60	57.8
DAC	1543218	492851	67.7	5.0	—	—	—	4.1	6620.36	45	6571.3 A	20-30	—
DB	1542874	489842	73.2	5.0	9/8/1998	66.15	6523.33	0.5	6589.48	—	— A	55-85	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
DBR	1542877	489855	55.6	5.0	1/25/1995	52.19	6536.97	4.8	6589.16	—	— A	-	—
DC	1543646	487060	64.1	4.0	11/24/2015	39.95	6531.36	2.7	6571.31	—	— A	45-65	—
DD	1546989	488943	78.5	4.0	10/8/2015	46.80	6545.79	1.9	6592.59	83	6507.7 A	40-80	38.1
DD2	1547439	489251	94.3	5.0	10/8/2015	45.60	6547.68	2.0	6593.28	80	6511.3 A	50-90	36.4
DE	1542877	490193	70.2	5.0	10/5/1998	63.70	6527.65	0.8	6591.35	80	6510.6 A	60-90	17.1
DF	1542839	490869	88.5	5.0	5/23/2002	65.06	6525.53	0.6	6590.59	—	— A	65-95	—
DG	1542839	491157	88.9	5.0	5/23/2002	59.80	6531.98	0.4	6591.78	—	— A	65-95	—
DH	1542835	491365	61.7	5.0	12/24/1991	52.65	6538.69	4.8	6591.34	—	— A	65-95	—
DI	1542821	491788	86.1	5.0	12/9/1997	57.87	6531.75	2.3	6589.62	75	6512.3 A	35-85	19.4
DIA	1542821	491793	—	4.0	12/23/1991	50.41	6543.22	1.4	6593.63	—	— A	-	—
DJ	1542821	491793	85.7	5.0	8/24/1988	46.87	6542.69	0.7	6589.56	75	6513.9 A	35-85	28.8
DK	1542799	492094	65.4	5.0	12/23/1991	43.58	6542.33	0.7	6585.91	55	6530.2 A	35-55	12.1
DL	1542813	492398	64.4	5.0	12/5/2000	2.00	6582.87	2.9	6584.87	55	6527.0 A	35-55	55.9
DM	1542628	490035	62.8	5.0	12/14/2000	52.00	6523.08	3.0	6575.08	—	— A	-	—
DN	1542776	490020	66.7	4.0	12/14/2000	51.52	6525.14	3.7	6576.66	—	— A	-	—
DNR	1542779	490031	79.7	4.0	12/5/2000	51.80	6525.26	3.3	6577.06	—	— A	-	—
DO	1542874	490049	75.8	5.0	12/5/2000	65.20	6525.13	1.6	6590.33	75	6513.7 A	65-75	11.4
DP	1542754	491012	79.8	5.0	6/26/2002	53.46	6526.25	3.5	6579.71	—	— A	-	—
DQ	1542592	491006	85.3	5.0	6/11/2015	40.77	6535.66	2.2	6576.43	—	— A	-	—
DR	1542884	489966	87.8	5.0	6/11/2015	55.75	6535.08	2.7	6590.83	85	6503.1 A	65-85	32.0
DS	1542876	490118	87.0	5.0	8/2/1999	65.22	6523.59	0.9	6588.81	77	6510.9 A	62-77	12.7
DT	1542871	489293	72.3	5.0	12/14/2015	44.70	6539.11	2.7	6583.81	99	6482.1 A	59-99	57.0
DU	1542879	490380	84.6	5.0	7/6/1988	51.56	6539.51	2.9	6591.07	81	6507.2 A	61-81	32.3
DV	1542826	490702	80.0	5.0	8/28/2006	54.64	6530.96	2.9	6585.60	77	6505.7 A	60-80	25.3
DW	1542818	492029	73.4	5.0	12/5/2000	2.50	6586.16	3.6	6588.66	59	6526.1 A	45-60	60.1
DX	1542838	491074	90.0	6.0	8/2/1999	61.80	6530.18	1.0	6591.98	80	6511.0 A	60-90	19.2
DY	1542737	492271	65.7	5.0	12/5/2000	1.50	6579.11	2.3	6580.61	56	6522.3 A	15-65	56.8
DZ	1542834	491501	81.8	5.0	12/28/2015	45.39	6545.14	2.2	6590.53	—	— A	-	—
E	1540553	490187	61.7	4.0	12/5/2000	2.00	6566.94	1.7	6568.94	60	6507.2 A	44-64	59.7
EE	1542853	490523	91.2	5.0	1/31/1995	45.26	6542.85	0.6	6588.11	80	6507.5 A	50-90	35.3
EW-1	1543400	488270	95.0	4.0	—	—	—	—	6577.04	—	— A	50-90	—
EW-2	1543288	488294	94.0	4.0	—	—	—	—	6576.75	—	— A	49-89	—
EW-3	1543180	488316	95.0	4.0	—	—	—	—	6576.58	—	— A	50-90	—
EW-4	1543072	488339	95.0	4.0	—	—	—	—	6575.81	—	— A	50-90	—
EW-5	1542963	488361	95.0	4.0	—	—	—	—	6575.63	—	— A	50-90	—
EW-6	1542855	488383	95.0	4.0	—	—	—	—	6575.58	—	— A	50-90	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
EW-7	1542749	488405	95.0	4.0	—	—	—	—	6576.05	—	— A	50-90	—
F	1539908	489554	63.8	4.0	11/30/2015	28.57	6536.25	1.2	6564.82	62	6501.6 A	45-65	34.6
FB	1540417	488857	62.0	4.0	9/25/2015	29.12	6536.54	2.0	6565.66	58	6505.7 A	43-58	30.9
* FF	1542878	490017	—	4.0	6/21/1983	41.08	6535.46	0.2	6576.54	124	6452.3 A	52-132	83.1
G	1538672	488890	78.3	4.0	12/13/2004	4.00	6559.09	2.0	6563.09	75	6486.1 A	50-80	73.0
GA	1538657	489255	—	4.0	11/30/2015	29.07	6533.72	1.8	6562.79	62	6499.0 A	45-65	34.7
GB	1538654	489456	65.2	4.0	4/3/2000	4.00	6558.99	1.9	6562.99	64	6497.1 A	45-65	61.9
GC	1538650	489654	—	4.0	12/11/2003	33.82	6531.35	2.5	6565.17	78	6484.7 A	60-80	46.7
GD	1538646	489855	—	4.0	12/4/1995	0.50	6565.12	1.8	6565.62	72	6491.8 A	55-75	73.3
GE	1538637	489972	117.0	4.0	12/11/2003	34.61	6531.66	2.4	6566.27	65	6498.9 A	50-120	32.8
GF	1538632	490097	119.2	4.0	11/30/2015	31.60	6534.41	1.8	6566.01	67	6497.2 A	50-120	37.2
GG	1538662	489055	58.7	4.0	4/3/2000	4.00	6559.13	1.8	6563.13	57	6504.3 A	48-68	54.8
GH	1538807	489509	69.2	4.0	11/30/2015	30.90	6531.86	1.3	6562.76	67	6494.5 A	55-65	37.4
GI	1538631	490218	119.0	4.0	4/3/2000	4.00	6561.85	1.5	6565.85	67	6497.4 A	50-120	64.5
GJ	1538629	490382	119.2	4.0	4/3/2000	4.00	6562.15	2.0	6566.15	65	6499.2 A	50-120	63.0
GK	1538622	490482	115.7	4.0	4/13/2012	33.17	6533.59	2.4	6566.76	67	6497.4 A	50-120	36.2
GL	1538614	490701	119.3	4.0	4/3/2000	4.00	6563.15	2.1	6567.15	71	6494.1 A	50-120	69.1
GM	1538605	490824	118.2	4.0	4/3/2000	4.00	6563.65	2.1	6567.65	69	6496.6 A	50-120	67.1
GN	1538602	490944	116.5	4.0	8/18/2015	31.50	6536.47	1.8	6567.97	70	6496.2 A	50-120	40.3
GO	1538663	488973	122.3	4.0	4/3/2000	4.00	6559.00	1.6	6563.00	75	6486.4 A	50-120	72.6
GP	1538649	489752	121.4	4.0	12/5/2000	5.00	6559.87	2.1	6564.87	68	6494.8 A	50-120	65.1
GQ	1538599	491067	70.0	4.0	12/13/2010	1.40	6566.76	0.9	6568.16	71	6496.3 A	50-70	70.5
GR	1538619	490619	85.0	4.0	12/23/1991	36.55	6528.66	1.0	6565.21	75	6489.2 A	50-85	39.5
GS	1538597	491408	86.4	5.0	12/5/2000	33.00	6541.31	2.0	6574.31	80	6492.3 A	50-85	49.0
GT	1538534	491565	84.0	5.0	12/5/2000	8.30	6567.87	2.1	6576.17	76	6498.1 A	60-84	69.8
GU	1538367	491854	80.0	5.0	3/7/2002	15.00	6560.65	2.0	6575.65	73	6500.7 A	60-80	60.0
GV	1537701	491428	83.0	5.0	11/30/2015	45.95	6531.43	2.5	6577.38	74	6500.9 A	62-82	30.5
GW1	1539755	490530	73.0	5.0	11/30/2015	29.17	6536.10	1.0	6565.27	65	6499.3 A	48-73	36.8
GW2	1539471	490497	75.0	5.0	11/30/2015	29.85	6536.23	1.0	6566.08	68	6497.1 A	47-75	39.1
GW3	1539532	490835	72.0	5.0	5/4/1993	34.42	6531.86	1.0	6566.28	62	6503.3 A	45-72	28.6
H	1538703	490582	69.3	4.0	12/23/1991	37.93	6528.65	1.8	6566.58	69	6495.8 A	50-70	32.9
I	1539319	490954	70.0	4.0	10/20/2012	31.83	6535.37	1.6	6567.20	68	6497.6 A	52-72	37.8
IW-1D	1543443	488206	85.0	4.0	—	—	—	—	6574.57	—	— A	60-80	—
IW-1S	1543422	488225	63.0						6573.45	—	— A	38-58	—
IW-2D	1543401	488218	83.0	4.0	—	—	—	—	6573.79	—	— A	58-78	—
IW-2S	1543373	488232	59.0						6573.93	—	— A	34-54	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
IW-3S	1543329	488242	59.0	4.0	—	—	—	—	6574.08	—	—A	34-54	—
IW-3D	1543352	488226	79.0						6574.66	—	—A	54-74	—
IW-4D	1543309	488236	86.0	4.0	—	—	—	—	6574.11	—	—A	61-81	—
IW-4S	1543286	488251	66.0						6573.55	—	—A	41-61	—
IW-5S	1543239	488261	64.0	4.0	—	—	—	—	6574.90	—	—A	39-59	—
IW-5D	1543264	488245	90.0						6574.85	—	—A	65-85	—
IW-6S	1543195	488270	62.0	4.0	—	—	—	—	6574.43	—	—A	37-57	—
IW-6D	1543218	488255	84.5						6574.27	—	—A	59.5-79.5	—
IW-7D	1543174	488265	82.0	4.0	—	—	—	—	6574.02	—	—A	57-77	—
IW-7S	1543151	488280	60.0						6574.94	—	—A	35-55	—
IW-8D	1543129	488274	80.0	4.0	—	—	—	—	6574.53	—	—A	55-75	—
IW-8S	1543110	488289	58.0						6574.20	—	—A	33-53	—
IW-9S	1543064	488298	58.0	4.0	—	—	—	—	6573.36	—	—A	33-53	—
IW-9D	1543088	488283	77.0						6574.23	—	—A	52-72	—
IW-10D	1543043	488292	81.0	4.0	—	—	—	—	6573.46	—	—A	56-76	—
IW-10S	1543018	488307	58.0						6573.72	—	—A	33-53	—
IW-11S	1542974	488317	60.0	4.0	—	—	—	—	6573.56	—	—A	35-55	—
IW-11D	1542998	488302	78.0						6574.14	—	—A	53-73	—
IW-12D	1542953	488312	85.0	4.0	—	—	—	—	6573.76	—	—A	60-80	—
IW-12S	1542929	488327	65.0						6574.11	—	—A	40-60	—
IW-13S	1542883	488337	65.0	4.0	—	—	—	—	6573.36	—	—A	40-60	—
IW-13D	1542908	488321	84.0						6573.43	—	—A	59-79	—
IW-14S	1542839	488346	69.0	4.0	—	—	—	—	6573.10	—	—A	44-64	—
IW-14D	1542863	488330	90.0						6573.04	—	—A	65-85	—
IW-15S	1542796	488355	67.0	4.0	—	—	—	—	6573.76	—	—A	42-62	—
IW-15D	1542818	488340	87.0						6573.22	—	—A	62-82	—
IW-16S	1542752	488365	67.0	4.0	—	—	—	—	6573.94	—	—A	42-62	—
IW-16D	1542775	488350	89.0						6573.98	—	—A	64-84	—
IW-17D	1542731	488359	97.0	4.0	—	—	—	—	6573.69	—	—A	72-92	—
IW-17S	1542709	488373	69.0						6573.48	—	—A	44-64	—
J	1540174	491302	65.6	4.0	12/5/2000	6.00	6564.19	3.4	6570.19	56	6510.8 A	46-68	53.4
J1	1540082	491585	57.0	6.0	12/5/2000	18.80	6553.05	3.8	6571.85	55	6513.1 A	50-57	40.0
J2	1540271	491013	58.0	6.0	12/5/2000	26.00	6544.19	2.9	6570.19	55	6512.3 A	50-58	31.9
J3	1540414	490499	70.0	6.0	12/5/2000	27.40	6541.74	2.6	6569.14	66	6500.5 A	43-70	41.2
J4	1540643	489974	80.0	6.0	12/5/2000	18.00	6551.52	3.9	6569.52	68	6497.6 A	40-70	53.9
J5	1540728	489747	65.0	6.0	12/5/2000	10.55	6559.24	2.8	6569.79	61	6506.0 A	50-65	53.2
J6	1540919	489221	67.0	6.0	12/5/2000	7.10	6563.00	3.7	6570.10	65	6501.4 A	48-67	61.6
J7	1540168	491892	61.9	5.0	12/5/2000	19.50	6550.88	2.1	6570.38	53	6515.3 A	40-60	35.6
J8	1540318	492064	63.2	5.0	12/5/2000	23.30	6547.49	2.4	6570.79	52	6516.4 A	35-61	31.1

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
J9	1540101	491759	68.0	5.0	12/5/2000	24.60	6546.60	2.0	6571.20	58	6511.2 A	36-68	35.4
J10	1540138	491436	66.0	5.0	12/5/2000	18.00	6552.91	3.5	6570.91	54	6513.4 A	36-66	39.5
J11	1540545	490909	66.0	5.0	12/5/2000	12.00	6557.86	2.0	6569.86	55	6512.9 A	36-66	45.0
J12	1540827	490466	70.0	5.0	12/5/2000	18.44	6551.86	3.0	6570.30	60	6507.3 A	40-70	44.6
J13	1540451	492218	55.0	5.0	2/5/2002	4.00	6564.40	1.8	6568.40	46	6520.6 A	15-55	43.8
J14	1540585	492367	55.0	5.0	2/5/2002	12.90	6556.08	1.7	6568.98	44	6523.3 A	15-55	32.8
J15	1540719	492521	55.0	4.0	2/5/2002	3.10	6566.53	2.2	6569.63	46	6521.4 A	15-55	45.1
JC	1540215	491240	60.0	5.0	12/5/2000	22.10	6546.34	1.8	6568.44	50	6516.6 A	35-55	29.7
K	1540730	491590	61.7	4.0	8/12/2002	2.00	6571.51	3.8	6573.51	60	6509.7 A	44-64	61.8
K2	1540736	491587	58.9	4.0	7/15/2005	19.40	6552.81	2.5	6572.21	58	6511.7 A	46-56	41.1
K3	1540744	491571	56.7	2.0	7/15/2005	19.20	6551.47	1.3	6570.67	—	— A	53-58	—
K4	1541211	492371	86.2	5.0	7/16/2015	54.77	6547.25	2.5	6602.02	80	6519.5 A	65-85	27.7
K5	1541269	491935	86.4	5.0	7/16/2015	65.42	6536.31	2.8	6601.73	80	6518.9 A	55-85	17.4
K6	1540689	491459	58.0	5.0	3/6/2002	13.00	6557.07	2.0	6570.07	—	— A	33-58	—
K7	1541232	492237	86.0	5.0	7/16/2015	59.48	6542.05	2.0	6601.53	79	6520.5 A	56-86	21.5
K8	1541250	492081	86.0	5.0	7/16/2015	72.93	6527.56	2.0	6600.49	78	6520.5 A	66-86	7.1
K9	1541287	491787	86.0	5.0	7/16/2015	63.87	6536.47	2.0	6600.34	79	6519.3 A	56-86	17.1
K10	1541305	491638	87.0	5.0	7/16/2015	70.02	6530.79	2.0	6600.81	81	6517.8 A	47-87	13.0
K11	1541325	491490	84.0	5.0	7/16/2015	72.66	6527.95	2.0	6600.61	78	6520.6 A	64-84	7.3
KA	1540959	491331	67.8	5.0	8/12/2002	13.00	6559.19	1.9	6572.19	65	6505.3 A	42-72	53.9
KB	1540893	491406	61.8	5.0	8/12/2002	0.60	6571.05	0.8	6571.65	60	6510.9 A	40-70	60.2
KC	1540826	491477	68.6	5.0	8/12/2002	0.50	6569.81	0.7	6570.31	59	6510.6 A	42-72	59.2
KD	1540627	491701	62.1	5.0	8/12/2002	1.10	6569.12	0.6	6570.22	—	— A	40-70	—
KE	1540566	491776	60.8	5.0	8/12/2002	9.10	6563.18	2.5	6572.28	—	— A	40-70	—
KEB	1540570	491487	59.9	5.0	7/21/2015	21.35	6548.38	1.5	6569.73	50	6518.2 A	40-60	30.1
KF	1540870	491169	63.5	5.0	7/21/2015	25.86	6544.35	2.2	6570.21	50	6518.0 A	30-60	26.3
KM	1540671	491444	52.4	5.0	3/6/2002	12.20	6557.57	2.2	6569.77	—	— A	-	—
KN	1540734	491492	50.1	5.0	10/11/2002	8.36	6561.23	2.3	6569.59	—	— A	-	—
KZ	1541100	491183	58.4	5.0	12/28/2015	27.47	6544.25	1.2	6571.72	—	— A	-	—
L	1538970	492150	67.0	4.0	4/2/2015	57.53	6517.44	0.8	6574.97	59	6515.2 A	46-66	2.3
L5	1539946	492730	60.2	5.0	11/18/2015	35.28	6540.79	1.3	6576.07	50	6524.8 A	25-55	16.0
L6	1540526	493110	51.1	5.0	10/16/2015	24.05	6550.59	2.1	6574.64	50	6522.5 A	25-55	28.1
L7	1540113	492842	67.8	5.0	11/18/2015	44.35	6532.26	2.3	6576.61	62	6512.3 A	36-66	20.0
L8	1539773	492621	73.9	5.0	10/16/2015	32.90	6543.59	2.1	6576.49	65	6509.4 A	32-72	34.2
L9	1539509	492463	74.9	5.0	11/18/2015	38.32	6538.91	2.2	6577.23	64	6511.0 A	43-73	27.9
L10	1539250	492310	74.2	5.0	10/16/2015	39.31	6537.52	2.0	6576.83	63	6511.8 A	53-73	25.7

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
L11	1540323	492965	70.0	4.5	4/11/2014	28.68	6547.37	2.0	6576.05	70	6504.1 A	30-70	43.3
L12	1539507	492810	75.0	4.5	---	---	---	2.0	6586.94	70	6514.9 A	55-75	---
L13	1539233	492633	75.0	4.5	---	---	---	2.0	6585.41	75	6508.4 A	35-75	---
L14	1538972	492514	75.0	4.5	---	---	---	2.0	6580.84	60	6518.8 A	35-75	---
L15	1538701	492324	75.0	4.5	---	---	---	2.0	6578.40	70	6506.4 A	35-75	---
L16	1538579	492286	75.0	4.5	---	---	---	2.0	6579.50	70	6507.5 A	35-75	---
L17	1538761	492424	75.0	4.5	---	---	---	2.0	6578.52	70	6506.5 A	35-75	---
L18	1538927	492582	75.0	4.5	---	---	---	2.0	6582.32	70	6510.3 A	35-75	---
L19	1538768	492575	75.0	4.5	---	---	---	2.0	6581.05	70	6509.1 A	35-75	---
L20	1539033	492736	75.0	4.5	---	---	---	2.0	6584.64	70	6512.6 A	35-75	---
L21	1539211	492827	75.0	4.5	---	---	---	2.0	6586.62	70	6514.6 A	55-75	---
L22	1539822	493033	70.0	4.5	4/9/2014	45.86	6542.69	2.0	6588.55	70	6516.6 A	30-70	26.1
L23	1539654	492890	70.0	4.5	4/9/2014	49.54	6539.72	2.0	6589.26	70	6517.3 A	30-70	22.5
L24	1539361	492700	70.0	4.5	4/9/2014	50.10	6537.97	2.0	6588.07	70	6516.1 A	30-70	21.9
L25	1538880	492409	70.0	4.5	4/9/2014	43.54	6536.00	2.0	6579.54	70	6507.5 A	30-70	28.5
L26	1540306	493302	60.0	4.5	---	---	---	2.0	6579.67	---	--- A	20-60	---
M1	1542797	489157	103.4	4.0	1/3/1989	79.80	6505.17	1.5	6584.97	120	6463.5 A	66-106	41.7
M2	1542785	489159	40.4	4.0	1/20/1995	34.85	6541.41	1.4	6576.26	---	--- A	-	---
M3	1542805	489151	105.3	4.0	7/14/2008	60.23	6515.87	1.0	6576.10	---	--- A	79-99	---
M3R	1542926	489078	115.0	5.0	12/15/2004	50.70	6529.56	2.1	6580.26	108	6470.2 A	55-115	59.4
M4	1542804	489134	81.8	5.0	10/31/2000	56.72	6521.54	3.7	6578.26	---	--- A	78-82	---
M5	1542360	489080	92.3	5.0	11/30/2015	36.00	6539.34	3.2	6575.34	84	6488.1 A	60-90	51.2
M6	1543097	486674	110.0	5.0	11/24/2015	57.65	6517.39	2.2	6575.04	65	6507.9 A	60-110	9.5
M7	1542790	486523	83.0	5.0	11/24/2015	53.27	6519.58	2.4	6572.85	71	6499.4 A	63-83	20.1
M8	1542960	486567	83.0	5.0	9/5/2000	33.71	6541.52	2.4	6575.23	57	6515.8 A	53-83	25.7
M9	1543310	486699	103.0	5.0	11/24/2015	68.85	6507.96	3.5	6576.81	78	6495.3 A	63-103	12.7
M10	1543677	486723	88.0	5.0	11/24/2015	52.80	6520.56	2.3	6573.36	86	6485.1 A	58-88	35.5
M11	1542358	486486	118.0	5.0	12/8/2003	53.98	6519.24	3.2	6573.22	109	6461.0 A	58-118	58.2
M12	1542174	487209	124.0	5.0	12/5/2000	3.87	6569.64	2.5	6573.51	118	6453.0 A	57-124	116.7
M13	1542450	487336	117.0	5.0	12/5/2000	29.81	6546.35	3.0	6576.16	108	6465.2 A	57-117	81.2
M14	1542661	487216	117.0	5.0	12/5/2000	29.42	6547.75	2.7	6577.17	109	6465.5 A	57-117	82.3
M15	1542872	487094	102.0	5.0	12/5/2000	3.71	6575.37	3.5	6579.08	93	6482.6 A	52-102	92.7
M19	1542940	486334	100.0	4.5	4/23/2014	59.34	6516.79	2.0	6576.13	97	6477.1 A	60-100	39.7
M20	1542584	486588	100.0	4.5	4/23/2014	49.64	6525.90	2.0	6575.54	100	6473.5 A	60-100	52.4
M21	1543508	486526	100.0	4.5	4/23/2014	57.74	6516.98	2.0	6574.72	80	6492.7 A	60-100	24.3
M22	1542817	486716	100.0	4.5	---	---	---	2.0	6575.43	100	6473.4 A	60-100	---

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
M23	1542992	486908	100.0	4.5	---	---	---	2.0	6575.97	100	6474.0 A	60-100	---
M24	1543204	486935	120.0	4.5	4/23/2014	43.23	6531.47	2.0	6574.70	65	6507.7 A	60-120	23.8
M28	1543175	487326	120.0	4.5	4/23/2014	42.11	6536.65	2.0	6578.76	69	6507.8 A	60-120	28.9
M29	1543440	487326	120.0	4.5	4/23/2014	36.92	6535.95	2.0	6572.87	52	6518.9 A	60-120	17.1
M30	1543462	487639	110.0	4.5	---	---	---	2.0	6574.91	80	6492.9 A	80-110	---
M31	1543745	487620	120.0	4.5	---	---	---	2.0	6575.93	80	6493.9 A	70-120	---
M32	1543176	487737	110.0	4.5	---	---	---	2.0	6573.35	80	6491.4 A	50-110	---
M33	1543040	487323	100.0	4.5	---	---	---	2.0	6577.71	100	6475.7 A	50-110	---
M34	1543608	487743	120.0	4.5	---	---	---	2.0	6574.55	60	6512.6 A	60-120	---
M35	1543889	487750	120.0	4.5	4/15/2014	35.13	6539.59	2.0	6574.72	71	6501.7 A	60-120	37.9
M36	1543993	487631	120.0	4.5	4/15/2014	36.56	6538.88	2.0	6575.44	72	6501.4 A	60-120	37.4
M37	1544120	487835	120.0	4.5	4/15/2014	38.37	6537.07	2.0	6575.44	73	6500.4 A	60-120	36.6
M38	1544319	487923	120.0	4.5	4/15/2014	37.91	6541.71	2.0	6579.62	79	6498.6 A	60-120	43.1
M39	1543900	487893	80.0	4.5	---	---	---	2.0	6574.58	60	6512.6 A	40-80	---
M40	1543775	487934	80.0	4.5	---	---	---	2.0	6574.52	60	6512.5 A	40-80	---
M41	1543398	487883	100.0	4.5	---	---	---	2.0	6573.73	60	6511.7 A	40-100	---
M43	1542858	487759	110.0	4.5	---	---	---	2.0	6572.10	80	6490.1 A	50-110	---
M44	1542722	487812	110.0	4.5	---	---	---	2.0	6571.74	110	6459.7 A	50-110	---
M45	1542593	487927	110.0	4.5	---	---	---	2.0	6572.20	110	6460.2 A	50-110	---
M46	1542504	488033	110.0	4.5	---	---	---	2.0	6572.60	110	6460.6 A	50-110	---
M47	1542409	488130	110.0	4.5	---	---	---	2.0	6571.88	110	6459.9 A	50-110	---
M48	1542317	488226	110.0	4.5	---	---	---	2.0	6572.83	100	6470.8 A	50-110	---
MA	1541290	487767	85.0	4.0	11/24/2015	37.12	6535.10	1.0	6572.22	85	6486.2 A	70-85	48.9
MB	1541296	487512	90.0	4.0	9/5/2000	2.05	6570.01	1.0	6572.06	85	6486.1 A	60-90	84.0
MC	1541304	487264	100.0	4.0	11/24/2015	39.61	6532.45	1.0	6572.06	95	6476.1 A	70-100	56.4
MD	1541311	487050	105.0	4.0	9/5/2000	2.00	6569.46	1.0	6571.46	105	6465.5 A	75-105	104.0
ME	1541537	486934	105.0	4.0	9/5/2000	1.61	6569.31	1.0	6570.92	105	6464.9 A	75-105	104.4
MF	1541757	486808	110.0	4.0	11/24/2015	42.60	6529.68	1.0	6572.28	110	6461.3 A	90-110	68.4
MG	1541972	486694	110.0	4.0	9/5/2000	1.72	6571.36	1.0	6573.08	110	6462.1 A	90-110	109.3
MH	1542208	486569	110.0	4.0	11/24/2015	47.26	6526.66	1.0	6573.92	110	6462.9 A	90-110	63.7
MI	1542486	486413	110.0	4.0	9/5/2000	2.24	6574.03	1.0	6576.27	110	6465.3 A	90-110	108.8
MJ	1542682	486350	60.0	4.0	11/24/2015	53.06	6519.88	1.8	6572.94	60	6511.1 A	40-60	8.7
MK	1543373	486324	57.0	4.5	12/5/2011	59.75	6514.04	1.5	6573.79	92	6480.3 A	-	33.8
ML	1543902	486691	76.0	5.0	11/24/2015	47.31	6525.39	2.3	6572.70	80	6490.4 A	56-76	35.0
MM	1544154	486324	63.0	5.0	9/5/2000	3.46	6573.99	2.4	6577.45	50	6525.1 A	33-63	48.9
MN	1544613	486325	63.0	5.0	11/24/2015	58.23	6519.33	1.9	6577.56	42	6533.7 A	23-63	0.0

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.).

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
MQ	1543173	486326	98.0	5.0	10/1/2015	67.10	6507.20	1.6	6574.30	88	6484.7 A	58-98	22.5
MU	1544461	487143	80.0	5.0	11/24/2015	33.40	6540.79	1.5	6574.19	72	6500.7 A	50-80	40.1
MW	1543802	486346	85.0	5.0	11/24/2015	59.50	6515.41	1.9	6574.91	83	6490.0 A	35-85	25.4
MX	1541287	486244	103.0	5.0	8/18/2015	47.21	6521.40	1.7	6568.61	94	6472.9 A	63-103	48.5
MY	1542200	486213	112.0	5.0	5/14/2013	52.97	6520.59	3.0	6573.56	102	6468.6 A	72-112	52.0
MZ	1543485	486757	92.0	5.0	11/24/2015	60.73	6515.91	3.0	6576.64	84	6489.6 A	60-92	26.3
N	1545101	489665	92.0	4.0	11/20/2012	38.64	6545.33	0.9	6583.97	80	6503.1 A	54-94	42.3
NA	1545000	491488	91.4	5.0	10/28/2008	49.67	6541.31	1.1	6590.98	80	6509.9 A	50-90	31.4
NB	1545000	491296	96.4	5.0	8/27/2015	43.70	6549.60	3.5	6593.30	80	6509.8 A	50-90	39.8
NC	1545220	491282	95.0	4.0	11/30/2015	37.85	6547.98	0.8	6585.83	85	6500.0 A	65-95	48.0
ND	1545927	494872	70.0	4.0	5/12/2015	43.32	6549.57	1.1	6592.89	65	6526.8 A	50-70	22.8
NE5	1544279	492332	156.8	5.0	4/3/2007	57.00	6610.00	3.2	6667.00	150	-- T	50-110	---
										150	6513.8 A	135-155	96.2
NW5	1544408	489433	149.8	5.0	5/29/2007	42.72	6614.86	2.7	6657.58	155	-- T	39-79	---
										155	6499.9 A	119-159	115.0
O	1545060	492725	69.9	4.0	8/26/2015	35.80	6552.03	1.3	6587.83	77	6509.5 A	40-70	42.5
P	1546691	491058	109.1	4.0	10/20/2015	36.85	6550.41	1.7	6587.26	107	6478.6 A	82-112	71.9
P1	1547017	491060	105.0	6.0	11/28/2000	55.75	6536.72	0.8	6592.47	105	6486.7 A	60-105	50.1
P2	1546555	490912	105.0	6.0	12/29/2014	41.84	6547.95	0.9	6589.79	105	6483.9 A	60-105	64.1
P3	1546159	490785	95.0	5.0	3/31/2015	41.38	6548.57	2.2	6589.95	85	6502.8 A	55-95	45.8
P4	1546504	491899	92.0	5.0	12/29/2014	35.45	6554.07	3.6	6589.52	84	6501.9 A	52-92	52.1
PM	1541426	490292	81.9	4.0	1/12/2004	12.33	6555.09	1.8	6567.42	---	-- A	-	---
PMW-2D	1542957	488282	76.0	2.0	---	---	---	---	6575.35	---	-- A	61-71	---
PMW-1S	1543104	488249	58.0						6575.81	---	-- A	43-53	---
PMW-1D			73.0							---	-- A	58-68	---
PMW-2S	1542957	488282	61.0						6575.31	---	-- A	46-56	---
PMW-3D	1542780	488318	92.0						6575.05	---	-- A	77-87	---
PMW-3S	1542781		73.0						6575.07	---	-- A	58-68	---
Q	1548693	492153	98.3	4.0	4/30/2015	43.02	6550.80	2.3	6593.82	100	6491.5 A	72-102	59.3
R	1550372	494514	85.0	4.0	5/12/2015	79.06	6524.97	0.3	6604.03	95	6508.7 A	60-90	16.2
S	1543871	488816	72.2	4.0	11/24/2015	36.80	6544.37	2.0	6581.17	75	6504.2 A	52-72	40.2
S1	1543288	488401	85.0	2.0	12/14/2015	35.22	6539.97	5.3	6575.19	85	6484.9 A	60-85	55.1
S2	1543127	488299	100.0	3.0	12/28/2015	34.93	6538.79	2.0	6573.72	100	6471.7 A	90-100	67.1
S3	1542857	488714	122.6	5.0	11/24/2015	34.94	6539.84	6.2	6574.78	116	6452.6 A	80-120	87.3
S4	1543344	488359	112.4	5.0	11/24/2015	34.60	6540.69	2.3	6575.29	108	6465.0 A	50-110	75.7
S5	1543269	488923	115.0	5.0	12/28/2015	35.84	6538.85	1.0	6574.69	105	6468.7 A	54-106	70.2
S5R	1543150	488938	115.0	5.0	6/11/2015	73.50	6506.99	1.9	6580.49	109	6469.6 A	55-115	37.4

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
S6	1543515	488874	113.2	5.0	1/3/2000	55.85	6524.22	1.3	6580.07	105	6473.8 A	55-105	50.5
S7	1543763	488874	97.0	5.0	1/4/1999	57.38	6522.51	1.0	6579.89	82	6496.9 A	40-84	25.6
S8	1543968	488879	43.8	5.0	8/22/1995	43.28	6537.06	1.0	6580.34	40	6539.3 A	12-42	0.0
S11	1544793	488150	76.2	5.0	11/24/2015	30.51	6547.88	1.9	6578.39	70	6506.5 A	48-78	41.4
S12	1543297	488628	93.0	5.0	2/5/2015	38.39	6540.46	2.1	6578.85	80	6496.7 A	53-93	43.7
S14	1543120	488152	90.0	4.5	4/22/2014	34.28	6541.12	2.0	6575.40	90	6483.4 A	50-90	57.7
S15	1543320	488160	90.0	4.5	4/17/2014	33.68	6541.48	2.0	6575.16	90	6483.2 A	50-90	58.3
S18	1543216	488312	100.0	4.5	4/22/2014	32.73	6541.55	2.0	6574.28	100	6472.3 A	60-100	69.3
S19	1544172	488682	80.0	4.5	11/24/2015	31.85	6546.12	2.0	6577.97	80	6496.0 A	40-80	50.1
S20	1544463	488461	80.0	4.5	4/16/2014	30.59	6547.76	2.0	6578.35	80	6496.4 A	40-80	51.4
S21	1544896	488670	80.0	4.5	11/24/2015	29.81	6550.47	2.0	6580.28	80	6498.3 A	40-80	52.2
S22	1544169	488375	80.0	4.5	4/16/2014	30.29	6546.30	2.0	6576.59	80	6494.6 A	40-80	51.7
S23	1543920	488284	80.0	4.5	4/17/2014	31.07	6545.63	2.0	6576.70	80	6494.7 A	40-80	50.9
S24	1543735	488232	80.0	4.5	—	—	—	2.0	6575.89	80	6493.9 A	40-80	—
S25	1543524	488146	80.0	4.5	4/17/2014	33.26	6542.46	2.0	6575.72	80	6493.7 A	40-80	48.7
S26	1543224	487996	100.0	4.5	4/22/2014	32.37	6540.61	2.0	6572.98	100	6471.0 A	60-100	69.6
S27	1542993	488044	100.0	4.5	4/22/2014	32.68	6540.64	2.0	6573.32	100	6471.3 A	60-100	69.3
S28	1542769	488403	90.0	4.5	9/11/2014	34.77	6538.04	2.0	6572.81	90	6480.8 A	50-90	57.2
S36	1542755	488559	90.0	4.5	4/22/2014	34.86	6540.77	2.0	6575.63	90	6483.6 A	50-90	57.1
S37	1542609	488516	90.0	4.5	9/11/2014	34.24	6538.05	2.0	6572.29	90	6480.3 A	50-90	57.8
S38	1542443	488727	90.0	4.5	9/11/2014	34.90	6538.06	2.0	6572.96	90	6481.0 A	50-90	57.1
S39	1542596	488744	90.0	4.5	4/8/2014	34.02	6540.41	2.0	6574.43	90	6482.4 A	50-90	58.0
SA	1543122	488811	123.7	5.0	6/11/2015	47.34	6532.97	1.0	6580.31	115	6464.3 A	100-130	68.7
SB	1543371	488811	125.0	5.0	6/11/2015	52.50	6528.59	0.9	6581.09	115	6465.2 A	100-130	63.4
SC	1543617	488815	105.4	5.0	12/5/2000	57.11	6521.69	1.2	6578.80	103	6474.6 A	55-105	47.1
SD	1543490	488564	90.1	5.0	2/23/2009	41.50	6536.81	0.6	6578.31	107	6470.7 A	50-110	66.1
SD4	1543497	488556	95.0	5.0	2/23/2009	46.17	6532.60	1.1	6578.77	95	6482.7 A	45-95	49.9
SDR-4S	1543570	488179	70.0	2.0	—	—	—	—	6574.32	—	— A	55-70	—
SDR-1S	1543571	488169							6574.22	—	— A	55-70	—
SDR-2D	1543585	488165	95.0						6574.67	—	— A	75-95	—
SDR-2S			70.0							—	— A	55-70	—
SDR-3D	1543583	488176	95.0						6574.24	—	— A	75-95	—
SDR-3S			70.0						6574.23	—	— A	55-70	—
SDR-4D	1543570	488179	95.0						6574.39	—	— A	55-70	—
SE	1543301	488550	111.8	5.0	2/23/2009	7.88	6570.11	0.5	6577.99	88	6489.5 A	50-90	80.6
SE4	1543308	488560	105.3	2.0	2/23/2009	45.78	6532.22	—	6578.00	—	— A	-	—
SE6	1543244	488615	92.0	5.0	2/5/2015	49.25	6529.66	2.3	6578.91	—	— A	-	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
SIW-D	1543575	488174	95.0	2.0	—	—	—	—	6573.40	—	— A	75-95	—
SIW-S	1543578	488169	75.0	2.0	—	—	—	—	6573.54	—	— A	55-75	—
SM	1543748	488566	86.0	5.0	12/28/2015	36.67	6542.07	0.7	6578.74	—	— A	-	—
SMW-4D	1543570	488179	95.0	2.0	—	—	—	—	6574.33	—	— A	75-95	—
SMW-5S	1543538	488159	70.0						6574.31	—	— A	55-70	—
SMW-6	1543596	488183	85.0						6574.32	—	— A	65-85	—
SMW-4S	1543570	488179	70.0						6574.33	—	— A	55-70	—
SMW-3D	1543565	488161	95.0						6574.51	—	— A	75-95	—
SMW-2	1543564	488184	85.0						6574.23	—	— A	65-85	—
SMW-1	1543570	4881643							6574.39	—	— A	65-85	—
SMW-5D	1543539	488159	95.0						6574.29	—	— A	75-95	—
SMW-3S	1543565	488161	70.0						6574.52	—	— A	55-70	—
SN	1543752	488716	67.5	4.0	12/28/2015	36.43	6542.83	1.1	6579.26	—	— A	-	—
SO	1543652	488381	92.3	5.0	12/28/2015	37.80	6540.99	0.6	6578.79	—	— A	-	—
SP	1543630	488531	94.4	4.0	12/28/2015	37.41	6541.25	2.0	6578.66	—	— A	-	—
SQ	1543507	488814	95.0	5.0	6/11/2015	42.25	6536.95	0.9	6579.20	95	6483.3 A	55-95	53.7
SR	1543611	488669	95.0	5.0	9/21/2007	47.54	6531.65	0.8	6579.19	95	6483.4 A	50-90	48.3
SS	1543374	488666	101.0	5.0	1/17/2011	40.96	6537.42	1.2	6578.38	90	6487.2 A	51-101	50.2
ST	1543215	488688	97.0	5.0	6/11/2015	49.64	6529.67	2.2	6579.31	96	6481.1 A	55-97	48.6
* SU	1542946	488953	110.0	5.0	9/5/1995	35.60	6542.50	0.7	6578.10	110	6467.4 A	50-110	75.1
SUR	1542991	488968	115.0	5.0	7/14/2008	58.28	6522.44	2.6	6580.72	106	6472.1 A	35-115	50.3
SV	1543676	488813	78.2	6.0	6/11/2015	37.20	6542.05	1.7	6579.25	100	6477.6 A	55-105	64.5
SW	1543783	488812	81.9	6.0	5/12/2015	38.63	6542.66	2.9	6581.29	75	6503.4 A	35-80	39.3
SX	1544510	489025	45.0	5.0	—	—	—	1.0	6581.49	40	6540.5 A	20-40	—
SZ	1544367	488833	62.6	5.0	11/24/2015	33.91	6547.56	2.2	6581.47	60	6519.3 A	40-70	28.3
T	1542536	492260	70.2	4.0	9/29/2015	29.67	6549.56	2.4	6579.23	68	6508.8 A	61-71	40.7
T1	1543285	490027	---	5.0	12/6/2002	102.40	6561.51	1.0	6663.91	161	6501.9 A	121-171	59.6
T2	1543538	489303	186.0	5.0	7/27/2015	114.46	6550.36	1.6	6664.82	180	6483.2 A	100-186	67.1
T4	1543340	489699	205.0	5.0	7/27/2015	114.60	6543.14	2.9	6657.74	175	6479.8 A	145-205	63.3
T5	1543307	490289	182.0	5.0	7/27/2015	113.65	6543.68	3.1	6657.33	151	6503.2 A	122-182	40.4
T6	1543282	490655	160.0	5.0	5/18/2015	112.94	6545.83	2.9	6658.77	156	6499.9 A	130-160	46.0
T7	1543272	491484	160.0	5.0	5/18/2015	110.04	6549.63	2.0	6659.67	142	6515.7 A	130-160	34.0
T8	1543296	491914	162.0	5.0	5/14/2015	113.94	6547.67	2.6	6661.61	158	6501.0 A	132-162	46.7
T9	1543347	492337	141.0	5.0	7/27/2015	115.32	6548.63	3.3	6663.95	138	6522.7 A	121-141	26.0
T10	1543434	492791	148.0	5.0	7/28/2015	102.19	6557.77	2.3	6659.96	142	6515.7 A	108-148	42.1
T11	1544585	489887	193.0	5.0	7/27/2015	109.54	6547.27	2.7	6656.81	160	6494.1 A	113-193	53.2
T12	1544583	490317	200.0	5.0	7/27/2015	94.80	6562.43	2.5	6657.23	170	6484.7 A	120-200	77.7

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
T13	1544534	490619	160.0	5.0	—	—	—	—	6657.37	160	— A	120-160	—
T14	1544565	491071	155.0	5.0	11/25/2014	112.64	6547.49	—	6660.13	155	— A	125-155	—
T15	1544480	491953	150.0	5.0	6/9/2015	116.82	6548.47	—	6665.29	150	— A	120-150	—
T16	1544276	492718	140.0	5.0	5/15/2015	111.29	6548.69	—	6659.98	132	— A	120-140	—
T17	1544008	489430	183.0	5.0	5/14/2015	110.83	6546.08	2.6	6656.91	170	6484.3 A	143-183	61.8
T18	1543977	490333	195.0	5.0	5/15/2015	117.78	6547.38	2.9	6665.16	162	6500.3 A	115-195	47.1
T19	1543958	490722	167.0	5.0	5/15/2015	112.83	6554.93	2.5	6667.76	162	6503.3 A	137-167	51.7
T20	1543935	491048	170.0	5.0	6/23/2015	136.06	6534.63	1.5	6670.69	162	6507.2 A	140-170	27.4
T21	1543951	491882	170.0	5.0	6/9/2015	120.03	6549.97	1.3	6670.00	163	6505.7 A	140-170	44.3
T22	1543876	492311	165.0	5.0	7/28/2015	108.83	6558.36	2.1	6667.19	160	6505.1 A	120-165	53.3
T23	1543901	492805	140.0	5.0	6/9/2015	112.64	6548.47	—	6661.11	140	— A	120-140	—
T24	1543387	489494	200.0	4.5	8/12/2014	114.81	6542.22	2.0	6657.03	—	— A	140-200	—
T25	1543352	489996	200.0	4.5	8/12/2014	115.39	6541.95	2.0	6657.34	—	— A	140-200	—
T26	1543567	489550	200.0	4.5	8/13/2014	113.24	6543.42	2.0	6656.66	—	— A	140-200	—
T27	1543474	489837	200.0	4.5	8/12/2014	113.98	6543.16	2.0	6657.14	—	— A	140-200	—
T28	1543484	490145	200.0	4.5	8/12/2014	114.83	6543.88	2.0	6658.71	—	— A	140-200	—
T29	1543774	489375	200.0	4.5	8/13/2014	112.81	6543.90	2.0	6656.71	—	— A	140-200	—
T30	1543663	489972	200.0	4.5	8/8/2014	115.22	6544.40	2.0	6659.62	—	— A	140-200	—
T31	1543789	489881	200.0	4.5	8/12/2014	114.32	6544.71	2.0	6659.03	—	— A	140-200	—
T32	1543801	490134	200.0	4.5	8/8/2014	116.48	6545.13	2.0	6661.61	—	— A	140-200	—
T33	1543872	489545	200.0	4.5	—	—	—	2.0	6655.79	—	— A	140-200	—
T34	1543888	489806	200.0	4.5	8/12/2014	115.45	6544.94	2.0	6660.39	—	— A	140-200	—
T35	1543992	489689	200.0	4.5	—	—	—	2.0	6659.33	—	— A	140-200	—
T36	1543735	489688	170.0	5.0	5/14/2015	111.45	6543.99	2.0	6655.44	170	6483.4 A	130-170	60.6
T37	1544089	489545	200.0	4.5	—	—	—	2.0	6656.52	—	— A	140-200	—
T38	1544089	489832	200.0	4.5	—	—	—	2.0	6658.46	—	— A	140-200	—
T39	1544498	491669	150.0	5.0	6/9/2015	115.78	6549.53	—	6665.31	150	— A	120-150	—
T40	1543819	491466	170.0	5.0	6/9/2015	127.10	6543.17	2.3	6670.27	165	6503.0 A	140-170	40.2
T41	1543278	491079	160.0	5.0	5/14/2015	82.85	6577.11	3.2	6659.96	155	6501.8 A	130-160	75.4
T42	1544077	490112	200.0	4.5	6/5/2014	113.69	6546.32	2.0	6660.01	—	— A	140-200	—
T43	1544209	489385	180.0	4.5	6/5/2014	111.54	6545.98	2.0	6657.52	—	— A	120-180	—
T44	1544204	489707	—	4.5	6/2/2014	110.76	6546.55	2.0	6657.31	—	— A	-	—
T45	1544183	489914	200.0	4.5	6/4/2014	111.58	6546.48	2.0	6658.06	—	— A	140-200	—
T46	1544210	490262	200.0	4.5	6/3/2014	114.24	6546.41	2.0	6660.65	—	— A	140-200	—
T47	1544317	489544	180.0	4.5	6/5/2014	110.78	6546.43	2.0	6657.21	—	— A	120-180	—
T48	1544291	489795	180.0	4.5	6/4/2014	110.51	6547.05	2.0	6657.56	—	— A	120-180	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
T49	1544304	490100	200.0	4.5	6/3/2014	111.80	6546.59	2.0	6658.39	---	--- A	140-200	---
T50	1544416	489707	200.0	4.5	6/4/2014	109.95	6546.55	2.0	6656.50	---	--- A	140-200	---
T51	1544397	489914	200.0	4.5	6/3/2014	109.08	6548.26	2.0	6657.34	---	--- A	140-200	---
T52	1544456	490208	200.0	4.5	6/3/2014	109.87	6548.13	2.0	6658.00	---	--- A	140-200	---
T53	1544504	489559	175.0	4.5	6/5/2014	110.49	6546.49	2.0	6656.98	---	--- A	115-175	---
T54	1544523	489796	200.0	4.5	6/5/2014	110.08	6547.02	2.0	6657.10	---	--- A	140-200	---
T55	1544592	490063	195.0	4.5	6/3/2014	1110.87	5546.79	2.0	6657.66	---	--- A	135-195	---
T56	1543447	490489	180.0	4.5	---	---	---	2.0	6661.39	180	6479.4 A	140-180	---
T57	1543470	490805	160.0	4.5	---	---	---	2.0	6666.15	160	6504.2 A	120-160	---
T58	1543494	491008	160.0	4.5	---	---	---	2.0	6666.59	160	6504.6 A	120-160	---
T59	1543426	491247	160.0	4.5	---	---	---	2.0	6668.00	160	6506.0 A	120-160	---
T60	1543666	490362	200.0	4.5	8/8/2014	116.76	6545.10	2.0	6661.86	---	--- A	140-200	---
T61	1543600	490687	160.0	4.5	8/13/2014	108.93	6559.92	2.0	6668.85	---	--- A	100-160	---
T62	1543688	491006	180.0	4.5	---	---	---	2.0	6668.34	180	6486.3 A	140-180	---
T63	1543628	491243	180.0	4.5	---	---	---	2.0	6669.54	180	6487.5 A	140-180	---
T64	1543797	490434	180.0	4.5	---	---	---	2.0	6665.29	180	6483.3 A	140-180	---
T65	1543743	490532	180.0	4.5	---	---	---	2.0	6664.86	180	6482.9 A	140-180	---
T66	1543821	490837	180.0	4.5	---	---	---	2.0	6669.08	180	6487.1 A	140-180	---
T67	1543791	491245	180.0	4.5	---	---	---	2.0	6670.75	180	6488.8 A	140-180	---
T68	1544082	490569	180.0	4.5	---	---	---	2.0	6666.45	180	6484.5 A	140-180	---
T69	1544069	490856	180.0	4.5	---	---	---	2.0	6668.52	180	6486.5 A	140-180	---
T70	1544036	491217	160.0	4.5	---	---	---	2.0	6670.67	160	6508.7 A	120-160	---
T71	1544200	490712	160.0	4.5	---	---	---	2.0	6667.54	160	6505.5 A	120-160	---
T72	1544137	491055	160.0	4.5	---	---	---	2.0	6670.03	160	6508.0 A	120-160	---
T73	1544137	491383	160.0	4.5	---	---	---	2.0	6669.85	160	6507.9 A	120-160	---
T74	1544306	490480	160.0	4.5	---	---	---	2.0	6662.57	160	6500.6 A	120-160	---
T75	1544255	490911	160.0	4.5	---	---	---	2.0	6669.55	160	6507.6 A	120-160	---
T76	1544257	491240	160.0	4.5	---	---	---	2.0	6669.33	160	6507.3 A	120-160	---
T77	1544383	490801	160.0	4.5	---	---	---	2.0	6664.51	160	6502.5 A	120-160	---
T78	1544369	491087	160.0	4.5	---	---	---	2.0	6667.13	160	6505.1 A	120-160	---
T79	1544335	491374	160.0	4.5	---	---	---	2.0	6668.27	160	6506.3 A	120-160	---
T80	1544482	490953	160.0	4.5	---	---	---	2.0	6663.14	160	6501.1 A	120-160	---
T81	1544470	491197	160.0	4.5	---	---	---	2.0	6664.98	160	6503.0 A	120-160	---
T82	1544563	490497	160.0	4.5	---	---	---	2.0	6657.66	160	6495.7 A	120-160	---
T83	1544575	490845	160.0	4.5	---	---	---	2.0	6660.72	160	6498.7 A	120-160	---
T84	1544531	491374	160.0	4.5	---	---	---	2.0	6662.09	160	6500.1 A	120-160	---

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
T85	1543427	491712	160.0	4.5	—	—	—	2.0	6667.09	160	6505.1 A	120-160	—
T86	1543472	492111	160.0	4.5	—	—	—	2.0	6668.52	160	6506.5 A	120-160	—
T87	1543565	491471	160.0	4.5	—	—	—	2.0	6668.18	160	6506.2 A	120-160	—
T88	1543629	491628	160.0	4.5	—	—	—	2.0	6670.12	160	6508.1 A	120-160	—
T89	1543622	491892	160.0	4.5	—	—	—	2.0	6669.63	160	6507.6 A	120-160	—
T90	1543637	492287	160.0	4.5	—	—	—	2.0	6669.67	160	6507.7 A	120-160	—
T91	1543661	492486	160.0	4.5	—	—	—	2.0	6666.41	160	6504.4 A	120-160	—
T92	1543702	491364	160.0	4.5	—	—	—	2.0	6670.13	160	6508.1 A	120-160	—
T93	1543811	491695	160.0	4.5	—	—	—	2.0	6671.90	160	6509.9 A	120-160	—
T94	1543752	492100	160.0	4.5	—	—	—	2.0	6670.22	160	6508.2 A	120-160	—
T95	1543913	492578	160.0	4.5	—	—	—	2.0	6664.51	160	6502.5 A	120-160	—
T96	1544023	491551	160.0	4.5	—	—	—	2.0	6670.17	160	6508.2 A	120-160	—
T97	1544004	491715	160.0	4.5	—	—	—	2.0	6671.69	160	6509.7 A	120-160	—
T98	1544036	492123	160.0	4.5	—	—	—	2.0	6671.69	160	6509.7 A	120-160	—
T99	1544203	491534	160.0	4.5	—	—	—	2.0	6669.25	160	6507.3 A	120-160	—
T100	1544153	491758	160.0	4.5	—	—	—	2.0	6669.13	160	6507.1 A	120-160	—
T101	1544222	491911	160.0	4.5	—	—	—	2.0	6668.43	160	6506.4 A	120-160	—
T102	1544203	492143	160.0	4.5	—	—	—	2.0	6669.85	160	6507.9 A	120-160	—
T103	1544056	492413	160.0	4.5	—	—	—	2.0	6666.69	160	6504.7 A	120-160	—
T104	1544412	491511	160.0	4.5	—	—	—	2.0	6666.09	160	6504.1 A	120-160	—
T105	1544289	491678	160.0	4.5	—	—	—	2.0	6668.99	160	6507.0 A	120-160	—
T106	1544369	491838	160.0	4.5	—	—	—	2.0	6667.00	160	6505.0 A	120-160	—
T107	1544209	492576	160.0	4.5	—	—	—	2.0	6662.80	160	6500.8 A	120-160	—
T108	1544441	492235	160.0	4.5	—	—	—	2.0	6664.75	160	6502.8 A	120-160	—
T109	1544366	492536	160.0	4.5	—	—	—	2.0	6662.90	160	6500.9 A	120-160	—
T110	1544209	492576	160.0	4.5	—	—	—	2.0	6660.29	160	6498.3 A	120-160	—
T111	1543706	492939	160.0	4.5	—	—	—	2.0	6660.29	160	6498.3 A	120-160	—
TA	1542471	492426	62.4	5.0	9/29/2015	33.54	6546.76	2.4	6580.30	55	6522.9 A	35-65	23.9
TB	1542351	492616	64.4	5.0	9/30/2015	32.79	6550.78	1.9	6583.57	55	6526.7 A	35-65	24.1
TDR-4D	1543060	488259	75.5	2.0	—	—	—	—	6575.12	—	— A	60.5-70.5	—
TDR-2D	1543240	488239	85.0						6576.28	—	— A	70-80	—
TDR-5S	1542852	488302	59.0						6574.71	—	— A	44-54	—
TDR-5D		488303	87.0							—	— A	62-82	—
TDR-4S	1543060	488258	60.5						6575.12	—	— A	45.5-55.5	—
TDR-1D	1543397	488249	83.0						6576.86	—	— A	68-78	—
TDR-2S	1543240	488240	67.0						6576.07	—	— A	52-62	—
TDR-3D	1543130	488284	74.0						6576.16	—	— A	59-69	—

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
TDR-1S	1543397	488249	59.0	2.0	—	—	—	—	6576.86	—	— A	44-54	—
TDR-3S	1543130	488284							6576.15	—	— A	44-54	—
W	1542302	487297	99.3	4.0	11/24/2015	38.59	6533.55	0.3	6572.14	117	6454.8 A	58-118	78.7
W2	1542251	486654	79.1	4.0	3/2/1998	56.21	6515.29	0.9	6571.50	—	— A	-	—
WN4	1543958	489961	142.4	5.0	7/6/2011	53.00	6609.78	3.0	6662.78	165	— T	40-100	—
										165	6494.8 A	50-190	115.0
WR1	1541280	488529	—	5.0	6/27/1989	46.54	6521.86	0.8	6568.40	—	— A	-	—
WR1R	1541302	488536	85.0	5.0	12/5/2000	28.62	6539.85	0.0	6568.47	85	6483.5 A	-	56.4
WR2	1541290	488678	94.1	5.0	12/5/2000	2.52	6566.07	0.9	6568.59	85	6482.7 A	65-95	83.4
WR3	1541490	488671	82.3	5.0	12/5/2000	32.96	6536.58	2.7	6569.54	83	6483.8 A	63-93	52.7
WR4	1541788	488678	62.0	5.0	12/5/2000	1.92	6570.89	0.0	6572.81	—	— A	-	—
WR5	1541813	488683	72.4	5.0	12/5/2000	38.69	6532.54	0.6	6571.23	80	6490.6 A	60-80	41.9
WR6	1541902	488566	96.8	5.0	12/5/2000	3.04	6569.99	1.3	6573.03	84	6487.7 A	55-85	82.3
WR7	1541997	488456	97.3	5.0	12/5/2000	38.91	6534.82	2.0	6573.73	84	6487.8 A	55-85	47.0
WR8	1542095	488328	110.2	5.0	11/10/2008	26.40	6546.20	0.4	6572.60	100	6472.2 A	50-100	74.0
WR9	1542185	488217	111.3	5.0	12/5/2000	46.82	6526.23	0.8	6573.05	100	6472.3 A	50-100	54.0
WR10	1542389	487961	120.6	5.0	1/29/2003	14.84	6558.35	0.7	6573.19	110	6462.5 A	60-110	95.9
WR11	1542586	487728	120.5	5.0	1/29/2003	14.88	6559.61	0.3	6574.49	110	6464.2 A	60-110	95.4
WR12	1541280	488277	96.7	4.0	11/24/2015	32.00	6536.19	1.1	6568.19	85	6482.1 A	55-85	54.1
WR13	1541068	488861	70.0	5.0	12/5/2000	18.98	6550.19	3.2	6569.17	60	6506.0 A	50-60	44.2
WR14	1540638	488863	70.0	5.0	5/28/2003	15.50	6551.41	2.3	6566.91	61	6503.6 A	50-60	47.8
WR15	1541280	488016	70.0	4.0	5/28/2003	10.90	6560.29	0.0	6571.19	75	6496.2 A	60-75	64.1
WR16	1543051	487495	122.3	5.0	1/29/2003	6.54	6566.24	1.9	6572.78	100	6470.9 A	40-120	95.4
WR17	1543328	487485	124.4	5.0	1/29/2003	2.45	6570.64	2.2	6573.09	75	6495.9 A	40-120	74.7
WR18	1543597	487465	73.6	5.0	1/29/2003	2.97	6569.94	2.2	6572.91	70	6500.7 A	20-70	69.2
WR19	1543873	487458	87.8	5.0	1/29/2003	3.31	6571.62	2.2	6574.93	74	6498.7 A	25-85	72.9
WR20	1544059	487449	102.3	5.0	1/29/2003	3.98	6570.49	2.1	6574.47	80	6492.4 A	42-102	78.1
WR21	1544241	487449	88.9	5.0	1/29/2003	6.28	6569.77	2.1	6576.05	77	6497.0 A	28-88	72.8
WR22	1544434	487462	91.5	5.0	1/29/2003	3.44	6574.45	2.4	6577.89	86	6489.5 A	30-90	85.0
WR23	1544632	487445	94.3	5.0	1/29/2003	1.72	6574.75	2.2	6576.47	77	6497.3 A	32-92	77.5
WR24	1544938	487438	89.2	5.0	1/29/2003	2.04	6586.63	3.0	6588.67	82	6503.7 A	50-90	83.0
X	1540512	491892	50.7	4.0	7/16/2015	43.50	6528.11	1.7	6571.61	—	— A	-	—
X1	1540671	492129	54.0	5.0	8/12/2002	7.50	6650.68	3.9	6658.18	47	6607.3 A	37-47	43.4
X2	1540836	492363	53.0	6.0	8/12/2002	2.50	6569.43	1.9	6571.93	45	6525.0 A	40-45	44.4
X3	1540992	492599	52.0	5.0	8/12/2002	2.50	6570.78	2.0	6573.28	42	6529.3 A	32-42	41.5
X4	1541210	492814	54.0	5.0	8/12/2002	13.10	6563.84	3.2	6576.94	45	6528.7 A	37-45	35.1

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
X5	1541408	492821	44.0	6.0	8/12/2002	7.80	6569.81	3.6	6577.61	35	6539.0 A	24-36	30.8
X6	1541609	492828	46.0	6.0	8/12/2002	8.00	6570.72	3.5	6578.72	35	6540.2 A	22-37	30.5
X7	1541808	492851	56.0	6.0	12/5/2000	8.60	6571.83	3.4	6580.43	45	6532.0 A	32-46	39.8
X8	1542007	492852	61.0	5.0	12/5/2000	13.00	6568.76	3.4	6581.76	51	6527.4 A	32-52	41.4
X9	1542194	492852	61.0	5.0	12/5/2000	27.00	6555.92	3.6	6582.92	51	6528.3 A	24-52	27.6
X10	1542352	492835	61.0	5.0	8/12/2002	4.00	6578.43	3.6	6582.43	53	6525.8 A	30-55	52.6
X11	1542553	492782	57.0	5.0	12/5/2000	0.50	6581.50	3.0	6582.00	53	6526.0 A	17-57	55.5
X12	1542861	492852	57.0	5.0	12/5/2000	0.50	6582.83	3.0	6583.33	53	6527.3 A	17-57	55.5
X13	1543640	493665	56.0	5.0	4/16/2012	39.61	6547.33	2.5	6586.94	51	6533.4 A	16-56	13.9
X14	1544002	493777	56.0	5.0	4/9/2002	39.80	6546.40	2.1	6586.20	49	6535.1 A	16-56	11.3
X15	1544222	493800	57.0	5.0	4/9/2002	40.54	6542.37	2.3	6582.91	51	6529.6 A	17-57	12.8
X16	1544473	493795	47.0	5.0	4/16/2012	38.22	6546.57	2.3	6584.79	47	6535.5 A	22-47	11.1
X17	1544356	493793	55.0	5.0	4/9/2002	41.06	6544.78	3.3	6585.84	48	6534.6 A	35-55	10.2
X18	1544593	493569	57.0	5.0	4/16/2012	38.36	6547.72	2.9	6586.08	49	6534.2 A	37-57	13.5
X19	1544753	493437	63.0	5.0	11/17/2006	32.46	6552.74	4.2	6585.20	56	6525.1 A	33-63	27.7
X20	1544855	493256	71.0	5.0	4/16/2012	38.54	6547.19	5.0	6585.73	64	6516.8 A	31-71	30.4
X21	1543606	493894	55.0	5.0	12/5/2000	38.99	6547.34	2.7	6586.33	51	6532.6 A	35-55	14.7
X22	1543874	493946	56.0	5.0	12/5/2000	39.21	6546.49	2.6	6585.70	50	6533.1 A	36-56	13.4
X23	1544064	494012	56.0	5.0	12/5/2000	38.96	6546.98	2.8	6585.94	47	6536.1 A	36-56	10.8
X24	1544244	494011	56.0	5.0	12/5/2000	39.94	6545.78	2.6	6585.72	46	6537.1 A	36-56	8.7
X25	1544445	494042	53.0	5.0	12/5/2000	39.41	6546.22	2.8	6585.63	46	6536.9 A	33-53	9.3
X26	1544693	493702	53.0	5.0	12/5/2000	35.34	6552.30	2.8	6587.64	43	6541.8 A	33-53	10.5
X27	1544953	493374	71.0	5.0	11/17/2006	39.75	6545.55	6.0	6585.30	64	6515.4 A	31-71	30.2
X28	1540545	491971	56.0	5.0	8/12/2002	8.30	6561.66	2.0	6569.96	48	6520.0 A	16-56	41.7
X29	1540735	492256	51.0	5.0	8/12/2002	4.00	6566.03	2.0	6570.03	43	6525.0 A	11-51	41.0
X30	1540897	492493	51.0	5.0	8/12/2002	3.00	6569.53	2.0	6572.53	43	6527.5 A	11-51	42.0
X31	1541052	492731	51.0	5.0	8/12/2002	8.00	6566.13	2.0	6574.13	44	6528.1 A	11-51	38.0
XDR-1	1544450	493758	45.0	2.0	---	---	---	---	6585.28	---	--- A	35-45	---
XDR-4	1544447	493767							6585.41	---	--- A	35-45	---
XDR-2	1544459	493758							6585.44	---	--- A	35-45	---
XDR-3	1544456	493767							6585.37	---	--- A	35-45	---
XIW	1544453	493762	45.0	4.0	---	---	---	---	6583.09	---	--- A	35-45	---
XMW-1	1544452	493746	45.0	2.0	---	---	---	---	6585.26	---	--- A	35-45	---
XMW-2	1544451	493731							6585.57	---	--- A	35-45	---
XMW-3	1544442	493746							6585.21	---	--- A	35-45	---
XMW-4	1544438	493764							6585.39	---	--- A	35-45	---
XMW-5	1544468	493746							6585.31	---	--- A	35-45	---

TABLE 4.1-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
XMW-6	1544465	4493778	45.0	3.0	---	---	---	---	6585.57	---	--- A	35-45	---
Y	1541025	491256	60.8	4.0	10/15/2002	15.20	6557.68	2.4	6572.88	57	6513.5 A	54-59	44.2
Z	1540290	490701	73.9	4.0	12/5/2000	5.00	6564.22	0.6	6569.22	68	6500.6 A	60-70	63.6
										68	6500.6 A	60-70	63.6

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

TABLE 4.1-2. WELL DATA FOR THE ALLUVIAL AQUIFER BROADVIEW AND FELICE ACRES WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
						Broadview							
0410	1537459	489882	105.0	6.0	5/25/2005	40.47	6519.19	0.0	6559.66	75	6484.7 A	90-105	34.5
0411	1537400	489510	70.0	6.0	8/7/1996	35.10	6524.90	0.0	6560.00	70	6490.0 A	65-70	34.9
0412	1537940	488830	—	6.0	—	—	—	0.0	6561.00	—	— A	-	—
0413	1537900	490100	—	—	4/27/1994	35.25	6530.75	0.0	6566.00	—	— A	-	—
0421	1538450	491100	88.0	5.0	1/30/1996	37.58	6534.42	0.9	6572.00	92	6479.1 A	72-102	55.3
0422	1538440	490810	80.0	4.0	4/6/1994	32.82	6537.18	0.0	6570.00	75	6495.0 A	60-80	42.2
0423	1538223	490926	—	—	—	—	—	0.0	6570.00	—	— A	-	—
0425	1538430	490630	90.0	6.0	4/7/1994	32.42	6534.58	0.0	6567.00	71	6496.0 A	50-90	38.6
0426	1538230	490620	100.0	—	11/10/1981	30.65	6534.35	0.0	6565.00	80	6485.0 A	80-100	49.4
0427	1538450	490410	121.0	6.0	9/20/2012	33.61	6536.39	0.0	6570.00	81	6489.0 A	62-120	47.4
0428	1538367	490435	110.0	4.0	—	—	—	0.0	6570.00	66	6504.0 A	83-104	—
0429	1538210	490430	100.0	6.0	9/1/1995	37.21	6532.79	0.0	6570.00	74	6496.0 A	58-75	36.8
0430	1538469	490300	145.0	—	—	—	—	0.0	6568.00	72	6496.0 A	-	—
										72	6433.0 U	-	—
0431	1538045	490090	130.0	6.0	4/12/1994	35.00	6533.00	0.0	6568.00	60	6508.0 A	125-130	25.0
										60	6450.0 U	125-130	83.0
0432	1538210	489840	—	—	—	—	—	0.0	6565.00	—	— A	-	—
0433	1538220	489620	90.0	4.0	5/2/1997	36.05	6527.95	1.5	6564.00	75	6487.5 A	58-84	40.5
0435	1538220	489300	85.0	6.0	3/25/2003	34.48	6526.52	1.3	6561.00	85	6474.7 A	-	51.8
0438	1537854	490840	120.0	4.0	—	—	—	0.0	6571.00	105	6466.0 A	70-100	—
0439	1537940	490490	97.0	4.0	8/7/1996	39.80	6527.20	0.0	6567.00	75	6492.0 A	77-97	35.2
0440	1537700	490230	—	—	—	—	—	0.0	6566.00	—	— A	-	—
0441	1537720	490090	116.0	6.0	1/30/1995	35.19	6530.81	0.0	6566.00	78	6488.0 A	106-116	42.8
0442	1537940	489840	100.0	4.0	8/7/1996	37.15	6527.85	0.0	6565.00	80	6485.0 A	70-100	42.8
0443	1537940	489280	—	4.0	—	—	—	0.0	6561.00	75	6486.0 A	60-80	—
0444	1537940	489180	80.0	4.0	5/18/1994	28.84	6532.16	0.0	6561.00	—	— A	-	—
0445	1537720	489300	108.0	6.0	—	—	—	0.0	6561.00	79	6482.0 A	75-105	—
0446	1537830	488960	110.0	6.0	9/8/1983	41.28	6518.72	0.0	6560.00	60	6500.0 U	60-95	18.7
										60	6500.0 A	60-95	18.7
0447	1537490	490480	142.0	6.0	4/11/1985	41.18	6526.82	0.0	6568.00	80	6488.0 A	120-142	38.8
										80	6430.0 U	120-142	96.8
0448	1537400	489100	—	—	—	—	—	0.0	6561.00	—	— A	-	—
0450	1537448	490763	—	6.0	1/25/1995	42.29	6528.71	0.0	6571.00	85	6486.0 A	70-105	42.7
* 0451	1537700	490600	—	—	—	—	—	0.0	0.00	—	— A	-	—
0452	1537880	490420	100.0	4.0	8/7/1996	41.20	6525.80	0.8	6567.00	85	6481.2 A	40-100	44.6

TABLE 4.1-2. WELL DATA FOR THE ALLUVIAL AQUIFER BROADVIEW AND FELICE ACRES WELLS. (cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0453	1538375	490300	110.0	4.0	7/1/2002	34.93	6533.07	0.9	6568.00	80	6487.1 A	60-110	46.0
* 0454	1537920	489025	—	4.0	—	—	—	0.0	0.00	—	— A	-	—
0455	1537804	490737	0.0	—	—	—	—	—	—	—	— A	-	—
0456	1538240	490060	300.0	5.0	—	—	—	—	6559.00	—	— A	-	—
SUB1	1537620	489100	—	4.0	4/30/2013	32.28	6528.72	0.0	6561.00	—	— A	-	—
SUB2	1537392	490370	—	4.0	5/28/2014	40.85	6526.72	0.0	6567.57	—	— A	-	—
SUB3	1538280	489420	84.0	6.0	11/3/2015	23.35	6533.72	0.0	6557.07	72	6485.1 A	56-72	48.6
SUB4	1538440	489840	100.0	4.0	9/21/1978	49.11	6515.89	0.0	6565.00	78	6487.0 A	60-85	28.9
SUB5	1537940	489470	86.0	4.0	—	—	—	0.0	6562.31	66	6496.3 A	55-80	—
SUB6	1537940	490090	82.0	4.0	—	—	—	0.0	6566.00	80	6486.0 A	52-82	—
SUB7	1537940	490630	98.0	4.0	—	—	—	0.0	6568.00	85	6483.0 A	78-98	—
SUB8	1538450	490210	150.0	5.0	—	—	—	0.0	6568.00	72	6496.0 A	60-90	—
SUB9	—	—	—	—	—	—	—	0.0	0.00	—	— A	-	—
						Felice Acres							
0481	1536820	490210	320.0	4.0	6/11/2014	75.65	6492.35	0.0	6568.00	110	6458.0 A	270-310	34.3
										110	6298.0 M	270-310	194.3
0482	1536981	489579	260.0	5.0	5/14/2014	46.60	6516.06	0.0	6562.66	80	6482.7 A	220-260	33.4
										80	6352.7 M	220-260	163.4
0483	1536586	489753	280.0	5.0	12/1/2014	35.91	6526.75	0.0	6562.66	40	6522.7 A	-	4.1
										40	6497.7 U	-	29.1
										40	6326.7 M	270-300	200.1
0490	1536553	489752	63.0	4.0	12/1/2015	24.50	6537.92	0.0	6562.42	75	6487.4 A	20-80	50.5
0491	1537031	489658	63.0	4.0	9/18/2014	36.87	6525.75	0.0	6562.62	40	6522.6 A	30-63	3.1
										40	6522.6 A	30-63	3.1
0492	1537220	489280	60.0	4.0	3/15/2011	29.00	6531.68	1.2	6560.68	55	6504.5 A	40-60	27.2
0495	1537400	497100	—	—	—	—	—	0.0	6571.00	—	— A	-	—
0496	1534650	489603	93.0	5.0	11/30/2015	48.08	6514.44	1.6	6562.52	86	6474.9 A	53-93	39.5
0497	1535039	489503	94.0	5.0	11/30/2015	48.35	6514.27	2.0	6562.62	89	6471.6 A	64-94	42.7
0498	1534661	488953	150.0	6.0	6/9/2015	53.85	6506.74	2.0	6560.59	80	6478.6 A	70-110	28.2
										80	6478.6 M	130-150	28.2
CW44	1535048	488891	208.0	6.0	7/29/2015	49.96	6510.78	2.5	6560.74	94	6464.2 A	-	46.5
										94	6428.2 M	69-208	82.5
Q1	1535125	488830	106.0	4.5	12/1/2014	56.84	6504.77	2.0	6561.61	106	6453.6 A	70-110	51.2
Q2	1534903	488867	97.0	4.5	12/1/2014	60.24	6501.44	2.0	6561.68	97	6462.7 A	60-100	38.8
Q3	1534743	488865	108.0	4.5	4/29/2015	61.72	6498.02	2.0	6559.74	108	6449.7 A	60-100	48.3
Q5	1534829	488945	100.0	4.5	4/29/2015	63.11	6498.37	2.8	6561.48	—	— A	60-100	—
Q7	1534981	489034	100.0	4.5	5/7/2015	52.71	6508.46	1.3	6561.17	100	6459.9 A	60-100	48.6

TABLE 4.1-2. WELL DATA FOR THE ALLUVIAL AQUIFER BROADVIEW AND FELICE ACRES WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
Q8	1534762	489059	100.0	4.5	11/30/2015	47.56	6513.24	2.0	6560.80	100	6458.8 A	60-100	54.4
Q9	1534643	489101	100.0	4.5	12/1/2014	54.53	6506.80	2.0	6561.33	100	6459.3 A	60-100	47.5
Q11	1534859	489134	100.0	4.5	5/7/2015	52.26	6508.76	2.1	6561.02	100	6458.9 A	60-100	49.8
Q12	1535058	489102	102.0	4.5	12/1/2014	56.58	6504.54	2.0	6561.12	---	--- A	60-100	---
Q13	1535173	489208	100.0	4.5	5/7/2015	51.58	6510.56	2.0	6562.14	100	6460.1 A	60-100	50.4
Q14	1534969	489213	100.0	4.5	5/7/2015	52.05	6509.92	1.7	6561.97	100	6460.3 A	60-100	49.7
Q15	1534779	489239	100.0	4.5	5/6/2015	52.66	6509.59	2.1	6562.25	100	6460.2 A	60-100	49.4
Q16	1534639	489347	102.0	4.5	12/1/2014	57.58	6505.70	2.0	6563.28	97	6464.3 A	60-100	41.4
Q18	1534869	489342	100.0	4.5	5/7/2015	50.99	6510.70	1.3	6561.69	100	6460.4 A	60-100	50.3
Q19	1535053	489306	100.0	4.5	5/8/2015	51.21	6510.96	1.9	6562.17	100	6460.3 A	60-100	50.7
Q20	1535132	489400	100.0	4.5	5/8/2015	50.85	6511.96	2.2	6562.81	100	6460.6 A	60-100	51.4
Q21	1534970	489422	100.0	4.5	5/8/2015	51.31	6511.78	2.3	6563.09	100	6460.8 A	60-100	51.0
Q22	1534806	489433	100.0	4.5	5/11/2015	51.96	6510.83	2.9	6562.79	100	6459.9 A	60-100	50.9
Q23	1534851	489534	100.0	4.5	12/1/2014	56.17	6508.09	2.0	6564.26	---	--- A	60-100	---
Q24	1535141	489581	100.0	4.5	5/11/2015	50.55	6513.50	2.0	6564.05	100	6462.1 A	60-100	51.5
Q25	1534978	489629	100.0	4.5	5/8/2015	51.37	6513.14	2.5	6564.51	100	6462.0 A	60-100	51.1
Q26	1534769	489630	100.0	4.5	5/8/2015	51.71	6513.12	---	6564.83	100	--- A	60-100	---
Q27	1534861	489727	100.0	4.5	5/8/2015	51.39	6513.49	2.4	6564.88	100	6462.5 A	60-100	51.0
Q28	1535076	489696	100.0	4.5	5/11/2015	49.97	6513.97	2.2	6563.94	100	6461.7 A	60-100	52.2
Q29	1535140	489920	89.0	4.5	11/30/2015	48.87	6517.59	2.0	6566.46	89	6475.5 A	60-100	42.1
Q30	1534970	489778	100.0	4.5	4/21/2014	52.72	6513.41	2.0	6566.13	---	--- A	60-100	---
Q42	1536662	489606	80.0	4.5	5/11/2015	35.27	6529.21	1.6	6564.48	80	6482.9 A	40-80	46.3
Q43	1536550	489507	80.0	4.5	5/14/2015	34.04	6529.15	1.8	6563.19	80	6481.4 A	40-80	47.8
Q44	1535671	488864	110.0	4.5	11/30/2015	47.80	6513.53	2.0	6561.33	---	--- A	70-110	---
Q45	1535346	489172	110.0	4.5	12/1/2014	56.14	6506.21	2.0	6562.35	---	--- A	70-110	---
Q46	1535526	489315	110.0	4.5	9/2/2014	51.71	6509.99	2.0	6561.70	---	--- A	70-110	---
Q47	1535356	489516	110.0	4.5	9/2/2014	53.54	6507.62	2.0	6561.16	---	--- A	70-110	---
Q48	1535653	490120	105.0	4.5	11/30/2015	48.15	6519.69	2.0	6567.84	105	6460.8 A	65-105	58.8
Q49	1535232	489780	100.0	4.5	5/11/2015	49.91	6514.80	1.7	6564.71	---	--- A	60-100	---
Q50	1536680	490288	85.0	4.5	8/25/2015	37.30	6531.63	2.0	6568.93	---	--- A	45-85	---

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

TABLE 4.1-3. WELL DATA FOR THE ALLUVIAL AQUIFER MURRAY ACRES AND PLEASANT VALLEY WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
						Murray							
* 0801	1541020	488600	100.0	4.0	7/15/2004	39.20	6528.53	0.0	6567.73	85	6482.7 A	80-100	45.8
0801R	1541096	488431	90.0	5.0	11/4/2004	41.01	6528.04	3.0	6569.05	82	6484.1 A	60-90	44.0
0802	1540765	488277	98.0	6.0	8/6/2015	84.06	6478.66	2.0	6562.72	81	6479.7 A	75-81	0.0
0803	1540800	487430	—	6.0	9/19/1983	84.86	6476.14	0.0	6561.00	85	— C	85-180	---
										85	6476.0 A	85-180	0.1
0804	1540790	486790	137.0	6.0	2/19/2013	42.20	6519.80	0.0	6562.00	85	6477.0 A	125-136	42.8
0805	1540818	486241	140.0	5.0	10/6/1994	59.34	6507.66	0.0	6567.00	110	6457.0 A	100-140	50.7
0810	*1540244*	*486563*	*105.0*	*6.0*	—	—	—	*0.0*	*6562.00*	*81*	*6481.0 A*	*75-101*	—
0811	1540320	486373	140.0	4.0	—	—	—	0.0	6563.00	110	6453.0 A	100-140	—
0815	1539090	488100	---	4.0	5/22/1991	29.14	6526.12	0.0	6555.26	—	— A	-	—
0844	1538376	487002	75.0	4.0	11/30/2015	36.32	6519.81	1.2	6556.13	70	6484.9 A	35-75	34.9
0845	1537280	487833	65.0	4.0	11/30/2015	33.80	6523.25	1.7	6557.05	55	6500.4 A	45-65	22.9
802A	1540691	488417	90.0	4.5	4/7/2014	35.64	6533.08	2.0	6568.72	82	6484.7 A	50-90	48.4
802B	1540833	488415	90.0	4.5	4/7/2014	34.46	6533.68	2.0	6568.14	58	6508.1 U	-	25.5
										58	6508.1 A	50-90	25.5
AW	1540235	488015	156.0	6.0	12/1/2015	30.87	6532.56	0.1	6563.43	63	6500.3 A	-	32.2
										63	6463.3 U	66-155	69.2
HW	*1540920*	*487435*	*115.0*	*6.0*	*11/9/1994*	*40.00*	*6517.00*	*0.0*	*6557.00*	*95*	*6462.0 A*	*60-94*	*55.0*
						Pleasant Valley							
0525	1541283	486020	---	4.5	7/12/2002	55.36	6514.64	---	6570.00	---	— A	-	---
0688	1541257	483955	105.0	5.0	11/30/2015	57.55	6505.07	2.9	6562.62	95	6464.7 A	65-105	40.4
0831	1540090	486030	—	—	9/6/1983	54.95	6506.05	0.0	6561.00	---	— A	-	---
0833	1539335	485445	110.0	6.0	12/10/1996	46.61	6511.39	0.0	6558.00	103	6455.0 A	60-90	56.4
0834	1540259	484847	100.0	4.0	---	—	—	0.0	6560.00	80	6480.0 A	60-80	---
0835	1539610	484795	98.0	5.0	5/2/2000	49.74	6509.26	0.0	6559.00	94	6465.0 A	73-94	44.3
0836	1540250	484010	90.0	4.0	---	—	—	0.0	6558.00	80	6478.0 A	65-80	---
0838	1540600	485640	100.0	---	7/22/1995	49.03	6513.97	0.0	6563.00	---	— A	-	---
0839	1540782	485371	100.0	5.0	12/19/1994	50.00	6510.00	0.0	6560.00	94	6466.0 A	80-96	44.0
0840	1540440	485360	98.0	6.0	9/8/1983	47.32	6513.68	0.0	6561.00	94	6467.0 A	73-94	46.7
0841	1540835	485020	100.0	---	7/22/1995	54.66	6506.34	0.0	6561.00	---	— A	-	---
0843	1541411	485738	120.0	4.0	6/27/1989	52.40	6517.60	0.0	6570.00	112	6458.0 A	100-110	59.6

TABLE 4.1-3. WELL DATA FOR THE ALLUVIAL AQUIFER MURRAY ACRES AND PLEASANT VALLEY WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS

Note: A = Alluvial Aquifer

MP = Measuring Point

LSD = Land Surface Datum

IN = Inches

FT = Feet

MSL = Mean Sea Level

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0520	1538934	492935	75.0	5.0	12/1/2015	49.35	6536.67	0.3	6586.02	68	6517.7 A	35-75	19.0
0521	1539104	492588	75.0	5.0	5/13/2013	49.58	6534.86	2.5	6584.44	65	6516.9 A	35-75	17.9
0522	1538640	492437	77.0	5.0	1/28/2014	46.78	6533.75	2.8	6580.53	68	6509.7 A	37-77	24.0
0523	1538680	492896	74.0	5.0	9/10/2002	2.00	6584.79	3.0	6586.79	62	6521.8 A	34-74	63.0
0524	1538889	493173	78.0	5.0	1/28/2003	3.47	6586.88	3.0	6590.35	70	6517.4 A	33-78	69.5
0531	1541086	478262	—	—	10/30/1996	79.24	6474.55	2.0	6553.79	—	— A	-	—
* 0533	—	—	195.0	—	—	—	—	0.0	6520.00	—	— A	-	—
0538	1533486	486899	170.0	6.0	7/18/2014	66.95	6481.99	2.0	6548.94	95	6451.9 A	50-90	30.1
										95	6413.9 L	130-170	68.1
0539	1534014	487596	210.0	6.0	12/1/2015	25.09	6530.23	2.0	6555.32	100	6453.3 A	50-70	76.9
										100	6453.3 A	80-100	76.9
										100	6378.3 L	170-210	151.9
0540	1534125	488091	90.0	6.0	12/1/2015	49.50	6506.41	2.7	6555.91	80	6473.2 A	30-90	33.2
0541	1539831	477236	120.0	5.0	11/30/2015	85.96	6469.66	2.0	6555.62	112	6441.6 A	78-118	28.0
0551	1536272	479881	135.0	5.0	11/30/2015	95.30	6452.00	2.1	6547.30	115	6430.2 A	95-135	21.8
0553	1534923	480563	130.0	5.0	11/30/2015	102.17	6445.31	2.0	6547.48	128	6417.5 A	90-125	27.8
0554	1534967	479107	140.0	5.0	11/30/2015	103.52	6443.65	1.9	6547.17	118	6427.3 A	90-125	16.4
0555	1538572	486236	100.0	5.0	2/25/2015	42.28	6512.06	2.5	6554.34	100	6451.8 A	60-90	60.2
0556	1538006	486184	100.0	5.0	2/25/2015	49.06	6504.16	2.4	6553.22	95	6455.8 A	60-90	48.4
0557	1537204	486000	65.0	5.0	2/25/2015	42.55	6508.72	2.5	6551.27	55	6493.8 A	45-65	15.0
0631	1532234	483756	118.0	6.0	12/2/2015	85.50	6455.60	2.2	6541.10	109	6429.9 A	58-118	25.7
0632	1531850	483767	110.0	6.0	12/2/2015	85.41	6455.89	1.4	6541.30	102	6437.9 A	70-110	18.0
0633	1541467	479642	83.0	8.0	12/6/2011	32.40	6525.16	0.0	6557.56	95	6462.6 A	11-83	62.6
0634	1541652	480362	103.0	4.5	11/30/2015	65.09	6494.98	2.8	6560.07	95	6462.3 A	80-100	32.7
0635	1535363	478401	63.0	12.0	—	—	—	—	6546.25	—	— A	4-63	—
0636	1545374	476038	123.0	4.5	12/18/2014	101.75	6471.69	2.3	6573.44	119	6452.1 A	103-123	19.6
0637	1545409	474710	124.0	4.5	12/11/2014	110.04	6465.16	2.5	6575.20	118	6454.7 A	104-124	10.5
0638	1539628	493265	75.0	5.0	12/1/2015	42.44	6543.12	0.0	6585.56	65	6520.6 A	35-75	22.6
0639	1539370	492961	80.0	5.0	5/13/2013	54.10	6533.78	2.5	6587.88	71	6514.4 A	35-80	19.4
0640	1537790	491961	84.0	5.0	12/1/2015	48.73	6531.24	2.2	6579.97	77	6500.8 A	64-84	30.5
0641	1536494	491110	95.0	5.0	6/30/2015	48.35	6525.01	2.5	6573.36	87	6483.9 A	65-95	41.2
0642	1536104	490932	95.0	5.0	6/30/2015	48.80	6523.08	2.4	6571.88	89	6480.5 A	65-95	42.6
0643	1533760	487386	108.0	5.0	10/16/2002	75.89	6475.44	1.5	6551.33	93	6456.8 A	58-108	18.6
0644	1533481	485450	110.0	5.0	12/1/2015	68.67	6475.23	2.0	6543.90	102	6439.9 A	55-110	35.3
0645	1532924	485282	80.0	5.0	4/15/2010	74.40	6469.39	2.5	6543.79	70	6471.3 A	60-80	0.0
0646	1533246	484953	100.0	5.0	12/2/2015	73.71	6469.64	1.5	6543.35	91	6450.9 A	60-100	18.8

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
0647	1536623	478308	140.0	4.5	11/30/2015	99.40	6452.51	1.4	6551.91	132	6418.5 A	80-140	34.0
0648	1534730	478343	120.0	4.5	3/6/2013	120.00	6427.79	2.0	6547.79	120	6425.8 A	80-120	2.0
0649	1534730	479798	124.0	4.5	11/30/2015	76.45	6466.84	0.3	6543.29	115	6428.0 A	84-124	38.9
0650	1536779	482135	109.0	4.5	12/1/2015	81.50	6465.61	2.2	6547.11	103	6441.9 A	89-109	23.7
0652	1531170	483779	88.0	5.0	12/2/2015	85.88	6452.27	1.5	6538.15	79	6457.7 A	60-88	0.0
0653	1533283	486570	206.0	6.0	12/2/2015	63.47	6481.50	1.6	6544.97	97	6446.4 A	69-206	35.1
										97	6408.4 L	-	73.1
0654	1541994	478636	120.0	4.5	11/30/2015	68.92	6481.58	1.4	6550.50	106	6443.1 A	60-120	38.5
0655	1541620	479830	96.0	8.0	4/15/2010	72.30	6485.88	—	6558.18	88	— A	21-84	—
0656	1542578	478333	88.0	8.0	11/30/2015	55.61	6498.46	—	6554.07	88	— A	6-88	—
0657	1537497	478392	128.0	6.0	11/30/2015	92.90	6458.91	2.2	6551.81	120	6429.6 A	87-128	29.3
0657A	1537083	478412	35.0	12.0	4/13/1999	37.00	6512.00	—	6549.00	—	— A	17-35	—
0658	1535922	478436	130.0	6.0	11/30/2015	102.20	6447.98	0.4	6550.18	129	6420.8 A	89-130	27.2
0659	1541689	480772	101.0	4.5	11/30/2015	64.64	6495.53	2.0	6560.17	97	6461.2 A	61-101	34.4
0680	1543850	478746	80.0	4.5	11/30/2015	72.39	6486.48	2.0	6558.87	75	6481.9 A	50-80	4.6
0681	1540676	482734	117.0	6.0	12/1/2015	61.83	6498.69	2.1	6560.52	111	6447.4 A	67-117	51.3
0682	1543125	477489	94.0	4.0	10/20/2010	79.60	6474.37	2.8	6553.97	102	6449.2 A	54-94	25.2
0683	1540198	476217	120.0	6.0	3/19/2013	88.45	6467.59	2.0	6556.04	140	6414.0 A	80-120	53.6
0684	1540273	478499	143.0	6.0	10/13/2015	80.50	6472.78	2.0	6553.28	118	6433.3 A	83-143	39.5
0685	1539098	478170	100.0	4.5	11/30/2015	91.09	6465.48	1.7	6556.57	116	6438.9 A	60-100	26.6
0686	1545319	475438	115.0	4.5	12/11/2014	110.86	6467.94	1.8	6578.80	136	6441.0 A	75-115	26.9
0687	1539011	477276	102.0	6.0	11/30/2015	90.11	6465.85	2.2	6555.96	120	6433.8 A	62-102	32.0
0689	1530024	478478	80.0	4.5	11/24/2008	83.65	6458.37	2.6	6542.02	75	6464.4 A	60-80	0.0
0692	1535892	493175	90.0	5.0	6/30/2015	64.18	6520.64	2.5	6584.82	80	6502.3 A	58-90	18.3
0846	1537219	484730	75.0	4.0	11/30/2015	44.08	6504.84	0.8	6548.92	65	6483.1 A	40-65	21.7
0847	1534736	488508	92.0	5.0	11/22/1996	53.88	6504.39	2.6	6558.27	80	6475.7 A	52-92	28.7
0848	1534634	490660	92.0	5.0	2/28/2007	60.78	6511.71	2.7	6572.49	91	6478.8 A	52-92	32.9
0851	1534692	483909	91.0	5.0	12/1/2015	86.60	6459.84	3.3	6546.44	80	6463.1 A	41-91	0.0
0852	1535610	493989	74.0	5.0	12/1/2015	69.93	6520.21	2.5	6590.14	70	6517.7 A	54-74	2.5
0855	1532111	484184	105.0	5.0	12/2/2015	83.87	6457.24	2.1	6541.11	97	6442.0 A	70-105	15.2
0861	1534332	488702	100.0	5.0	9/21/2010	66.96	6492.89	2.3	6559.85	65	6492.6 A	50-100	0.3
0862	1534265	487800	110.0	5.0	12/1/2015	48.45	6507.73	3.3	6556.18	97	6455.9 A	63-103	51.8
0863	1533867	487912	110.0	5.0	9/12/2007	96.08	6460.48	2.5	6556.56	94	6460.1 A	63-103	0.4
0864	1533735	486464	95.0	5.0	8/20/2015	64.05	6482.67	1.9	6546.72	78	6466.9 A	44-84	15.8
0865	1534123	488429	97.0	5.0	8/20/2015	51.80	6504.98	2.2	6556.78	88	6466.6 A	37-97	38.4
0866	1534494	488340	120.0	5.0	8/20/2015	34.69	6523.43	1.8	6558.12	80	6476.3 A	33-113	47.1

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0867	1533762	488409	88.0	5.0	12/1/2015	52.30	6503.60	2.0	6555.90	86	6467.9 A	48-88	35.7
0868	1534848	491033	103.0	5.0	6/30/2015	56.11	6518.63	2.2	6574.74	94	6478.5 A	53-103	40.1
0869	1533251	486073	94.0	5.0	12/1/2015	65.33	6479.16	1.7	6544.49	99	6443.8 A	44-94	35.4
* 0870	1532680	484906	93.0	5.0	1/11/1996	68.56	6475.60	1.9	6544.16	95	6447.3 A	69-89	28.3
0871	1533603	485400	100.0	5.0	1/11/1996	66.86	6477.85	2.4	6544.71	93	6449.3 A	60-100	28.5
* 0872	1533092	485407	100.0	5.0	1/11/1996	65.80	6477.51	1.8	6543.31	96	6445.5 A	55-100	32.0
* 0873	1533286	484505	100.0	5.0	1/11/1996	67.55	6475.46	1.9	6543.01	96	6445.1 A	60-100	30.3
* 0874	1533968	484925	105.0	5.0	1/11/1996	68.68	6476.66	2.2	6545.34	110	6433.1 A	55-105	43.5
* 0875	1532785	483634	125.0	5.0	1/11/1996	69.85	6472.99	1.7	6542.84	116	6425.1 A	65-125	47.9
0876	1532853	486088	95.0	5.0	12/1/2015	65.07	6479.19	1.9	6544.26	85	6457.4 A	58-88	21.8
0877	1533068	488067	70.0	5.0	12/2/2015	56.51	6496.57	1.9	6553.08	65	6486.2 A	58-68	10.4
0879	1532401	486104	70.0	5.0	12/2/2015	66.80	6477.75	2.2	6544.55	62	6480.4 A	48-68	0.0
0881	1542034	481478	96.0	4.5	2/26/2015	68.66	6496.38	2.0	6565.04	103	6460.0 A	76-96	36.3
0882	1541404	482396	110.0	4.5	2/26/2015	61.37	6499.79	2.0	6561.16	98	6461.2 A	70-110	38.6
0883	1540097	483039	100.0	5.0	11/30/2015	57.08	6500.05	1.9	6557.13	96	6459.3 A	60-90	40.8
0884	1542677	481498	90.0	5.0	2/26/2015	67.59	6498.51	1.0	6566.10	85	6480.2 A	58-88	18.4
0885	1541919	483474	100.0	5.0	11/30/2015	61.31	6503.33	1.5	6564.64	95	6468.1 A	70-100	35.2
0886	1542327	482487	90.0	5.0	11/30/2015	64.23	6500.32	1.5	6564.55	87	6476.1 A	60-90	24.3
0887	1543063	482469	67.0	5.0	11/30/2015	58.25	6509.48	1.5	6567.73	60	6506.2 A	42-67	3.3
0888	1542285	479335	105.0	5.0	11/30/2015	71.67	6485.66	1.1	6557.33	90	6466.2 A	75-105	19.4
0889	1540047	480222	65.0	5.0	11/30/2015	62.40	6487.23	1.5	6549.63	60	6488.2 A	35-65	0.0
0890	1541365	480088	101.0	5.0	9/29/2015	70.70	6487.73	1.7	6558.43	93	6463.7 A	81-101	24.0
0893	1541934	482244	98.0	4.5	11/30/2015	64.93	6499.04	2.1	6563.97	93	6468.9 A	78-98	30.2
0894	1541976	478317	78.0	4.5	10/20/2010	77.41	6476.88	3.0	6554.29	97	6454.3 A	58-78	22.6
0895	1541521	476222	104.0	5.0	10/19/2012	84.73	6469.11	2.4	6553.84	116	6435.4 A	61-101	33.7
0896	1542246	476237	113.0	5.0	10/19/2012	85.93	6469.68	2.0	6555.61	117	6436.6 A	73-113	33.1
0897	1543819	478237	93.0	4.0	11/30/2015	77.41	6484.84	2.0	6562.25	70	6490.3 A	63-93	0.0
0899	1543801	477288	110.0	4.0	6/9/2015	95.90	6474.94	2.0	6570.84	120	6448.8 A	70-110	26.1
0905	1532700	480850	120.0	5.0	5/9/2012	102.00	6443.00	0.0	6545.00	120	6425.0 A	100-120	18.0
0906	1532900	480450	---	---	8/29/1995	74.65	6462.75	0.0	6537.40	---	--- A	-	---
0909	1531900	483400	140.0	4.0	5/12/2015	84.49	6454.41	0.0	6538.90	112	6426.9 L	80-135	27.5
										112	6426.9 A	80-135	27.5
0910	1528800	481150	138.0	5.0	---	---	---	0.0	6535.00	132	6403.0 A	120-134	---
0912	1471000	478250	---	---	---	---	---	0.0	6530.00	---	--- A	-	---
0913	1555800	500950	---	8.0	1/24/1996	38.40	6604.60	0.3	6643.00	---	--- A	-	---
0914	1555500	500850	---	6.0	5/6/2009	42.87	6599.13	1.4	6642.00	---	--- A	-	---

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0915	1552650	499650	100.0	4.0	6/19/2006	30.00	6595.00	0.0	6625.00	70	6555.0 A	55-85	40.0
0916	1552350	499600	160.0	4.0	5/7/2009	36.63	6588.37	0.0	6625.00	—	— A	45-70	—
0917	1542200	514600	—	—	—	—	—	0.0	6800.00	—	— A	-	—
0920	1555800	496900	—	7.0	5/11/1994	33.40	6594.20	0.7	6627.60	—	— A	-	—
0921	1555400	495800	—	5.0	10/22/2014	39.63	6584.37	1.9	6624.00	—	— A	-	—
0922	1555200	492500	—	6.0	10/17/2012	50.15	6571.55	1.7	6621.70	—	— A	-	—
0924	1547500	438900	135.0	4.0	—	—	—	0.0	6592.90	112	6480.9 A	94-114	—
0925	1548600	480800	150.0	4.0	—	—	—	0.0	6601.40	140	6461.4 A	126-141	—
0926	1547500	472700	134.0	4.0	—	—	—	0.0	6596.90	132	6464.9 A	123-132	—
0935	1540115	476629	300.0	16.0	10/13/2015	86.08	6472.04	2.6	6558.12	125	6430.5 A	95-132	41.5
0936	1543621	472978	160.0	5.0	—	—	—	0.0	6573.38	160	6413.4 A	100-160	—
0939	1539751	483202	97.0	8.0	7/25/1996	59.31	6497.69	2.3	6557.00	—	— A	-	—
0940	1538651	483040	70.0	—	7/24/1996	57.30	6495.70	8.8	6553.00	—	— A	-	—
0942	1538306	483703	100.0	6.0	—	—	—	0.0	6550.20	95	6455.2 A	85-95	—
0947	1536206	491841	100.0	4.0	7/27/1994	54.63	6520.55	0.0	6575.18	95	6480.2 A	70-100	40.4
0950	1560400	498300	81.0	5.0	7/12/2000	25.70	6631.30	0.5	6657.00	—	— A	-	—
0952	1534550	477800	140.0	—	—	—	—	0.0	6550.00	—	— A	-	—
0975	1539753	482896	—	—	—	—	—	0.0	6556.00	—	— A	-	—
0976	1539751	483100	115.0	—	—	—	—	0.0	0.00	—	— A	-	—
0977	1539900	482720	—	—	12/9/1995	61.47	6495.53	1.0	6557.00	—	— A	-	—
0979	1538860	483110	105.0	5.0	7/10/2002	57.56	6593.44	0.0	6651.00	100	6551.0 A	90-100	42.4
0980	1539330	483050	—	—	11/8/1995	57.70	6497.30	0.0	6555.00	—	— A	-	—
0981	1539040	483740	—	—	—	—	—	0.0	6554.00	—	— A	-	—
0982	1538610	483400	110.0	5.0	—	—	—	0.0	6651.00	105	6546.0 A	90-105	—
0983	1538590	483100	—	—	—	—	—	0.0	6552.00	—	— A	-	—
0984	1538750	482950	103.0	5.0	—	—	—	0.0	6651.00	98	6553.0 A	88-98	—
0985	1539048	483380	115.0	5.0	7/18/1996	58.75	6592.25	0.0	6651.00	102	6549.0 A	90-110	43.3
0989	1538220	482920	—	—	11/2/1995	58.10	6494.90	1.0	6553.00	—	— A	-	—
0992	1539510	483790	100.0	5.0	—	—	—	0.0	6552.00	95	6457.0 A	85-95	—
0993	1537920	483677	102.0	5.0	—	—	—	0.0	6550.00	98	6452.0 A	85-98	—
0994	1539700	476240	144.0	6.0	10/19/2015	87.16	6467.84	0.0	6555.00	—	— A	95-110	—
0996	1537621	477989	138.0	5.0	12/5/2011	49.60	6502.92	1.7	6552.52	136	6414.8 A	126-136	88.1
0997	1539821	473807	—	—	3/12/1996	76.90	6491.40	0.0	6568.30	—	— A	-	—
1012	—	—	—	6.0	—	—	—	0.0	0.00	—	— A	-	—
1013	—	—	—	4.0	—	—	—	0.0	0.00	—	— A	-	—
1014	—	—	—	9.0	—	—	—	0.0	0.00	—	— A	-	—

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
1015	—	—	—	6.0	—	—	—	0.0	0.00	—	— A	-	—
1018	—	—	—	5.0	—	—	—	0.0	0.00	—	— A	-	—
1020	—	—	—	5.0	1/18/1996	15.17	-15.17	0.0	0.00	—	— A	-	—
1021	—	—	—	—	1/18/1996	18.00	-18.00	0.0	0.00	—	— A	-	—
H1	1541931	480022	98.0	4.5	9/29/2015	69.46	6489.79	2.0	6559.25	98	6459.3 A	78-98	30.5
H2	1541665	480014	100.0	4.5	5/5/2015	71.81	6489.02	2.0	6560.83	100	6458.8 A	80-100	30.2
H2A	1541694	479997	88.0	4.5	11/24/2015	69.05	6490.82	2.0	6559.87	88	6469.9 A	66-88	20.9
H3	1541482	479947	92.0	4.5	4/8/2014	76.00	6481.10	2.0	6557.10	92	6463.1 A	72-92	18.0
H4	1542118	480122	99.0	4.5	4/9/2014	74.00	6483.60	2.0	6557.60	99	6456.6 A	79-99	27.0
H5	1541786	480167	99.0	4.5	8/4/2014	80.00	6478.44	2.0	6558.44	99	6457.4 A	79-99	21.0
H6	1541541	480181	99.0	4.5	5/5/2015	65.36	6494.62	2.0	6559.98	99	6459.0 A	79-99	35.6
H6A	1541564	480172	100.0	4.5	7/14/2014	77.00	6480.57	2.0	6557.57	100	6455.6 A	80-100	25.0
H7	1541974	480333	102.0	4.5	5/5/2015	66.92	6492.62	2.0	6559.54	102	6455.5 A	82-102	37.1
H7A	1542002	480322	100.0	4.5	11/24/2015	66.40	6492.69	2.0	6559.09	100	6457.1 A	80-100	35.6
H7B	1541933	480350	98.0	4.5	9/29/2015	65.05	6494.33	2.0	6559.38	98	6459.4 A	78-98	34.9
H8	1541405	480325	95.0	4.5	5/5/2015	64.85	6493.26	2.0	6558.11	95	6461.1 A	75-95	32.2
H9	1542143	480524	97.0	4.5	5/5/2015	66.14	6494.48	2.0	6560.62	97	6461.6 A	77-97	32.9
H10	1541828	480550	100.0	4.5	5/5/2015	63.79	6494.77	2.0	6558.56	100	6456.6 A	80-100	38.2
H11	1541517	480586	97.0	4.5	5/5/2015	64.84	6494.58	2.0	6559.42	97	6460.4 A	77-97	34.2
H12	1542007	480744	100.0	4.5	9/29/2015	66.62	6497.00	2.0	6563.62	100	6461.6 A	80-100	35.4
H13	1542183	480842	100.0	4.5	4/14/2014	72.00	6490.42	2.0	6562.42	100	6460.4 A	80-100	30.0
H14	1541884	480906	100.0	4.5	4/14/2014	72.00	6486.85	2.0	6558.85	100	6456.9 A	80-100	30.0
H15	1541590	480941	97.0	4.5	—	—	—	2.0	6560.41	97	6461.4 A	77-97	—
H16	1542116	481129	92.0	4.5	4/15/2014	64.00	6493.98	2.0	6557.98	92	6464.0 A	72-92	30.0
H17	1541782	481151	99.0	4.5	4/15/2014	74.00	6489.36	2.0	6563.36	99	6462.4 A	79-99	27.0
H18	1542325	481231	93.0	4.5	4/15/2014	71.00	6489.77	2.0	6560.77	93	6465.8 A	73-93	24.0
H19	1541970	481270	91.0	4.5	4/17/2014	72.00	6490.54	2.0	6562.54	91	6469.5 A	71-91	21.0
H20	1541664	481314	86.0	4.5	4/18/2014	64.00	6493.68	2.0	6557.68	86	6469.7 A	66-86	24.0
H21	1542330	481444	95.0	4.5	4/21/2014	79.00	6485.40	2.0	6564.40	95	6467.4 A	75-95	18.0
H22	1541756	481496	94.0	4.5	4/21/2014	68.00	6493.53	2.0	6561.53	94	6465.5 A	74-94	28.0
H23	1542412	481663	95.0	4.5	4/21/2014	68.00	6496.96	2.0	6564.96	95	6468.0 A	75-95	29.0
H24	1542195	481605	100.0	4.5	4/24/2014	71.00	6494.87	2.0	6565.87	100	6463.9 A	80-100	31.0
H25	1541937	481652	100.0	4.5	4/25/2014	70.00	6494.79	2.0	6564.79	100	6462.8 A	80-100	32.0
H26	1542244	481823	98.0	4.5	4/25/2014	79.00	6487.81	2.0	6566.81	98	6466.8 A	78-98	21.0
H27	1541924	481863	96.0	4.5	4/25/2014	68.00	6497.25	2.0	6565.25	96	6467.3 A	76-96	30.0
H28	1542427	481976	97.0	4.5	4/28/2014	70.00	6495.38	2.0	6565.38	97	6466.4 A	77-97	29.0

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
H29	1542117	481997	100.0	4.5	—	—	—	2.0	6562.00	100	6460.0 A	80-100	—
H30	1542590	482118	92.0	4.5	4/28/2014	68.00	6497.80	2.0	6565.80	92	6471.8 A	72-92	26.0
H31	1542290	482160	95.0	4.5	4/29/2014	68.00	6497.06	2.0	6565.06	95	6468.1 A	75-95	29.0
H32	1542470	482295	98.0	4.5	7/11/2014	66.00	6499.11	2.0	6565.11	98	6465.1 A	78-98	34.0
H33	1542162	482347	98.0	4.5	6/25/2014	65.00	6501.08	2.0	6566.08	98	6466.1 A	78-98	35.0
H34	1542415	482618	96.0	4.5	8/7/2014	65.48	6500.71	2.0	6566.19	96	6468.2 A	76-96	32.5
H35	1542209	482713	97.0	4.5	6/26/2014	73.00	6491.93	2.0	6564.93	97	6465.9 A	77-97	26.0
H36	1542405	482853	100.0	4.5	—	—	—	2.0	6559.96	100	6458.0 A	80-100	—
H37	1542586	482972	96.0	4.5	6/3/2014	59.00	6501.56	2.0	6560.56	96	6462.6 A	76-96	39.0
H38	1542314	483081	93.0	4.5	7/1/2014	68.00	6494.49	2.0	6562.49	93	6467.5 A	73-93	27.0
H39	1542517	483204	100.0	4.5	7/2/2014	62.00	6504.03	2.0	6566.03	100	6464.0 A	80-100	40.0
H40	1542710	483345	98.0	4.5	7/10/2014	51.00	6514.57	2.0	6565.57	98	6465.6 A	78-98	49.0
H41	1542414	483448	100.0	4.5	—	—	—	2.0	6564.33	100	6462.3 A	80-100	—
H42	1542813	483511	100.0	4.5	10/9/2014	64.30	6503.50	2.0	6567.80	100	6465.8 A	80-100	37.7
H42A	1542822	483522	100.0	4.5	10/1/2015	64.00	6503.43	2.6	6567.43	100	6464.8 A	80-100	38.6
H43	1542954	483706	90.0	4.5	—	—	—	2.4	6569.14	90	6476.7 A	70-90	—
H44	1542694	483771	90.0	4.5	10/13/2015	82.00	6487.86	3.1	6569.86	90	6476.8 A	70-90	11.1
H45	1542945	483956	90.0	4.5	10/5/2015	63.50	6506.15	2.0	6569.65	90	6477.7 A	50-90	28.5
H46	1542614	483981	95.0	4.5	—	—	—	2.0	6567.36	95	6470.4 A	75-95	—
H47	1543121	484112	90.0	4.5	10/5/2015	63.00	6506.46	2.0	6569.46	90	6477.5 A	70-90	29.0
H48	1542787	484185	90.0	4.5	10/13/2015	62.00	6506.26	2.0	6568.26	90	6476.3 A	70-90	30.0
H49	1543056	484342	90.0	4.5	—	—	—	2.0	6570.84	90	6478.8 A	70-90	—
H50	1542846	484394	100.0	4.5	10/14/2015	62.00	6506.84	2.2	6568.84	90	6476.6 A	80-100	30.2
H51	1543254	484489	90.0	4.5	10/15/2015	62.00	6507.94	2.6	6569.94	95	6472.3 A	70-90	35.6
H52	1542976	484590	100.0	4.5	10/13/2015	54.00	6516.01	2.5	6570.01	95	6472.5 A	80-100	43.5
H54	1543160	484723	100.0	4.5	10/15/2015	60.00	6509.56	2.0	6569.56	70	6497.6 A	80-100	12.0
H55	1542909	484706	95.0	4.5	9/15/2014	60.00	6509.25	2.0	6569.25	95	6472.3 A	75-95	37.0
H56	1542625	484804	95.0	4.5	—	—	—	2.0	6569.49	95	6472.5 A	75-95	—
H57	1543338	484884	90.0	4.5	10/16/2015	64.00	6507.09	2.0	6571.09	90	6479.1 A	70-90	28.0
H58	1543051	484959	95.0	4.5	10/16/2015	60.00	6511.02	2.5	6571.02	95	6473.5 A	75-95	37.5
H59	1542764	484969	100.0	4.5	10/20/2015	58.00	6512.15	2.5	6570.15	95	6472.7 A	80-100	39.5
H60	1542945	484152	100.0	4.5	10/23/2015	70.00	6501.02	2.0	6571.02	100	6469.0 A	80-100	32.0
H61	1542631	485206	89.0	4.5	—	—	—	2.0	6570.49	89	6479.5 A	69-89	—
H62	1543413	485343	100.0	4.5	10/26/2015	81.00	6491.52	2.3	6572.52	100	6470.3 A	80-100	21.3
H63	1543072	485346	100.0	4.5	10/23/2015	81.00	6490.85	2.5	6571.85	100	6469.4 A	80-100	21.5
H64	1542779	485373	90.0	4.5	10/26/2015	83.00	6488.86	3.0	6571.86	90	6478.9 A	70-90	10.0

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
H65	1543237	485530	93.0	4.5	4/30/2014	58.00	6517.06	2.0	6575.06	93	6480.1 A	73-93	37.0
H66	1542938	485536	90.0	4.5	10/27/2015	64.00	6507.77	2.5	6571.77	100	6469.3 A	80-90	38.5
H67	1543489	485743	90.0	4.5	10/28/2015	64.00	6509.76	2.9	6573.76	90	6480.9 A	70-90	28.9
H68	1543114	485766	100.0	4.5	10/28/2015	62.00	6511.38	3.0	6573.38	100	6470.4 A	80-100	41.0
H69	1542779	485752	100.0	4.5	10/29/2015	61.00	6512.08	3.6	6573.08	95	6474.5 A	80-100	37.6
H70	1543343	485979	93.0	4.5	4/30/2014	58.00	6516.62	2.0	6574.62	93	6479.6 A	73-93	37.0
H71	1542939	485966	91.0	4.5	4/30/2014	55.00	6517.32	2.0	6572.32	91	6479.3 A	71-91	38.0
H72	1543147	486104	90.0	4.5	11/2/2015	64.00	6511.17	3.3	6575.17	90	6481.9 A	70-90	29.3
H73	1541828	482047	91.0	4.5	4/30/2014	60.00	6496.73	2.0	6556.73	91	6463.7 A	71-91	33.0
H74	1541953	482471	95.0	4.5	6/24/2014	65.00	6498.05	2.0	6563.05	95	6466.1 A	75-95	32.0
H75	1542212	483453	93.0	4.5	7/1/2014	60.00	6505.25	2.0	6565.25	93	6470.3 A	73-93	35.0
H93	1543202	483884	100.0	4.5	9/4/2014	59.50	6507.25	2.0	6566.75	100	6464.8 A	80-100	42.5
H95	1543327	484311	100.0	4.5	11/30/2015	60.40	6508.51	2.0	6568.91	100	6466.9 A	80-100	41.6
H97	1543406	484644	95.0	4.5	9/4/2014	58.16	6512.06	2.0	6570.22	95	6473.2 A	75-95	38.8
H99	1543525	485438	100.0	4.5	9/4/2014	58.93	6512.73	2.0	6571.66	100	6469.7 A	80-100	43.1
H100	1543724	485306	90.0	4.5	11/4/2015	82.00	6492.12	2.8	6574.12	80	6491.3 A	70-90	0.8
H101	1543764	485695	90.0	4.5	11/6/2015	64.00	6511.52	3.8	6575.52	90	6481.8 A	70-90	29.8
H102	1543624	485946	90.0	4.5	11/6/2015	63.00	6512.62	2.5	6575.62	90	6483.1 A	70-90	29.5
H103	1543767	486104	90.0	4.5	11/9/2015	70.00	6505.61	2.3	6575.61	90	6483.4 A	70-90	22.3
H104	1543562	486140	90.0	4.5	11/9/2015	83.00	6492.05	2.0	6575.05	80	6493.1 A	70-90	0.0
H105	1542792	486149	100.0	4.5	---	---	---	2.0	6574.76	90	6482.8 A	80-100	---
H106	1542087	482933	94.0	4.5	6/26/2014	64.00	6500.75	2.0	6564.75	94	6468.8 A	74-94	32.0
H107	1541784	481742	98.0	4.5	6/24/2014	66.00	6496.36	2.0	6562.36	98	6462.4 A	78-98	34.0
M16	1543252	485112	93.3	5.0	11/30/2015	58.30	6512.29	1.4	6570.59	100	6469.2 A	60-100	43.1
M17	1542752	484617	100.0	4.5	---	---	---	2.0	6569.21	95	6472.2 A	80-100	---
M18	1542607	485970	88.0	4.5	4/30/2014	54.00	6518.28	2.0	6572.28	88	6482.3 A	68-88	36.0
MO	1543620	485518	88.0	4.5	11/30/2015	59.49	6513.40	2.0	6572.89	80	6490.9 A	45-85	22.5
MP	1544164	485492	80.0	5.0	11/30/2015	60.75	6513.73	2.1	6574.48	50	6522.4 A	33-63	0.0
MR	1542609	483574	100.0	5.0	11/30/2015	62.71	6503.55	1.8	6566.26	100	6464.5 A	54-94	39.1
MS	1542607	485570	82.0	5.0	11/30/2015	57.72	6512.95	1.5	6570.67	89	6480.2 A	52-82	32.8
MT	1543221	483531	98.0	4.5	11/30/2015	59.46	6507.97	2.3	6567.43	87	6478.1 A	34-94	29.8
MV	1542618	484418	105.0	4.5	11/30/2015	62.46	6507.32	1.3	6569.78	95	6473.5 A	75-105	33.8
R1	1534551	487790	120.0	5.0	12/1/2015	44.98	6510.14	2.0	6555.12	84	6469.1 M	80-120	41.0
										84	6469.1 A	80-120	41.0
R2	1534548	487968	115.0	5.0	5/14/2015	48.09	6506.07	2.0	6554.16	83	6469.2 A	75-115	36.9
										83	6469.2 M	75-115	36.9

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
R3	1534546	488196	140.0	5.0	5/14/2015	48.79	6506.94	2.0	6555.73	88	6465.7 A	60-80	41.2
										88	6465.7 M	100-140	41.2
R4	1534541	488446	130.0	5.0	5/14/2015	50.45	6508.33	2.0	6558.78	84	6472.8 A	90-130	35.5
										84	6472.8 M	90-130	35.5
R5	1534560	488666	125.0	5.0	5/14/2015	51.78	6505.97	2.0	6557.75	71	6484.8 A	65-125	21.2
										71	6484.8 M	65-125	21.2
R6	1534356	488448	130.0	5.0	11/19/2013	60.75	6498.89	2.0	6559.64	68	6489.6 A	50-90	9.3
										68	6489.6 M	110-130	9.3
R7	1534399	488087	145.0	5.0	8/16/2013	54.21	6500.60	2.0	6554.81	74	6478.8 A	65-105	21.8
										74	6478.8 M	125-145	21.8
R8	1534412	487891	145.0	5.0	8/16/2013	53.47	6500.69	2.0	6554.16	86	6466.2 A	65-105	34.5
										86	6466.2 M	125-145	34.5
R9	1534420	487700	120.0	4.5	11/13/2013	54.74	6501.01	2.0	6555.75	80	6473.8 M	60-120	27.3
										80	6473.8 A	60-120	27.3
R10	1534305	488003	120.0	4.5	5/14/2015	49.25	6505.97	2.0	6555.22	70	6483.2 A	60-120	22.8
										70	6483.2 M	60-120	22.8
R11	1534320	488280	120.0	4.5	5/14/2015	53.39	6505.06	2.0	6558.45	70	6486.5 M	60-120	18.6
										70	6486.5 A	60-120	18.6
R12	1534220	488360	120.0	4.5	11/14/2013	59.23	6497.72	2.0	6556.95	66	6489.0 M	60-120	8.8
										66	6489.0 A	60-120	8.8
R13	1534220	488150	120.0	4.5	11/14/2013	59.43	6497.46	2.0	6556.89	72	6482.9 M	60-120	14.6
										72	6482.9 A	60-120	14.6
R14	1534168	487971	100.0	4.5	11/14/2013	59.22	6497.57	2.0	6556.79	80	6474.8 A	60-100	22.8
										80	6474.8 M	60-100	22.8
R15	1534180	487700	100.0	4.5	11/14/2013	56.46	6499.77	2.0	6556.23	98	6456.2 A	60-100	43.5
R16	1533973	487394	100.0	4.5	11/14/2013	68.19	6486.30	2.0	6554.49	92	6460.5 A	60-100	25.8
R17	1534040	487810	100.0	4.5	11/18/2013	58.62	6496.60	2.0	6555.22	89	6464.2 M	60-100	32.4
										89	6464.2 A	60-100	32.4
R18	1534030	487970	100.0	4.5	5/14/2015	55.35	6500.65	2.0	6556.00	82	6472.0 A	60-100	28.7
										82	6472.0 M	60-100	28.7
R19	1534029	488173	100.0	4.5	11/18/2013	60.42	6496.08	2.0	6556.50	92	6462.5 A	60-100	33.6
										92	6462.5 M	60-100	33.6
R20	1534120	488260	100.0	4.5	5/14/2015	54.09	6502.25	2.0	6556.34	80	6474.3 A	60-100	27.9
										80	6474.3 M	60-100	27.9
R21	1534031	488350	100.0	4.5	11/18/2013	58.86	6496.71	2.0	6555.57	92	6461.6 M	60-100	35.1
										92	6461.6 A	60-100	35.1
R22	1533940	488091	100.0	4.5	5/12/2015	56.52	6500.62	2.0	6557.14	85	6470.1 M	60-100	30.5
										85	6470.1 A	60-100	30.5
R23	1533880	487750	100.0	4.5	11/14/2013	62.02	6493.73	2.0	6555.75	97	6456.8 A	60-100	37.0

TABLE 4.1-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
R24	1533872	487526	100.0	4.5	---	---	---	2.0	6552.30	100	6450.3 A	60-100	---
R28	1533761	487226	100.0	4.5	---	---	---	2.0	6550.30	100	6448.3 A	60-100	---
R29	1533785	487629	100.0	4.5	---	---	---	2.0	6554.08	100	6452.1 A	60-100	---
R41	1533596	487388	100.0	4.5	---	---	---	2.0	6550.90	100	6448.9 A	60-100	---
R43	1533509	487134	100.0	4.5	---	---	---	2.0	6551.15	100	6449.2 A	60-100	---
R47	1533470	485780	160.0	4.5	12/20/2013	75.59	6471.58	2.0	6547.17	103	6442.2 A	100-160	29.4
										103	6442.2 L	100-160	29.4
R48	1533345	485775	160.0	4.5	---	---	---	2.0	6545.24	100	6443.2 A	100-160	---
										100	6443.2 L	100-160	---
R57	1533260	485880	135.0	4.5	12/20/2013	74.67	6472.40	2.0	6547.07	99	6446.1 L	75-135	26.3
										99	6446.1 A	75-135	26.3
R58	1533170	485710	160.0	4.5	4/8/2014	70.98	6473.47	2.0	6544.45	98	6444.5 L	100-160	29.0
										98	6444.5 A	100-160	29.0
R59	1533125	485963	150.0	4.5	---	---	---	2.0	6545.01	90	--- L	110-150	---
										90	6453.0 A	110-150	---
R68	1533025	485819	160.0	4.5	10/10/2014	69.44	6475.41	2.0	6544.85	99	6443.9 A	100-160	31.6
										99	6443.9 L	100-160	31.6
R69	1532987	486024	160.0	4.5	4/8/2014	70.53	6474.82	2.0	6545.35	96	6447.4 L	100-160	27.5
										96	6447.4 A	100-160	27.5
R73	1533019	485560	150.0	4.5	5/13/2015	69.92	6474.42	2.3	6544.34	100	6442.0 A	110-150	32.4
										100	6442.0 L	110-150	32.4
R74	1532852	485502	140.0	4.5	12/1/2015	68.63	6475.40	2.4	6544.03	100	6441.6 A	100-140	33.8
										100	6441.6 L	100-140	33.8
R75	1532922	485716	140.0	4.5	5/13/2015	69.14	6475.74	2.3	6544.88	100	6442.6 L	100-140	33.2
										100	6442.6 A	100-140	33.2
R76	1532888	485891	140.0	4.5	5/13/2015	68.37	6476.72	2.3	6545.09	100	6442.8 A	100-140	33.9
										100	6442.8 L	100-140	33.9
R77	1532683	485800	140.0	4.5	5/13/2015	68.28	6476.69	2.4	6544.97	80	6462.6 A	-	14.1
										80	6462.6 L	100-140	14.1
										80	6462.6 A	100-140	14.1
R78	1532683	485612	140.0	4.5	5/13/2015	69.16	6474.87	2.0	6544.03	100	6442.0 L	100-140	32.8
										100	6442.0 A	100-140	32.8

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

4.2 ALLUVIAL WATER LEVELS

4.2.1 WATER-LEVEL ELEVATION - ALLUVIAL

This section presents information necessary to evaluate the direction of ground water flow in the alluvial aquifer. Water-level elevations are used to quantify the gradient of the alluvial water table, which in turn can be used to interpret the direction of ground water flow.

Figures 4.2-1, 4.2-1A, 4.2-1B and 4.2-1C present the fall of 2015 alluvial aquifer water-level elevation contours for the Grants Project area. The three insert maps are used to show water-level elevations where the spacing of the wells is too close for showing the information on Figure 4.2-1. The alluvial aquifer limits (green lines on figure) are based on the 2014 water-level elevation map and base of the alluvium map. This 2014 adjustment in the alluvial aquifer limits resulted in only small changes in the limits of the alluvial aquifer. Locations of the alluvial wells, with their respective well names listed adjacent to the well symbol, are plotted on Figure 4.1-1 in the previous section. The 2015 ground water flow patterns in the alluvial aquifer are very similar to those observed in the fall of 2014. The ridge in the piezometric surface west of the LTP is attributable to continued injection of water into the injection wells and lines in 2015 (see Figure 4.1-1 for locations). The water-level elevations and flow directions indicate the extent of the area of the alluvial aquifer from which ground water is drawn by the collection system. The area of collection is between the fresh-water injection area and the collection wells, where ground water is flowing back to the collection wells. The area underlying the LTP is also within the collection area, because alluvial ground water in this area flows to the collection wells. The collection area also extends from the southeast corner of the STP through the injection ridge to the zero saturation line to the east.

The water-level elevations in Section 3 overall increased in 2015 with the fresh water injection and limited Off-site pumping in this section (see Figure 4.2-1). Water-level also increased a few feet in Section 33 (see the western half of Figure 4.2-1), likely due to above recharge and no South Collection pumping from this area. The water levels in Section 28 also increased a few feet in 2015 due to the Section 28 fresh water injection and increased recharge.

Several wells were drilled in the area of the zero saturation boundaries to better define the limits of the alluvial aquifer. However, there are occurrences of limited saturation in the Chinle shale below the alluvium, indicating that there may be zones of perched water in the

upper part of the Chinle shale. These wells have been used to help define where the zero saturation boundary of the alluvium occurs and the water levels in these wells may not be representative of the alluvial aquifer. Water levels were measured in wells 652, 680, 851, 852, 867, 877, 879, 887, 889, 892, 897, 1C, 1H, 1I, 1P, 1N, 1O, MN and MP in late 2015 to define the amount of limited ground water that exists near the saturation boundary.

Flow in the San Mateo alluvium is naturally diverted either west through the western portion of Section 28 or south/southwest through Sections 35 and 3 around the area where the base of the alluvium is elevated. There is no alluvial saturation where the elevation of the base of the alluvium is above the water table. Further downgradient, the San Mateo alluvial water then mixes with the Rio San Jose alluvial water flowing from the northwest. The combined flow continues to flow in a southerly direction. The gradient of the alluvial water surface in the Rio San Jose alluvium has been increased somewhat due to irrigation water withdrawal, but it is still relatively flat due to its large transmitting ability. San Mateo alluvial ground water that flows through the northern portion of Section 3 (see Figure 4.2-1) joins the Rio San Jose ground water system in the eastern portion of Section 4.

Water-level data for the alluvial wells are presented in Appendix A as Table A.1-1 (HMC alluvial wells), Table A.1-2 (Murray Acres, Broadview Acres, Felice Acres, and Pleasant Valley Estates alluvial wells) and Table A.1-3 (regional alluvial wells).

4.2.2 WATER-LEVEL CHANGE - ALLUVIAL

Figure 4.2-2 presents well locations and indicates the grouping of wells for presentation on water-level elevation versus time plots. The figure number of the water-level elevation plots for each group of wells is shown by the well groupings in the black boxes depicted on Figure 4.2-2. The colors used for the well name and well symbol on Figure 4.2-2 correspond with those used on the water-level elevation plots. Time plots (Figures 4.2-3 through 4.2-18) present the last fifteen years of data to illustrate the recent trends.

Water levels in the alluvial aquifer have been fairly stable during the last year. Figure 4.2-3 presents water-level elevation data for up-gradient wells DD, DD2, ND, P, Q and R. A very slight increasing trend was observed in up-gradient wells during 2015 except for a decline

in wells DD, DD2, P and R during April or May. These declines are not considered to be representative of static water levels in these wells.

Water-level elevation data are presented for two sets of wells monitored for the purpose of detection of a reversal of water-surface gradient near the S line of the collection system. These wells (SP and SO) are located just northeast of the majority of the S line of collection wells. Figure 4.2-4 graphically illustrates that the alluvial hydraulic gradient is very flat in the area of wells SM, SN, SO and SP. Water-level rises were observed in wells SM, SN, SO and SP in 2003 and 2004 due to injection of fresh water into the injection line with overall steady water levels in 2015. The water levels actually indicate a very flat gradient between wells SP and SO for 2015. The injection of water into the injection line has caused slightly more rise in well SP than SO. The head is larger near the injection line than near wells SP and SO. The water levels between wells SM and SN shows a slight reversal in the water level elevation.

Wells S2 and S5 are the two reversal wells down-gradient of the S line of collection wells (see Figures 4.1-1 and 4.2-2 for their location). Recent data from these two wells indicate a very good reversal of the ground water flow direction due to the collection wells near well S5 and the rise in water levels caused by the injection line except for eight higher water levels from well S5 which are considered outliers (see Figure 4.2-5). This data shows that a strong reversal has been maintained between wells S2 and S5.

Figure 4.2-6 presents water-level elevation data for a group of wells located west of the S line of collection wells. Water-level elevations in each of these wells were maintained higher in 2015 due to the injection into the injection line. The late 2015 water-level elevation in well DC declined.

The alluvial water levels north of Murray Acres were fairly steady in 2015 in wells M9, MO, MQ and MX (see Figure 4.2-7). The lower water-level elevation in wells M9 and MQ are due to the pumping of water from these two collection wells in 2011 through 2015as RO collection supply wells.

Wells B and BA are monitored in order to define the reversal in the ground water gradient between the M and J injection lines and the D collection line. Figure 4.2-8 presents water-level elevation data for wells B and BA and indicates a very flat gradient between these two wells in 2015. Increased collection rate upgradient of these two wells is needed in 2016.

Water levels in this area sharply rose after the addition of the R.O. product injection into the new EMA injection lines until the second quarter of 2006 when the water levels overall declined until mid-2008 when the level steadily rose for the remainder of 2008 and have overall been fairly steady through 2010. An overall gradual rise has been observed the last few years.

Figure 4.2-9 presents water-level elevation plots for alluvial wells B8, B12, B13 and D1, which are located near the lined collection ponds. This plot shows that these water levels overall rose in 2015.

Water-level elevations in the alluvial aquifer near the Small Tailings collection system are presented on Figure 4.2-10 for reversal wells DZ and KZ. Well DZ is near the D collection line and well KZ is close to the K injection line and, therefore, is naturally down-gradient of well DZ. This plot shows that, during late 2009 and again in 2014 and some of 2015, the reversal of the ground water gradient was lost between the line of injection and line of collection. Additional collection is needed in 2016 to reverse this gradient.

Figure 4.2-11 presents water-level elevation data for wells C10, C12, K7 and L6. This data reflects the changes in water levels near the STP. Injection of R.O. product and fresh water has caused the higher water-level elevations observed in well L6 with steady levels in 2011 through 2015. Steady to gradually declining water levels in wells C10 and K7 were observed in 2015. The rise in water level in well C12 was due to less pumping of this well in some of 2015.

Figure 4.2-12 shows the water-level elevation plots for wells K8, K9, K11and X. Water levels overall declined in these wells in 2015.

Water-level elevations in the alluvial aquifer south of the Broadview Acres injection system gradually rose in 2015 due to the lack of pumping in Felice Acres for South Off-Site collection supply (see water levels for wells 490, 497, FB, GH and SUB3 on Figure 4.2-13).

Water levels in the former flood irrigation area south of Murray Acres were fairly steady in alluvial wells 555, 556, 557, 844, 845 and 846 during 2015 (see Figure 4.2-14). A small decline in the water levels in wells 556 and 557 were observed in 2015.

Figure 4.2-15 presents water-level hydrographs for five wells in Section 3. Water levels rose in 2015 in these wells due to fresh water injection and reduced Off-site pumping. The larger rise in well 866 in late 2015 seems to be an outlier. Figure 4.2-15A presents water-level

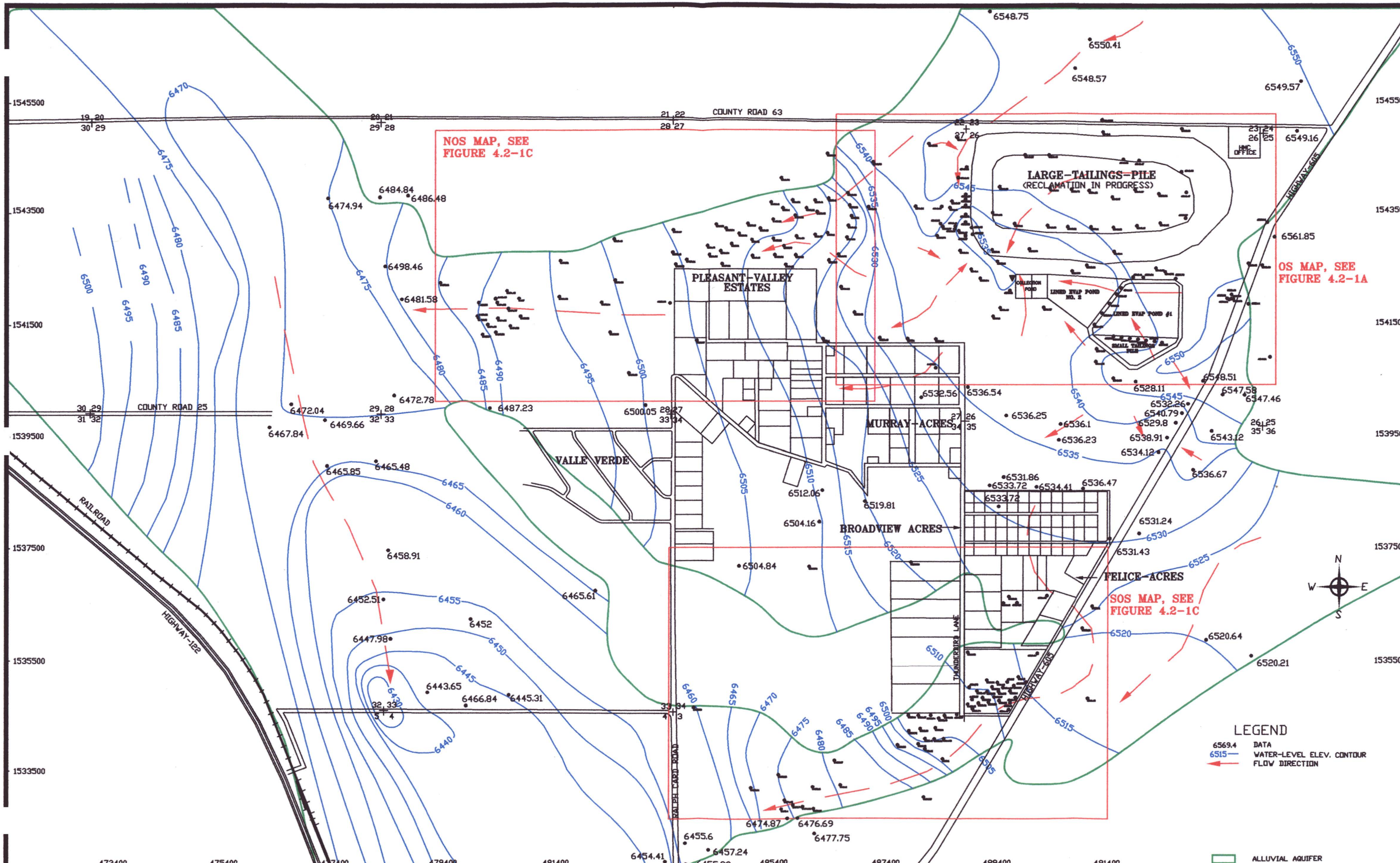
elevations for five of the R wells with the levels in wells R3 and R4 showing the affects from pumping these wells in 2014.

Water-level hydrographs for six wells in the former irrigation area in Section 28 are presented on Figure 4.2-16. Water levels in 2015 were higher than those at a similar time in 2014.

Water-level hydrographs for five wells just west of the former Section 28 irrigation area are presented on Figure 4.2-16A. Water levels generally rose in 2015 in these wells.

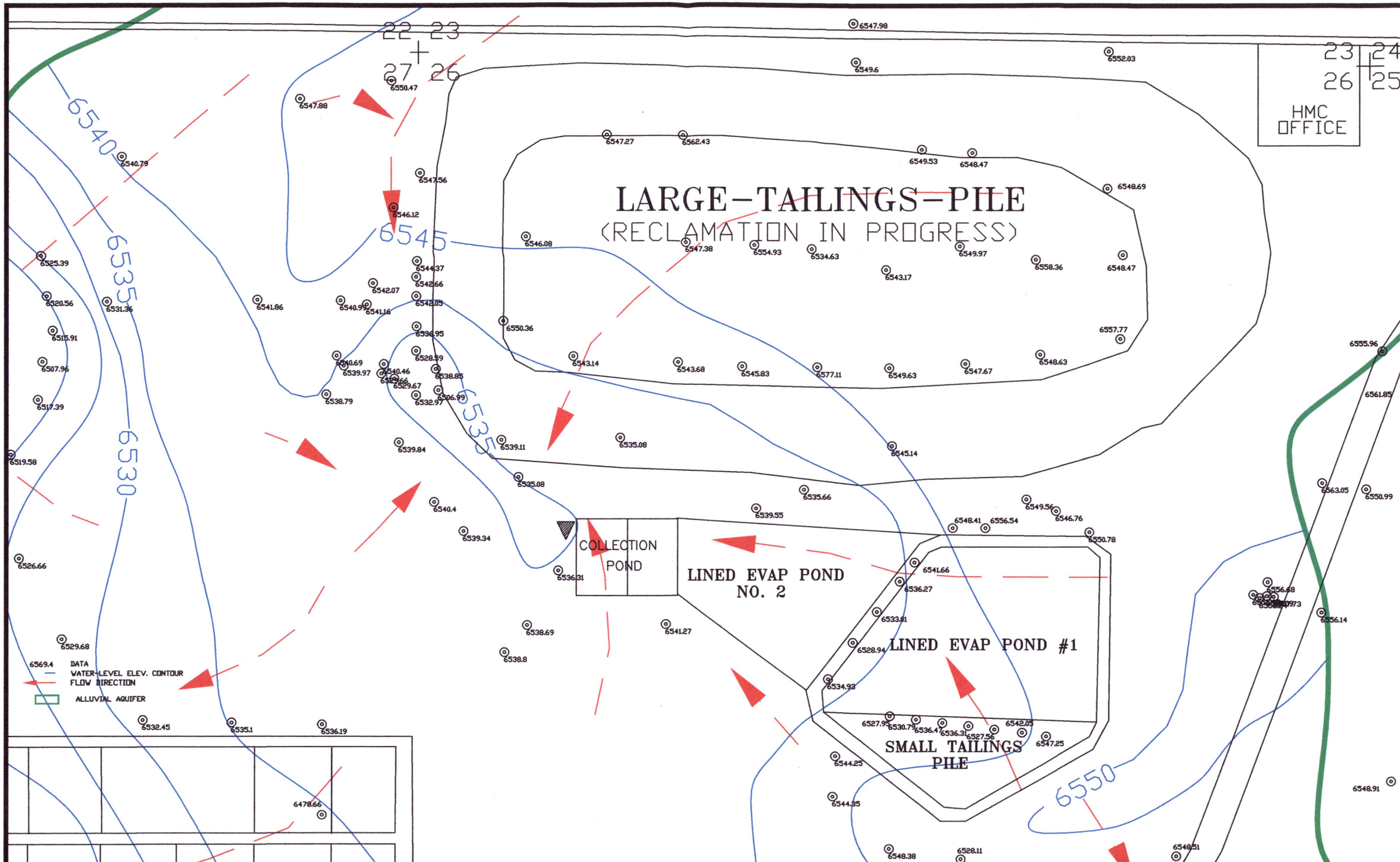
Figure 4.2-17 presents the water- level time plots for the group of wells northwest and southwest of the Section 28 collection wells. Water levels rose in these wells the last three years.

Figure 4.2-18 presents the water-level plots for the Section 33 wells shown on Figure 4.2-2. No pumping from the Section 33 wells was done in 2013 through 2015. Water levels overall rose in 2015 in these wells.



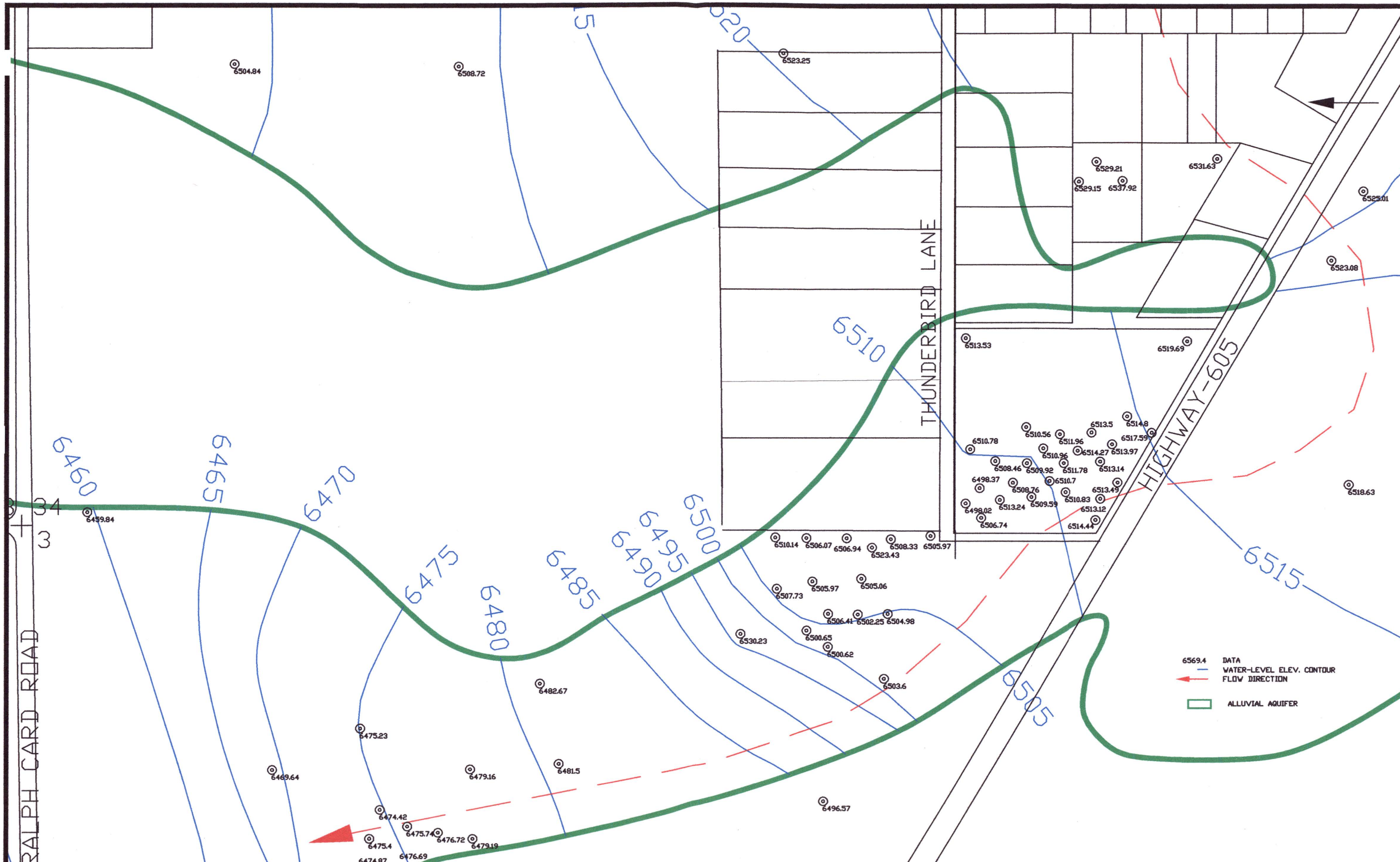
SCALE: 1"=1600'
C:\PROJECTS\ 2016-06
1600QAL15
DATE: 2/11/16

FIGURE 4.2-1. WATER-LEVEL ELEVATIONS OF THE ALLUVIAL AQUIFER, FALL 2015, FT-MSL



SCALE: 1"=500'
C:\PROJECTS\ 2016-06
1600QAL15
DATE: 2/11/16

FIGURE 4.2-1A. WATER-LEVEL ELEVATIONS OF THE ALLUVIAL AQUIFER, OS, FALL 2015, FT-MSL



SCALE: 1"=500'
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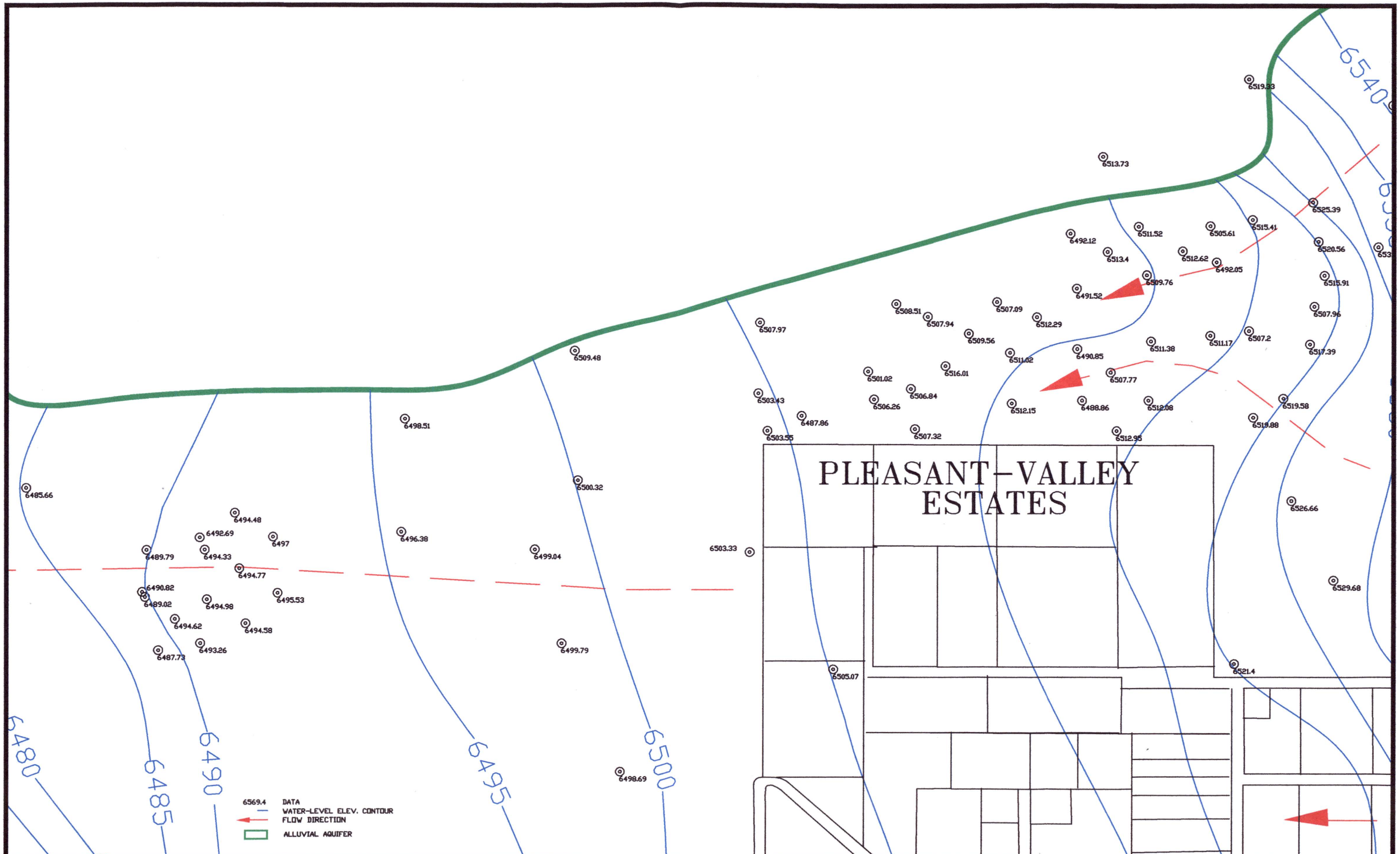
1600QAL15
DATE: 2/11/16

FIGURE 4.2-1B. WATER-LEVEL ELEVATIONS OF THE ALLUVIAL AQUIFER, SOS, FALL 2015, FT-MSL



SCALE: 1"=500'
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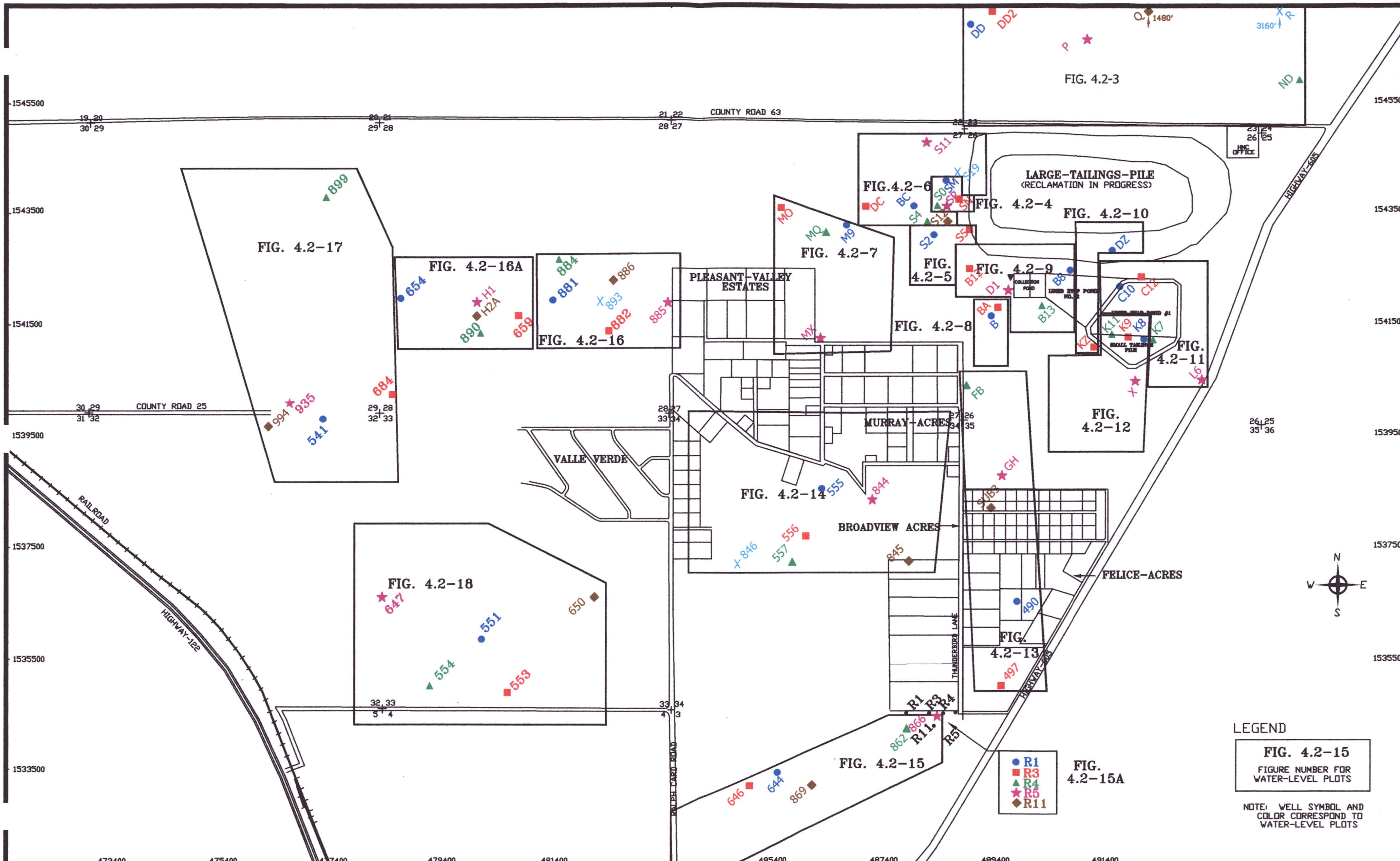
1600QAL15
DATE: 2/11/16

FIGURE 4.2-1C. WATER-LEVEL ELEVATIONS OF THE ALLUVIAL AQUIFER, NOS, FALL 2015, FT-MSL



SCALE: 1"=1600'
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DATE: 2/11/16

FIGURE 4.2-2. LOCATION OF ALLUVIAL WELLS WITH WATER-LEVEL PLOTS, 2015

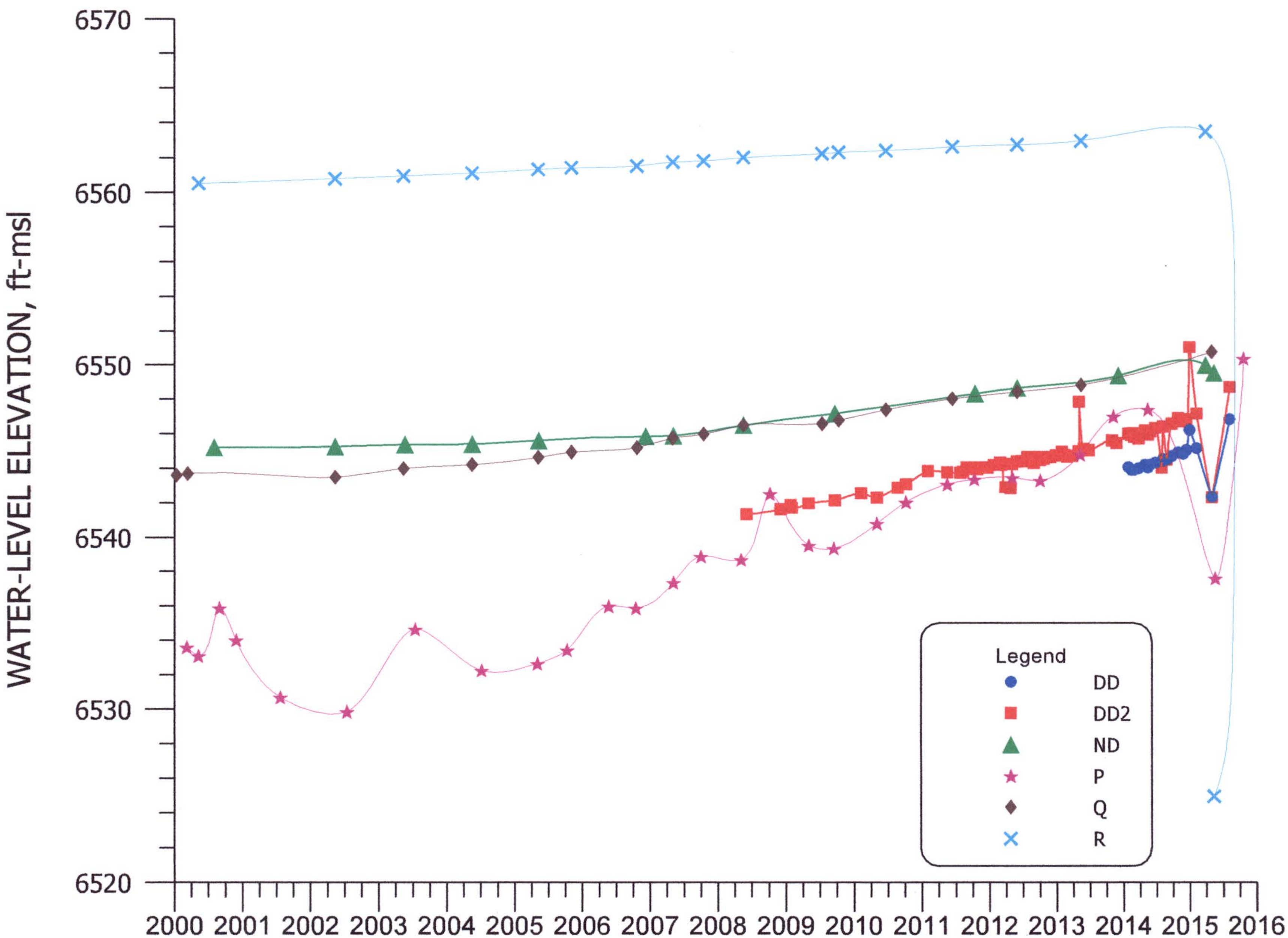

FIGURE 4.2-3. WATER-LEVEL ELEVATION FOR WELLS DD, DD2, ND, P, Q, AND R.

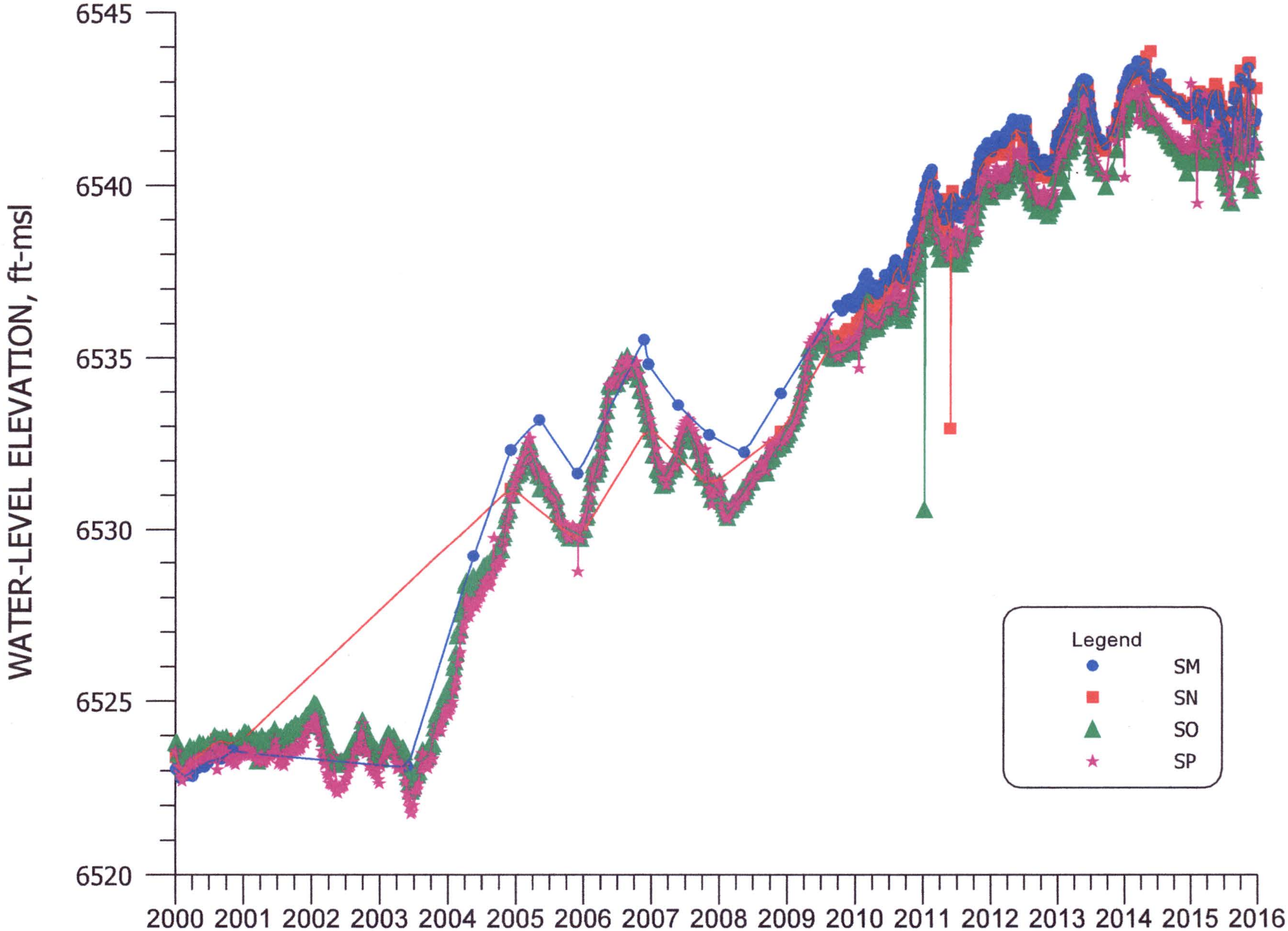

FIGURE 4.2-4. WATER-LEVEL ELEVATION FOR WELLS SM, SN, SO, AND SP.

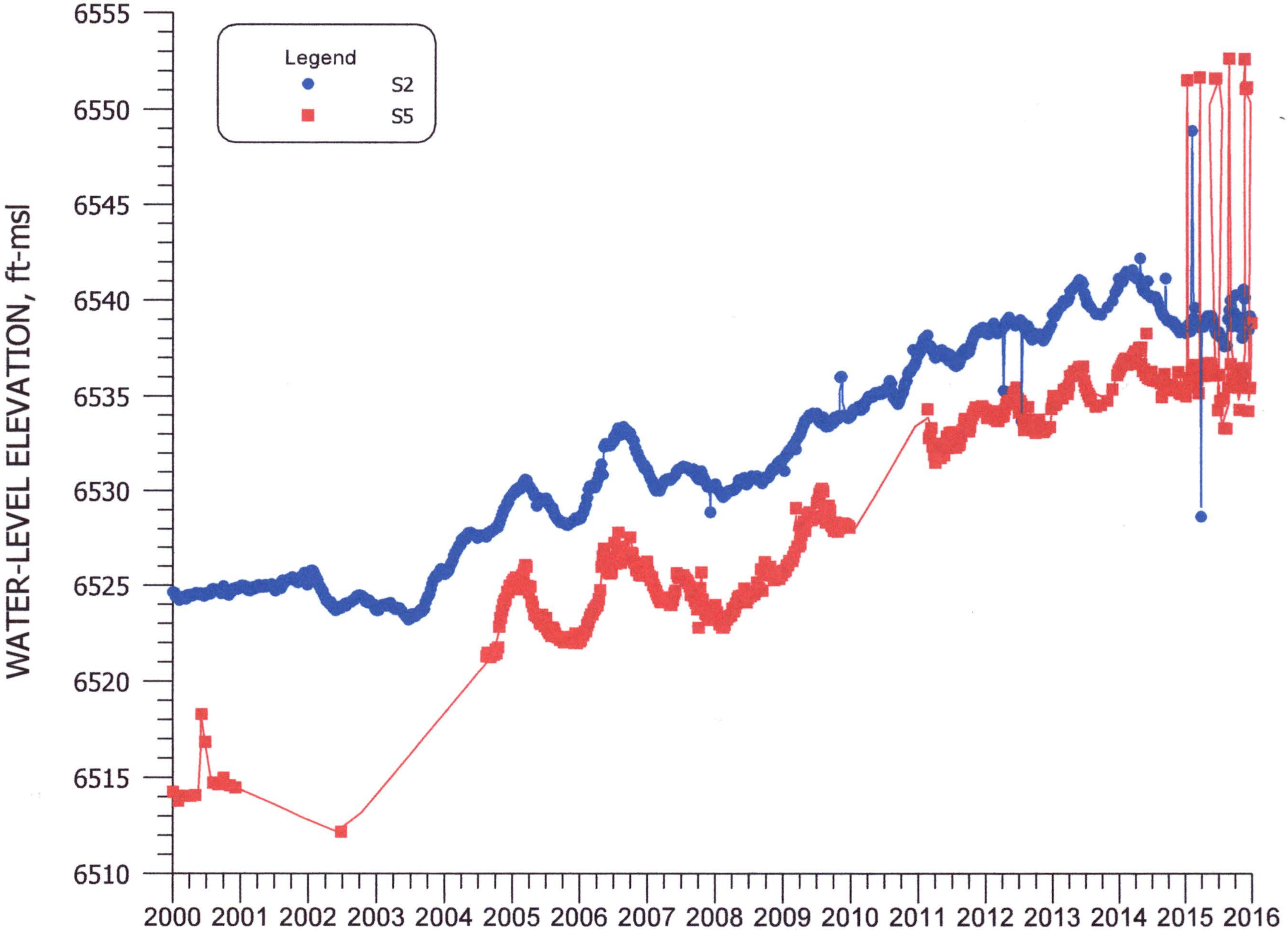

FIGURE 4.2-5. WATER-LEVEL ELEVATION FOR WELLS S2 AND S5.

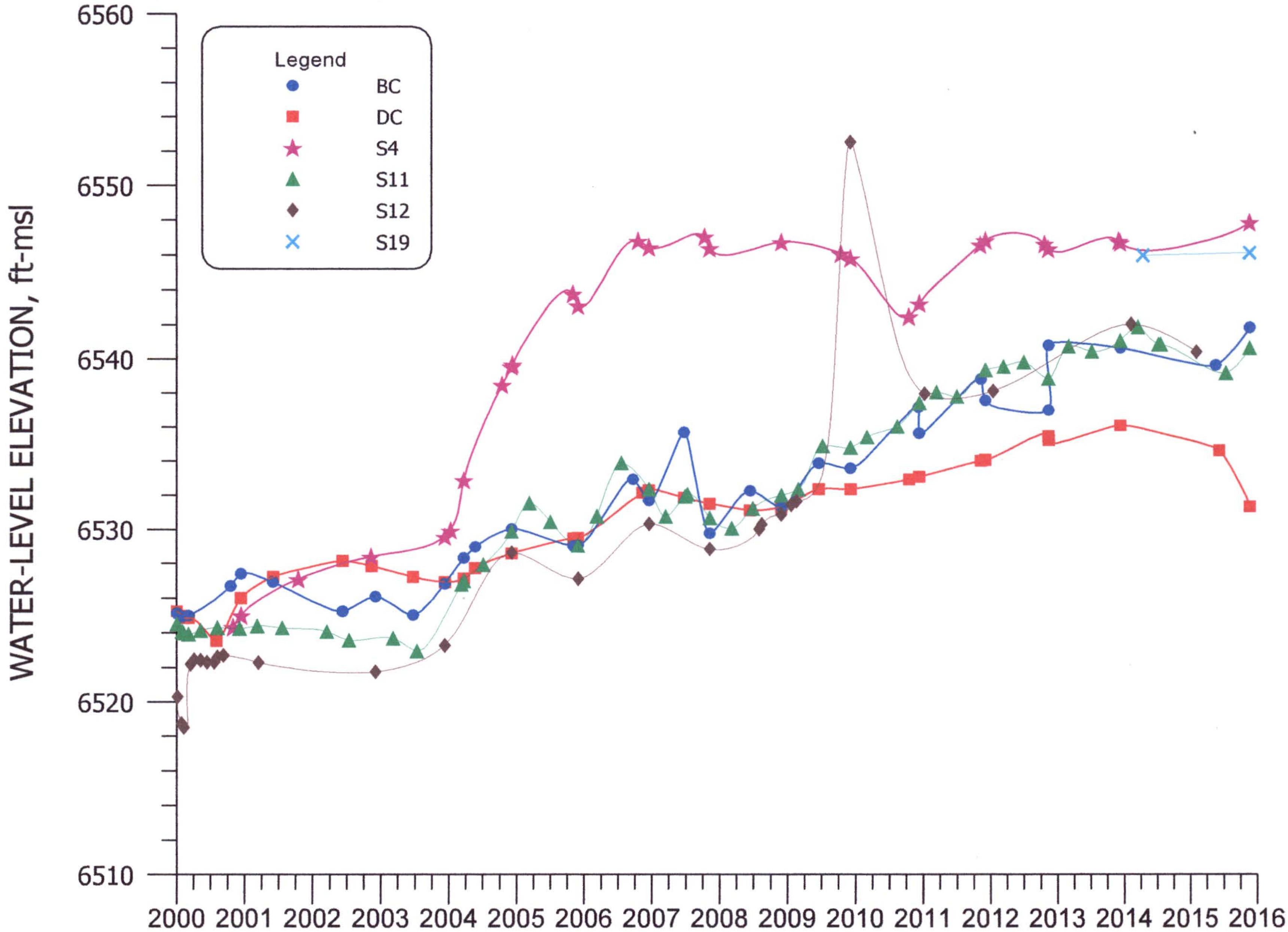

FIGURE 4.2-6. WATER-LEVEL ELEVATION FOR WELLS BC, DC, S4, S11, S12, AND S19.

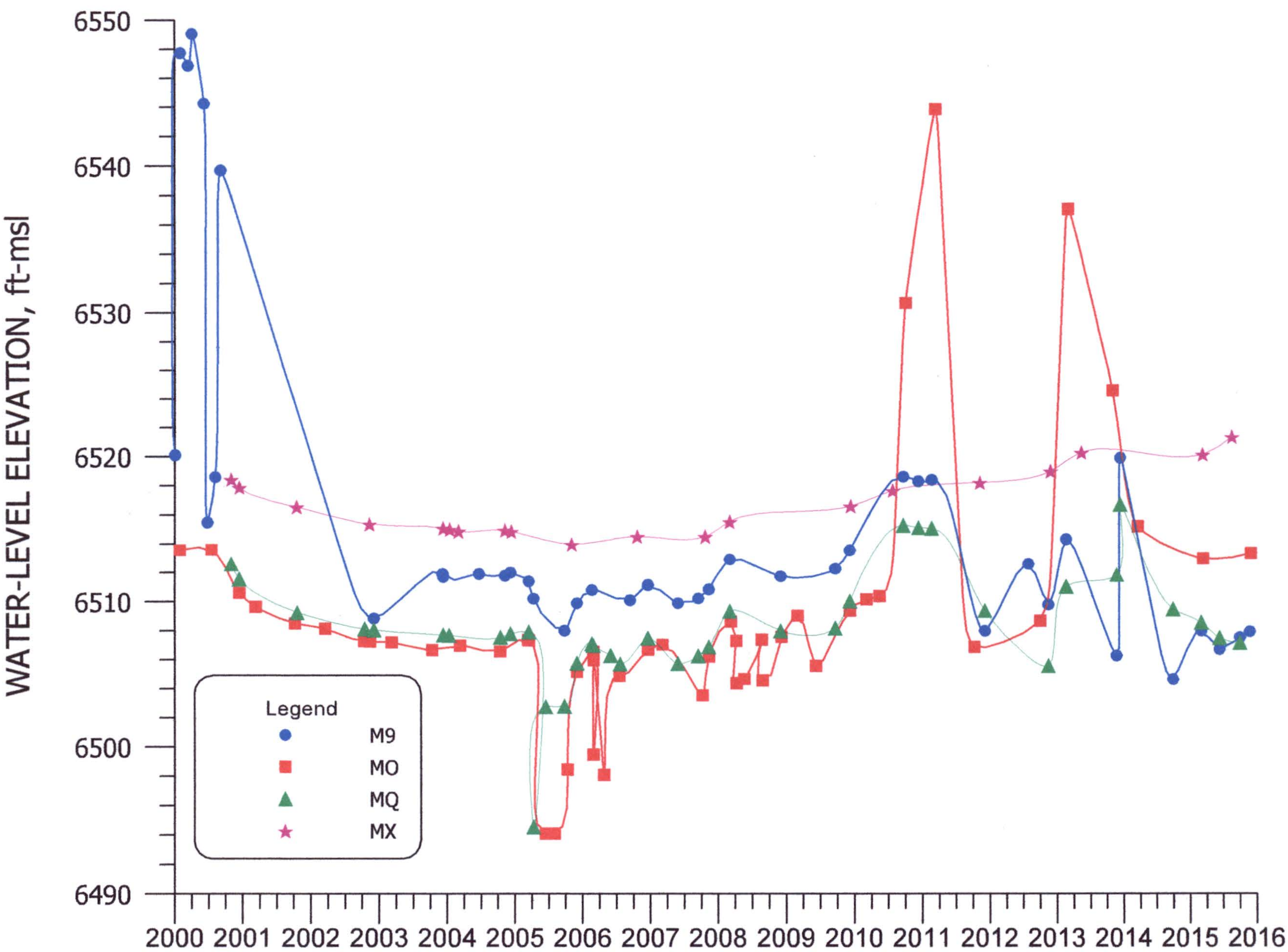

FIGURE 4.2-7. WATER-LEVEL ELEVATION FOR WELLS M9, MO, MQ, AND MX.

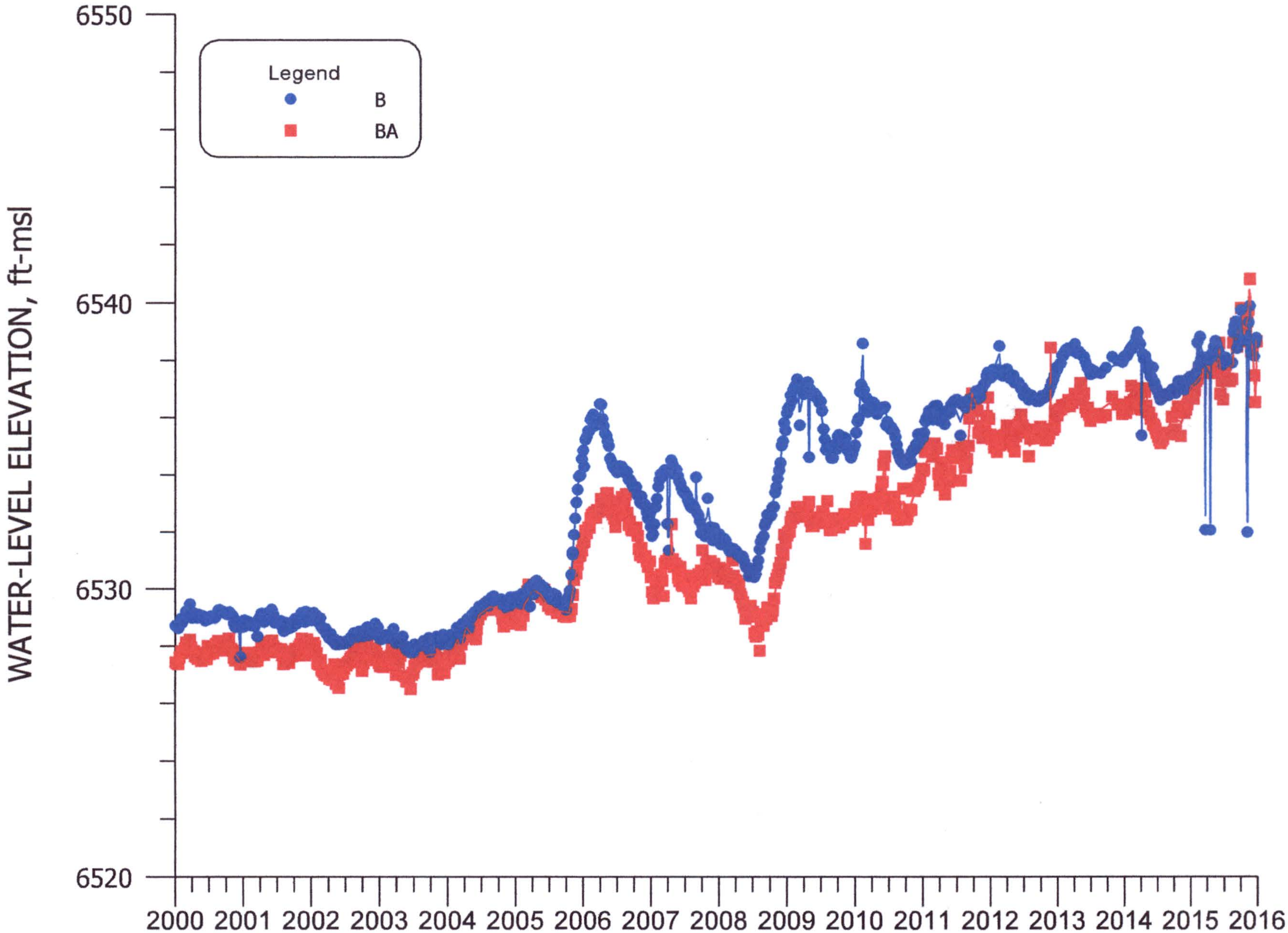

FIGURE 4.2-8. WATER-LEVEL ELEVATION FOR WELLS B AND BA.

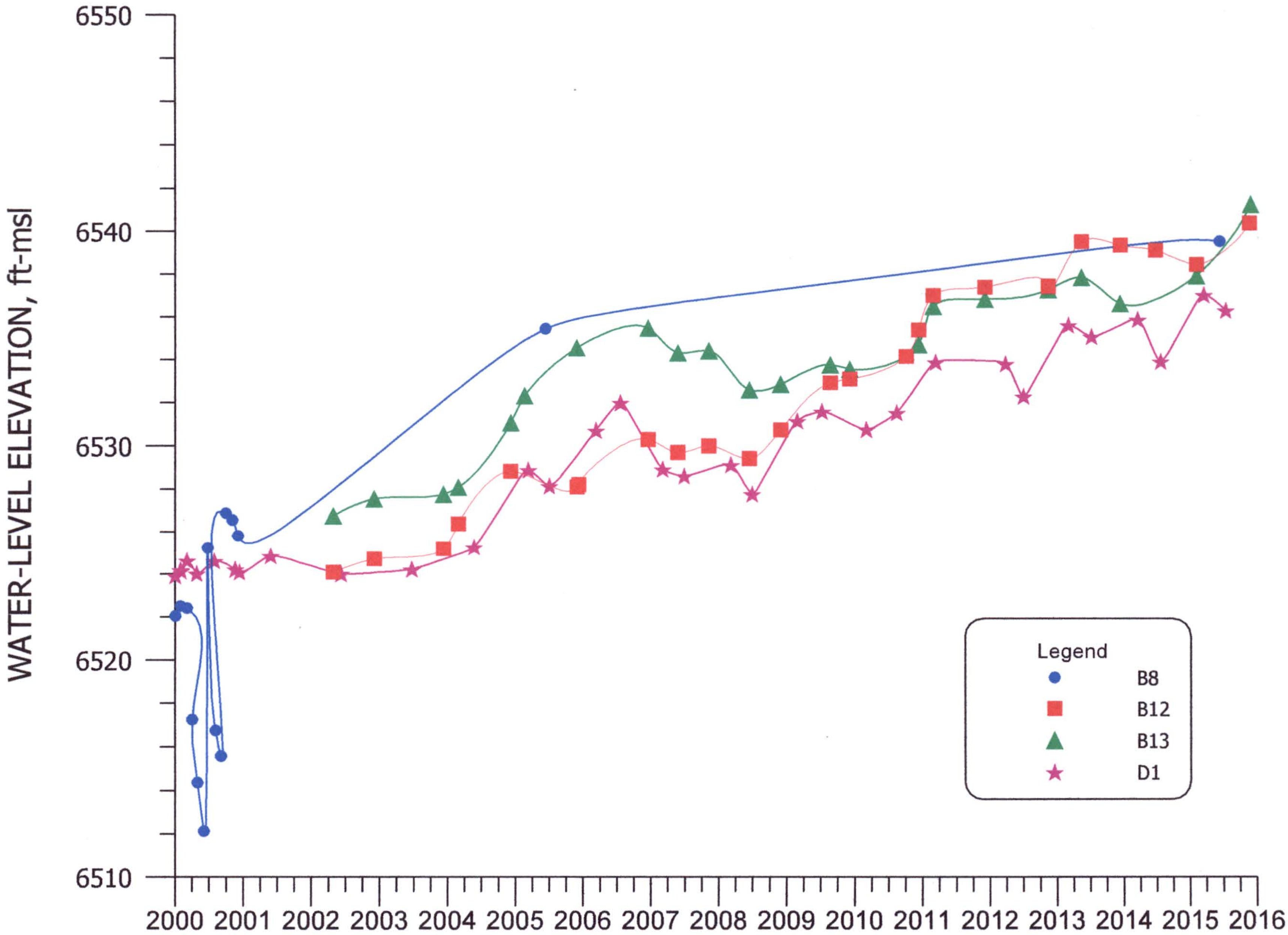

FIGURE 4.2-9. WATER-LEVEL ELEVATION FOR WELLS B8, B12, B13, AND D1.

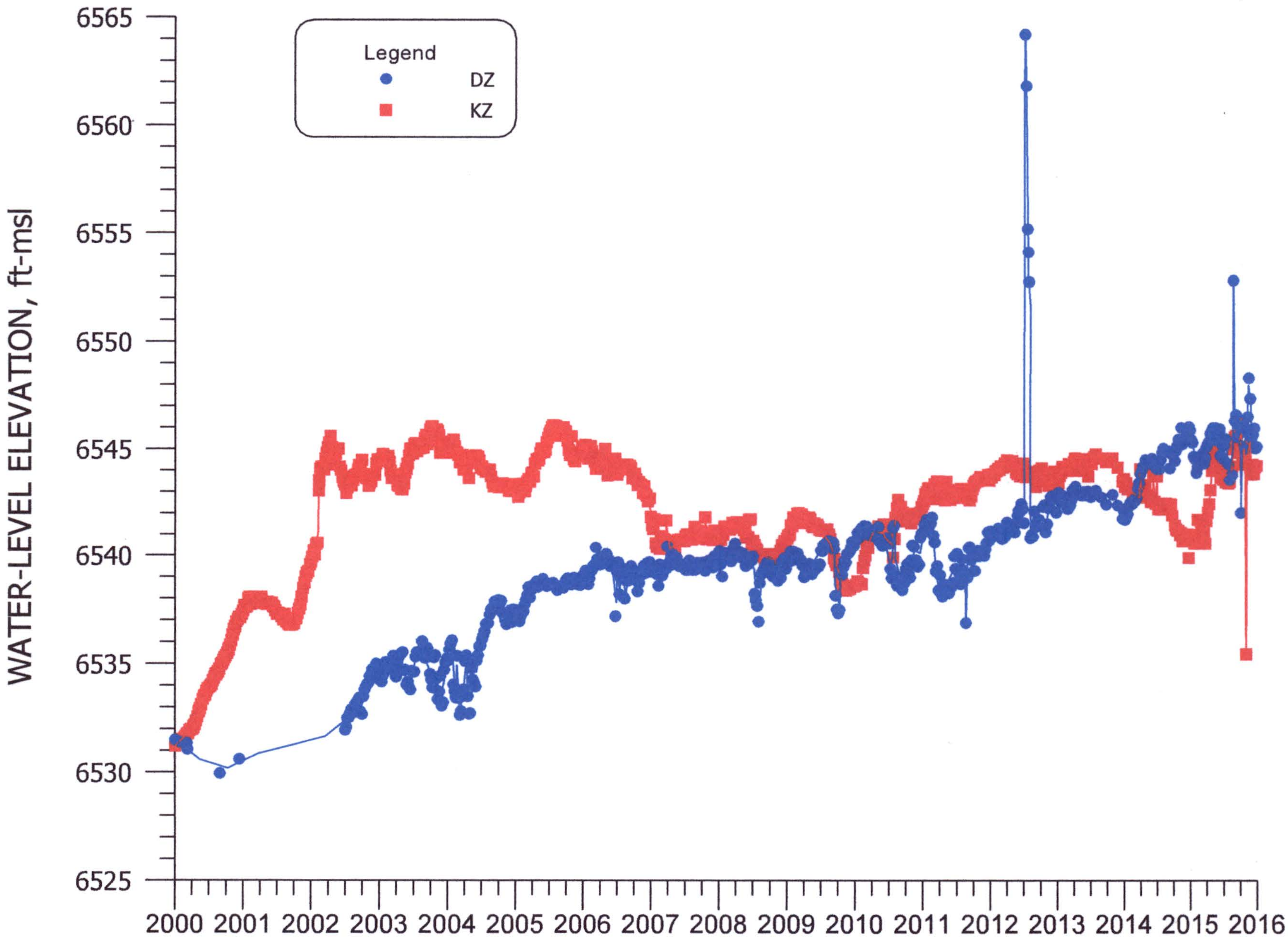

FIGURE 4.2-10. WATER-LEVEL ELEVATION FOR WELLS DZ AND KZ.

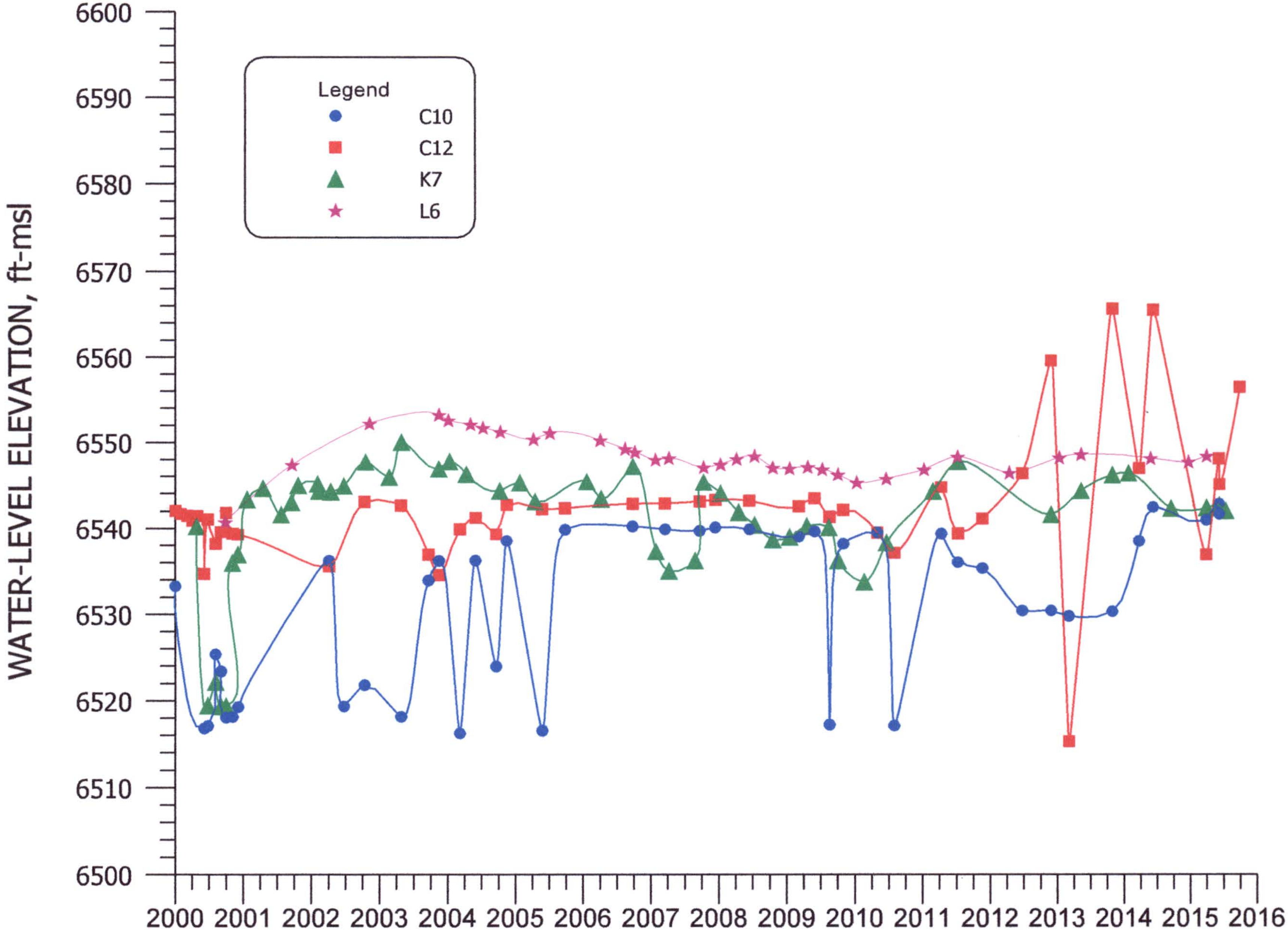

FIGURE 4.2-11. WATER-LEVEL ELEVATION FOR WELLS C10, C12, K7, AND L6.

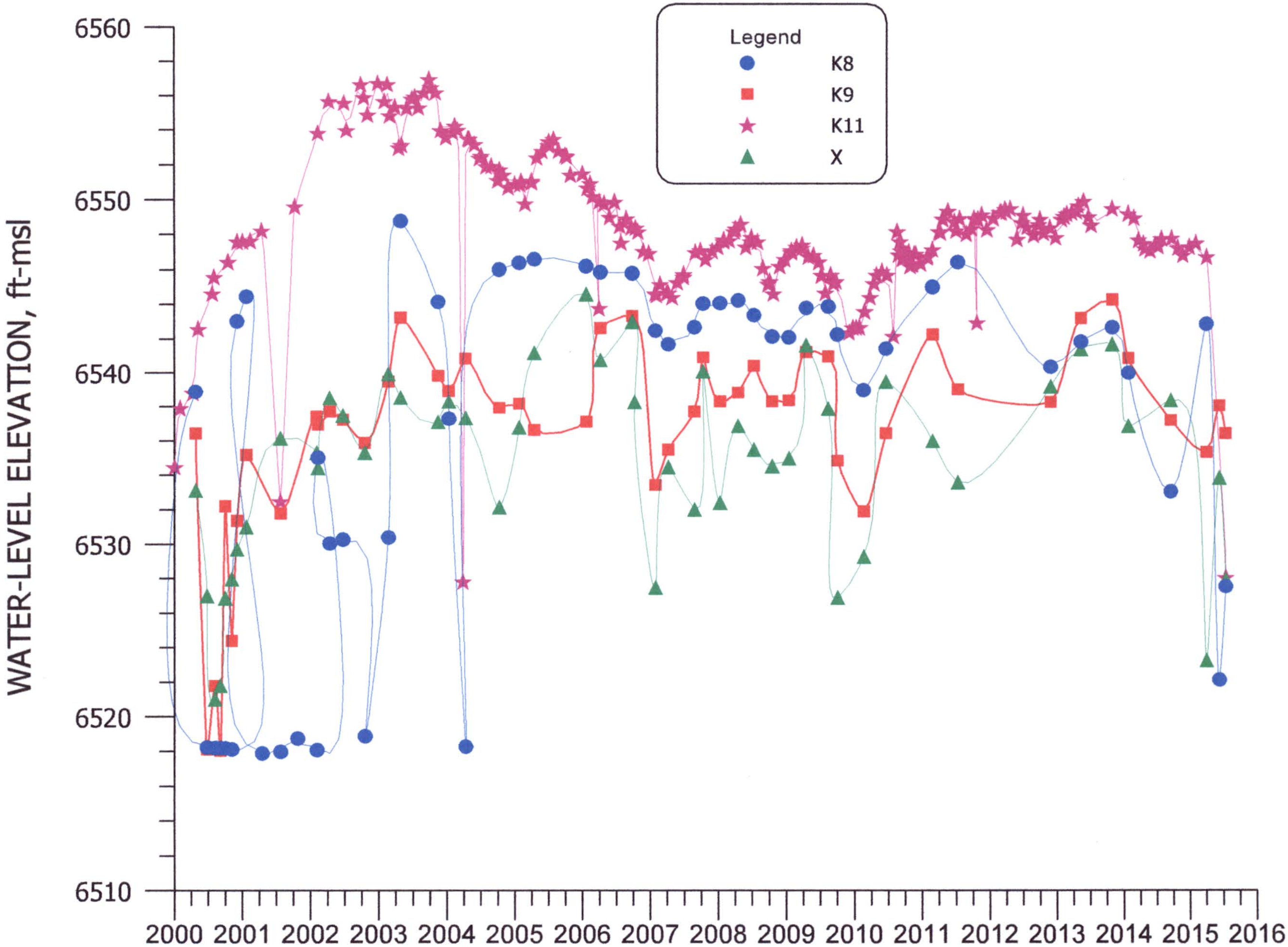

FIGURE 4.2-12. WATER-LEVEL ELEVATION FOR WELLS K8, K9, K11, AND X.

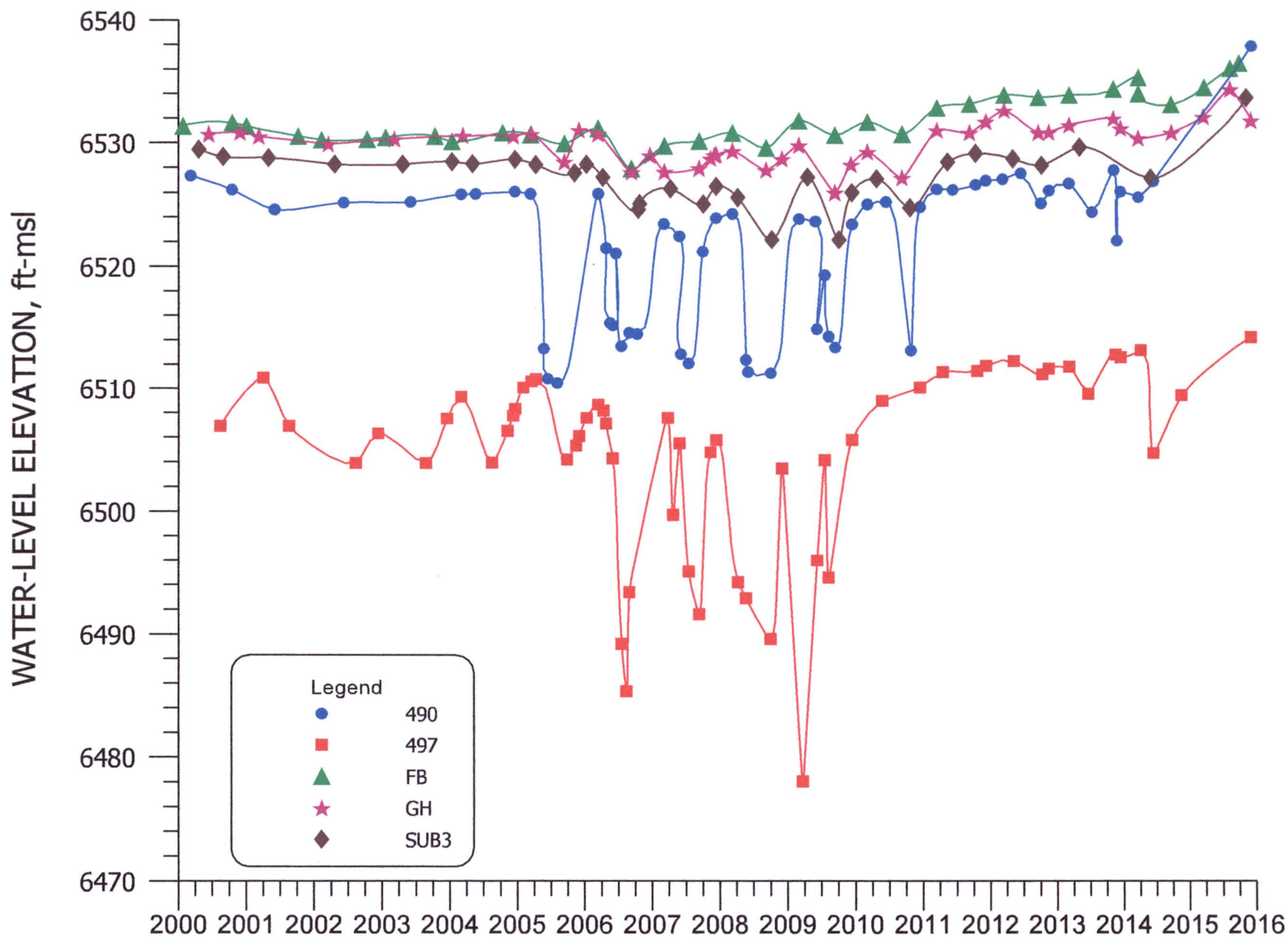

FIGURE 4.2-13. WATER-LEVEL ELEVATION FOR WELLS 490, 497, FB, GH, AND SUB3.

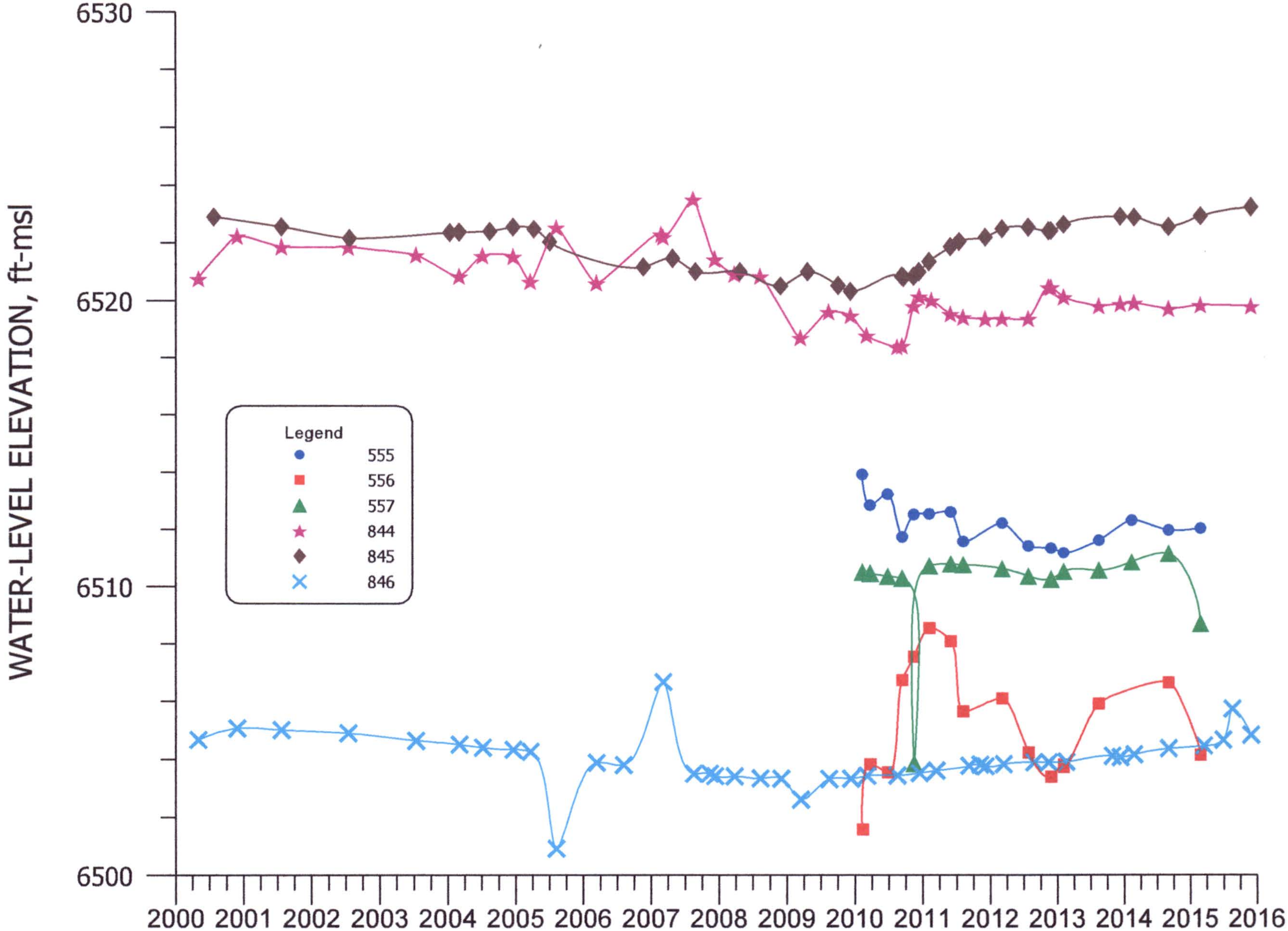

FIGURE 4.2-14. WATER-LEVEL ELEVATION FOR WELLS 555, 556, 557, 844, 845, AND 846.

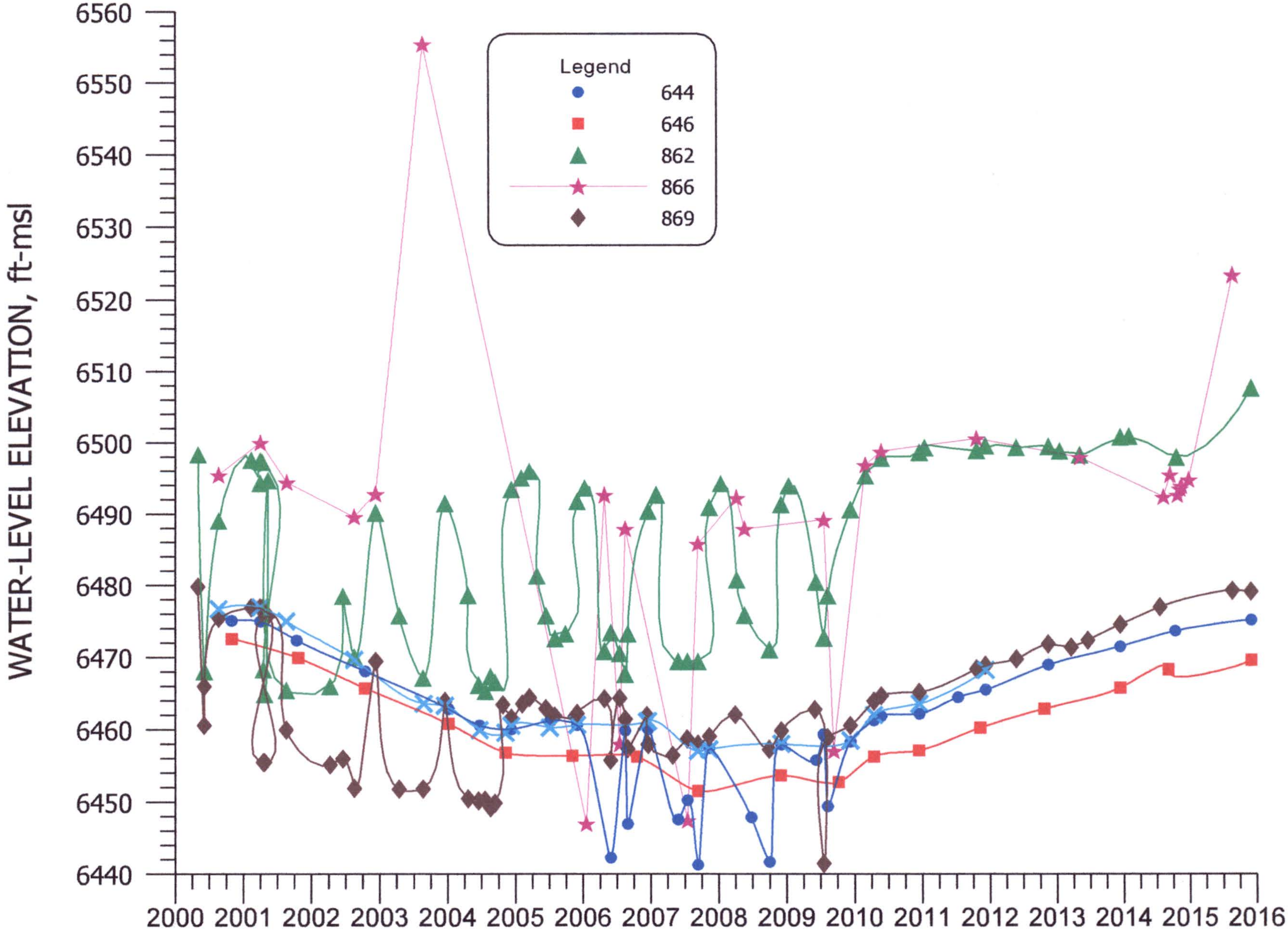

FIGURE 4.2-15. WATER-LEVEL ELEVATION FOR WELLS 644, 646, 862, 866, AND 869.

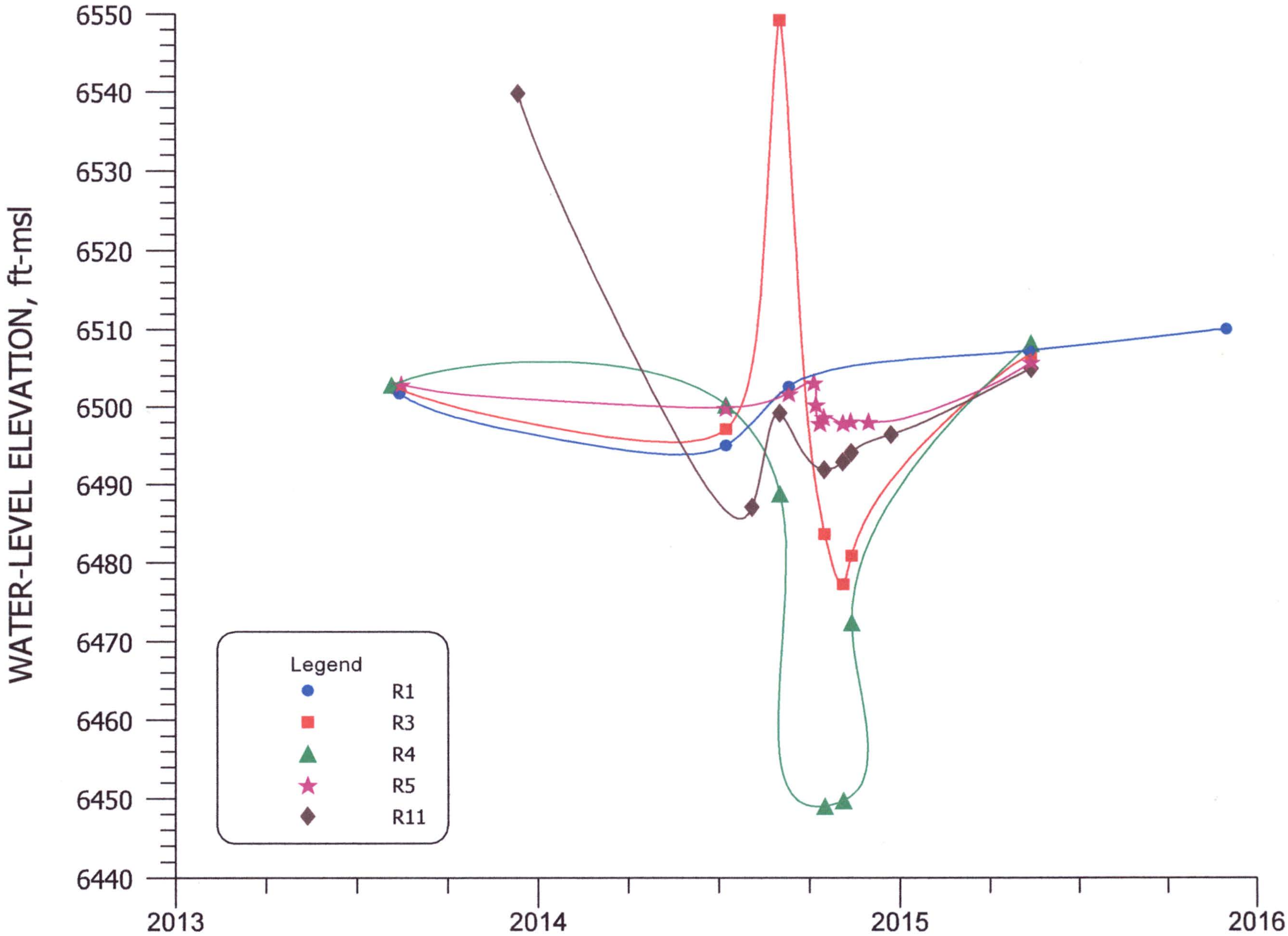

FIGURE 4.2-15A. WATER-LEVEL ELEVATION FOR WELLS R1, R3, R4, R5, AND R11.

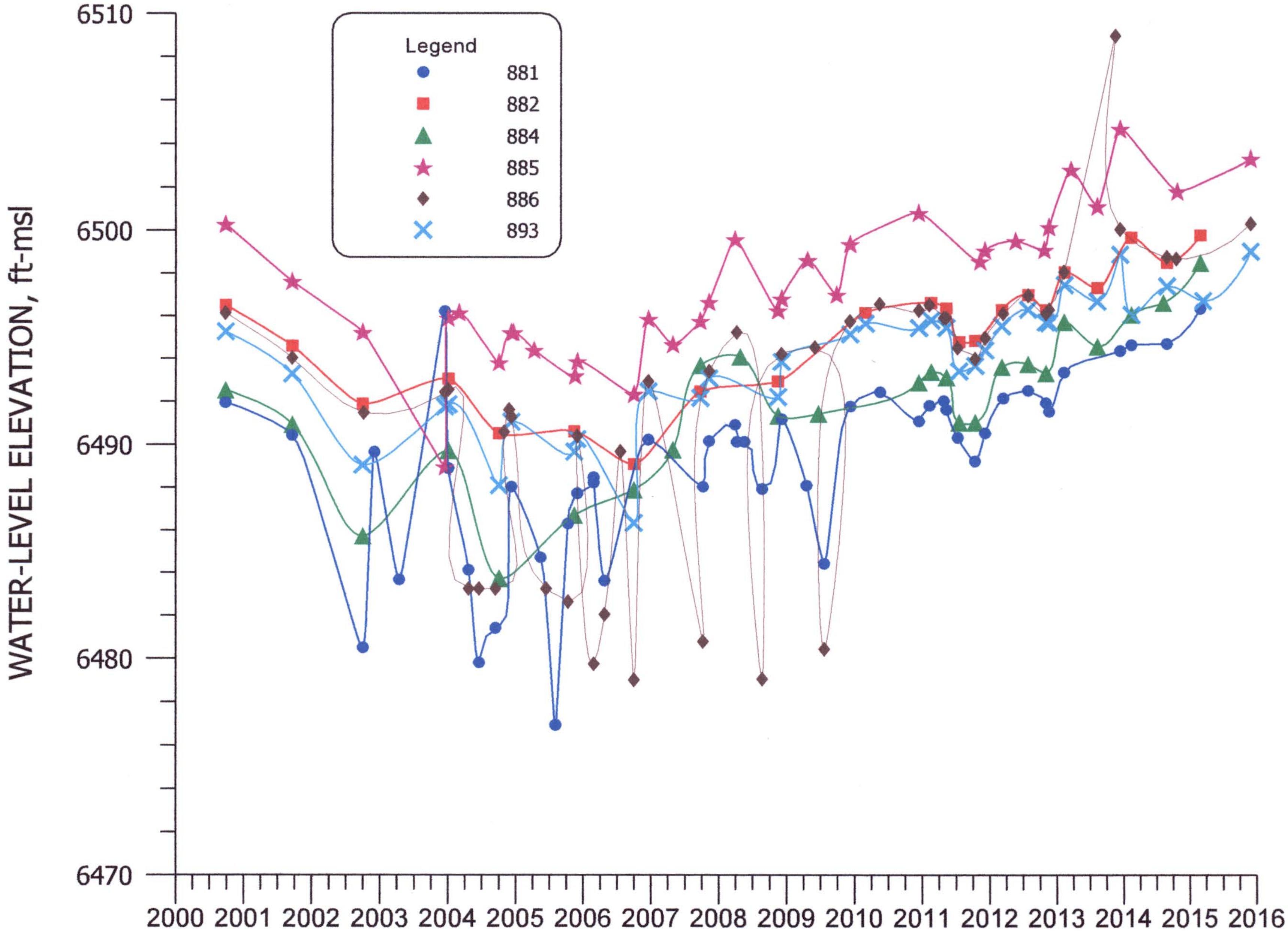

FIGURE 4.2-16. WATER-LEVEL ELEVATION FOR WELLS 881, 882, 884, 885, 886, AND 893.

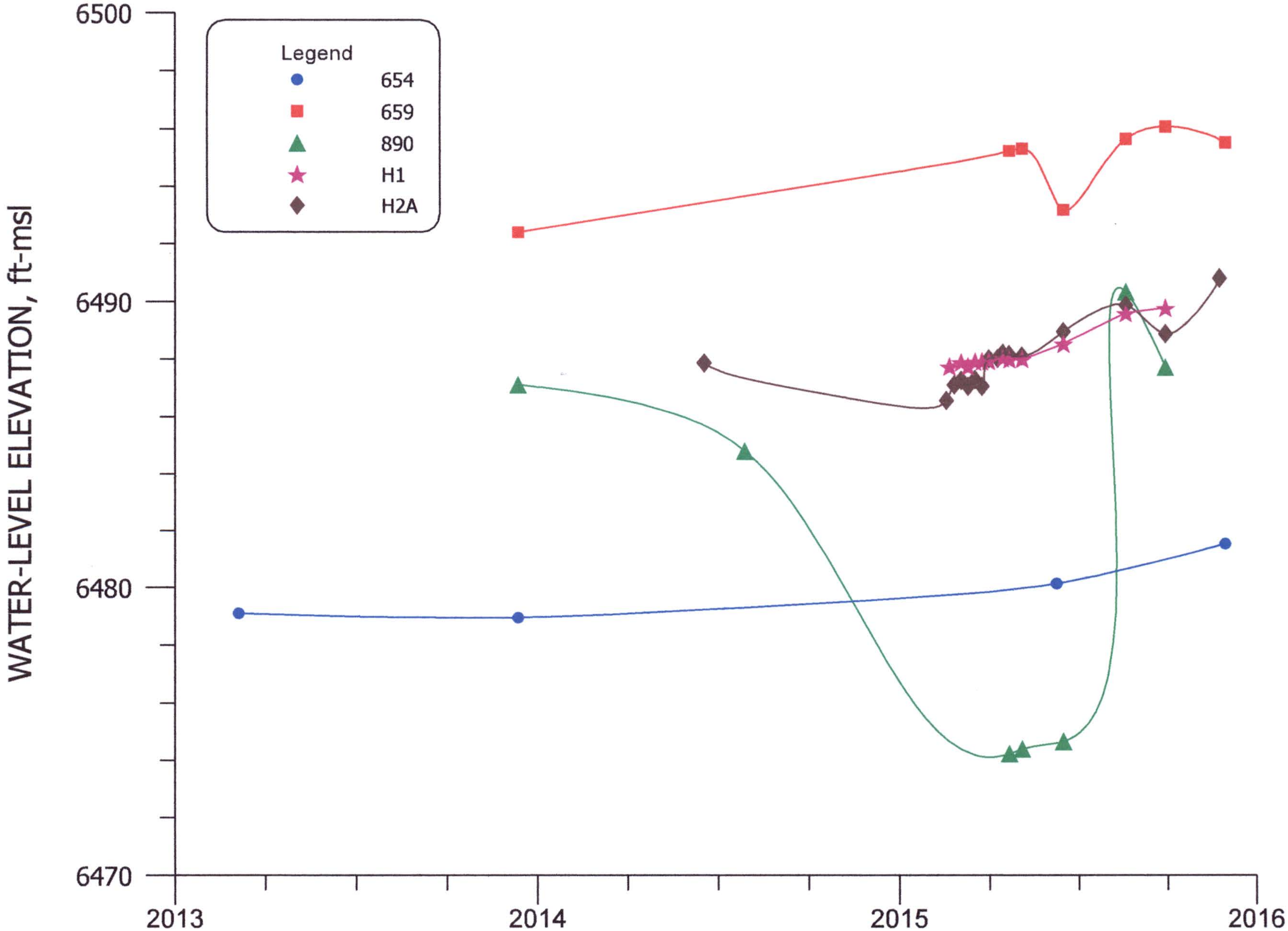

FIGURE 4.2-16A. WATER-LEVEL ELEVATION FOR WELLS 654, 659, 890, H1, AND H2A.

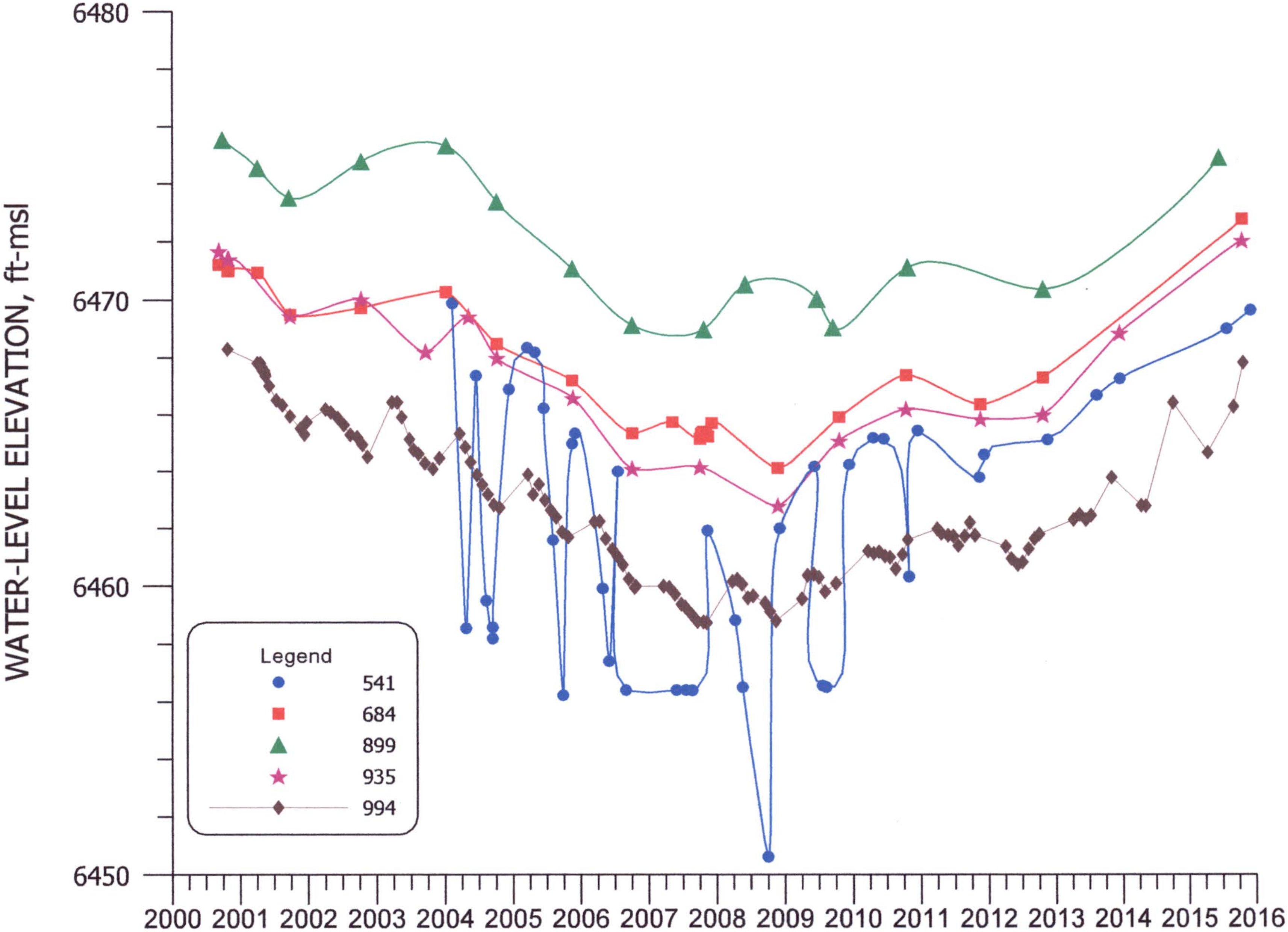

FIGURE 4.2-17. WATER-LEVEL ELEVATION FOR WELLS 541, 684, 899, 935, AND 994.

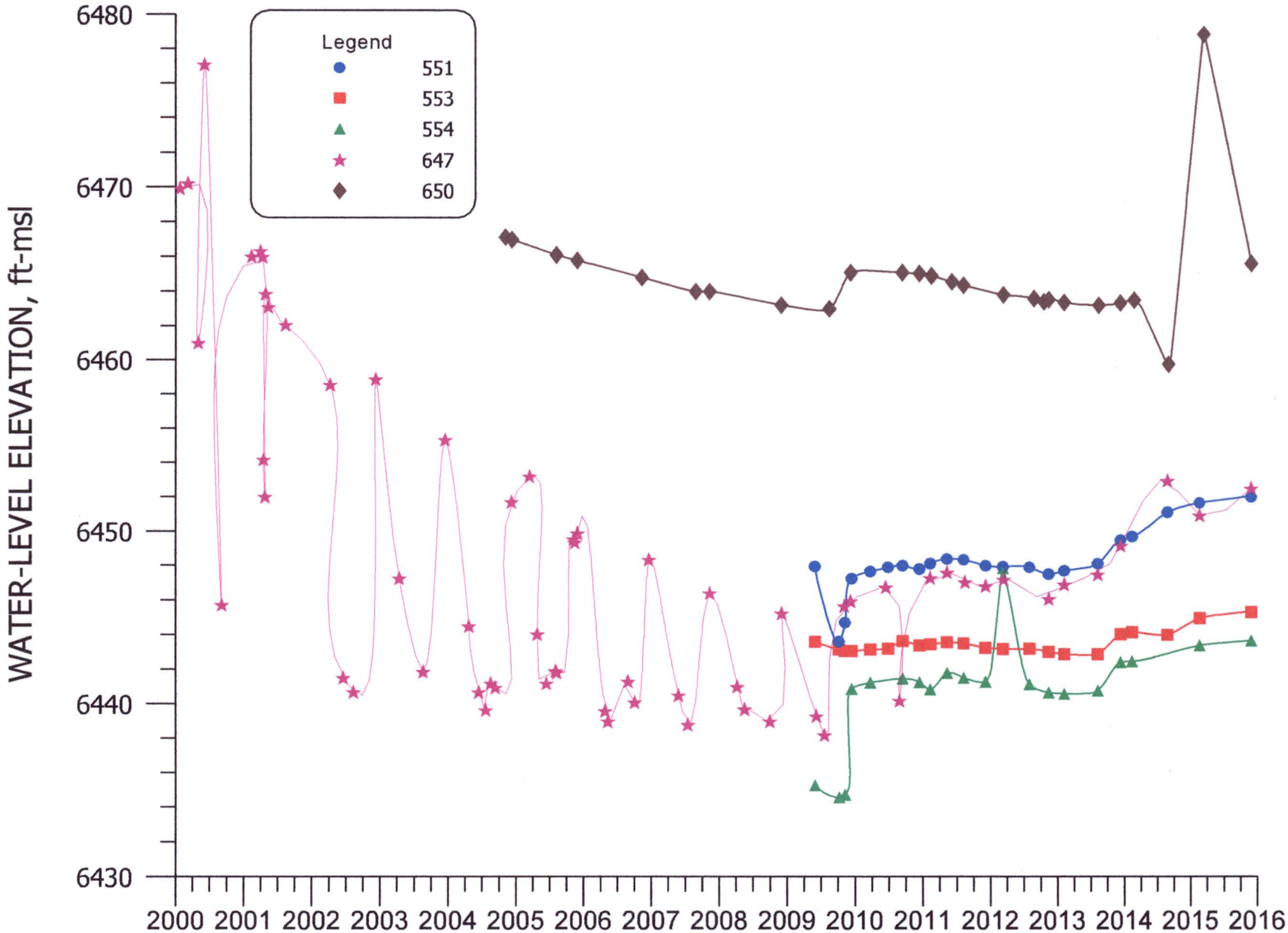

FIGURE 4.2-18. WATER-LEVEL ELEVATION FOR WELLS 551, 553, 554, 647, AND 650.

4.3 ALLUVIAL WATER QUALITY

This section presents the 2015 water-quality data for the alluvial aquifer. The major general water quality constituents that are typically measured at this site are sulfate, chloride and TDS. Sulfate concentrations are used as the primary indicator where contaminant remediation remains to be completed. Selenium, uranium and molybdenum are the primary metals of concern at this site. Nitrate, radium, chromium, vanadium and thorium are also discussed in the monitoring report, but these constituents are of only minor concern at the Grants site. Tables B.4-1 through B.4-6 in Appendix B present the 2015 alluvial water-quality data for each well. The most recent monitoring values were used for the iso-concentration contour figures presented in this section.

Colored patterns are used on the figures to delineate where concentration limits exceed the NRC site standards for each of the constituents. The standard is presented in the legend of the respective figure for each parameter. A greater than sign was added in front of the numeric value to note that the pattern shows where the standard is exceeded.

4.3.1 SULFATE - ALLUVIAL

Sulfate has been used as the primary indicator constituent for this site, because concentrations are large in the tailings solution. Concentrations of sulfate in the alluvial aquifer for 2015 are presented on Figure 4.3-1. Upgradient background well concentrations observed in 2015 ranged from 748 to 1970 mg/l. An updated statistical evaluation of the background sulfate concentration with data for a ten year period (1995 – 2004) showed that concentrations as great as 1500 mg/l could occur naturally at this site and is, therefore, the site standard. Areas where sulfate concentrations exceed 1500 mg/l are shown with a green pattern on Figure 4.3-1. This figure shows the locations of three areas where the sulfate concentrations are also posted for the On-Site (OS), the South Off-Site (SOS) and the North Off-Site (NOS) areas respectively in Figures 4.3-1A, 4.3-1B and 4.3-1C. As shown on Figures 4.3-1A, sulfate concentration in most wells on the north, east and south sides of the LTP exceeds 5,000 mg/l. The observed sulfate concentrations in the four adjacent subdivisions were less than the site standard of 1500 mg/l in 2015 except for two wells in Section 34. Sulfate concentrations were fairly stable in Section 3 in 2015 and a presented in Figure 4.3-1B. Sulfate concentrations exceeded 1000 mg/l in the southwest portion of Murray Acres, southern Pleasant Valley Estates, eastern Valle Verde and to

the southeast of Valle Verde. Sulfate concentrations also exceeded 1000 mg/l just north of Pleasant Valley in the northern portion of Section 27 and into the eastern edge of Section 28 (see Figure 4.3-1C). Down-gradient of the Grants Project site, the sulfate concentrations are all within the natural range of background except for the two wells south of Murray Acres and Pleasant Valley and, therefore, no water-quality restoration with respect to sulfate is necessary beyond the immediate Grants Project area except for these two wells. These two wells need their concentration reduced to below 1500 mg/l.

Plots of constituent concentrations versus time have been prepared for the alluvial aquifer for sulfate, TDS, chloride, uranium, selenium, molybdenum and nitrate. The groupings of wells used for these plots are shown on Figure 4.3-2. The figure numbers for each of the well groupings that correspond with the sulfate concentration versus time plots are indicated. The color and symbol used for each well are the same as those used in the time plots for each constituent. Figure numbers for the time plots of other constituents are not shown on this map; however, it is useful for the other time-concentration plots because the color, symbol and well groupings are consistent.

Figure 4.3-3 presents sulfate concentrations plotted versus time for near up-gradient background wells DD, DD2, ND, P, Q and R. A gradual increase occurred in the up-gradient well DD in the 2008 through 2012 values compared to previous recent concentrations while the 2013 through 2015 concentrations were steady except for an increase in the last 2015 value. A gradual increase in sulfate concentration has been observed in alluvial well DD2 in the last two years. Fairly steady sulfate concentrations were observed in wells ND, P, Q and R during 2015. The historical values for these wells show similar periods of short term increasing and decreasing trends in the alluvial aquifer. The changes in sulfate concentration in these wells are well within the range previously observed for sulfate in the up-gradient wells. Some of these increases could be due to the influx of ground water with higher sulfate concentrations into this area up-gradient of Homestake's background wells.

Sulfate concentrations immediately west of the LTP in alluvial wells S2, S4, S12, SM and SV were fairly steady in 2015, except for increases in wells S12 and SV (see Figure 4.3-4). The sulfate concentrations for well S2 decreased in 2010 through 2012, steady in 2013 and 2014 and a gradual decrease in 2015. A larger decrease in sulfate in well SM near the edge of the LTP

was observed in 2004 through 2010 and then steady concentrations. Overall steady values have been observed in well S4 for a longer period of time.

Figure 4.3-5 presents sulfate concentrations plotted versus time for alluvial wells M9, MO, MQ and MX situated further west of the LTP. Sulfate concentrations were fairly stable in alluvial wells M9, MQ and MX in 2015. Values increased in well MO.

Figure 4.3-6 presents sulfate concentration versus time plots for alluvial wells 802, B12, D1, M3 and S3. Large increases in sulfate concentrations were observed in wells D1 and S3 in 2015. Fairly steady concentrations in wells 802, B12 and M3 were observed in 2015.

Figure 4.3-7 presents time plots of sulfate concentrations for wells B5, B11, T2, T4, T12 and T21. The sulfate concentrations in wells B5, B11, T4 and T12 were fairly steady during 2015. A small sulfate concentration increase was observed in wells T2 and T21 in 2015.

Figure 4.3-8 presents plots of sulfate concentrations versus time for alluvial wells on the west side of the STP. Sulfate concentration decreased in wells C6 and C8 in 2015. The variations observed in these two wells indicate that the restoration front is near these two wells. A small increase was measured in wells C10 and C12.

Figure 4.3-9 presents sulfate concentrations versus time for alluvial wells on the STP and the south side of the STP. Sulfate concentrations in these wells were all small in 2015 with small variations. Some of these small changes in sulfate concentrations are due to the switching to fresh water injection in this area in place of the R.O. product injection. R.O. product water injection had reduced sulfate concentrations in these wells to very low levels over the previous years.

Figure 4.3-10 shows the sulfate concentrations for the STP collection wells 1U, K4, K5, K7 and K8. Fairly steady sulfate concentrations were observed in these wells during 2015.

Time plots of sulfate concentrations in collection wells located southeast of the STP are presented on Figure 4.3-11. This figure shows reasonably steady sulfate concentrations in 2015 in wells L, L6, L7, L8, L9 and L10 with a general very small increase in the sulfate concentration in this area.

Figure 4.3-12 presents sulfate concentration time plots for Broadview Acres alluvial wells SUB2 and SUB3 and alluvial wells F, FB and GH north of Broadview Acres. Similar and steady concentrations were observed in these wells in 2015.

Figure 4.3-13 presents sulfate concentrations versus time for Felice Acres alluvial wells 490, Q3, Q5, Q43 and Q50. The sulfate concentrations in wells 490 and Q3 were fairly steady in 2015. The sulfate concentration from wells Q5, Q43 and Q50 are slightly higher than the value from well Q3.

Figure 4.3-14 contains time plots of sulfate concentrations for wells in and near the former flood irrigation area for alluvial wells 555, 556, 557, 844, 845 and 846. This plot shows that sulfate concentrations in water taken from alluvial wells 844 and 846 became fairly steady in 2014 and 2015 while a gradual decline was observed in well 845. Concentrations were fairly steady in alluvial wells 555, 556 and 557 during 2015.

Figure 4.3-15 presents the sulfate concentration time plots for six wells in Section 3 (see Figure 4.3-2 for the location of these wells). Sulfate concentrations in the Section 3 alluvial wells have been fairly steady over the last several years except for the higher value from well 862 which is thought to be a lab error due to the lack of change in the TDS concentration. Figure 4.3-15A presents the sulfate concentration time plots for six new R collection wells in the northeast corner of Section 3 near wells 866, 862 and 540 (see Figure 4.3-2 for the location of these wells). Collection and fresh water injection in the R wells was started in July of 2014. This plot shows that the sulfate concentration in these collection wells did not change much due to the fresh water injection sulfate concentration being very similar.

The sulfate concentrations in water from six wells near the Section 28 center pivot irrigation system are presented on Figure 4.3-16. The decline in sulfate concentrations that occurred in monitoring well 884 during 2005 and 2006 was due to the movement of fresh water that was injected in Section 28. Sulfate concentrations well 884 were slightly higher in 2011 through 2014 with a small decline in 2015. A sulfate decline continued in well 886 in 2009 but increased in 2011 and 2012 and then declined in 2013 prior to a small increase in 2014 and 2015. Sulfate concentrations were steady in wells 688, 881, 882 and 893 in 2015. These small changes could be due to ceasing irrigation in this area.

Figure 4.3-16A presents sulfate concentrations with time for five wells located west of the Section 28 irrigation area where initial restoration is occurring. The sulfate concentrations in these five wells do not show much change in 2015.

Figure 4.3-17 presents sulfate concentrations with time for five wells located farther west and after the confluence with the Rio San Jose alluvium. The sulfate concentrations in these Rio San Jose alluvial wells are fairly steady during 2015.

The time variations of sulfate concentrations in water sampled from five wells in Section 33 Center Pivot area are plotted on Figure 4.3-18. Sulfate concentrations in each of these wells were fairly steady in 2015 except for a decline in well 551 that needs confirmation. A gradual increase had been observed from well 551 in the center of the Section 33 pivot prior to the decrease. The increase could be due to a small effect from the past Section 33 irrigation but is well within the natural variations that have been observed for this area.

4.3.2 TOTAL DISSOLVED SOLIDS - ALLUVIAL

Total dissolved solids (TDS) concentration contours for the alluvial aquifer during 2015 are presented on Figures 4.3-19, 4.3-19A, 4.3-19B and 4.3-19C. The alluvial background TDS concentrations measured up-gradient of the LTP in 2015 varied from 1410 to 3210 mg/l. Based on an updated statistical analysis, TDS concentration must exceed 2734 mg/l before it is considered elevated beyond the naturally occurring range. A light green pattern is shown on Figures 4.3-19, 4.3-19A, 4.3-19B and 4.3-19C to indicate where the TDS concentrations exceed the 2734 mg/l site background standard. None of the observed concentrations in the west half of Figure 4.3-19 exceed this level. The TDS concentrations near the tailings exceed 2734 mg/l for a distance of approximately 500 feet to the west of the LTP. A significant portion of the alluvial aquifer underlying the Large Tailings area exceeds 10,000 mg/l (see Figure 4.3-19A). A zone of 2000 mg/l or greater TDS concentration extends to the west of the LTP into the western portion of Section 28 (see Figure 4.3-19C). Additional areas of TDS concentrations greater than 2000 mg/l exists in the southern portion of Pleasant Valley Estates, the southern portion of Murray Acres, the eastern portion of Valle Verde and to the south and southwest of this area (see Figure 4.3-19). The only other areas of TDS concentrations above 2000 mg/l are two small areas in Felice Acres. Only the areas closely proximal to the two tailings piles and a small area west of the Large Tailings and areas east of Valle Verde and south of the Murray Acres require ground water quality restoration to meet the site TDS background standard.

TDS time concentration plots were developed for the same grouping of wells as those prepared for sulfate (see Figure 4.3-2 for groupings of wells with TDS plots). Figure 4.3-20

presents the TDS concentrations versus time for the up-gradient wells. TDS concentrations were steady in well DD in 2013 through 2015 except for a small increase in the last value. TDS in well DD2 gradually increased in 2015, while concentrations in the remainder of the upgradient wells remained fairly steady.

Figure 4.3-21 presents TDS concentrations plotted versus time for wells S2, S4, S12, SM and SV. This plot shows steady concentrations in 2015 for these wells except for increases in wells S12 and SV.

TDS concentrations were relatively stable in water collected from wells MQ and MX during 2015 (see Figure 4.3-22). Variable concentrations were observed in 2015 in well M9 while an increase was measured in well MO.

TDS concentrations in water sampled from wells 802, B12, D1, M3 and S3 are presented in Figure 4.3-23. TDS concentrations increased in 2015 in wells D1 and S3 and have been variable in recent years in well B12. Slightly smaller concentration was observed in well M3 in 2015 while steady values were measured in well 802.

Figure 4.3-24 presents TDS concentrations for wells B5, B11, T2, T4, T12 and T21. Fairly steady concentrations were observed in wells B5, B11, T4 and T12 in 2015, while increase in concentrations were measured in wells T2 and T21on the LTP.

Figure 4.3-25 presents time concentration plots for wells C6, C8 and C10 on the west side of the STP and well C12 on the north side of the STP. The concentrations in wells C8, C10 and C12 were variable in 2015 while the values in well C6 were fairly steady.

TDS concentrations versus time for three well on the STP and one well just south of the STP are presented in Figure 4.3-26. This figure shows continued low and slightly variable concentrations in 2015. Previous recent increases are thought to be due to changing from RO product to fresh water injection near these wells.

Figure 4.3-27 presents plots of TDS concentrations for four wells on the south side of the No. 1 Evaporation Pond and on top of the STP and one well to the east of the STP. Samples from these alluvial wells were steady in 2015 except for a decline in well 1U.

TDS concentrations in water taken from the L line of wells are presented in Figure 4.3-28. TDS concentrations generally show a very gradual increase in 2015 in these L wells.

Figure 4.3-29 presents the TDS concentrations versus time for two Broadview Acres wells and three wells north of Broadview Acres. This plot shows fairly steady TDS concentrations in 2015 in these wells.

The TDS concentrations in the Felice Acres alluvial wells 490, Q3, Q5, Q43 and Q50 were overall steady in 2015 (see Figure 4.3-30) with similar concentration concentrations in new wells Q43 and Q50.

TDS concentrations for the former flood irrigation area alluvial wells are presented in Figure 4.3-31. Steady TDS concentrations were observed in these wells in 2015 except for a gradual increase in well 844. The increases in TDS concentrations in recent years in wells 844 and 845 could be due to the flood irrigation in this area but are within the higher concentrations observed prior to irrigation in well 846.

Figure 4.3-32 presents time plots of TDS concentrations for five wells located in Section 3. Overall, TDS concentrations have been relatively steady over the last few years in these wells. Figure 4.3-32A presents time plots of TDS concentrations for five new R collection wells located in the northeast corner of Section 3. These TDS concentrations have been steady due to a very similar TDS that is being used for the fresh water injection adjacent to these collection wells.

TDS concentrations for the former Section 28 irrigation monitoring wells were also fairly stable in 2015 (see Figure 4.3-33) but with small declines in wells 881, 884 and 886. The observed changes in these wells in 2013 through 2015 could be due to ceasing irrigation in Section 28 but could be due to freshwater injection proximal to these wells. The TDS in the freshwater injection source increased in 2012 due to the switch from San Andres well 951 to well 951R. The total change in the TDS due to the freshwater injection appears to have occurred in well 884 in 2006. Some of the TDS variations could be due to past irrigation in this area.

TDS concentrations in alluvial wells just west of the Section 28 former irrigation area are presented on Figure 4.3-33A. TDS concentrations in these wells in 2015 were fairly steady.

TDS concentrations in alluvial wells in Sections 29 and 32 are presented on Figure 4.3-34. TDS concentrations in these wells in 2015 were steady except for an increase in well 899.

Figure 4.3-35 presents TDS concentrations in the Section 33 alluvial wells. This plot shows a small increasing trend in these wells in 2015 except for the questionable decline in well

551. These concentrations are within the natural variations observed in this area but could be showing a very small effect from the past Section 33 irrigation.

4.3.3 CHLORIDE - ALLUVIAL

Chloride concentration is another important indicator of tailings seepage because of the conservative nature of this constituent and the fact that up-gradient concentrations are low. Chloride concentrations measured during 2015 in the alluvial aquifer near the tailings are presented on Figures 4.3-36, 4.3-36A, 4.3-36B and 4.3-36-C. Up-gradient chloride concentrations in the alluvial aquifer varied from 42 to 90 mg/l in 2015. The fresh-water injection systems have used water with chloride concentrations of approximately 200 mg/l, whereas the R.O. product chloride concentration is less than 10 mg/l. The alluvial aquifer around and underlying the LTP contains chloride concentrations in excess of the State drinking water standard of 250 mg/l (site standard). Measurement of chloride concentration in alluvial ground water is useful in defining areas where the R.O. product water has migrated in the alluvial aquifer. A light green pattern on Figures 4.3-36, 4.3-36A, 4.3-36B and 4.3-36-C is used to illustrate where concentrations exceed 250 mg/l. The limited areal extent of the green pattern on these figures show that the need for ground water-quality restoration with respect to chloride is limited to the immediate area of the tailings and three wells in Section 34. Chloride concentrations in the alluvial water in the western half of Figure 4.3-36 have not typically exceeded 250 mg/l. No alluvial wells north of Pleasant Valley exceed the site standard in 2015 (see Figure 4.3-36C).

Figure 4.3-37 presents chloride concentrations versus time for six up-gradient wells. Analysis of the data on this figure shows overall steady chloride concentrations in 2015 in these wells.

Figure 4.3-38 presents time plots of chloride concentration for wells S2, S4, S12, SM and SV. Fairly steady chloride levels were measured in these five wells in 2015 except for the increase observed in wells S12 and SV.

Chloride concentrations in wells M9, MO, MQ and MX are presented in Figure 4.3-39. Similar values were measured in these wells in 2015.

Plots of chloride concentration for wells 802, B12, D1, M3 and S3 are presented on Figure 4.3-40. Chloride concentrations in wells D1 and S3 increased in 2015. The chloride concentrations in new wells 802, B12 and M3 were fairly steady in 2015.

Chloride concentrations in wells B15, B31, T2, T4, T12 and T21 are presented on Figure 4.3-41. Chloride concentrations in the four T wells on the LTP were fairly steady in 2015. The chloride concentrations are higher in the two B wells to the south on the south side of the LTP and steady.

Chloride concentrations in alluvial wells on the west and north sides of the STP are presented on Figure 4.3-42. This figure shows an overall decrease in well C8 and a small increase in well C10 for 2015 while steady values are observed in wells C6 and C12.

All of the chloride concentrations on the top of the STP and south side of the STP remained very low in 2015 (see Figure 4.3-43). The chloride concentrations in water from the remainder of the K wells on top of the STP (see Figure 4.3-44) have been steady in 2015. A decrease in chloride concentration was observed in well 1U in 2014 and 2015 after steady values that followed a large decline in 2008.

The chloride concentrations in water collected from the L line wells are presented in Figure 4.3-45. The 2015 chloride concentrations in these wells are generally slightly larger than they were several years ago due to switch from RO product water to fresh water to the northwest of this area.

Figure 4.3-46 presents time plots of chloride concentrations in wells near or in Broadview Acres with the concentrations very similar to the fresh water chloride concentration.

Figure 4.3-47 presents the chloride concentration-time plots for the four Felice Acres wells. The 2015 chloride concentrations are fairly similar to previous chloride concentrations observed in wells 490, Q3 and Q5. The chloride in the two new wells Q43 and Q50 are similar to the 490 value.

Chloride concentration plots for the former flood irrigation area monitoring wells are presented on Figure 4.3-48. Chloride concentrations are very similar to the fresh water injection concentration except chloride concentration increase in wells 555, 844 and 845. The higher values in the last three years in these three wells could possibly be due to the flood irrigation in this area.

The plots of chloride concentration versus time in Section 3 wells are presented on Figure 4.3-49. Chloride concentrations were similar in 2015 in these wells to their historic values. The chloride concentrations for five collection R wells show that their values stayed fairly steady into 2015 (see Figure 4.3-49A).

Figure 4.3-50 presents plots of the variation of chloride concentrations with time in Section 28 wells. Decline in chloride concentration was observed in well 886 through 2009 but increased in 2011 and 2012. These recent increases in the Section 28 wells could possibly be due to previous irrigation in Section 28 which ceased after 2012. Chloride concentrations in these wells in the Section 28 Center Pivot area had been fairly steady since the irrigation has ceased. If the increase near the end of irrigation was due to irrigation, it shows that the effects on chloride concentrations were small and short lasting.

Chloride concentrations in five wells just west of the Section 28 irrigation area are presented on Figure 4.3-50A. Chloride concentrations in this active area of ground water restoration were steady in 2015.

Chloride concentrations in the Sections 29 and 32 monitoring wells are presented on Figure 4.3-51. Chloride concentrations in recent samples from wells 531, 541, 935 and 994 gradually increased in 2015.

Figure 4.3-52 presents time plots of chloride concentrations in the Section 33 wells. The 2015 chloride concentrations slightly increased in wells 554, 649, 650 and 658 in 2015 while concentration in well 551 decreased. Overall the chloride concentrations in these wells are slightly higher in 2009 through 2015 than observed in previous years. These slightly higher chloride concentrations could be showing a very small effect from the Section 33 irrigation but it also could be a small natural change.

4.3.4 URANIUM - ALLUVIAL

Uranium is considered an important ground water constituent at this site due to the significant levels in the tailings seepage. Uranium data and contours for 2015 are presented on Figure 4.3-53. Background uranium concentrations during 2015 varied from 0.01 to 0.23 mg/l; the alluvial background site standard is 0.16 mg/l. The light green pattern on Figure 4.3-53 shows where uranium concentrations exceed 0.16 mg/l, the statistical upper range of background from previous statistical analysis of the 1995-2004 data. The uranium values inside three areas

outlined on Figure 4.3-53 are posted on additional uranium figures due to the density of the new wells in these three areas. Figures 4.3-53A, 4.3-53B and 4.3-53C present the OS, SOS and NOS areas respectively.

Uranium concentrations exceed background in the area of the LTP and STP with numerous additional values measured in wells on the LTP and south and west of the LTP (see Figure 4.3-53A). Uranium concentrations extend to the west of the LTP into the western half of Section 27 and Section 28 with numerous new wells in the NOS area (see Figure 4.3-53C). Uranium concentrations in Sections 29 and 32 also reflect a contribution from the Rio San Jose alluvial system in Section 20, but these levels have decreased to less than 0.16 mg/l. The zones of moderately elevated concentrations join together and the combined area extends down-gradient approximately one mile into Section 33.

Uranium concentrations greater than 0.16 mg/l are also present near the L collection wells south of the STP. Uranium concentrations in the L wells were overall similar in 2015 to values observed in 2014.

Additional areas, where uranium concentrations in the alluvium are greater than 0.16 mg/l, exist in Felice Acres and to the southwest into Section 3 (see Figure 4.3-53B). Several new wells were added to this area in 2015. The area of elevated concentrations extends approximately 3800 feet to the southwest of the southwest corner of Felice Acres. Significant progress toward restoration was made in the northeast corner of Section 3 with the collection and injection into the R well field in 2014 and most of this restored area was maintained in 2015. The uranium concentration in another small area in the northeast portion of Murray Acres at well 802 is slightly less than 0.16 mg/l. Concentrations in this area decreased in 2015 to below the site standard. Additional restoration is needed in each of these areas with respect to uranium concentrations.

Uranium concentration plots were prepared in order to illustrate changes that result from the corrective action program and other factors. Figure 4.3-2 shows the grouping and location of the alluvial wells used for the uranium-time plots. The figure numbers shown on Figure 4.3-2 correspond to the sulfate time plots. The same grouping of wells was used for the uranium plots, and their symbols and colors are the same as those used on other time plots.

Figure 4.3-54 presents uranium concentrations plotted versus time for up-gradient wells DD, DD2, ND, P, Q and R. The uranium concentrations in wells ND, P, Q and R have

been fairly steady during the last few years. Data for new upgradient wells DD and DD2 are slightly higher uranium concentrations and concentrations in these two wells overall gradually declined in 2015. The site standard of 0.16 mg/l is shown in the legend on Figure 4.3-53.

A decrease in uranium concentrations was observed in 2010 through 2015 for well S2 (see Figure 4.3-55). Uranium concentrations remained small and steady in wells S4 and SM in 2015. Uranium concentrations increased in wells S12 and SV in 2015.

Figure 4.3-56 presents the uranium concentration time plots for alluvial wells west of the LTP. Uranium concentrations were steady in well MO in 2015 and were variable in collection wells M9 and MQ. Steady and small concentrations were measured in well MX.

Figure 4.3-57 presents time plots of uranium concentrations for alluvial wells 802, B12, D1, M3 and S3. Uranium concentrations were variable in wells B12 and M3 in 2015 showing that additional restoration is needed in this area. Uranium concentration in wells D1 and S3 increased while a small decline was observed in Murray Acres well 802.

Plots of uranium concentration versus time are presented on Figure 4.3-58 for alluvial wells B5, B11, T2, T4, T12 and T21. The uranium concentration in 2015 in wells B5 and B11 were steady while a small decline was observed in well T12. Uranium concentrations in wells T2 and T21 on the LTP slightly increased. The smaller uranium concentrations in the LTP T wells than in the B wells show that the LTP flushing program decreased the uranium concentrations in the alluvial aquifer in the LTP area.

Figure 4.3-59 presents plots of uranium concentration versus time for collection wells C6, C8, C10 and C12 on the west side of the STP. Uranium concentrations in these wells are variable showing that they are near the restoration front. Uranium is the main parameter that requires additional restoration in this area.

Figure 4.3-60 presents uranium concentrations for wells on the STP and the south side of the STP in wells K9, K10, K11 and X. Uranium concentrations were fairly steady in each of these wells in 2015 with a small increase in well K10.

Uranium concentrations in wells 1U, K4, K5, K7 and K8 were reasonably steady in 2015 (see Figure 4.3-61). A large decrease in concentrations in well 1U was observed prior to the small concentrations measured the last six years. A small amount of additional restoration is needed in this area.

Uranium concentrations in water from alluvial wells L, L6, L7, L8, L9, and L10 are presented on Figure 4.3-62. Uranium concentrations were fairly steady in 2015 in all of these wells. This time plot shows that additional restoration is also needed in the L collection area.

Figure 4.3-63 presents uranium concentrations versus time for five wells in or near Broadview Acres alluvial wells: F, FB, GH, SUB2 and SUB3. Uranium concentrations in each of these wells were steady in 2015. The uranium concentrations in each of these wells are below the site standard.

Figure 4.3-64 presents the uranium concentration time plots for Felice Acres wells 490, Q3, Q5, Q43 and Q50. Uranium concentrations declined in wells 490, Q3 and Q5 in 2015. Additional restoration from the South collection and injection in the alluvial aquifer in the Felice Acres area is needed. The two new wells in central Felice Acres have uranium concentrations similar to those in well 490.

Figure 4.3-65 presents uranium concentrations for wells in the former flood irrigation area. Uranium concentrations declined in well 844 for the last few years. Uranium concentrations in the remainder of these wells in this area have been fairly steady.

The uranium concentrations for five wells in Section 3 southwest of Felice Acres are plotted on Figure 4.3-66. The uranium concentrations in well 540 declined in 2014 and 2015 while a small decline in wells 862 and 865 was observed in 2015. Uranium concentration in well 866 increased in 2015 in well 866 likely due to the lack of collection from this area in 2015. The concentration in well R74 shows that additional restoration is needed in central Section 3.

The uranium concentrations for five of the R collection wells in northeast corner of Section 3 are presented on Figure 4.3-66A. This plot shows an increase in uranium concentrations in wells R3, R4 and R11 in 2015 due to the lack of collection of alluvial water in the northeast portion of Section 3 in 2015. Some additional restoration is needed in this portion of the alluvial aquifer mainly in the area of collection wells R3, R4, R11 and 866.

Uranium concentrations from six Section 28 wells are plotted on Figure 4.3-67. Small increases in concentrations in wells 881, 886 and 893 were observed in 2015. Concentrations from wells 688, 882 and 884 were steady in 2015.

Uranium concentrations from five wells west of the Section 28 irrigation are plotted on Figure 4.3-67A. Small declines in concentrations in wells 890, H1 and H2A were observed in

2015. Concentrations from wells 654 and 888 were steady in 2015. Collection from the western H wells and well 890 in 2016 should cause result in the restoration of this area.

Uranium concentration time plots for wells in Sections 29 and 32 are presented on Figure 4.3-68. These wells are completed in the Rio San Jose alluvium down gradient of the confluence with the San Mateo alluvium in Section 29. A very small increase in concentration was observed in wells 531 and 899 in 2015 while the values from wells 541 and 935 were steady. Steady and small concentrations in well 994 in the northern portion of Section 32 have been observed.

Uranium concentrations in wells located in Section 33 are relatively small and are plotted on Figure 4.3-69. Concentrations have remained low with steady values in wells 551, 554, 649, 650 and 658 during 2015. No increase was observed in the Section 33 wells for uranium.

4.3.5 SELENIUM - ALLUVIAL

Selenium is an important constituent at the Grants Project site because, like uranium, it is present in significant concentrations in the tailings water. Figures 4.3-70, 4.3-70A, 4.3-70B and 4.3-70C present maps of the spatial distribution of selenium concentrations throughout the site. The background site standard for selenium is 0.32 mg/l. Selenium concentrations upgradient of the site varied from less than 0.005 to 0.61 mg/l in 2015. A green pattern is superimposed on the concentration contour figures to show where concentrations exceed 0.32 mg/l. A 0.1 mg/l selenium concentration contour exits in the central portion of Section 27 (see Figures 4.3-70, 4.3-70A and 4.3-70C). All selenium concentrations measured west of this area are less than 0.1 mg/l. All selenium concentrations in the alluvial aquifer in all of the nearby subdivisions are less than 0.1 mg/l.

Selenium concentrations exceeding 0.32 mg/l were measured in wells around the LTP and STP and extend approximately 300 feet to the west of the LTP and also extend to the south of the STP in the area east of the L collection wells and east of Highway 605. This shows that only the area near the tailings pile and the area near some of the L collection wells require additional restoration in order to reduce selenium concentration.

Figure 4.3-2 presents the location and grouping of wells for selenium concentration plots. The symbols and colors used on Figure 4.3-2 are the same as those used on each constituent time plot.

Figure 4.3-71 presents plots of selenium concentration versus time for up-gradient wells DD, DD2, ND, P, Q and R. There has been a small amount of variation in the selenium concentrations in up-gradient wells for last few years. The concentrations in the farthest upgradient wells Q and R are larger of the remainder of these wells.

Figure 4.3-72 shows small selenium concentrations in wells S4, S12 and SM during 2015. Larger selenium concentrations were observed in well S2 with a declining trend in the last three years and an increasing trend in well SV. Additional collection from the S wells in 2016 should cause the selenium concentration to continue to decrease in well S2 and start restoration near well SV.

Figure 4.3-73 presents selenium concentrations for wells M9, MO, MQ and MX. Selenium concentrations have remained low in all of these wells. The 2015 sample for well M9 shows a small increase.

Selenium concentrations in water from alluvial wells located southwest of the LTP are plotted on Figure 4.3-74. This figure shows a small selenium concentration for wells 802 and B12 in 2015 and a slightly higher value from well D1. Additional pumping B wells in 2016 in this area should cause the selenium concentration to continue to decline in well M3 and a reversal of the increasing concentrations in well S3.

Figure 4.3-75 presents plots of selenium concentrations for wells B5, B11, T2, T4, T12 and T21. Small and overall steady selenium concentrations have been measured for wells T2, T4, T12 and T21 in the last several years. Selenium concentrations in collection wells B11 decreased in 2015 while the level in well B5 was steady. The selenium concentration is larger to the south of the LTP in the two B wells.

The selenium concentrations for collection wells located on the west side of the STP are plotted on Figure 4.3-76. A small decrease in concentrations was observed in well C8 in 2015 while steady to small decline was observed in the remainder of these wells.

Figure 4.3-77 presents selenium concentrations for wells K9, K10, K11 and X, which are located on top of the STP and to the south side of the STP. Only small concentrations were measured in water taken from these wells in 2015 except for an increase in well K10.

Selenium concentrations in wells K4, K5, K7 and K8 were fairly steady in 2015 (see Figure 4.3-78). The selenium concentration decreased in 2008 in well 1U and has stayed very low for the last seven years.

Figure 4.3-79 presents selenium concentration for wells L, L6, L7, L8, L9 and L10. Fairly steady selenium concentrations with time were observed in these wells during 2015.

Figures 4.3-80 and 4.3-81 present selenium concentration plots for four wells to the north and in Broadview Acres and five wells in Felice Acres. These plots show that the selenium concentrations have been reduced and maintained at low levels for the last several years in these two subdivisions.

Selenium concentrations are presented for wells in the former flood irrigation area adjacent to Murray Acres on Figure 4.3-82. This plot shows continuing low selenium concentrations in monitoring wells in this area of the alluvial aquifer. Fairly steady values were observed in these wells in 2015 except for a small decline in well 846 with the levels all being below the site standard of 0.32 mg/l.

Selenium concentrations for five wells in Section 3 are plotted on Figure 4.3-83. Well 865 shows a small decline in selenium concentrations. Selenium concentrations in this well gradually decreased in the last several years. Concentrations in wells 540, 862, 866 and R72 were low in 2015.

Selenium concentrations for five wells in the northeast corner Section 3 are plotted on Figure 4.3-83A. The selenium concentration in these R collection wells was small prior to the start of the collection in this area in 2014 and they stayed low during 2015.

The selenium concentrations in alluvial water in Section 28 have been fairly steady with time with a small increase observed in well 881 in 2015. Figure 4.3-84 presents the selenium concentrations from the Section 28 alluvial wells. A significant decline was observed in concentration in well 884 in 2006 due to the fresh water injection in this area and this decline leveled off in 2008.

Figure 4.3-84A displays selenium concentrations in wells west of the Section 28 irrigation area, which are located near the front of the uranium concentrations in the North area. Fairly steady and small selenium concentrations were observed in 2015 in these wells.

Figure 4.3-85 displays selenium concentrations in wells in Sections 29 and 32, which are located in Section 29 after the confluence with the Rio San Jose and the north side of Section 32. Fairly steady and small selenium concentrations were observed in 2015 in these wells.

Selenium concentrations from wells in Section 33 are presented on Figure 4.3-86. The data demonstrated small and steady selenium concentrations in 2015 in these wells.

4.3.6 MOLYBDENUM - ALLUVIAL

This section discusses the molybdenum concentrations in the alluvial aquifer at the Grants Project during 2015. Figures 4.3-87, 4.3-87A, 4.3-87B and 4.3-87C are spatial presentations of the concentration data and contours. Molybdenum concentrations in alluvial water in the west area of Figure 4.3-87 have typically been less than 0.03 mg/l and, therefore, samples from the western wells are not routinely analyzed for molybdenum. Numerous samples were taken from these wells in 2015 to update the molybdenum database. The movement of molybdenum in the alluvial aquifer is dramatically attenuated in comparison to that of selenium and uranium. Molybdenum concentrations only exceeded 100 mg/l at one location under the LTP in 2015 with only a few values above 50 mg/l. A 10 mg/l contour extends around most of the LTP and to the west side of the STP (see Figure 4.3-87A).

The light green patterns on these four figures show the area where molybdenum concentrations exceed 0.10 mg/l, the site standard. A molybdenum concentration of 0.10 mg/l is considered the threshold of significance for this constituent at this site. Significant molybdenum concentrations extend to just north of Pleasant Valley west of the LTP (see Figures 4.3-87A and 4.3-87B) and also to the southeast of the STP to the L collection wells (see Figure 4.3-87). Concentrations in five wells in the west half of Section 27 exceed the molybdenum site standard of 0.10 mg/l. None of the concentrations in alluvial wells in the subdivisions exceed 0.10 mg/l of molybdenum.

Figure 4.3-88 presents molybdenum concentration for the up-gradient wells DD, DD2, ND, P, Q and R. Concentrations have remained low in these six wells in 2015.

Steady molybdenum concentrations were fairly steady in wells S4 and SM in 2015, while the molybdenum concentrations in well S2 decreased and increased in wells S12 and SV (see Figure 4.3-89).

Figure 4.3-90 presents time plots of molybdenum concentration for wells M9, MO, MQ and MX. Molybdenum concentrations in wells MO and MX were small in 2015 while the concentrations in collection well M9 were variable and decreased in collection well MQ.

Figure 4.3-91 displays molybdenum concentrations for wells 802, B12, D1, M3 and S3. Higher molybdenum concentrations in wells B12, D1, M3 and S3 were observed while small concentration exists in well 802. Additional collection from the S and D collections wells in 2016 should cause the molybdenum concentrations in these wells to decline.

Figure 4.3-92 presents molybdenum concentrations for wells B5, B11, T2, T4, T12 and T21. The molybdenum concentrations in wells B5, T2, T4, T12 and T21 were fairly steady in 2015. An increase in concentration occurred in well B11.

Molybdenum concentrations in wells on the west side of the STP are presented on Figure 4.3-93. Molybdenum concentrations were variable in the water in these wells in 2015 except for a decline in well C6.

Figure 4.3-94 presents molybdenum concentrations for wells on top of the STP and to the south side of the STP. Small molybdenum concentrations were measured in well X during the last year. Larger and variable values were observed in wells K9 and K10 while an increase in concentration was observed in well K11.

Figure 4.3-95 shows small molybdenum concentrations in wells 1U, K4, K5, K7 and K8 in 2015 with fairly steady concentrations in wells 1U, K4 and K7. The molybdenum concentrations in wells K9 and K10 were variable in 2015.

Figure 4.3-96 present molybdenum concentrations in wells L, L6, L7, L8, L9 and L10, which are located further to the southeast of the STP. Molybdenum concentrations were steady and small in these wells in 2015.

Molybdenum concentrations in alluvial wells located in Broadview Acres and Felice Acres are plotted on Figures 4.3-97 and 4.3-98, respectively. The molybdenum concentrations in Broadview wells F, FB, GH, SUB2 and SUB3 have been low for the last several years. Molybdenum concentrations in wells 490, Q3, Q5, Q43 and Q50 in Felice Acres remained low for 2015.

Figure 4.3-99 presents the molybdenum concentrations for wells in the former flood irrigation area near Murray Acres. This plot shows that molybdenum concentrations have remained low in these alluvial wells.

Molybdenum concentration plots for the Section 3 wells are presented in Figures 4.3-100 and 4.3-100A and both show low concentrations. The western area wells values are plotted on Figures 4.3-101 through 4.3-103 time plots with the Section 28 wells presented on the first two figures, Section 29/32 on the third figure and Section 33 wells on the fourth figure. All of the molybdenum concentrations have remained low in wells located in these areas in 2015. Molybdenum concentrations have migrated into Section 27 and could possibly have migrated into eastern Section 28 in a small area.

4.3.7 NITRATE - ALLUVIAL

The presence of relatively large nitrate concentrations up-gradient of the Grants site has resulted in a site background standard of 12 mg/l (see Table 3.1-1). A statistical analysis of the up-gradient data 1995 through 2004 produced the nitrate concentration of 12 mg/l based on the 95th percentile of background. Upgradient nitrate concentrations varied from less than 0.1 to 18 mg/l in 2015. Figures 4.3-104 and 4.3-104A present nitrate concentrations measured in 2015 in the alluvial aquifer. Figure 4.3-104A list the nitrate values for the new wells drilled in the western portion of the LTP. The nitrate concentrations north and up-gradient of the tailings ultimately impact the nitrate concentrations down-gradient of the LTP in the northern portion of Sections 27 and 28. It is difficult to determine whether seepage from the tailings has any significant impact on the nitrate concentrations in this area, because the naturally higher concentrations up-gradient of the LTP makes modestly elevated nitrate concentrations indistinguishable from background. The nitrate concentrations in the northeast portion of Section 27 may exceed 12 mg/l. This larger nitrate concentration could be caused by the higher historical nitrates upgradient of the site.

Nitrate concentrations exceed 12 mg/l in an area between the LTP and STP which are likely due to seepage from the tailings. Nitrate concentration above 12 mg/l also exists in a small area south of Pleasant Valley. Nitrate concentrations in all of the alluvial subdivision wells are below 12 mg/l. Areas where water-quality restoration is required with respect to nitrate are shown by the green patterns on Figure 4.3-104. Restoration of nitrate will likely occur prior to the restoration of some other key parameters in these areas.

Plots of nitrate concentration over time were prepared for the alluvial wells that are listed on Figure 4.3-2. Figure 4.3-105 presents the nitrate concentrations for the background

wells. Concentrations in these wells have been relatively stable in 2015 except for a small outlier for well R. Nitrate concentrations in upgradient wells farther to the north have been larger and have exceeded the site standard which shows that higher nitrate concentrations upgradient of the site are entering the near-up-gradient area.

The nitrate concentrations in wells S2, S4, S12, SM and SV, immediately west of the LTP, are plotted on Figure 4.3-106. This figure shows small and steady concentrations in 2015 for these wells.

Figure 4.3-107 presents the nitrate concentrations for wells M9, MO, MQ and MX. Nitrate concentrations increased in 2015 in well MO to the value near the site standard.

Nitrate concentrations in the group of wells southwest of the LTP are presented as time plots on Figure 4.3-108. The 2015 nitrate concentration in well S3 increased while the value from well M3 decreased. Concentrations in wells 802 and D1 were steady.

Figure 4.3-109 presents nitrate concentrations in wells B5, B11, T2, T4, T12 and T21. Nitrate concentrations were fairly steady in these wells in 2015 with a higher value in well B11.

Nitrate concentrations in wells on the west side of the STP are plotted on Figure 4.3-110. An increase in nitrate concentrations was observed in well C10 in 2015 while the nitrate in well C12 declined.

Figure 4.3-111 shows nitrate concentrations for wells on top of the STP and to the south side of the STP. The nitrate concentrations in these wells were steady in 2015.

The nitrate concentrations in the K and L series wells are presented on Figures 4.3-112 and 4.3-113, respectively. Concentrations in recent samples have been very small in all of these wells.

Nitrate concentrations in the Broadview Acres wells are presented on Figure 4.3-114. Small and relatively steady nitrate concentrations were measured in water from these wells with time in the last few years.

Nitrate concentrations for the Felice Acres wells are presented on Figure 4.3-115 with reasonably steady concentrations over time in well 490.

Nitrate concentrations in Murray Acres and Pleasant Valley Estates wells are presented on Figure 4.3-116. Nitrate concentrations in well 846 are higher than the other five wells shown on this figure and shows an overall increase in 2008 through 2012 and a decrease

from this peak in 2013 to an overall decline in 2015. The nitrate concentration in the remainder of these wells was fairly steady in 2015 except for a small increase in well 844.

Nitrate concentrations in Section 3 wells are presented on Figure 4.3-117. The nitrate concentrations in these wells were low in 2015.

Nitrate concentrations for the Section 28 wells are presented on Figure 4.3-118. The nitrate concentrations in these wells were reasonably steady in 2015 except for some small changes.

Figure 4.3-119 presents nitrate concentrations in wells 531, 541, 899, 935 and 994. The nitrate concentrations were steady in these wells.

Nitrate concentrations in the Section 33 wells are presented on Figure 4.3-120 and were steady in 2015.

4.3.8 RADIUM-226 AND RADIUM-228 - ALLUVIAL

Figures 4.3-121 and 4.3-121A present radium concentrations for the alluvial ground water in the Grants Project area. Radium concentrations are very small in the alluvial aquifer except directly underneath the LTP. The monitoring program for radium has been scaled back, because radium is not present in significant concentrations in the alluvial aquifer. The radium-226 concentrations are printed horizontally in black, while the radium-228 values are shown at a 45° angle and in magenta. The State standard for radium-226 plus radium-228 is 30 pCi/l, while the NRC site standard is 5 pCi/l.

Measured activities of radium-226 in alluvial wells beneath the LTP exceed 10 pCi/l. No significant radium-228 values were measured in 2015. No radium concentrations outside of the LTP area are in exceedance of the standard. Past data has shown that radium is not mobile in the alluvial aquifer at this site. The laboratory started in 2008 reporting negative and zero values for the radionuclides instead of a less than value. These very low results should be considered non-detect values.

4.3.9 VANADIUM - ALLUVIAL

Vanadium concentrations measured in 2015 are shown on Figure 4.3-122. None of the vanadium concentrations in the POC wells exceeded the site standard of 0.02 mg/l except one value just to the southwest of the LTP and a larger detection level used for background well R. POC well X was the only POC well that routinely contained a vanadium concentration above the site standard prior to restoration of that area. Therefore, none of the POC wells are expected to contain vanadium concentrations above the site standard of 0.02 mg/l in the future. Injection of R.O. product water has effectively restored ground water quality in the area near well X. Vanadium concentrations in 2004, in eight alluvial wells located within the footprint of the LTP, were above the site standard for vanadium. The ongoing corrective action program will restore vanadium concentrations in this area.

4.3.10 THORIUM-230 - ALLUVIAL

Figure 4.3-123 presents the 2015 thorium-230 concentrations in the alluvial aquifer. Thorium-230 concentrations are low at this site. The very low site standard of 0.3 pCi/l was established to reflect the low background concentrations. The thorium-230 activity was significant in some of the alluvial wells underneath the LTP in 2004. Thorium-230 has not been mobile in the alluvial aquifer except in the immediate vicinity of the tailings. The site standard for thorium-230 was exceeded in 2004 in ten wells in the alluvial aquifer underneath the LTP. This area is within the collection area, and additional restoration will result from the ongoing collection/injection programs.

Thorium-230 levels from the three POC wells, as well as the upgradient and several other alluvial wells in 2015 were less than the site standard. Therefore, only the alluvial aquifer underneath the LTP requires restoration relative to this parameter.

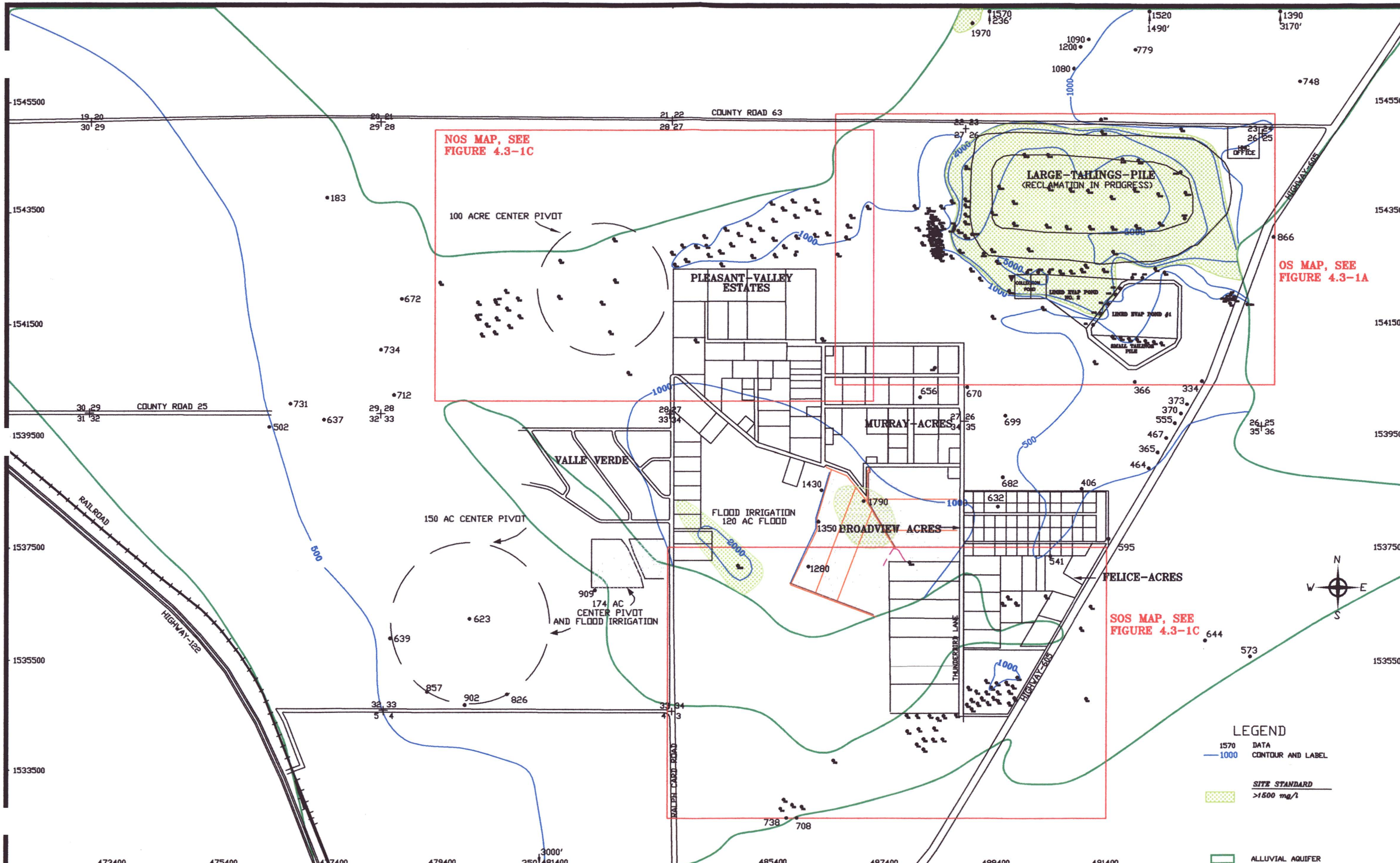

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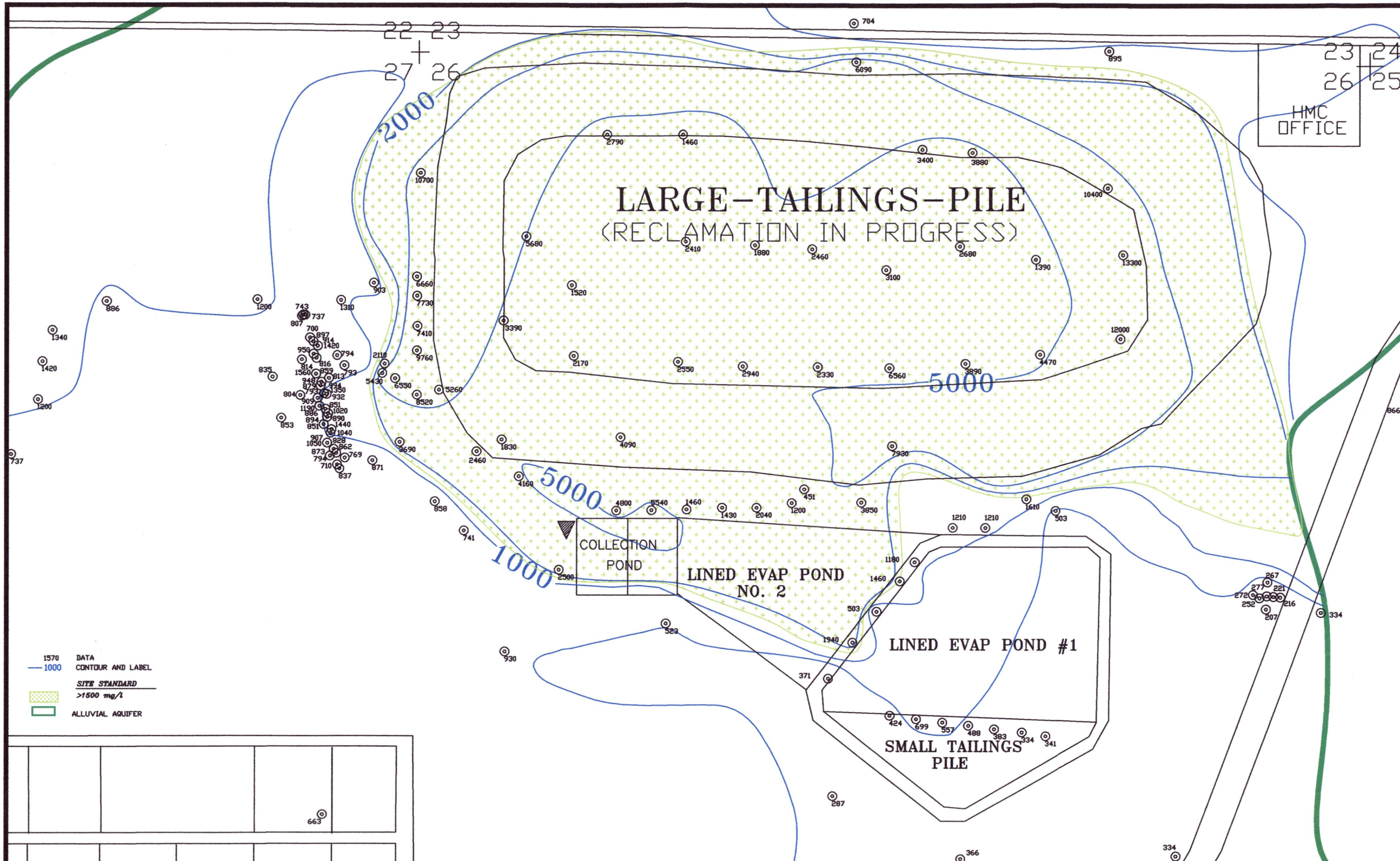
FIGURE 4.3-1. SULFATE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, 2015, mg/l



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DATE: 2/11/16

FIGURE 4.3-1A. SULFATE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, OS, 2015, mg/l

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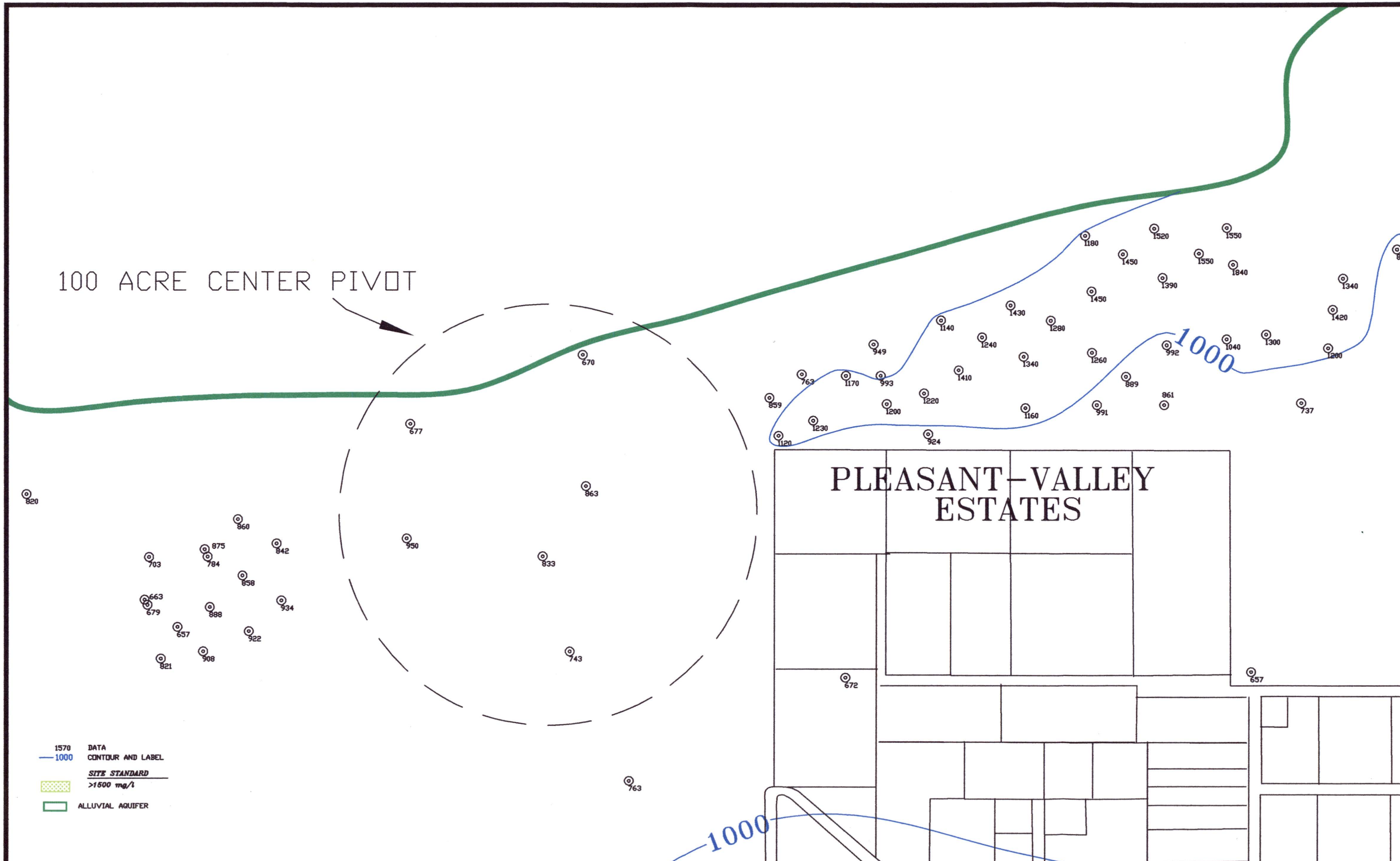
DATE: 3/1/16

FIGURE 4.3-1B. SULFATE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, SOS, 2015, mg/l



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DATE: 3/1/16

FIGURE 4.3-1C. SULFATE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, NOS, 2015, mg/l

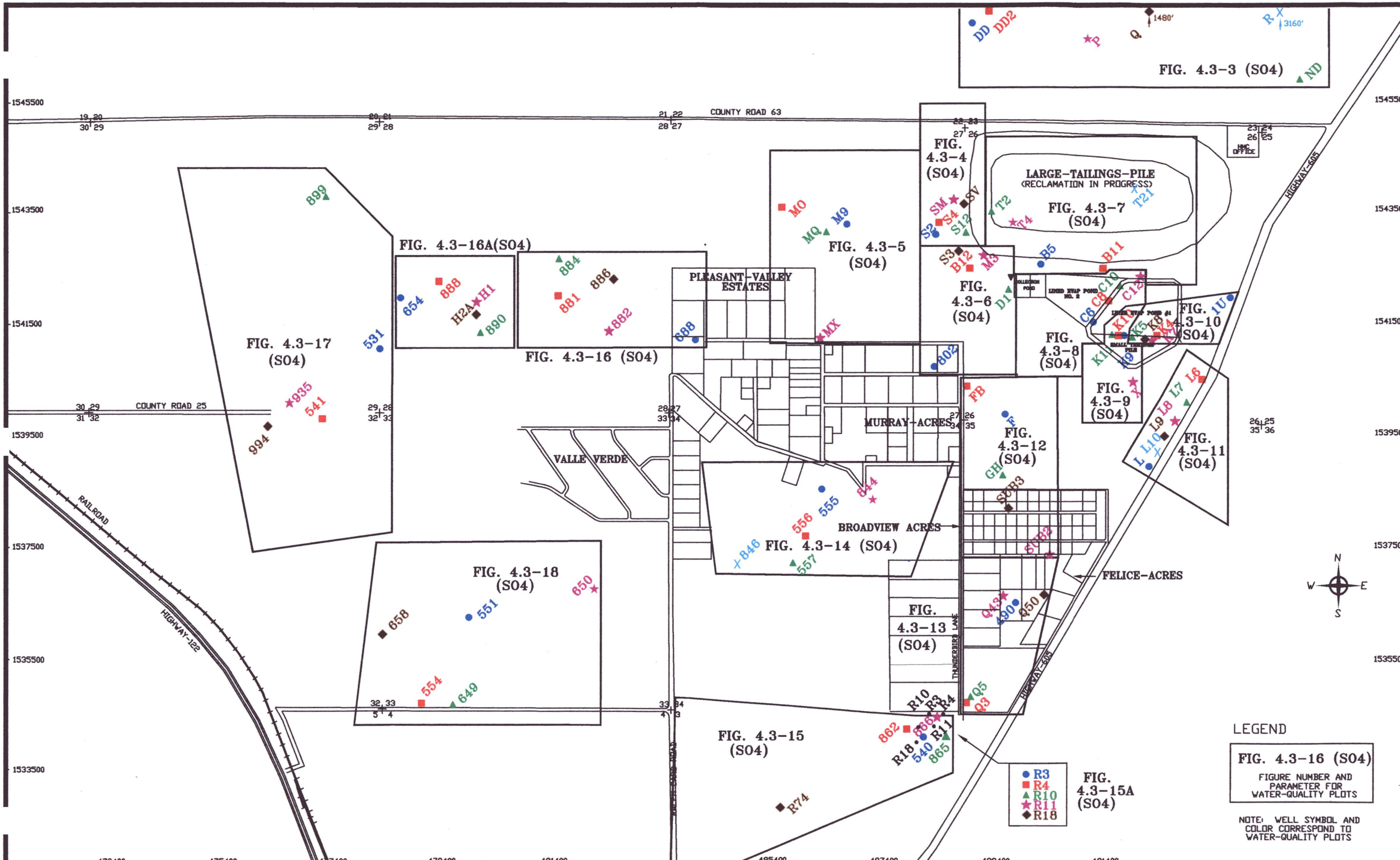

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FIGURE 4.3-2. LOCATION OF ALLUVIAL WELLS WITH WATER-QUALITY PLOTS, 2015

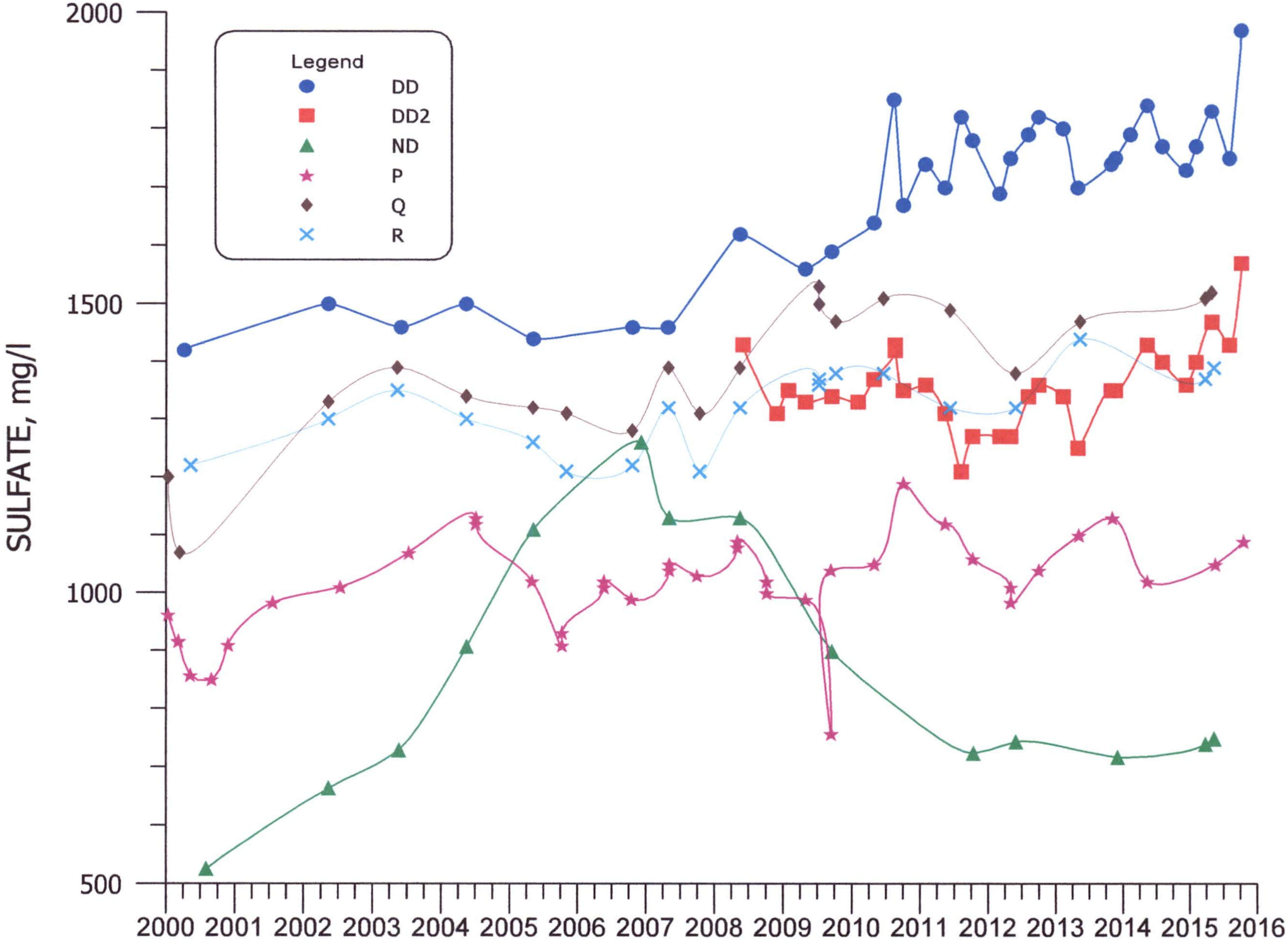

FIGURE 4.3-3. SULFATE CONCENTRATIONS FOR WELLS DD, DD2, ND, P, Q, AND R.

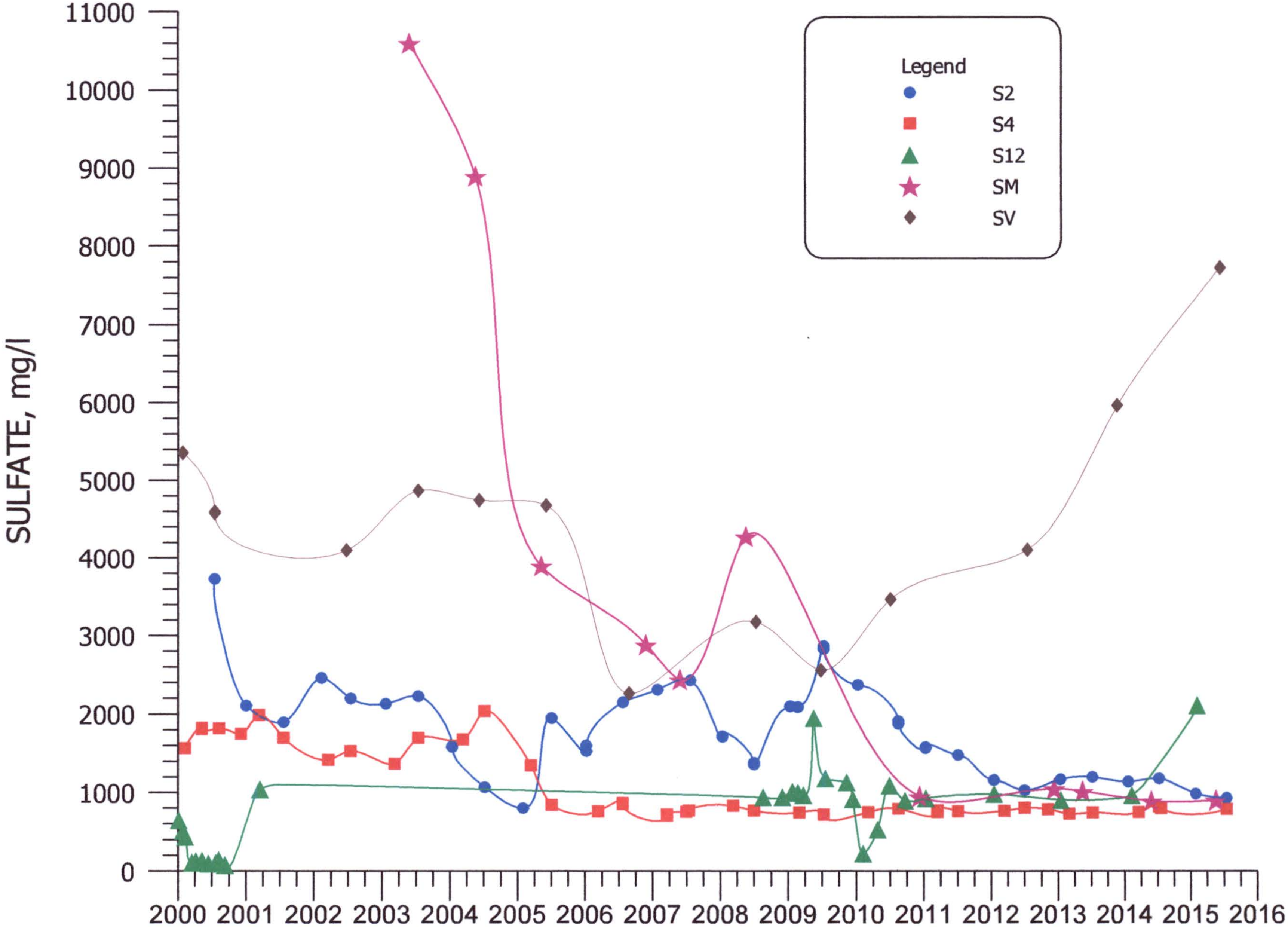

FIGURE 4.3-4. SULFATE CONCENTRATIONS FOR WELLS S2, S4, S12, SM, AND SV.

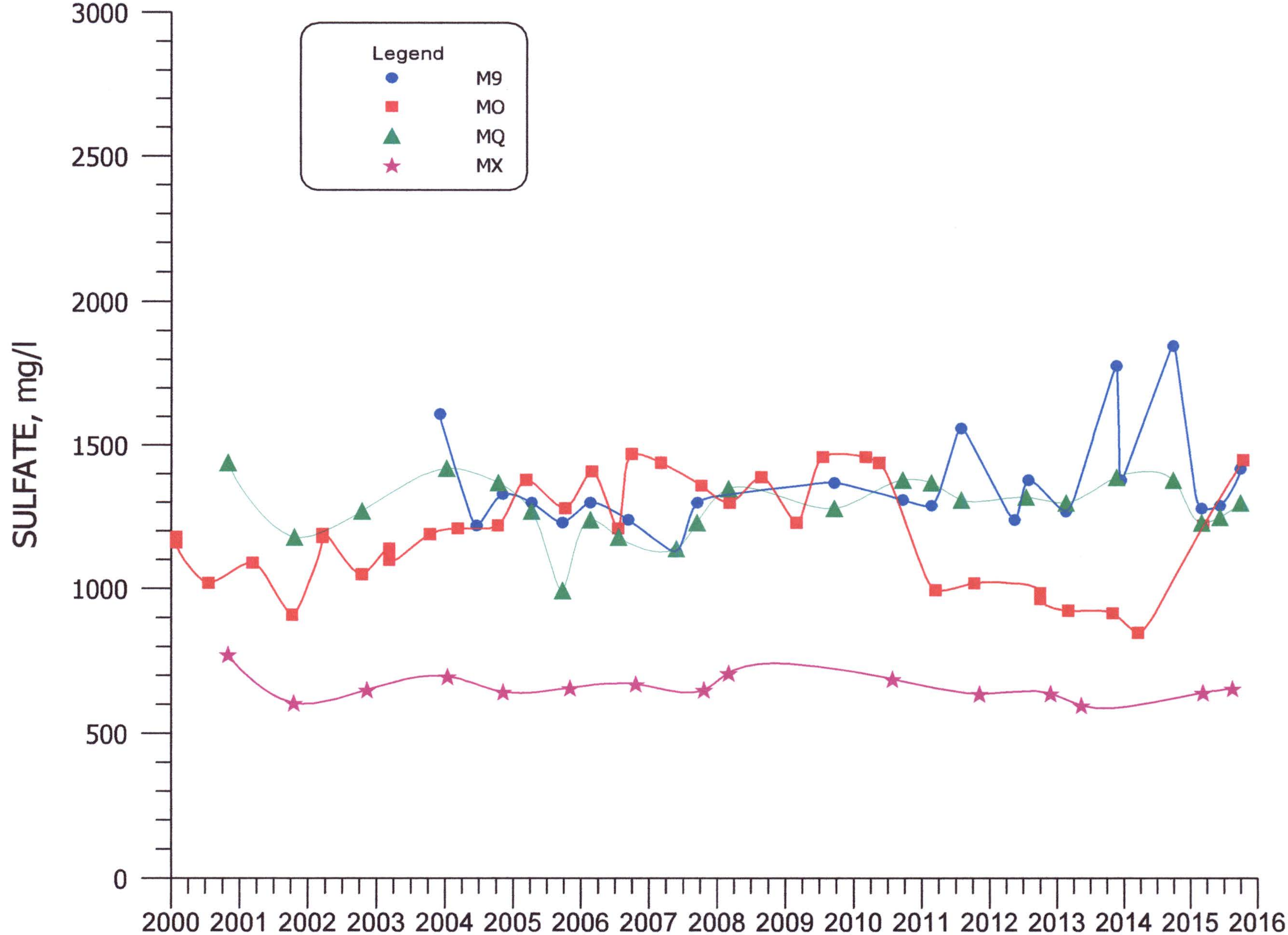

FIGURE 4.3-5. SULFATE CONCENTRATIONS FOR WELLS M9, MO, MQ, AND MX.

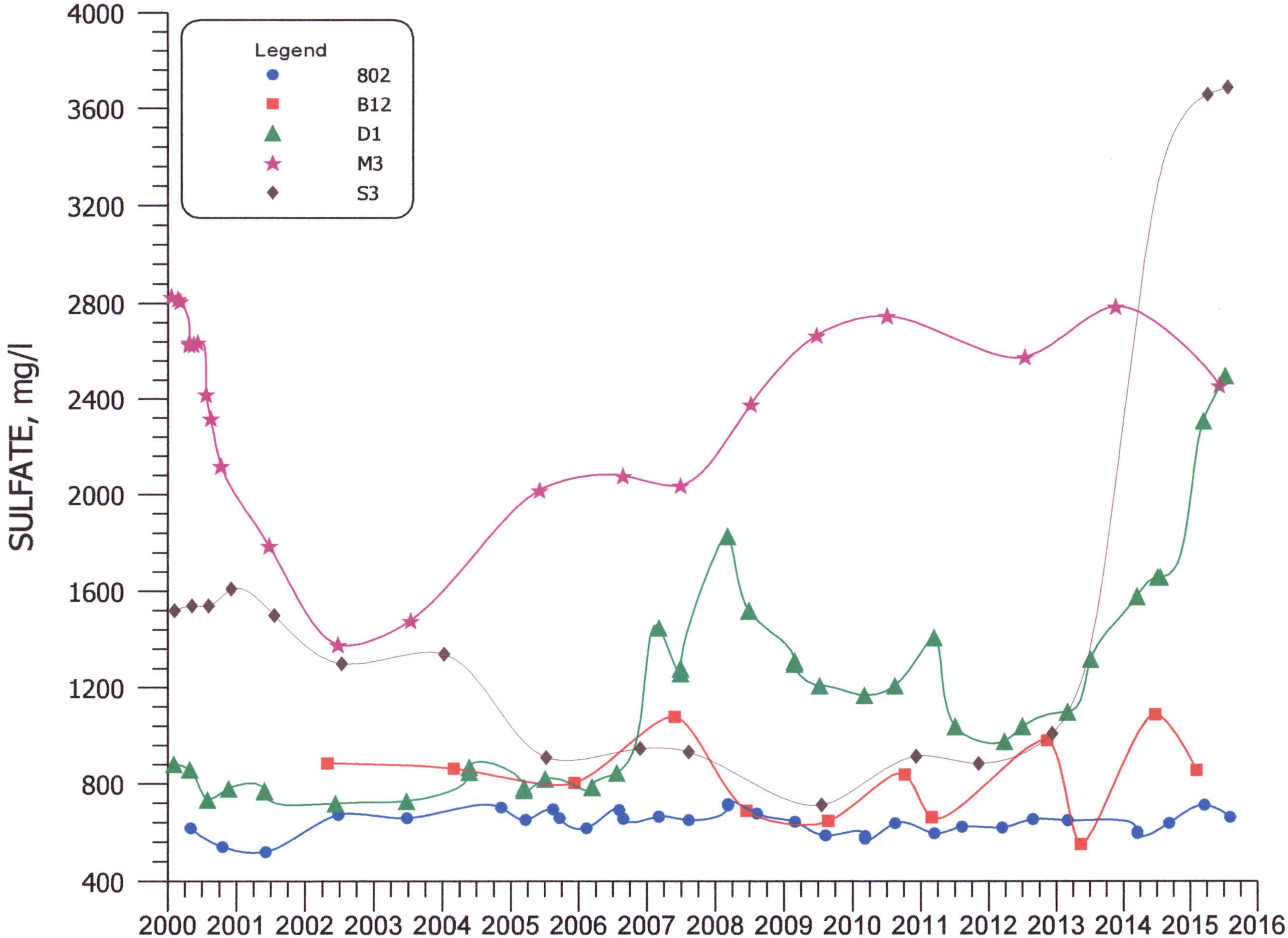

FIGURE 4.3-6. SULFATE CONCENTRATIONS FOR WELLS 802, B12, D1, M3, AND S3.

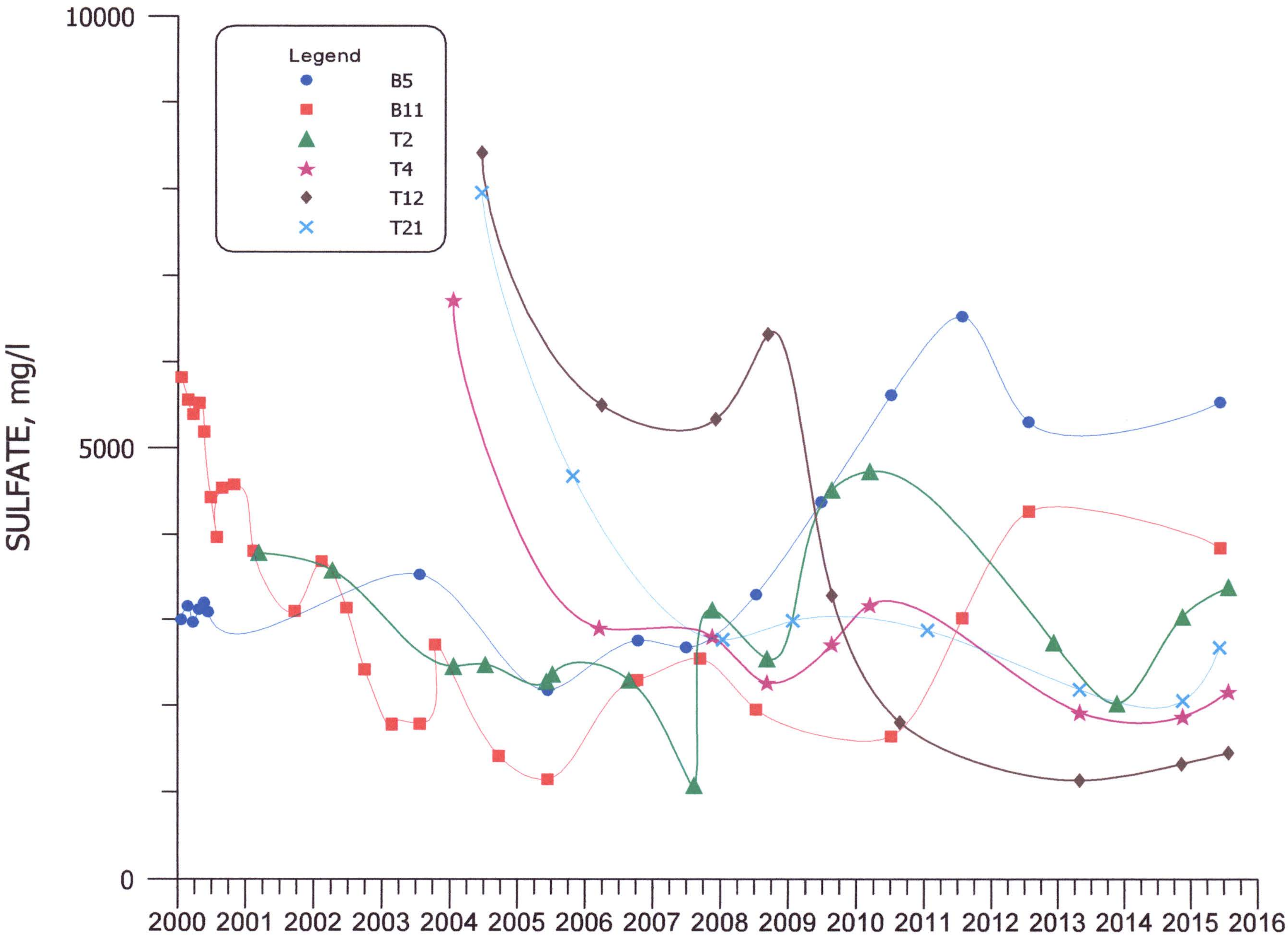

FIGURE 4.3-7. SULFATE CONCENTRATIONS FOR WELLS B5, B11, T2, T4, T12, AND T21.

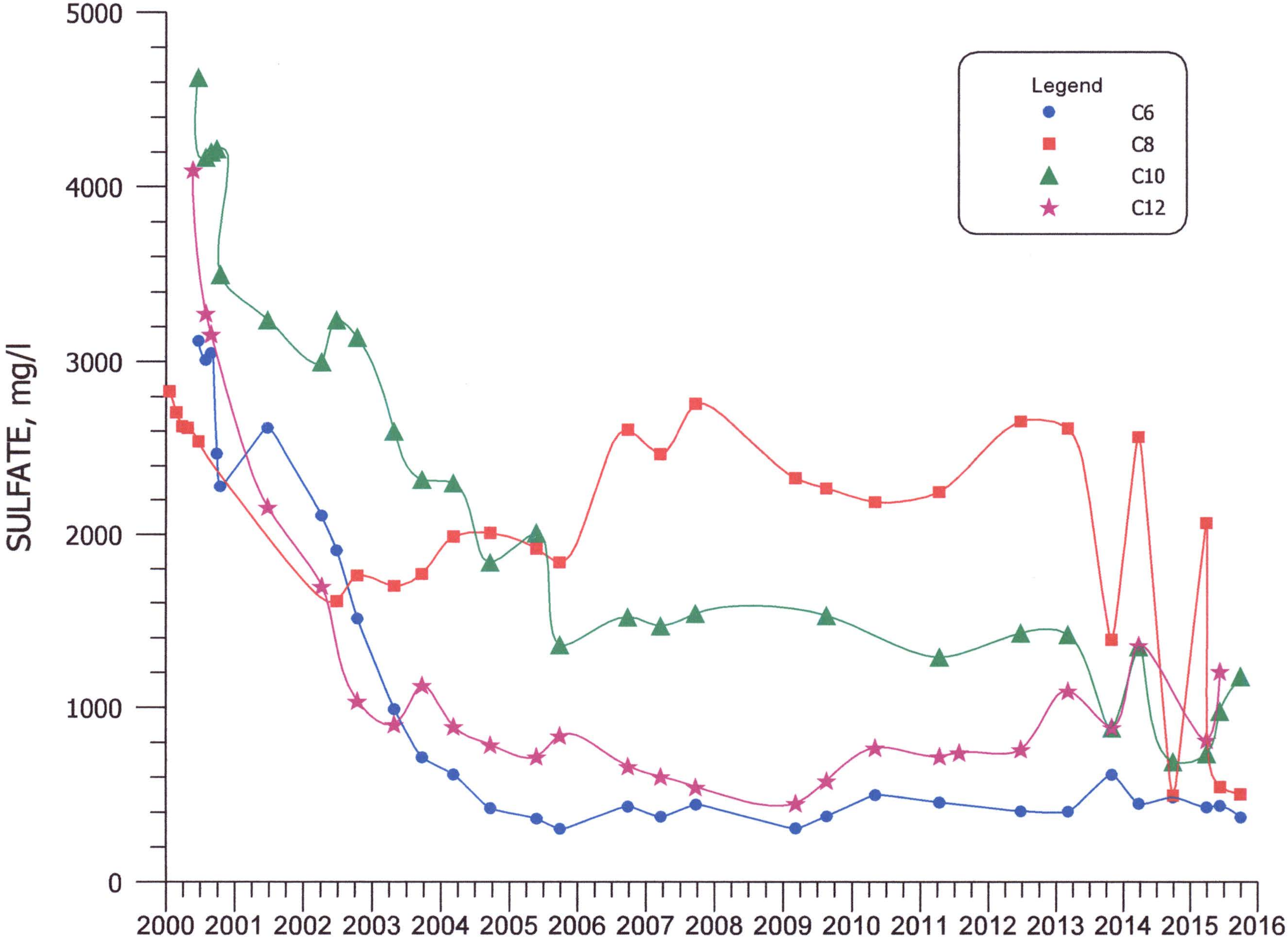

FIGURE 4.3-8. SULFATE CONCENTRATIONS FOR WELLS C6, C8, C10 AND C12.

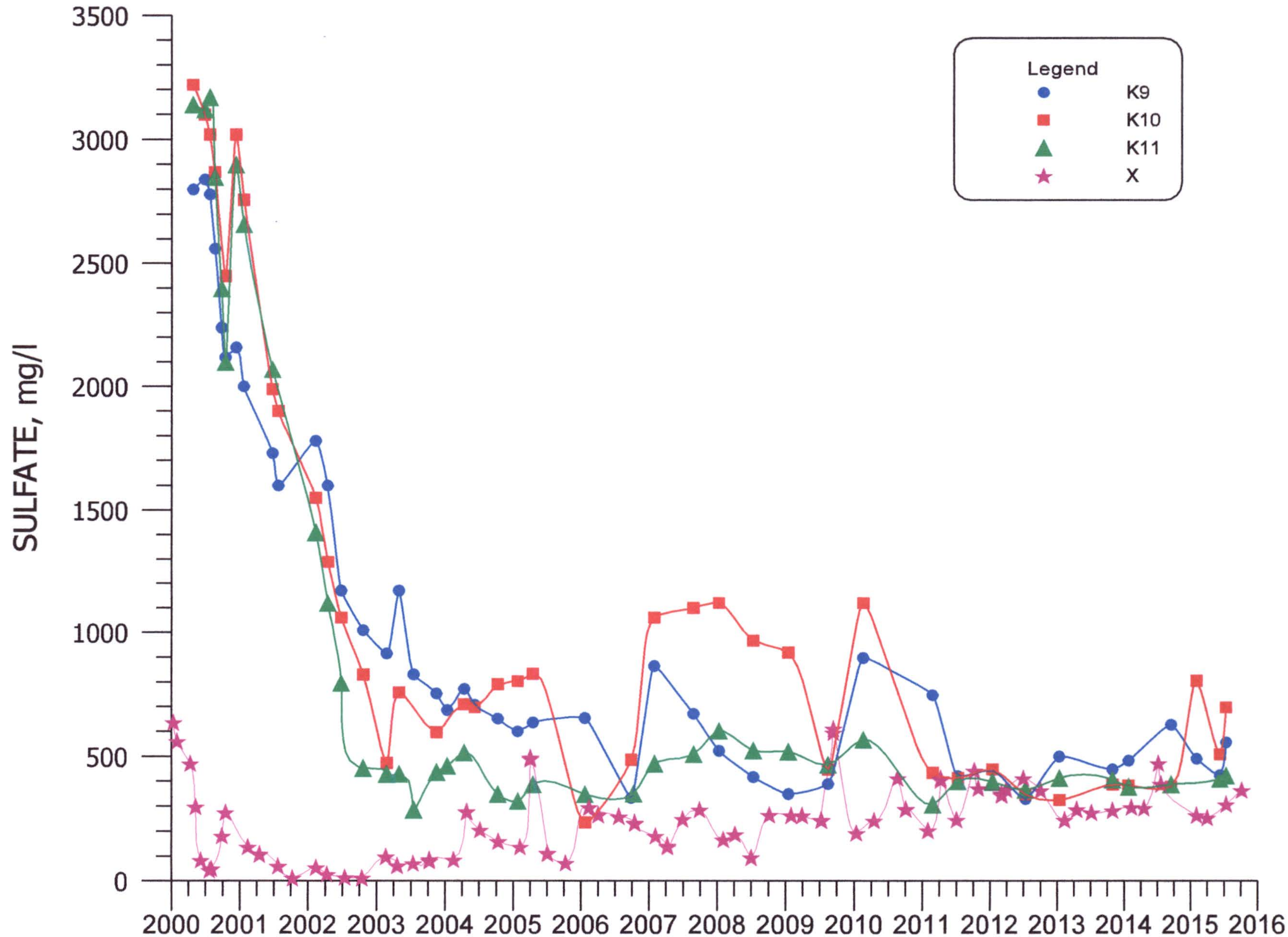

FIGURE 4.3-9. SULFATE CONCENTRATIONS FOR WELLS K9, K10, K11 AND X.

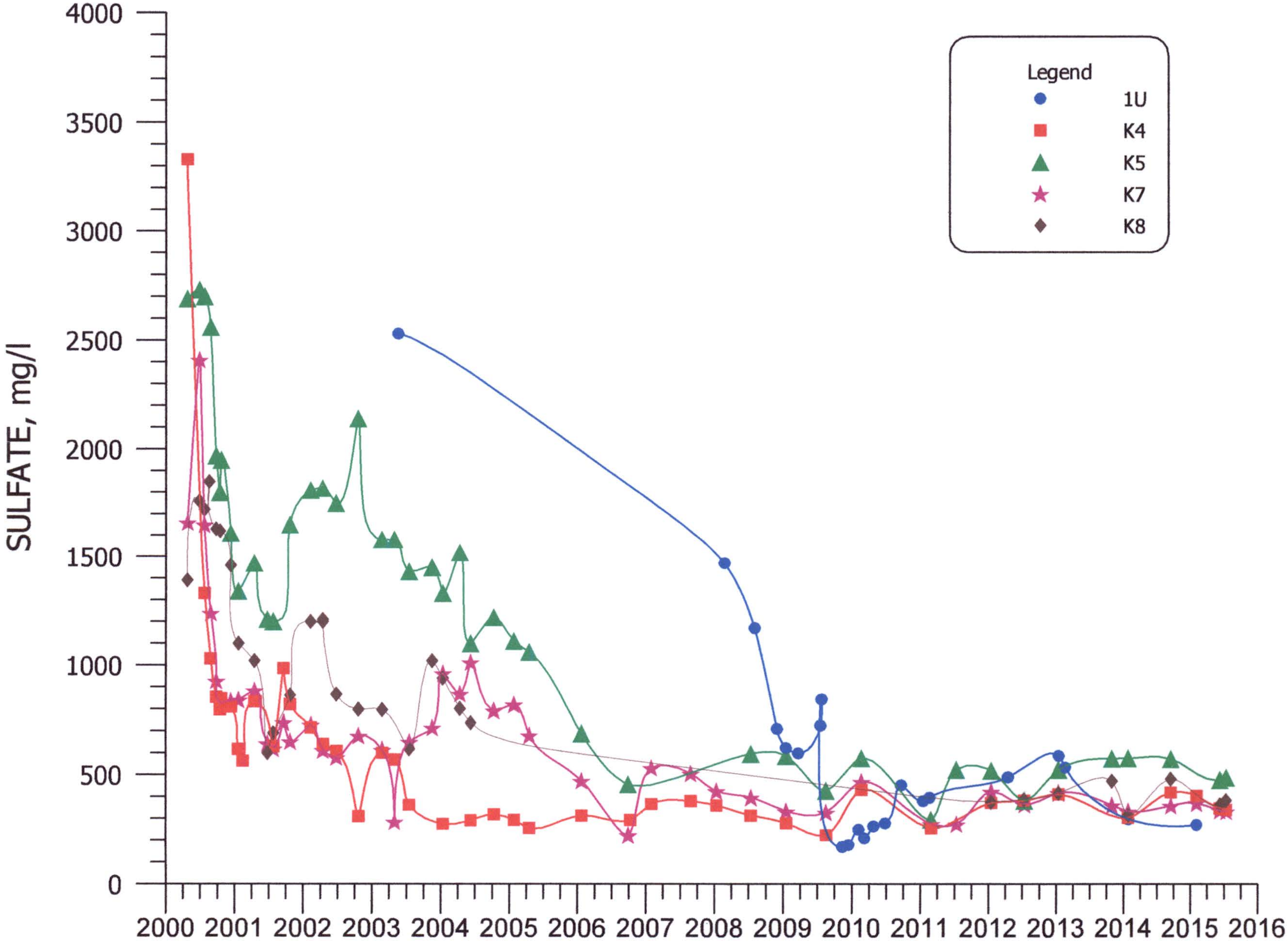

FIGURE 4.3-10. SULFATE CONCENTRATIONS FOR WELLS 1U, K4, K5, K7 AND K8.

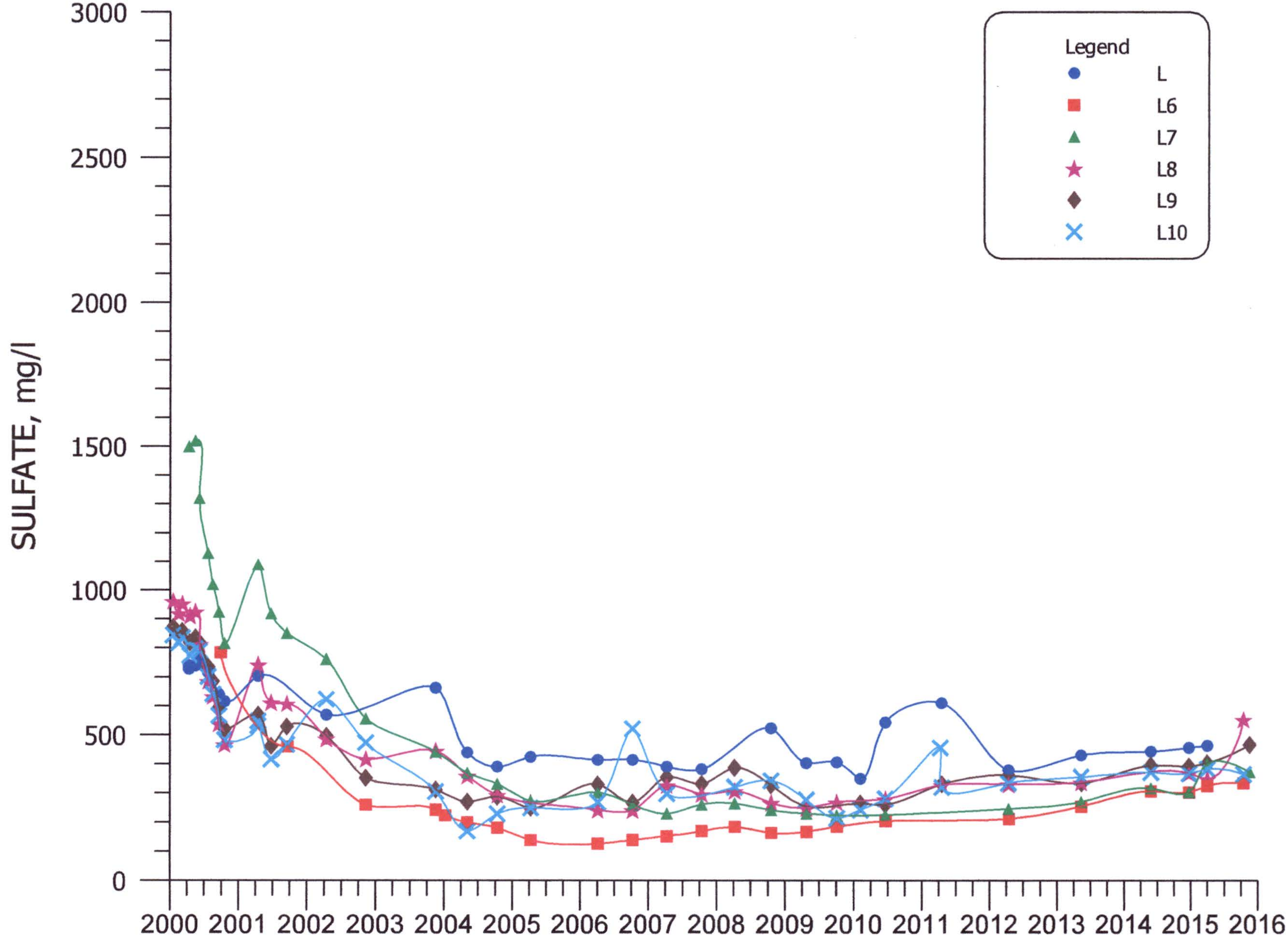

FIGURE 4.3-11. SULFATE CONCENTRATIONS FOR WELLS L, L6, L7, L8, L9 AND L10.

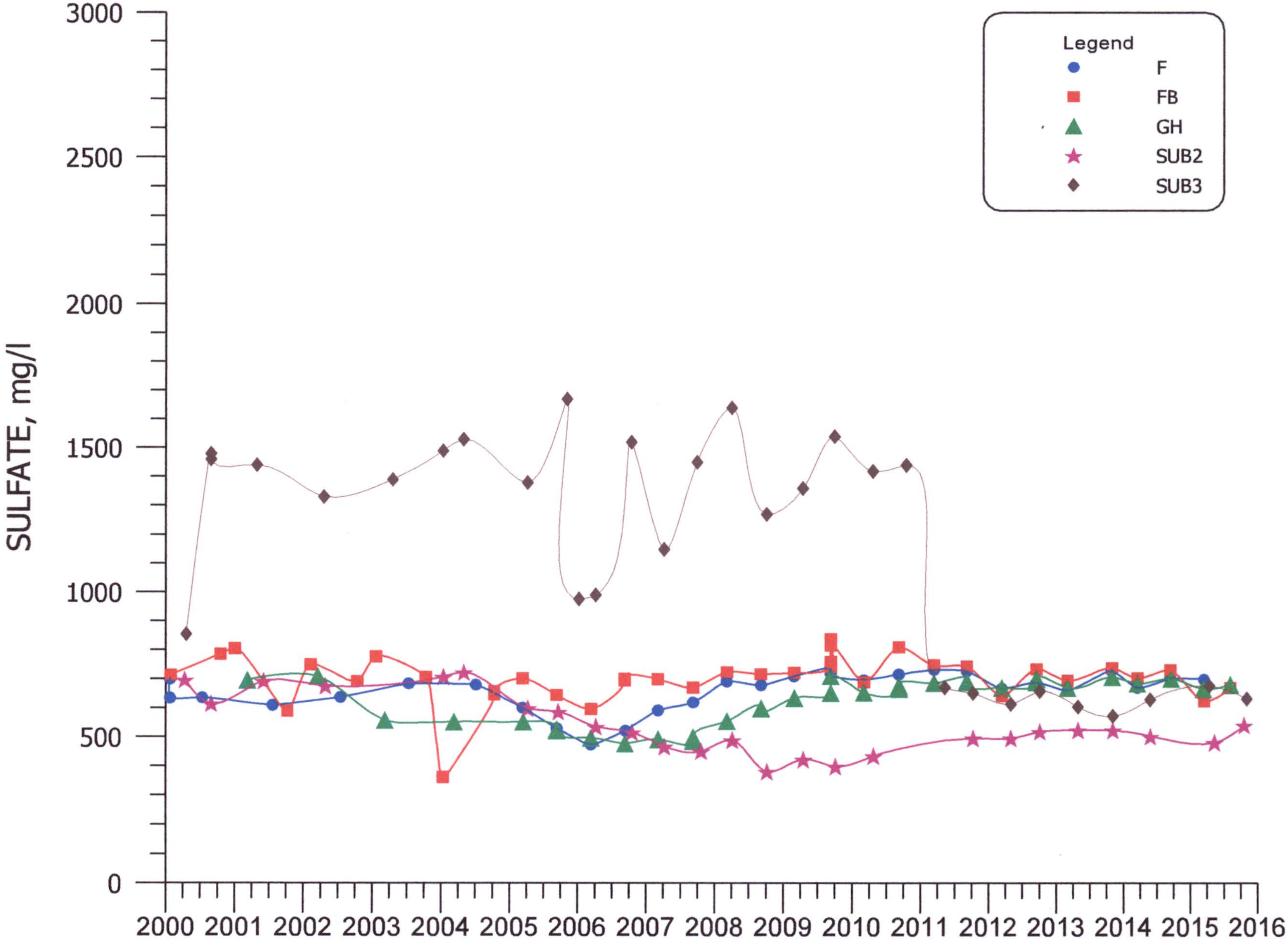

FIGURE 4.3-12. SULFATE CONCENTRATIONS FOR WELLS F, FB, GH, SUB2, AND SUB3.

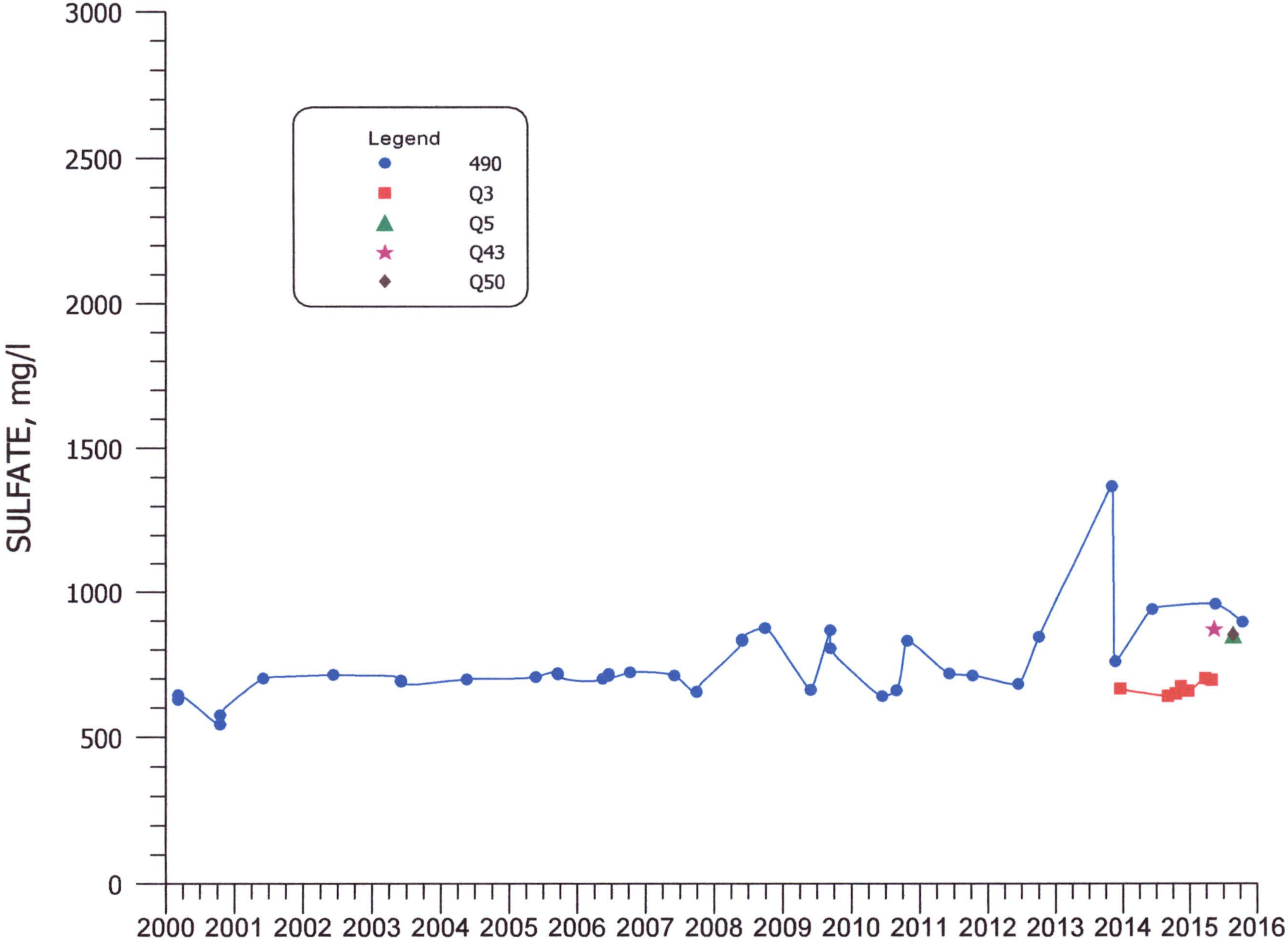

FIGURE 4.3-13. SULFATE CONCENTRATIONS FOR WELLS 490, Q3, Q5, Q43, AND Q50.

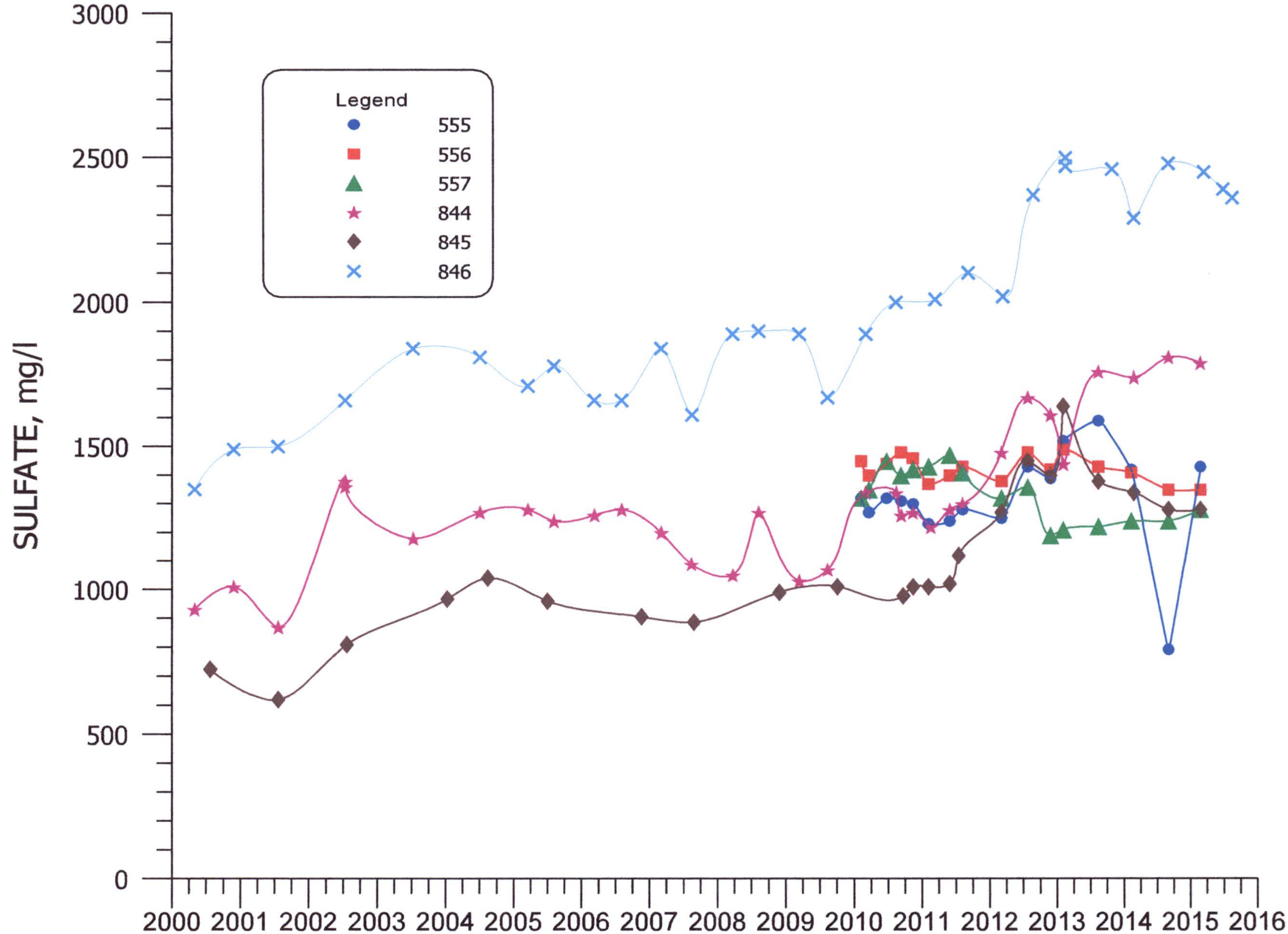

FIGURE 4.3-14. SULFATE CONCENTRATIONS FOR WELLS 555, 556, 557, 844, 845, AND 846.

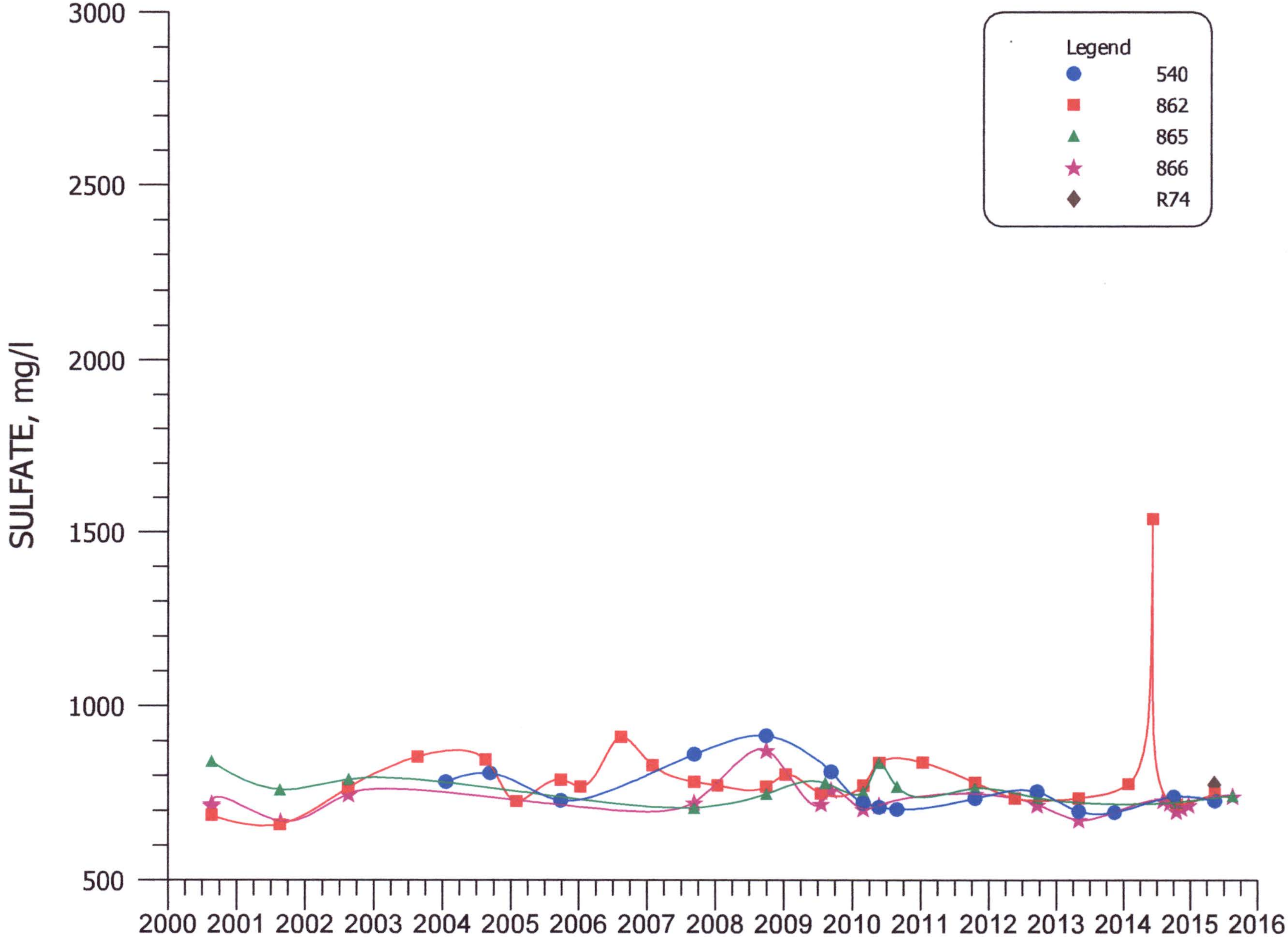

FIGURE 4.3-15. SULFATE CONCENTRATIONS FOR WELLS 540, 862, 865, 866, AND R74.

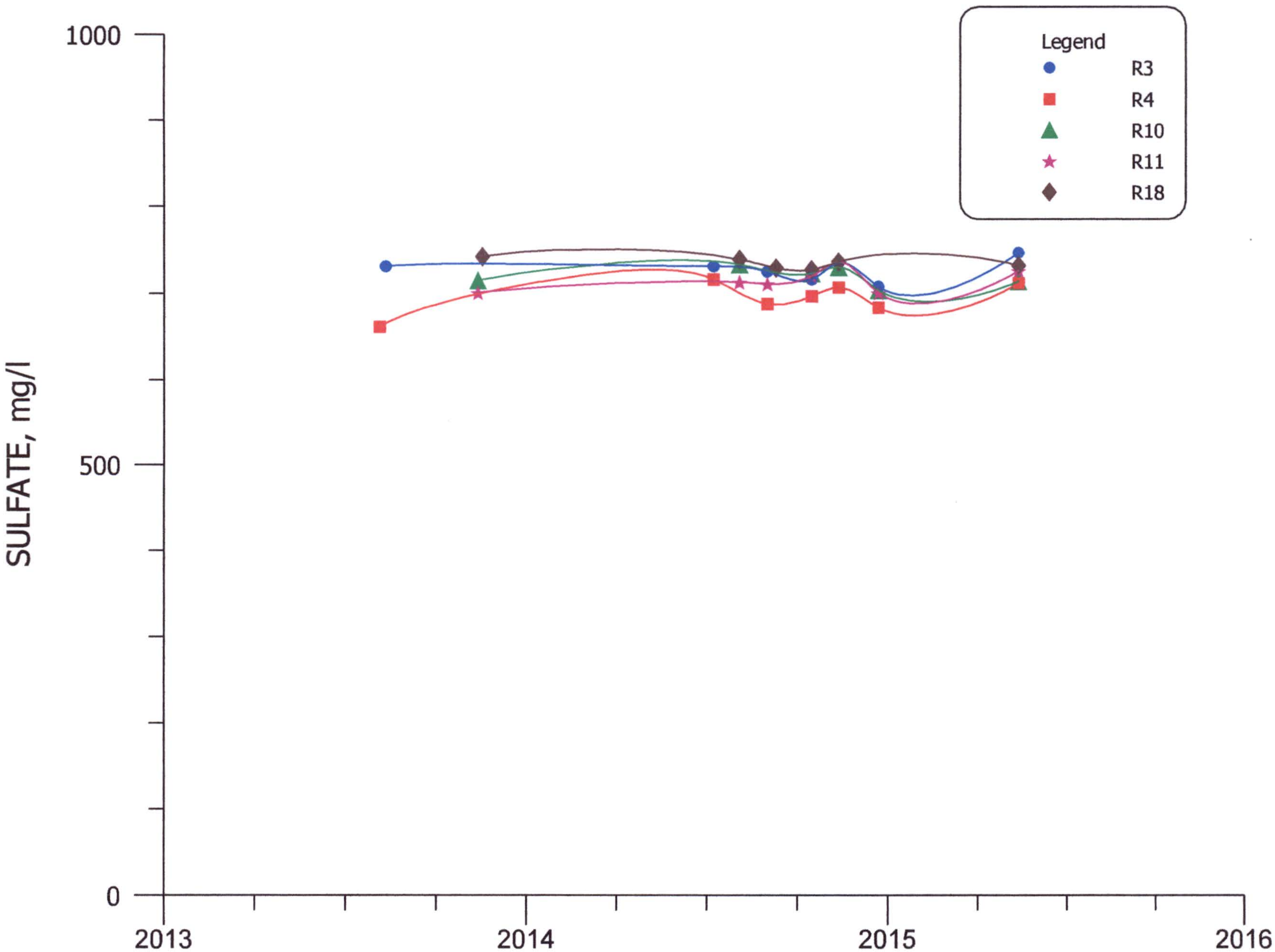

FIGURE 4.3-15A. SULFATE CONCENTRATIONS FOR WELLS R3, R4, R10, R11 AND R18.

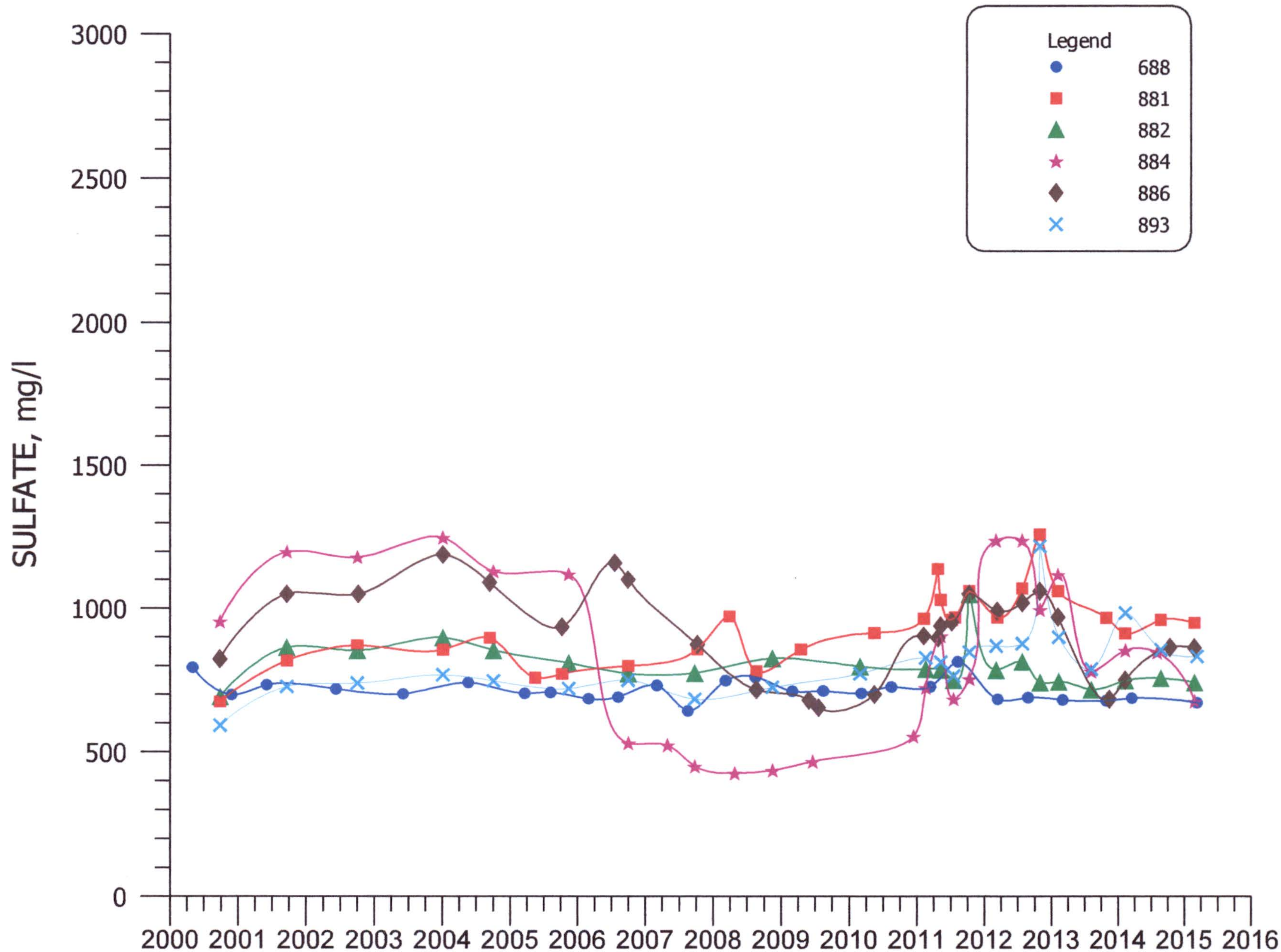

FIGURE 4.3-16. SULFATE CONCENTRATIONS FOR WELLS 688, 881, 882, 884, 886, AND 893.

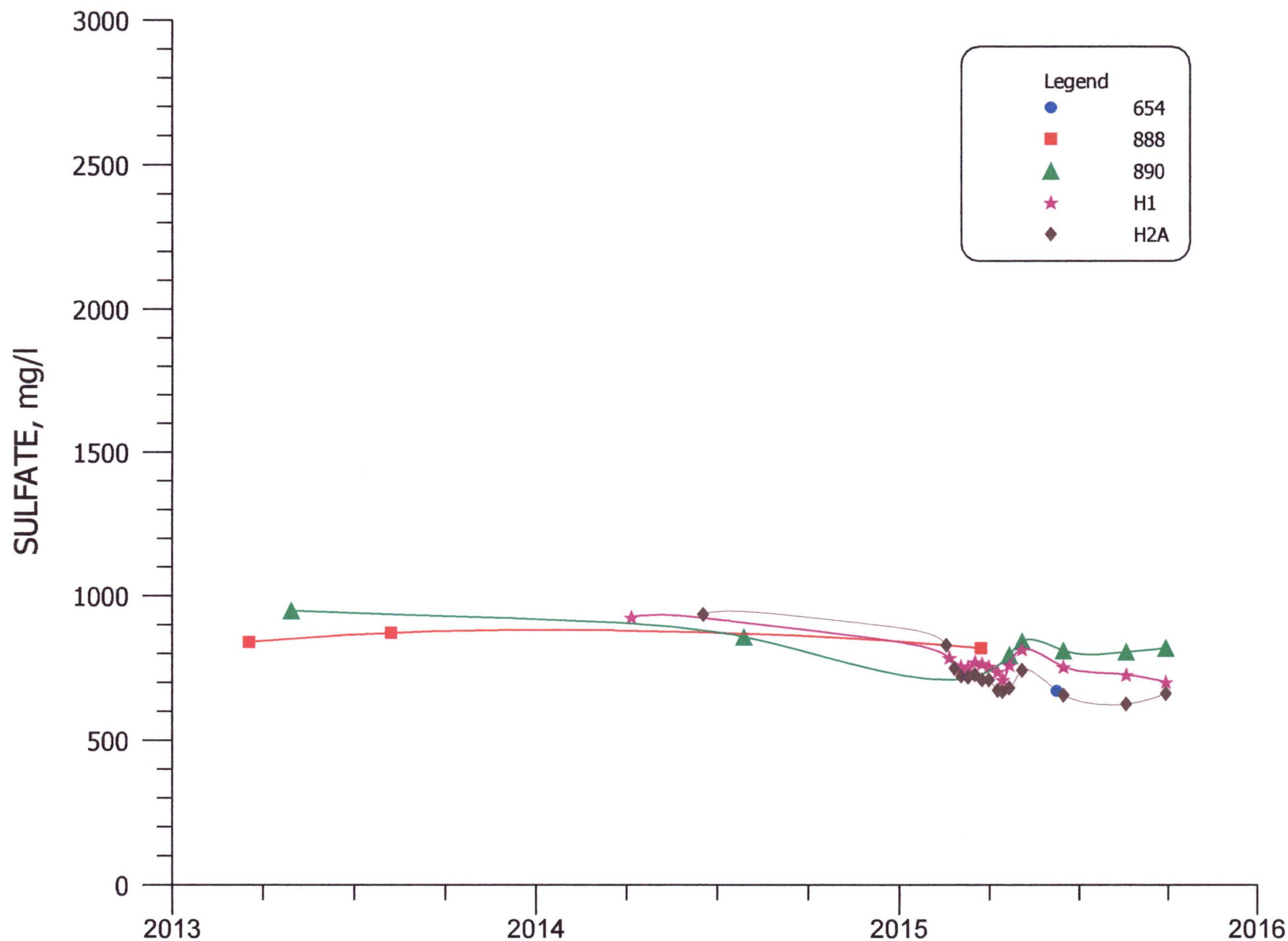

FIGURE 4.3-16A. SULFATE CONCENTRATIONS FOR WELLS 654, 888, 890, H1, AND H2A.

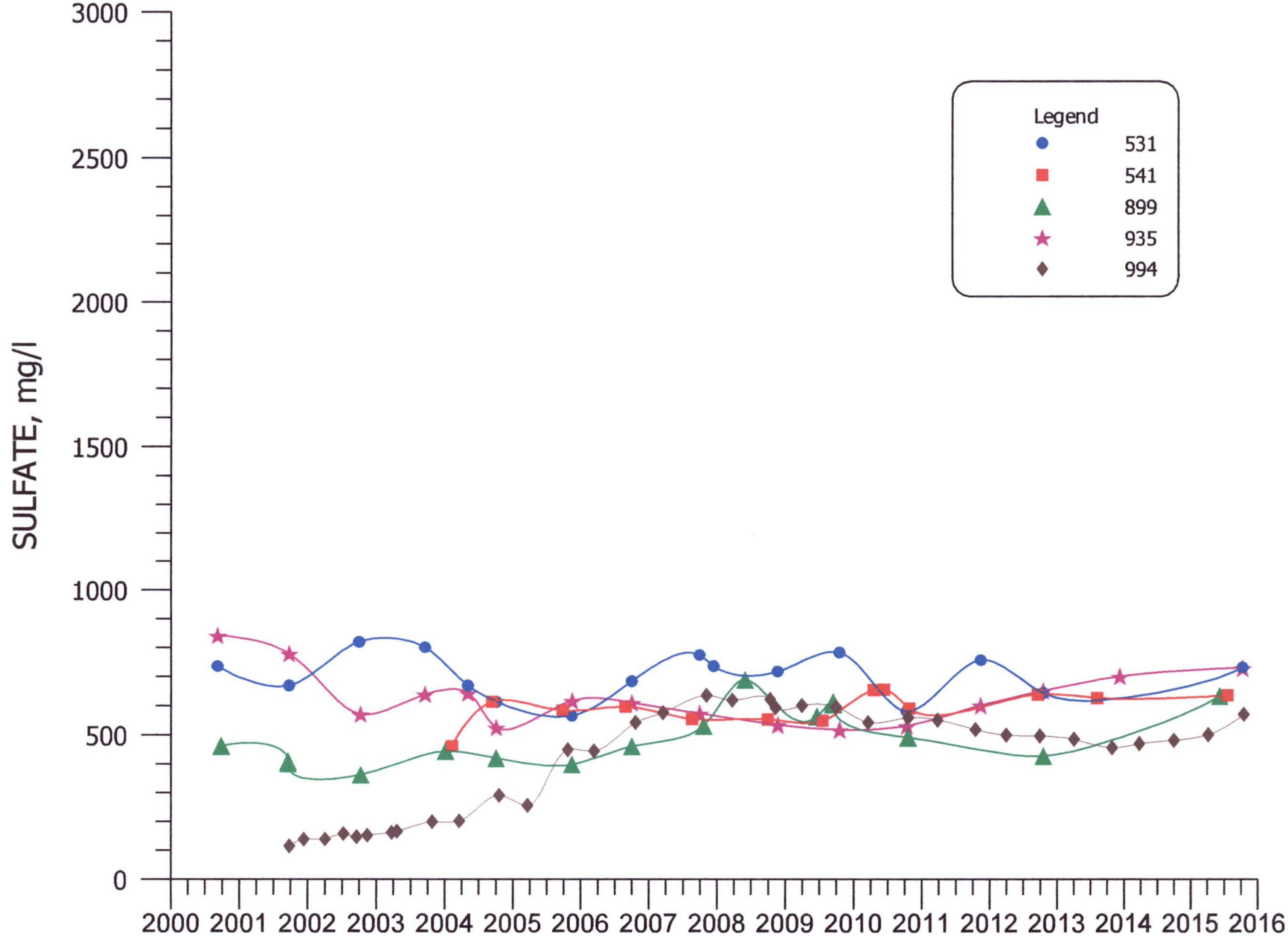

FIGURE 4.3-17. SULFATE CONCENTRATIONS FOR WELLS 531, 541, 899, 935 and 994.

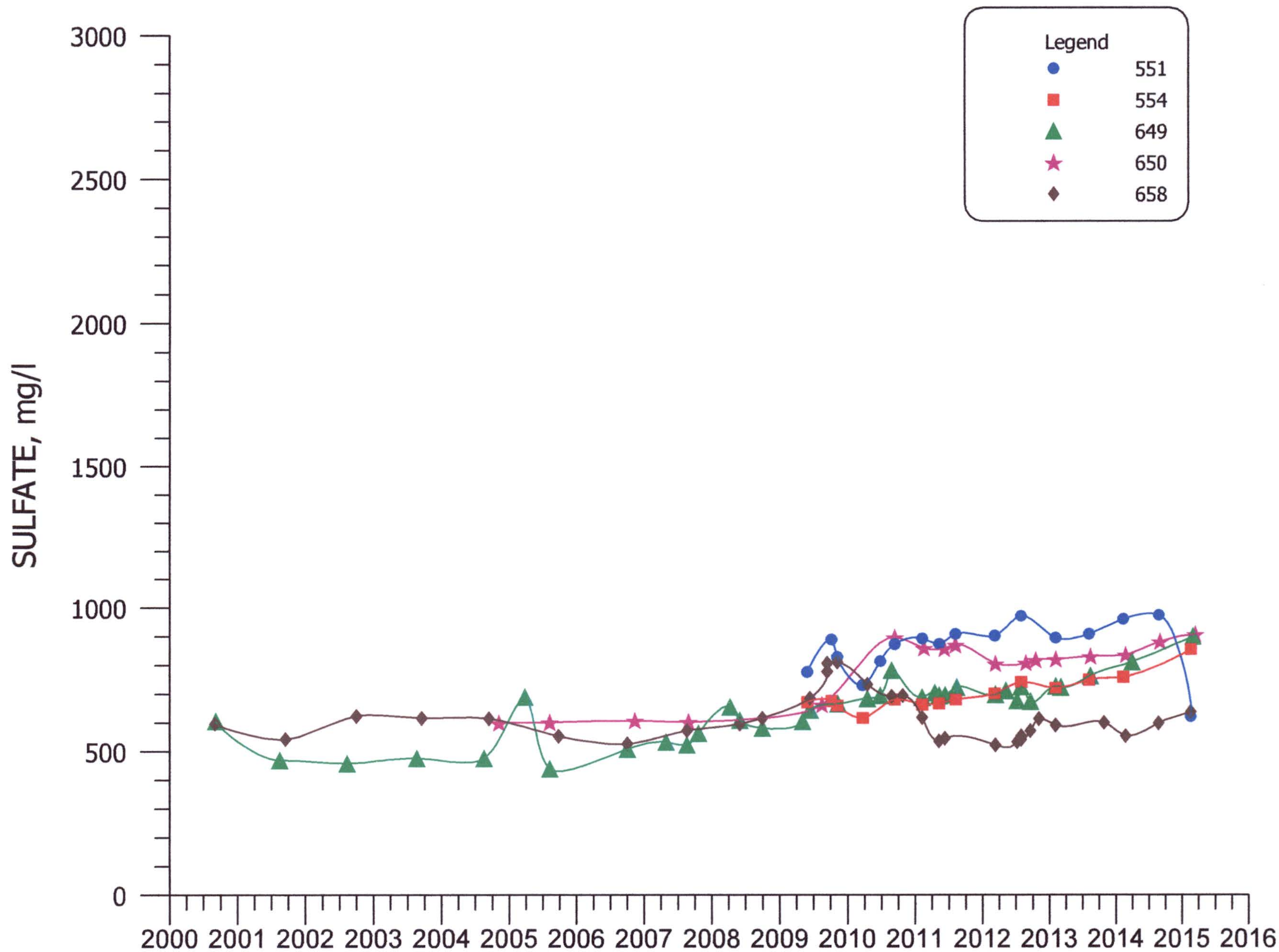

FIGURE 4.3-18. SULFATE CONCENTRATIONS FOR WELLS 551, 554, 649, 650, AND 658.

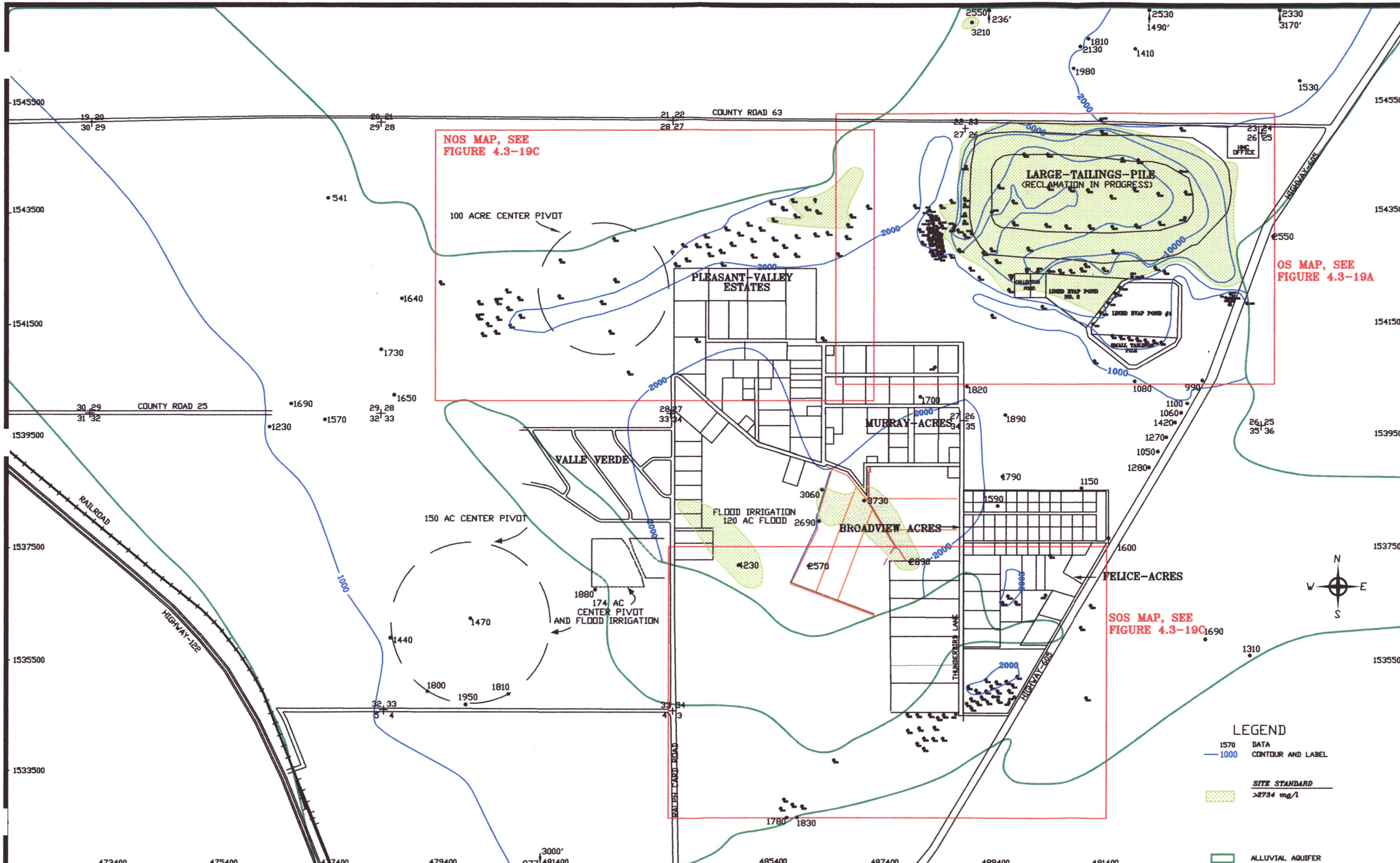

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FIGURE 4.3-19. TDS CONCENTRATIONS OF THE ALLUVIAL AQUIFER, 2015, mg/l

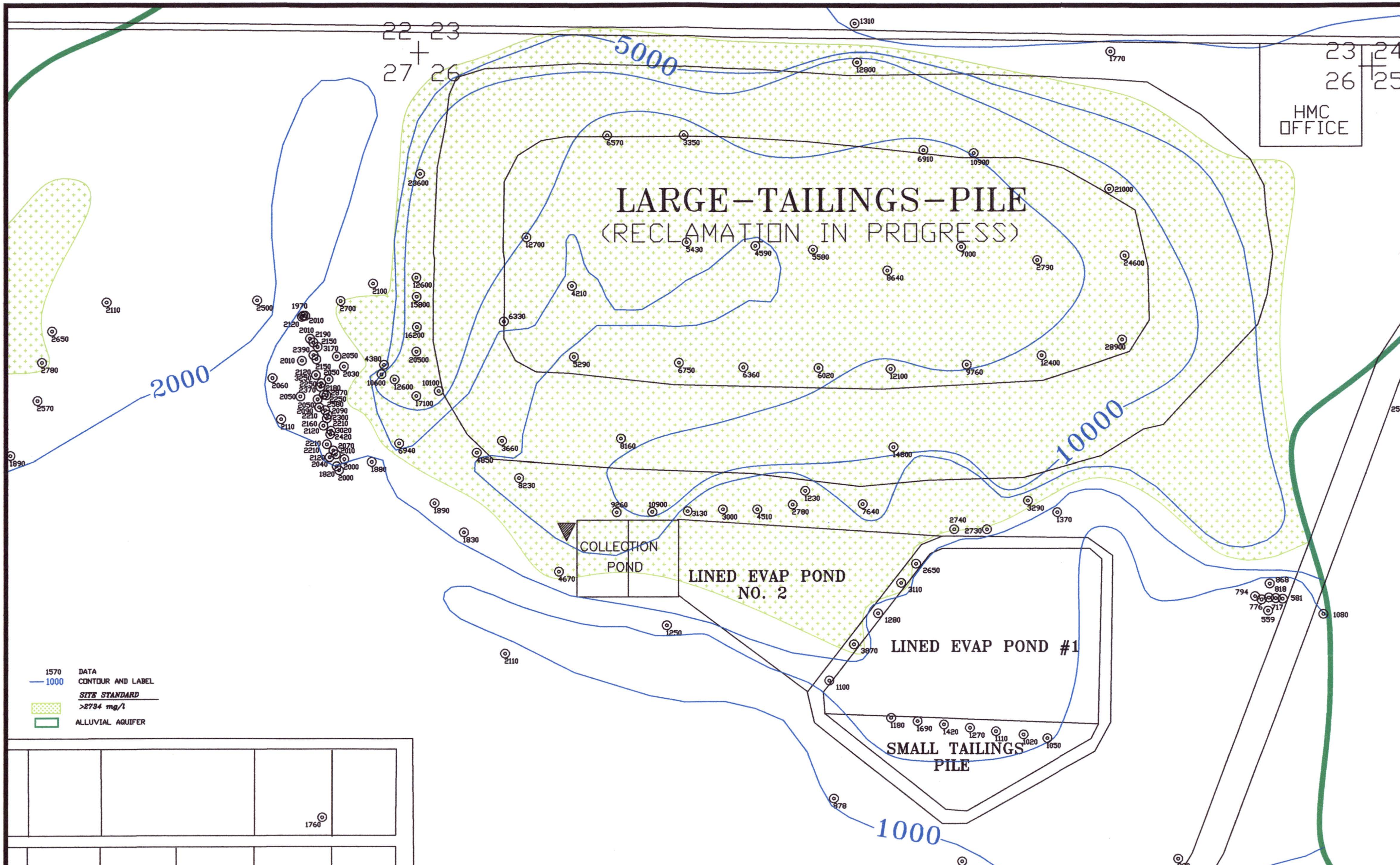

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FIGURE 4.3-19A. TDS CONCENTRATIONS OF THE ALLUVIAL AQUIFER, OS, 2015, mg/l

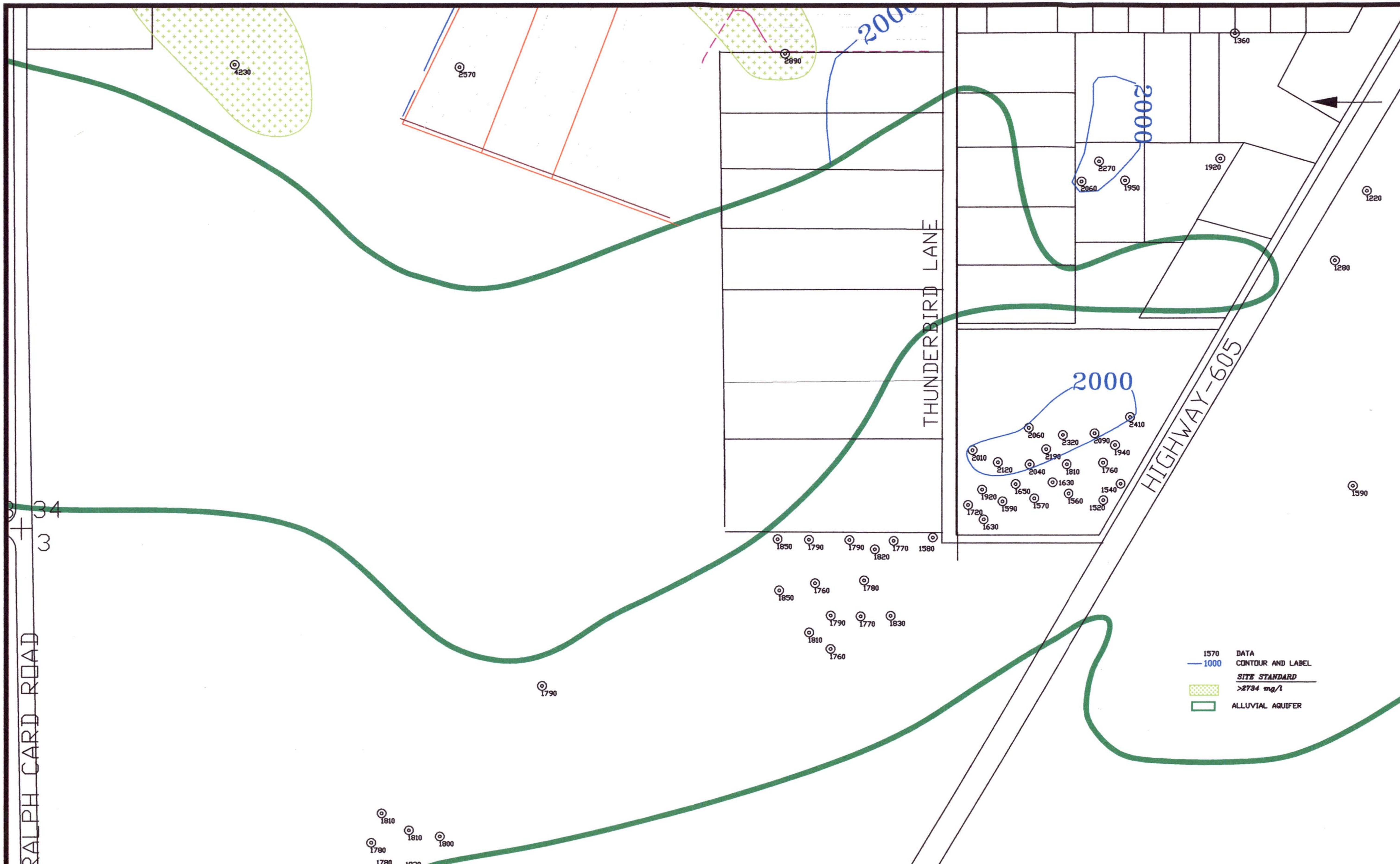

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FIGURE 4.3-19B. TDS CONCENTRATIONS OF THE ALLUVIAL AQUIFER, SOS, 2015, mg/l

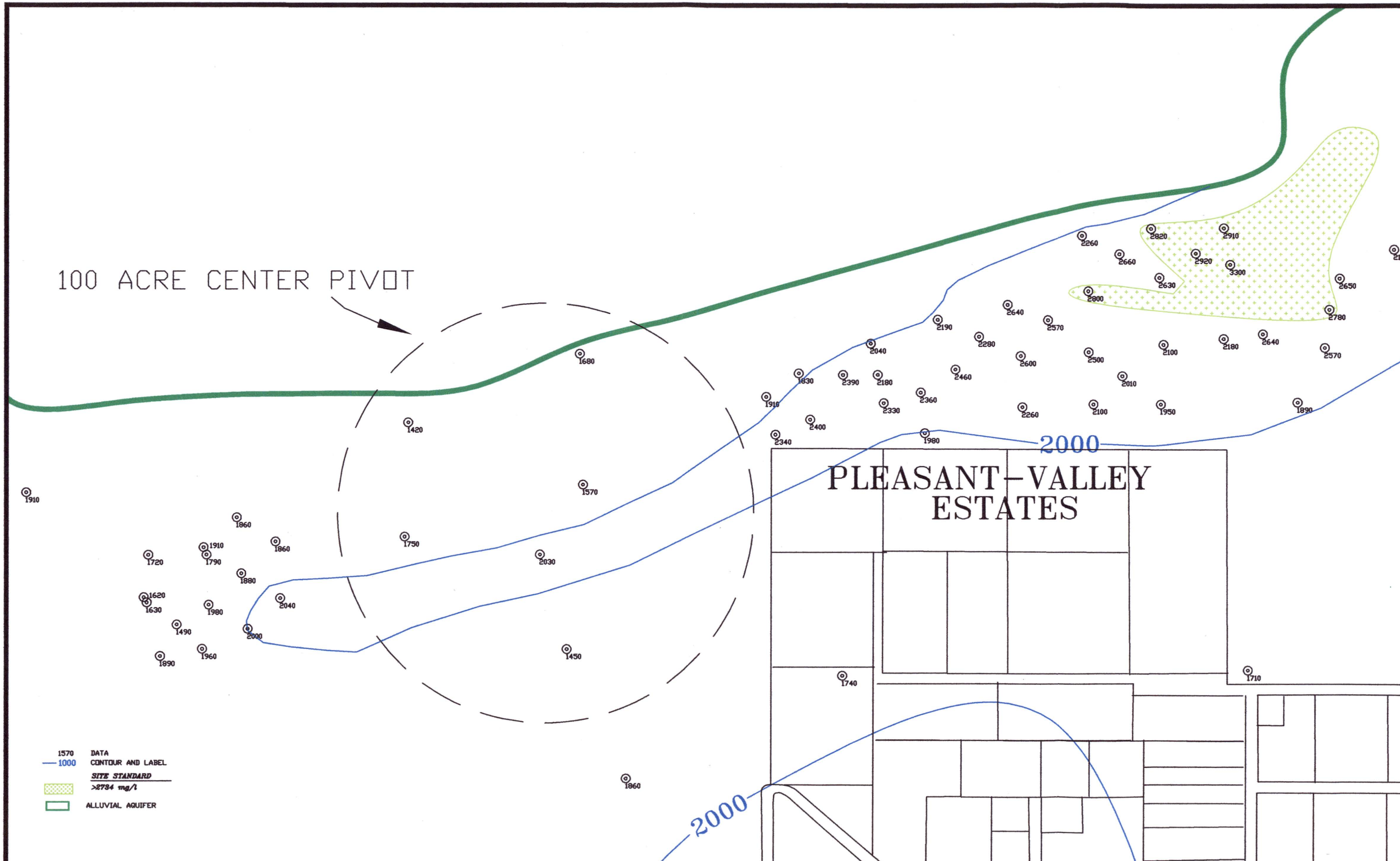

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FIGURE 4.3-19C. TDS CONCENTRATIONS OF THE ALLUVIAL AQUIFER, NOS, 2015, mg/l

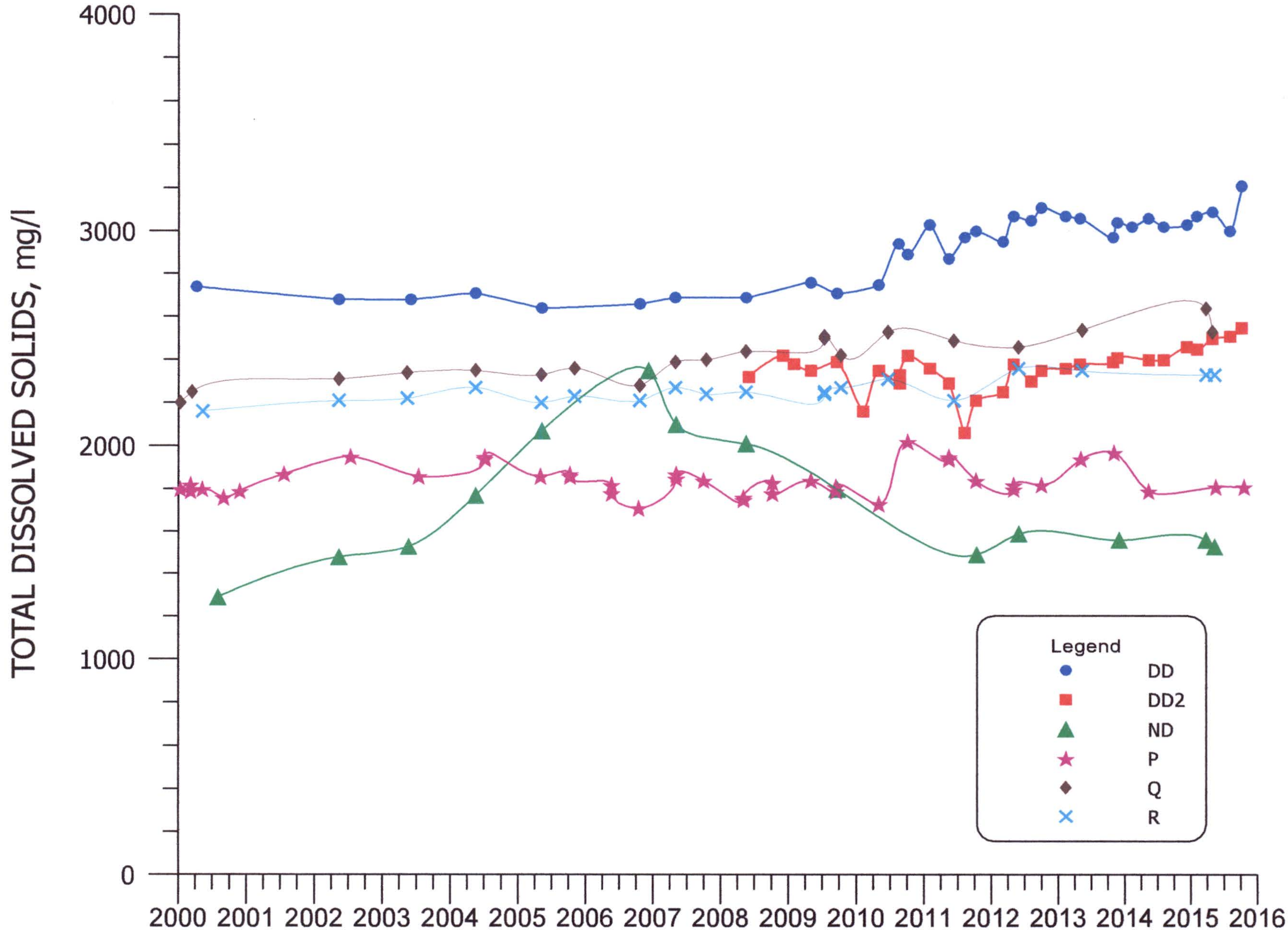


FIGURE 4.3-20. TDS CONCENTRATIONS FOR WELLS DD, DD2, ND, P, Q, AND R.

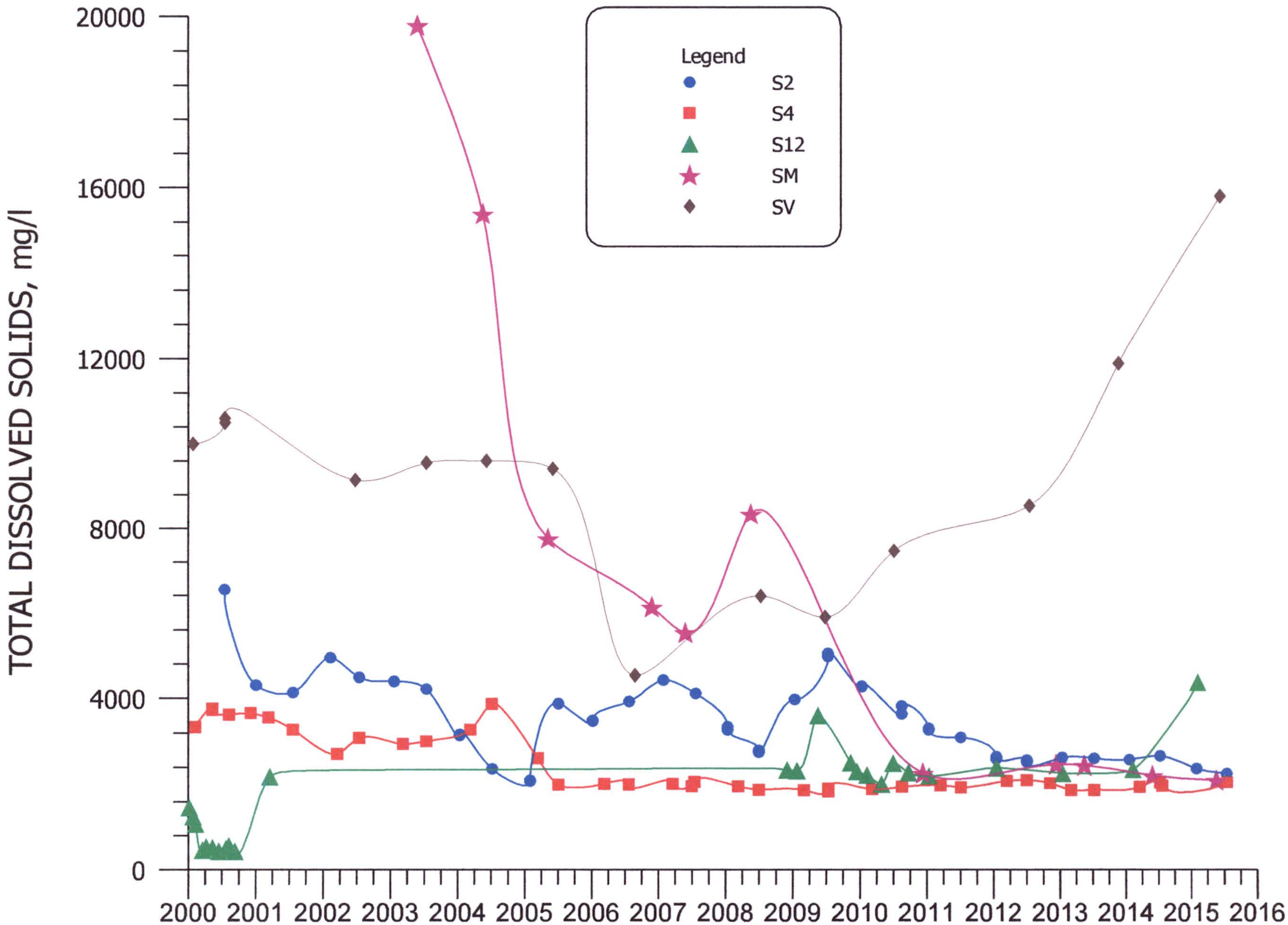


FIGURE 4.3-21. TDS CONCENTRATIONS FOR WELLS S2, S4, S12, SM, AND SV.

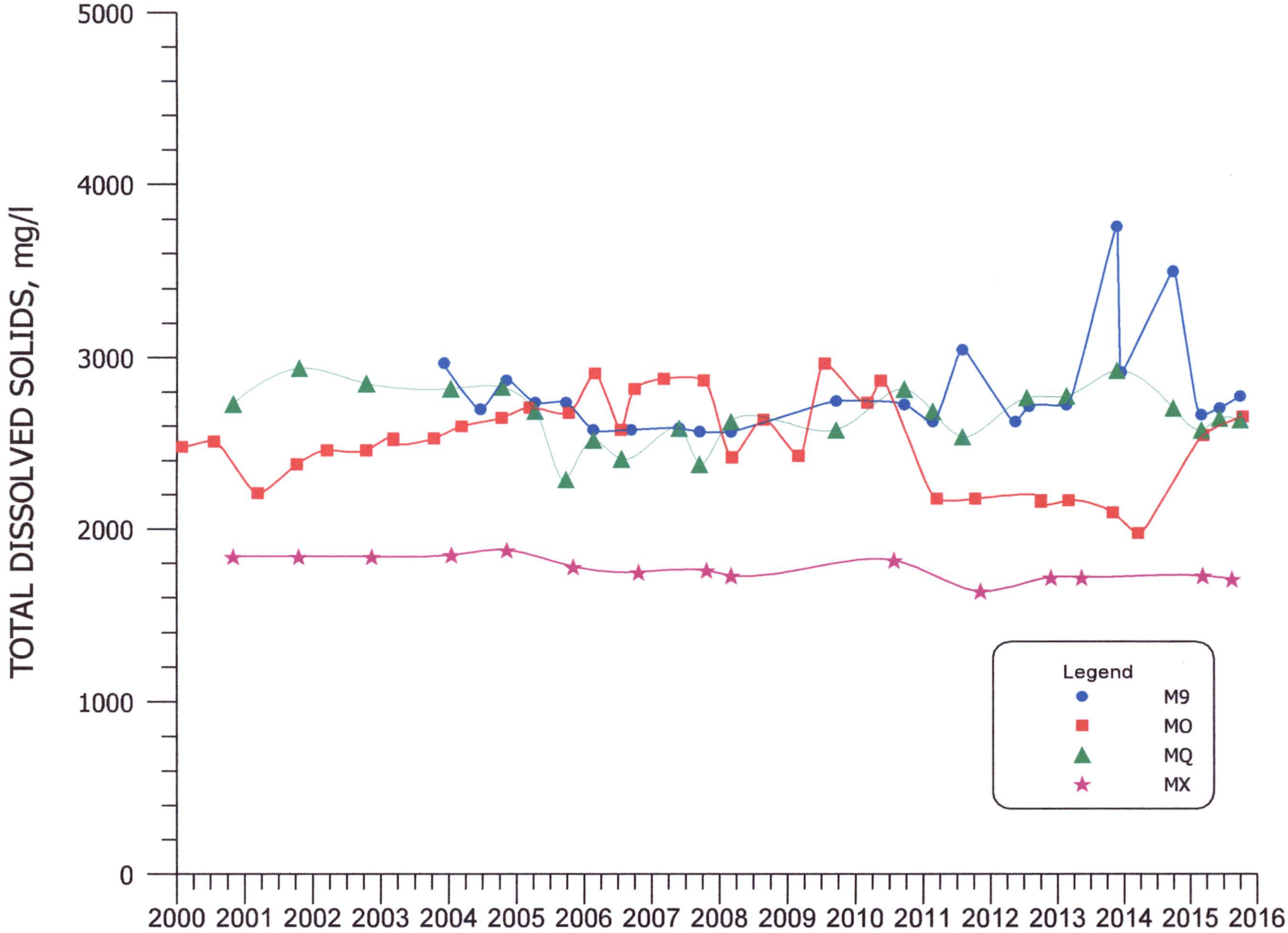


FIGURE 4.3-22. TDS CONCENTRATIONS FOR WELLS M9, MO, MQ, AND MX.

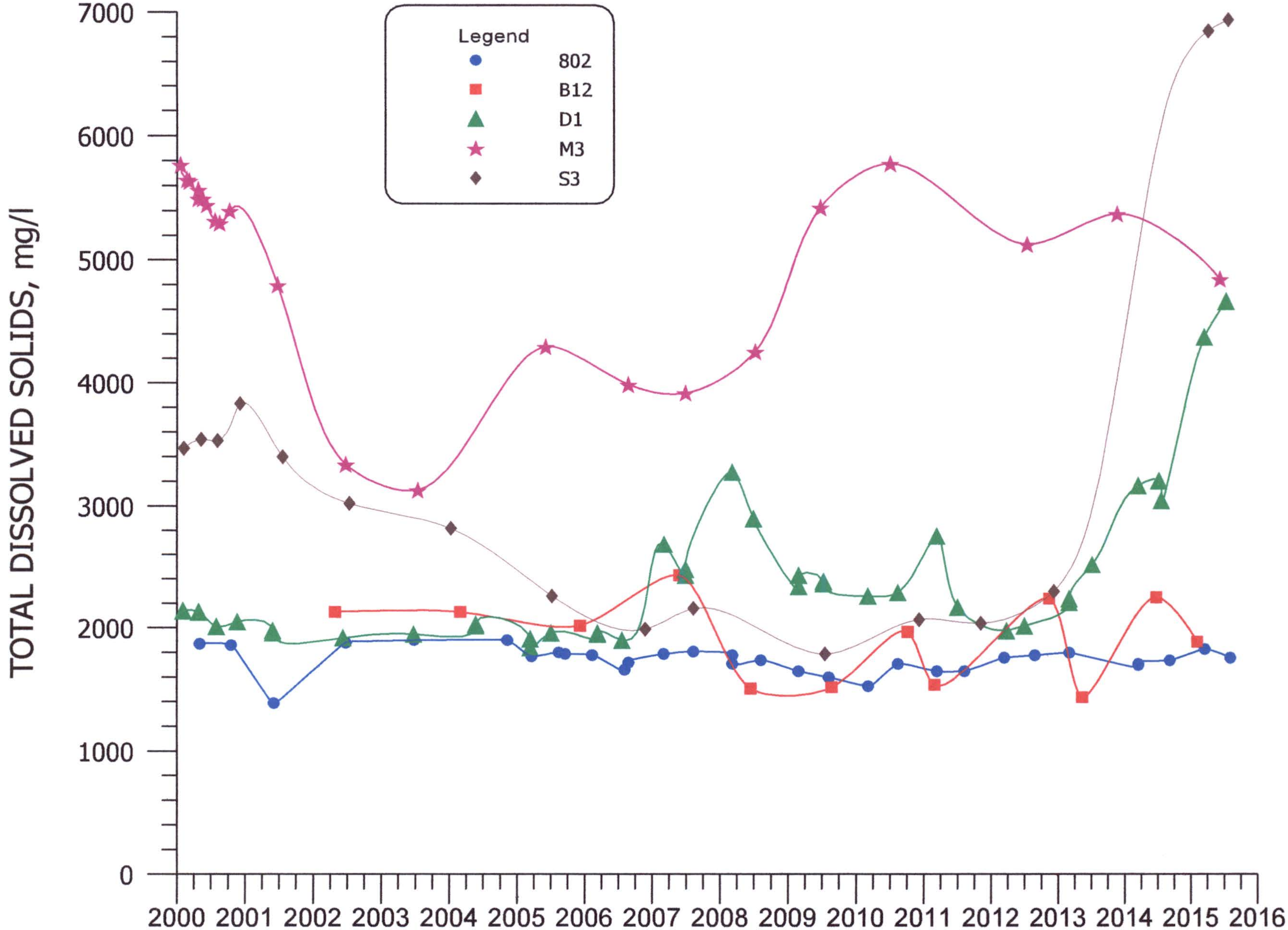


FIGURE 4.3-23. TDS CONCENTRATIONS FOR WELLS 802, B12, D1, M3, AND S3.

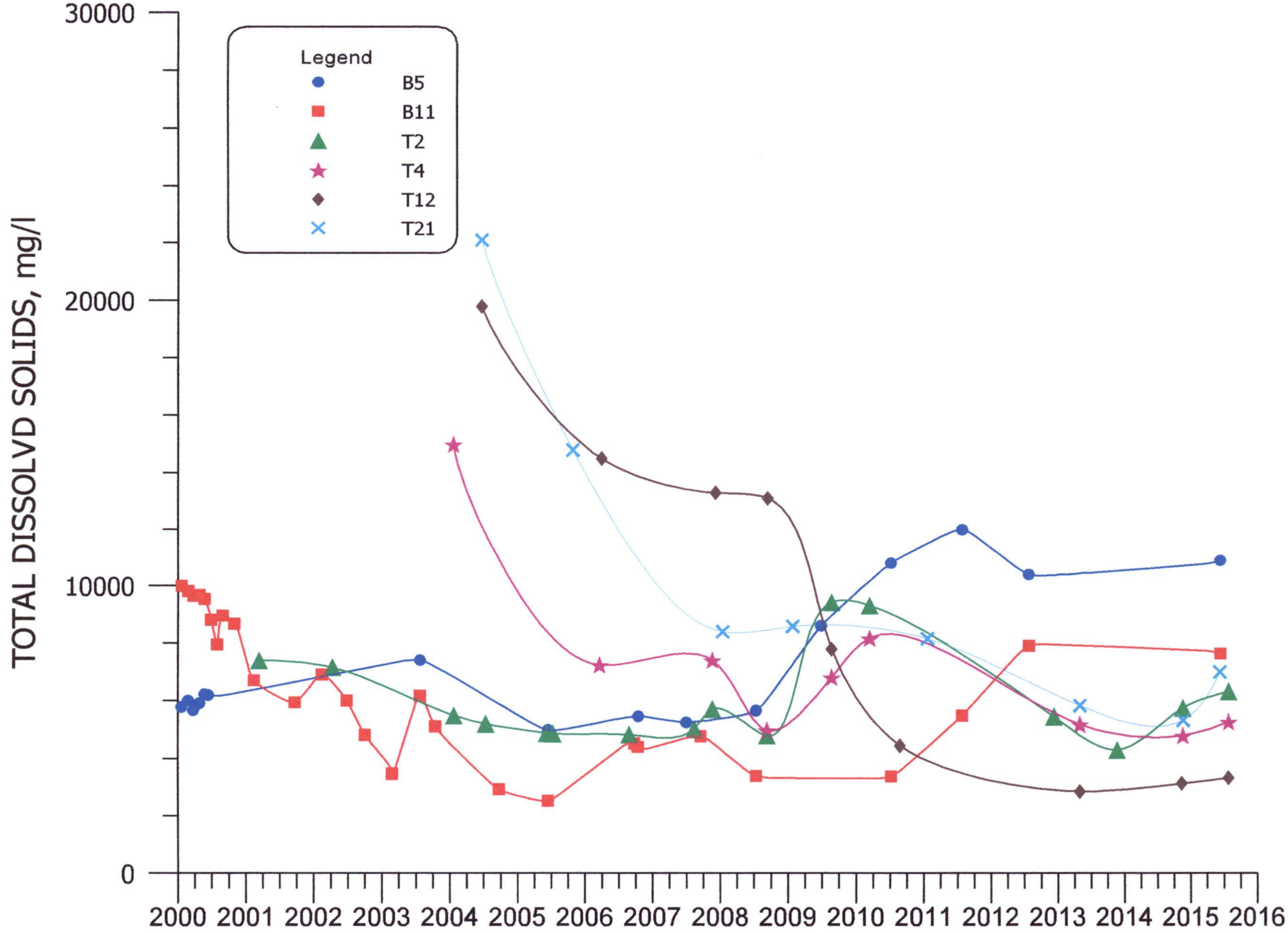


FIGURE 4.3-24. TDS CONCENTRATIONS FOR WELLS B5, B11, T2, T4, T12, AND T21.

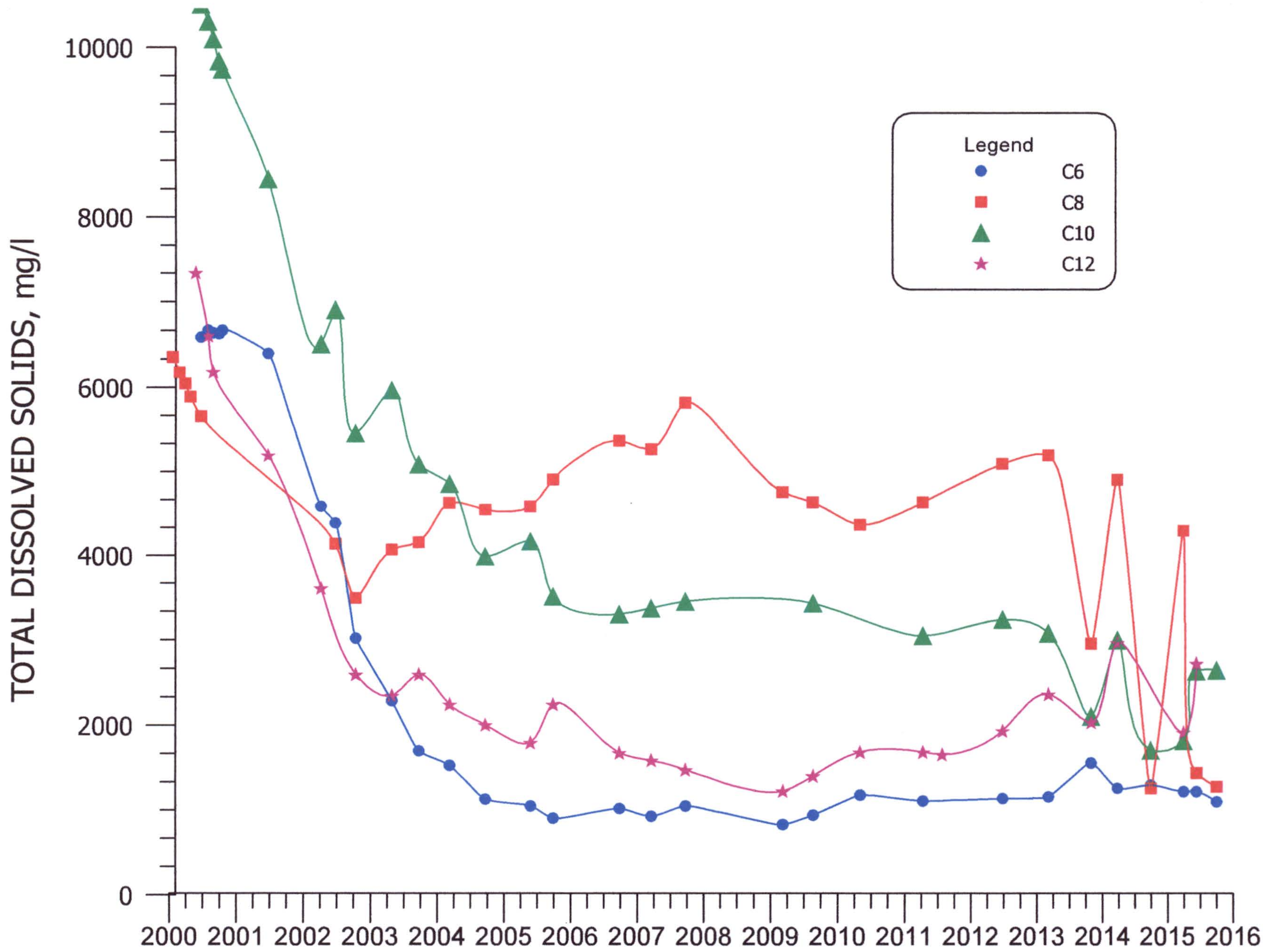


FIGURE 4.3-25. TDS CONCENTRATIONS FOR WELLS C6, C8, C10 AND C12.

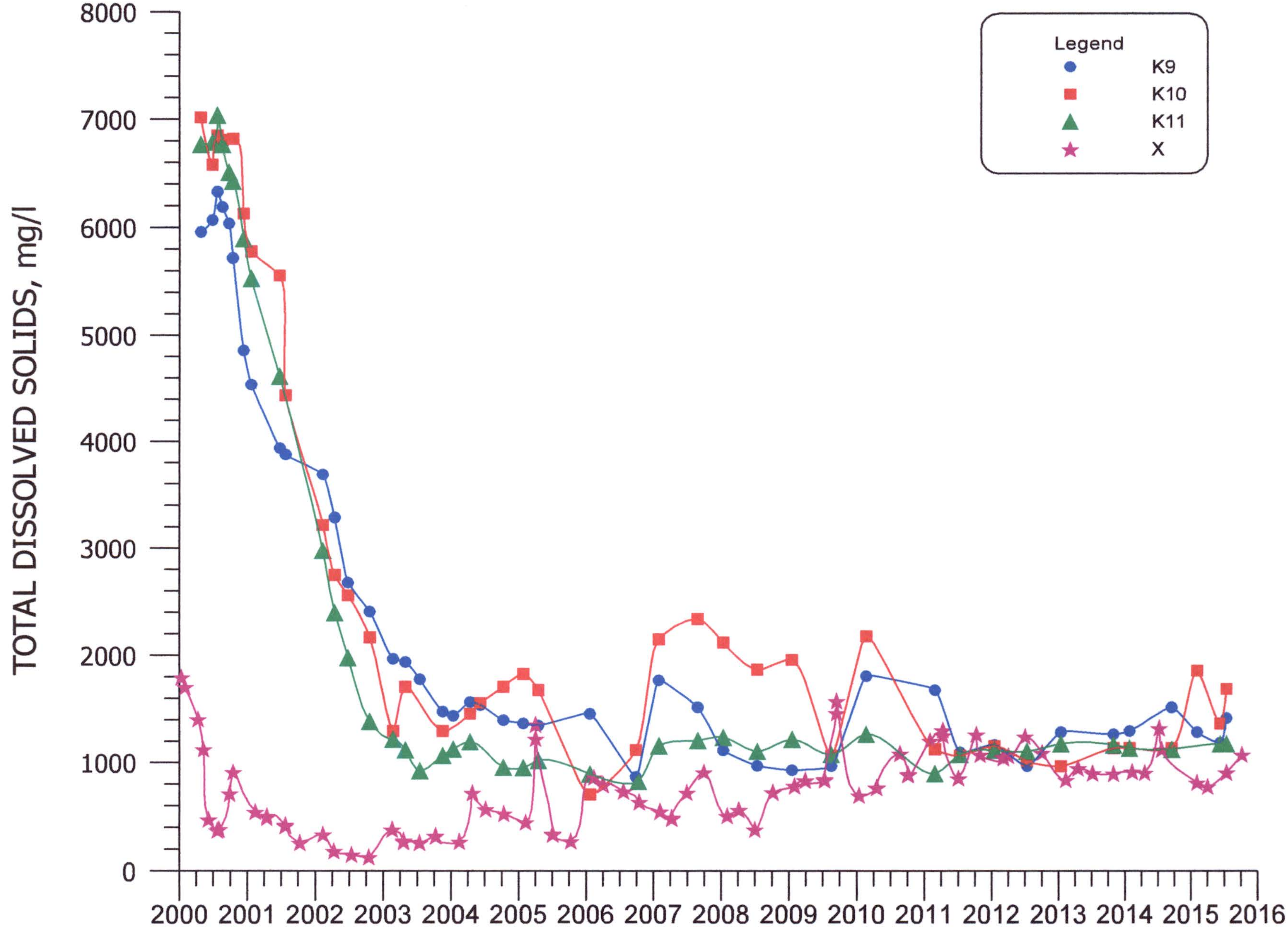


FIGURE 4.3-26. TDS CONCENTRATIONS FOR WELLS K9, K10, K11 AND X.

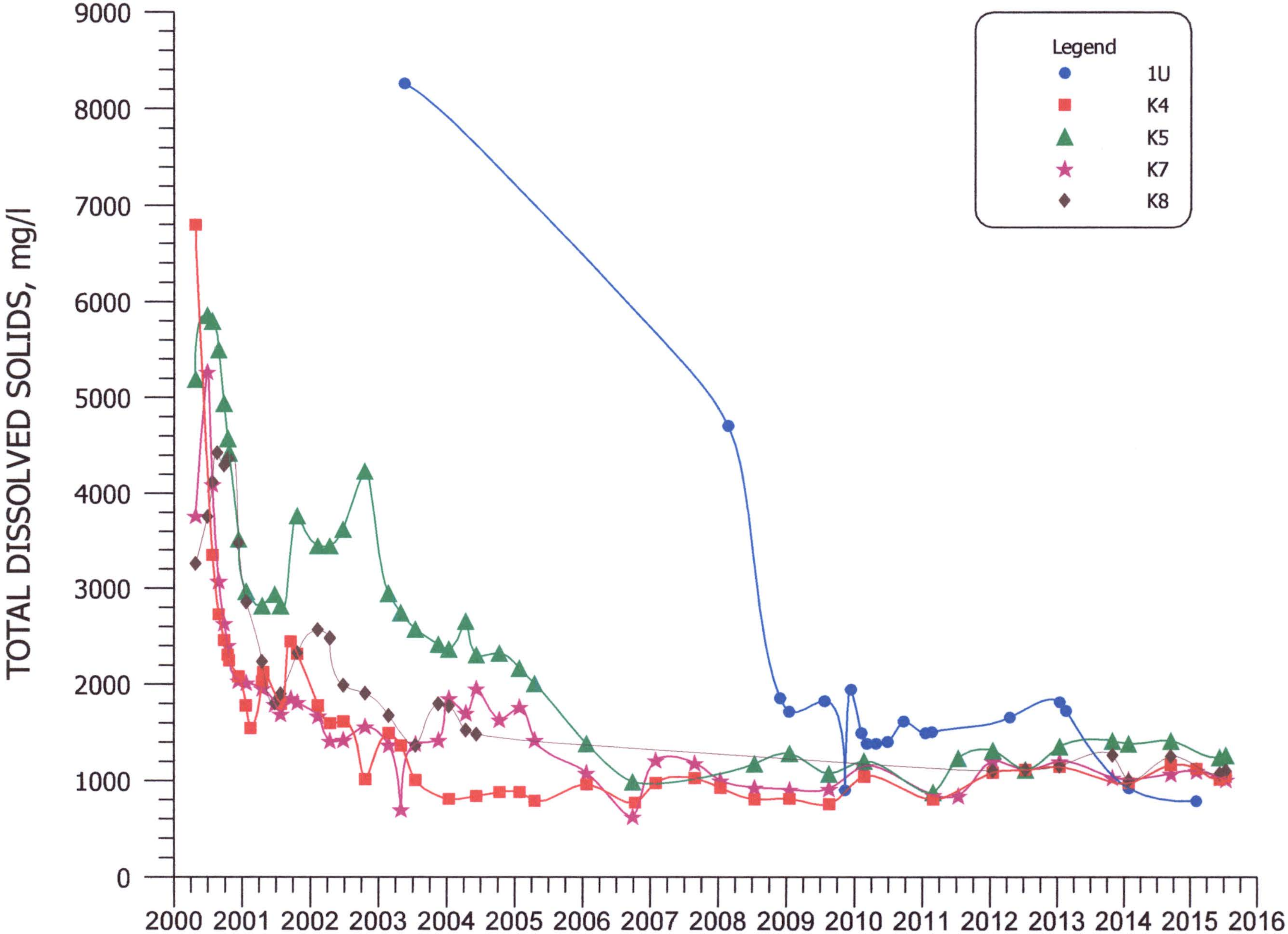


FIGURE 4.3-27. TDS CONCENTRATIONS FOR WELLS 1U, K4, K5, K7 AND K8.

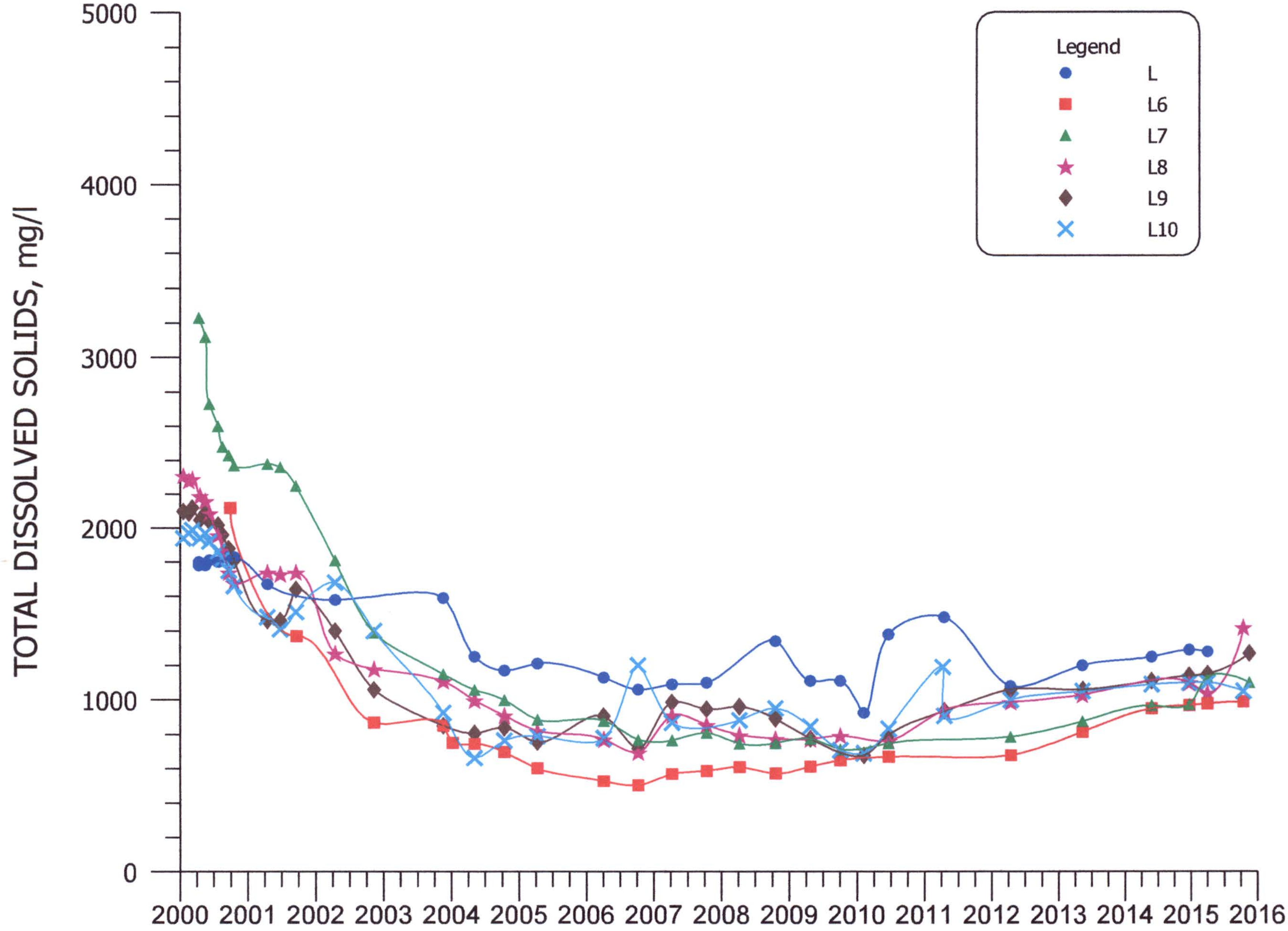


FIGURE 4.3-28. TDS CONCENTRATIONS FOR WELLS L, L6, L7, L8, L9, AND L10.

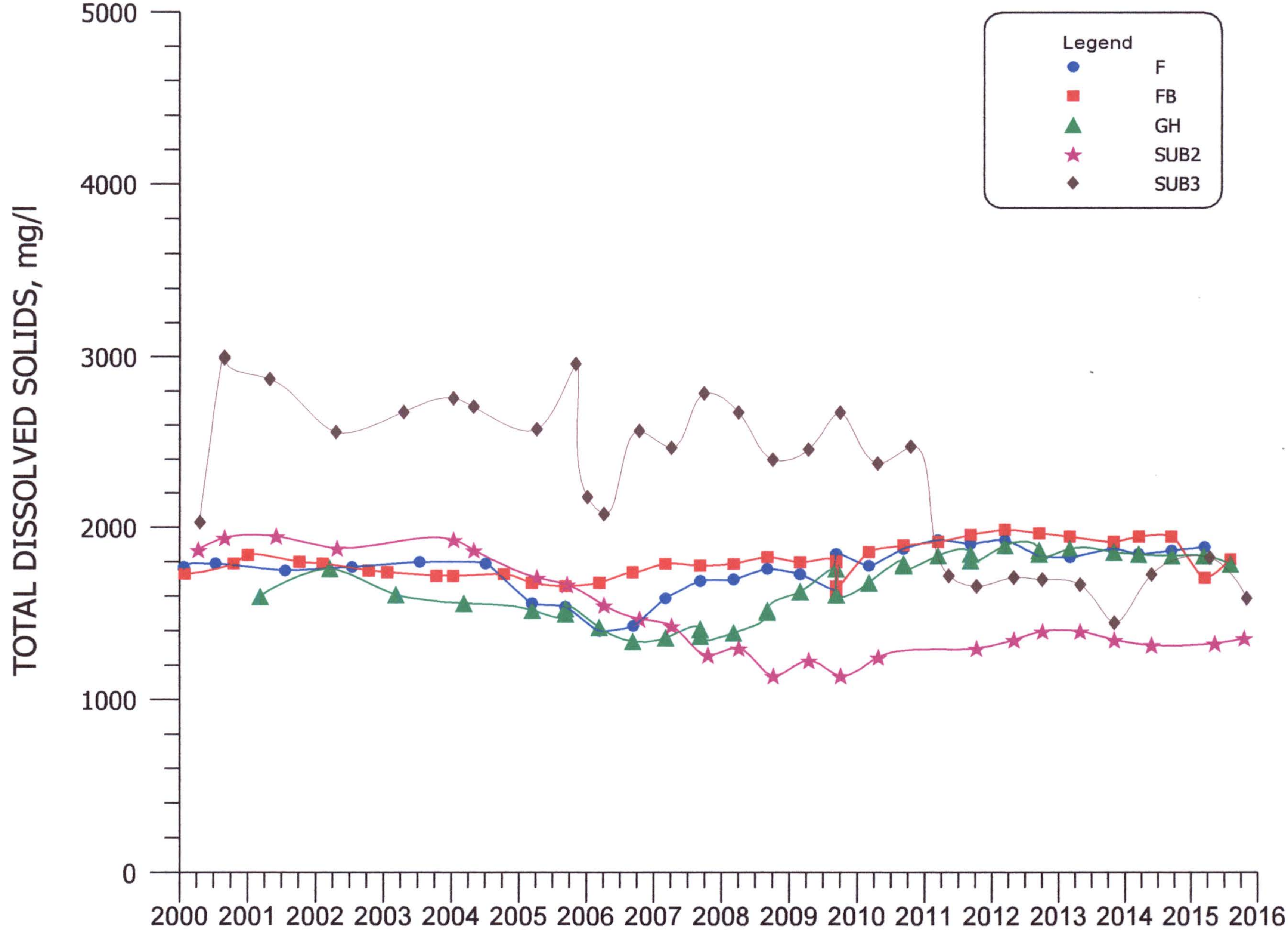


FIGURE 4.3-29. TDS CONCENTRATIONS FOR WELLS F, FB, GH, SUB2, AND SUB3.

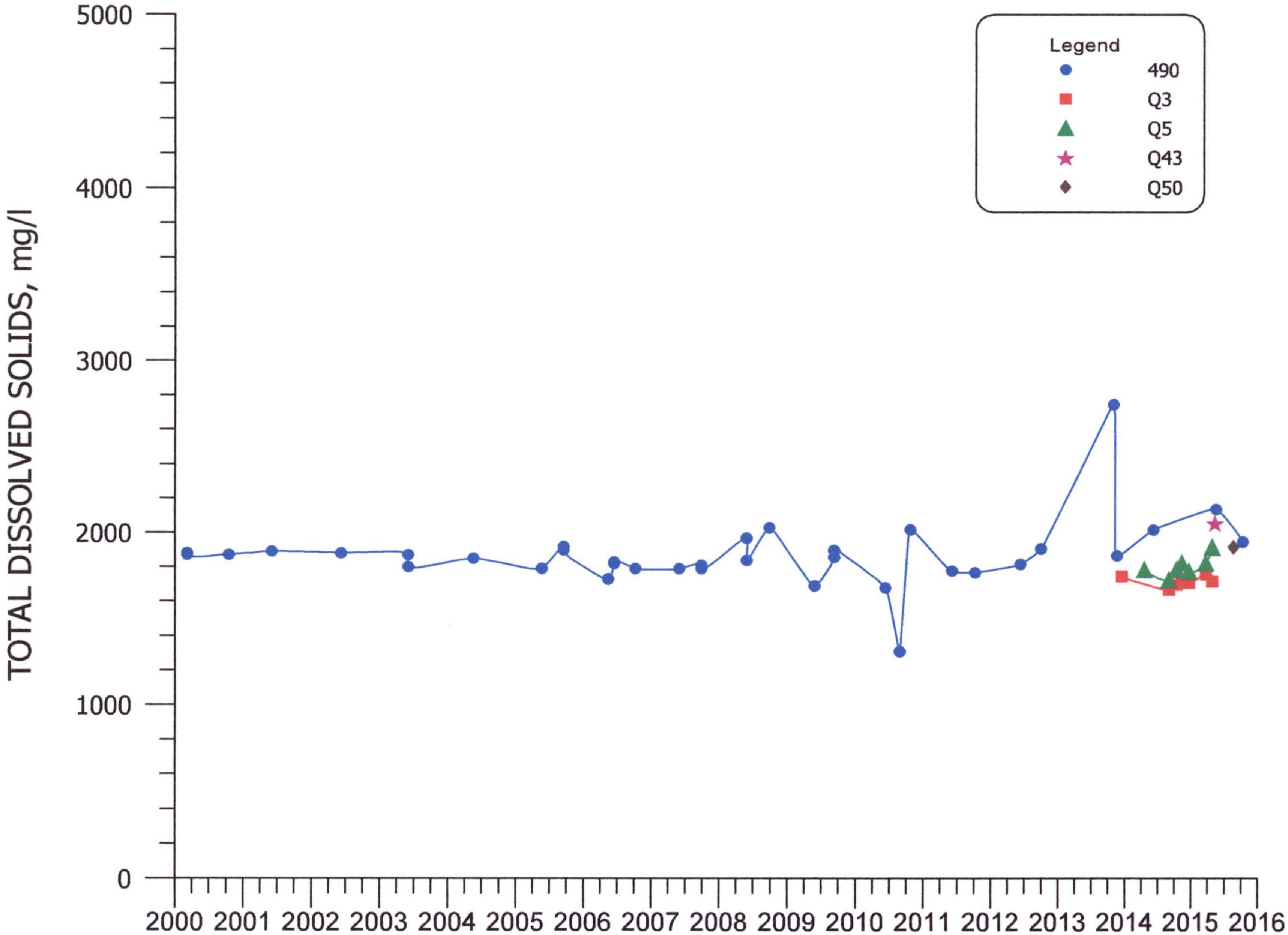


FIGURE 4.3-30. TDS CONCENTRATIONS FOR WELLS 490, Q3, Q5, Q43, AND Q50.

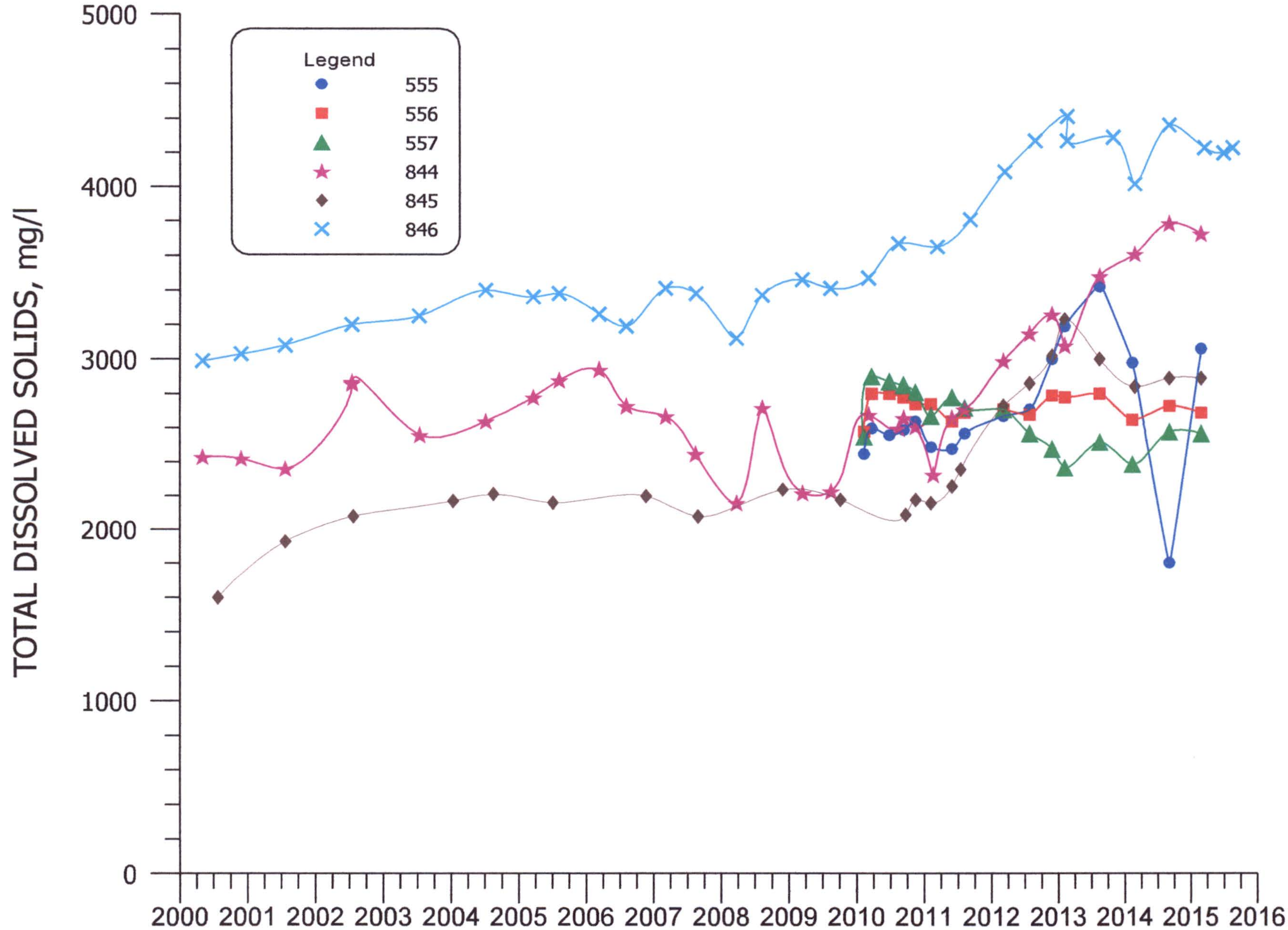


FIGURE 4.3-31. TDS CONCENTRATIONS FOR WELLS 555, 556, 557, 844, 845, AND 846.

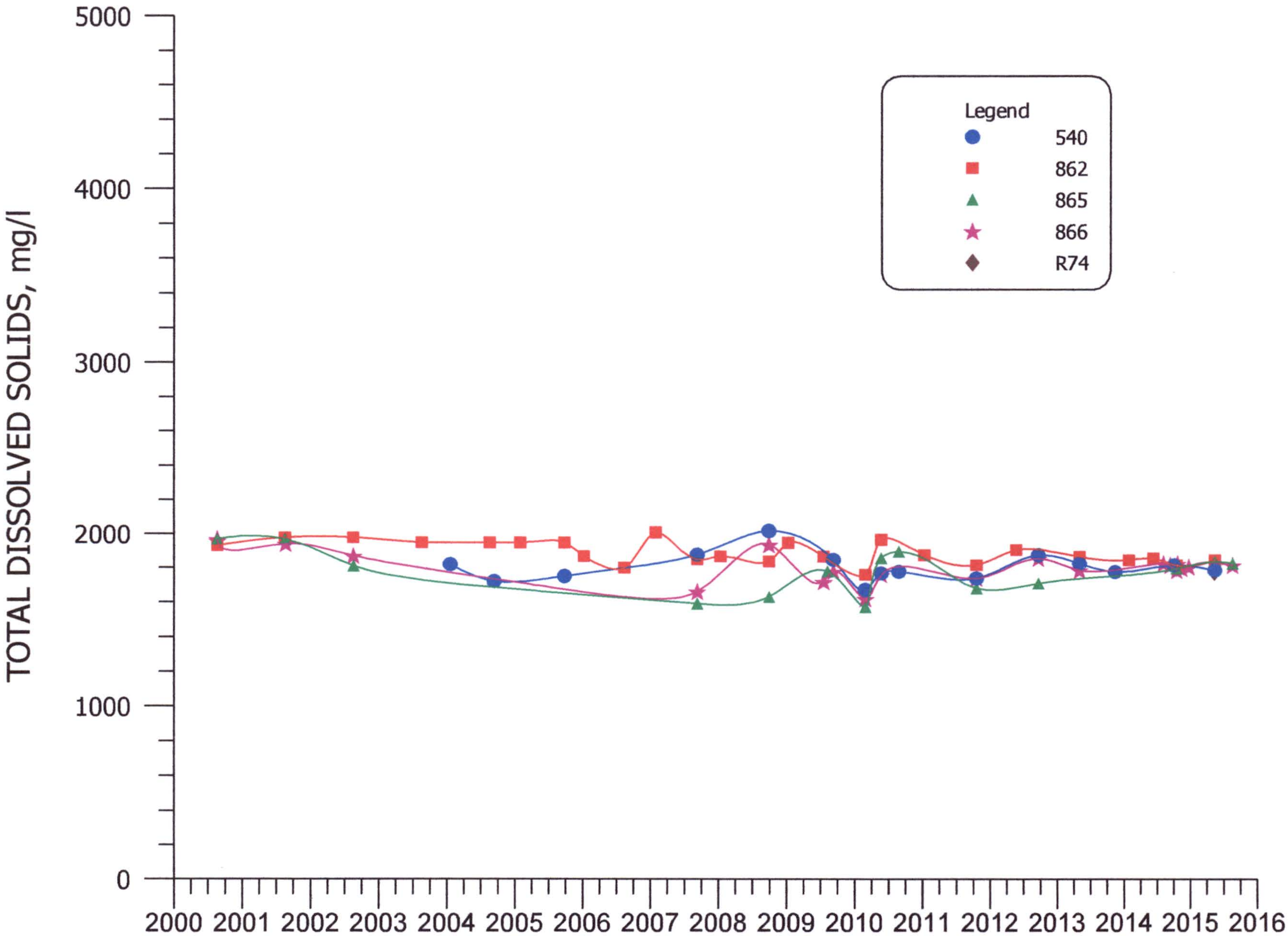


FIGURE 4.3-32. TDS CONCENTRATIONS FOR WELLS 540, 862, 865, 866, AND R74.

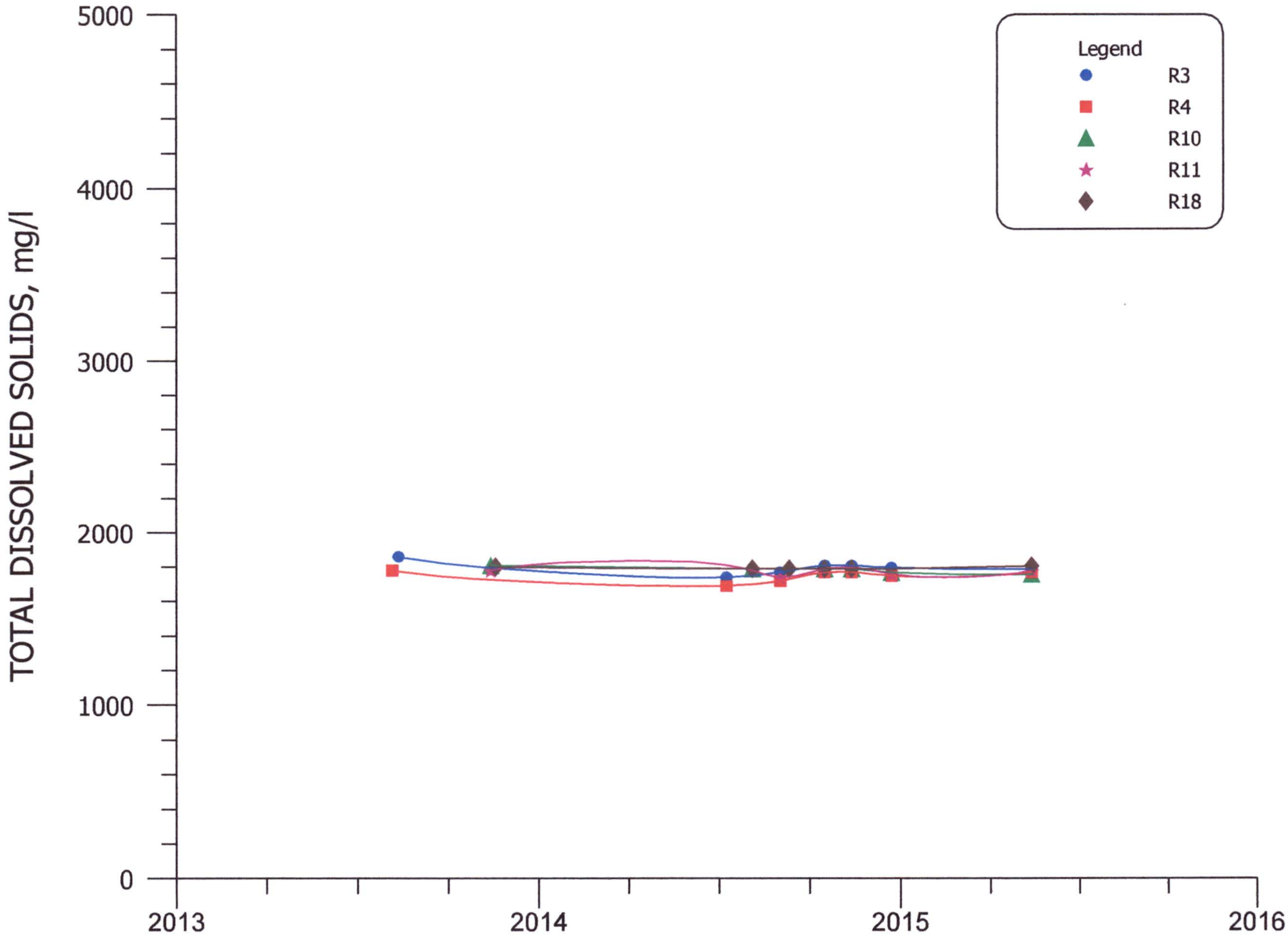


FIGURE 4.3-32A. TDS CONCENTRATIONS FOR WELLS R3, R4, R10, R11 AND R18.

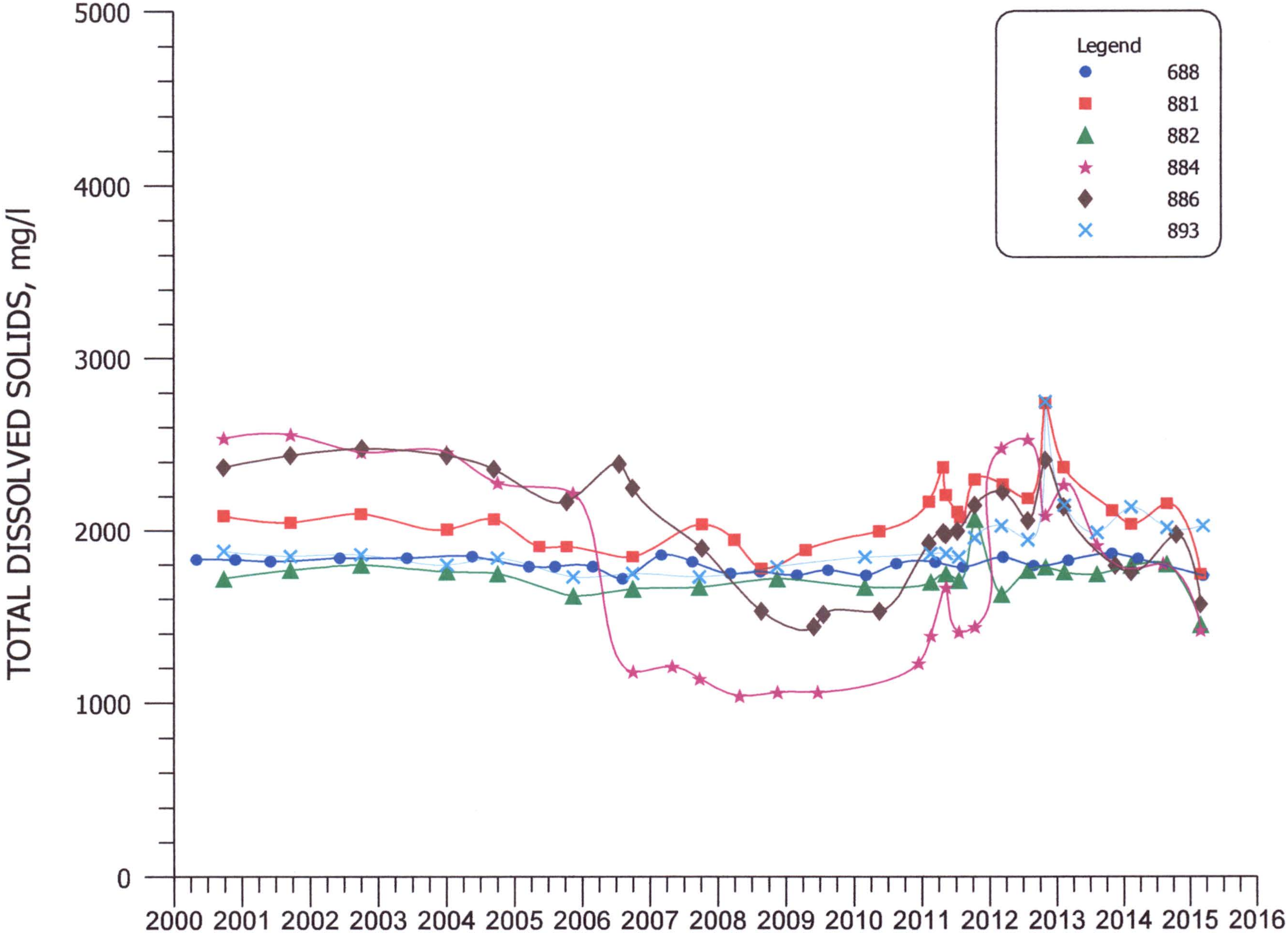


FIGURE 4.3-33. TDS CONCENTRATIONS FOR WELLS 688, 881, 882, 884, 886, AND 893.

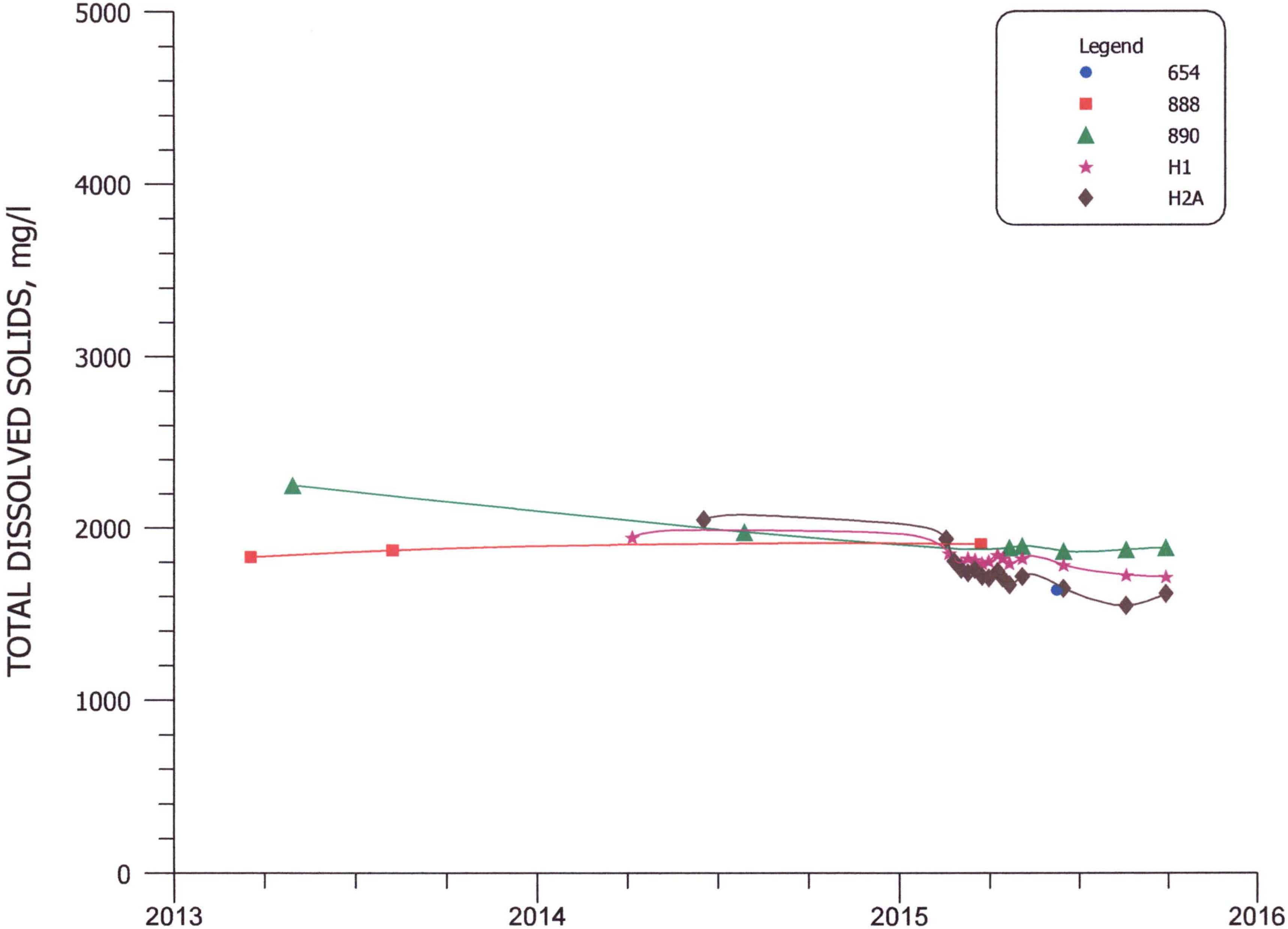


FIGURE 4.3-33A. TDS CONCENTRATIONS FOR WELLS 654, 888, 890, H1, AND H2A.

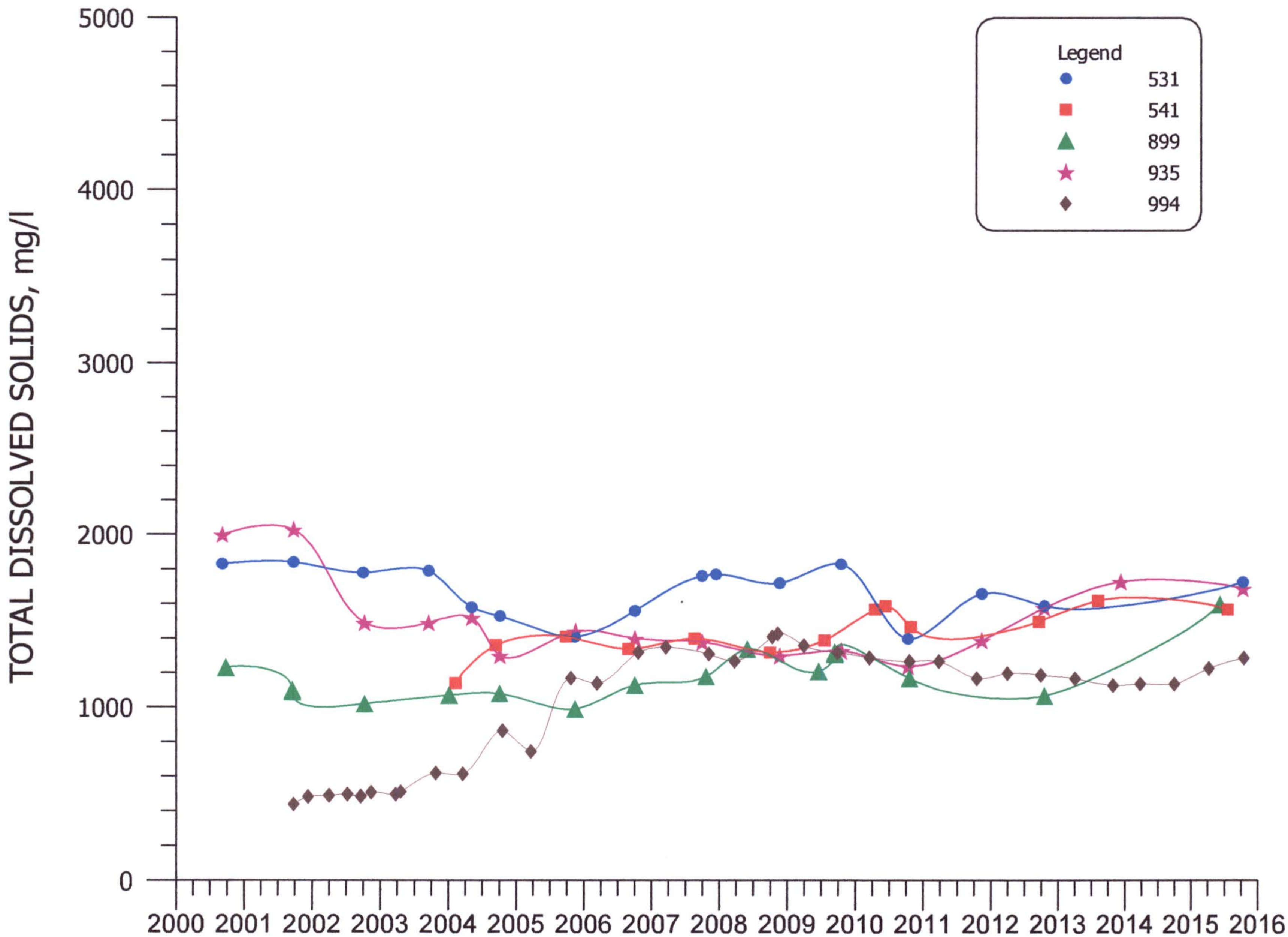


FIGURE 4.3-34. TDS CONCENTRATIONS FOR WELLS 531, 541, 899, 935, and 994.

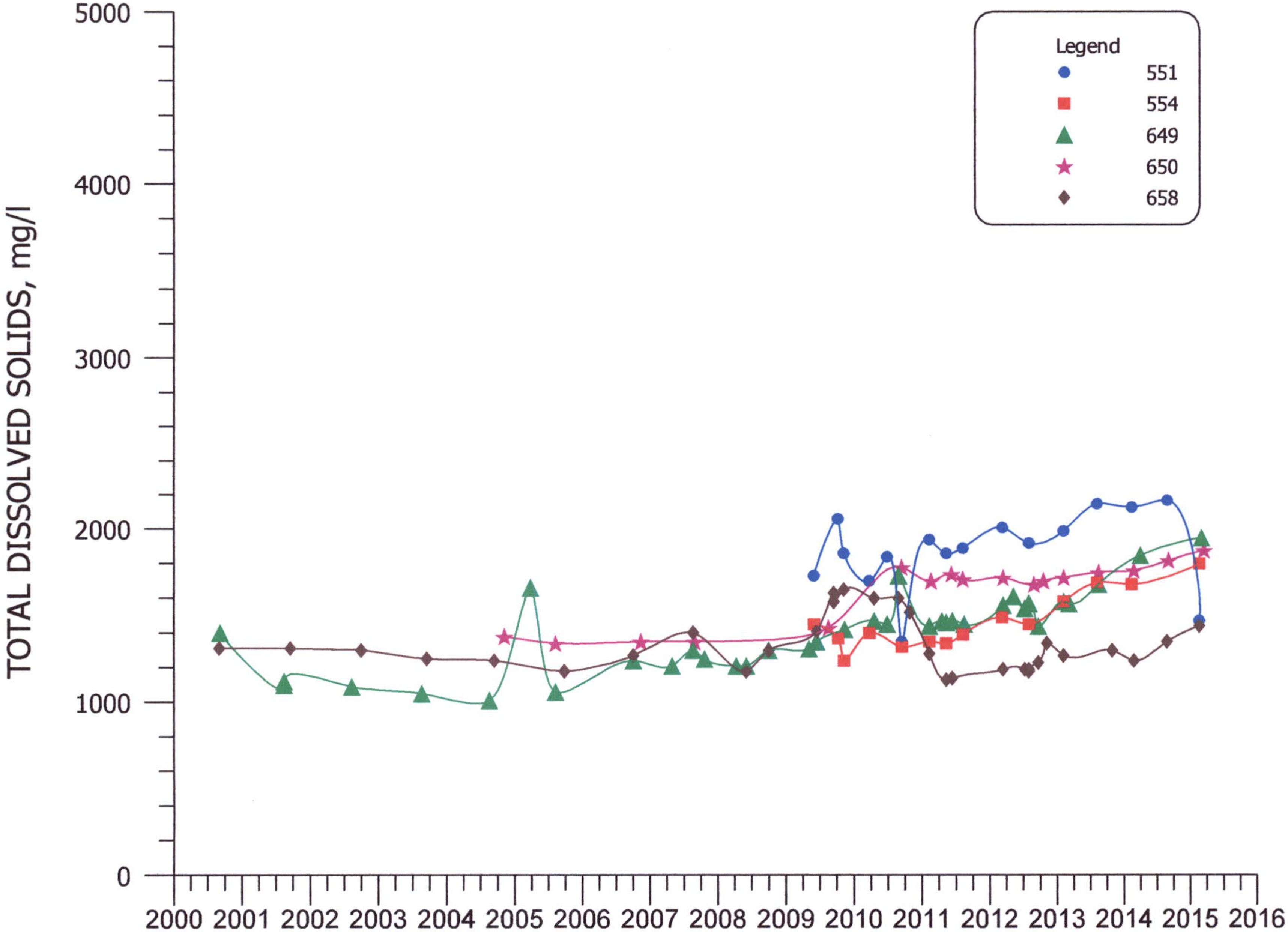
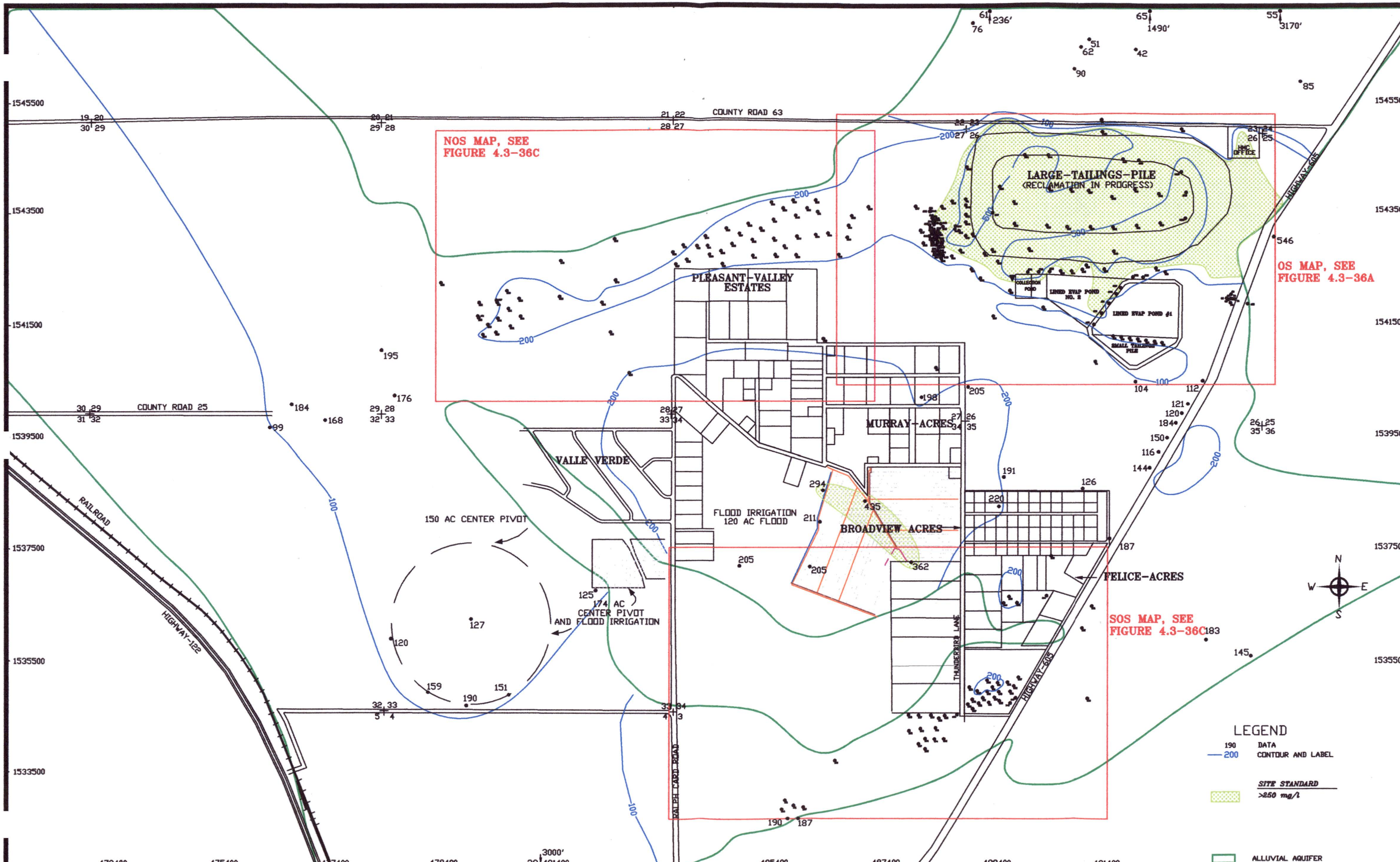


FIGURE 4.3-35. TDS CONCENTRATIONS FOR WELLS 551, 554, 649, 650, AND 658.



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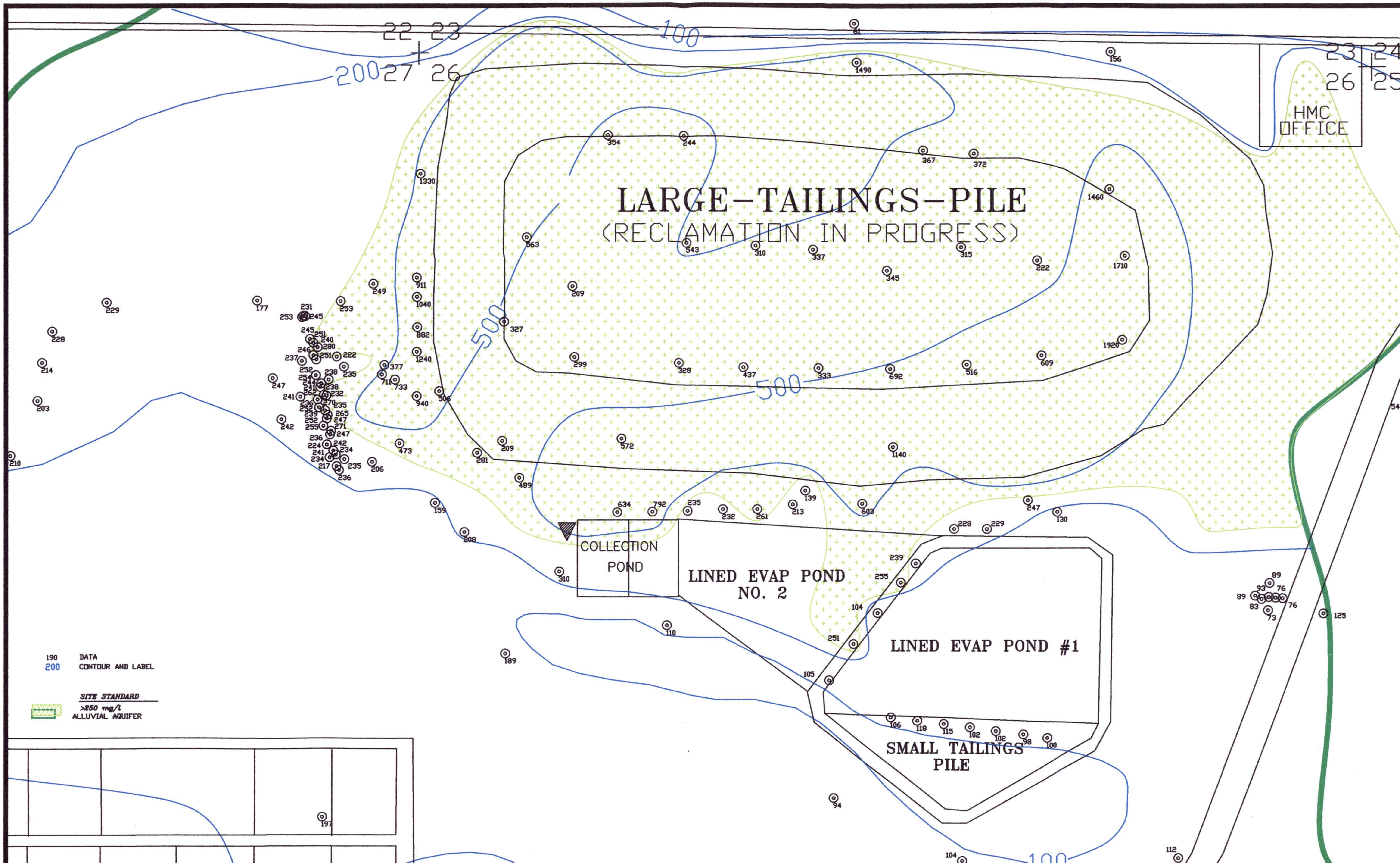
DATE: 3/1/16

FIGURE 4.3-36. CHLORIDE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, 2015, mg/l



SCALE: 1"=500'	FIGURE 4.3-36A. CHLORIDE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, OS, 2015, mg/l
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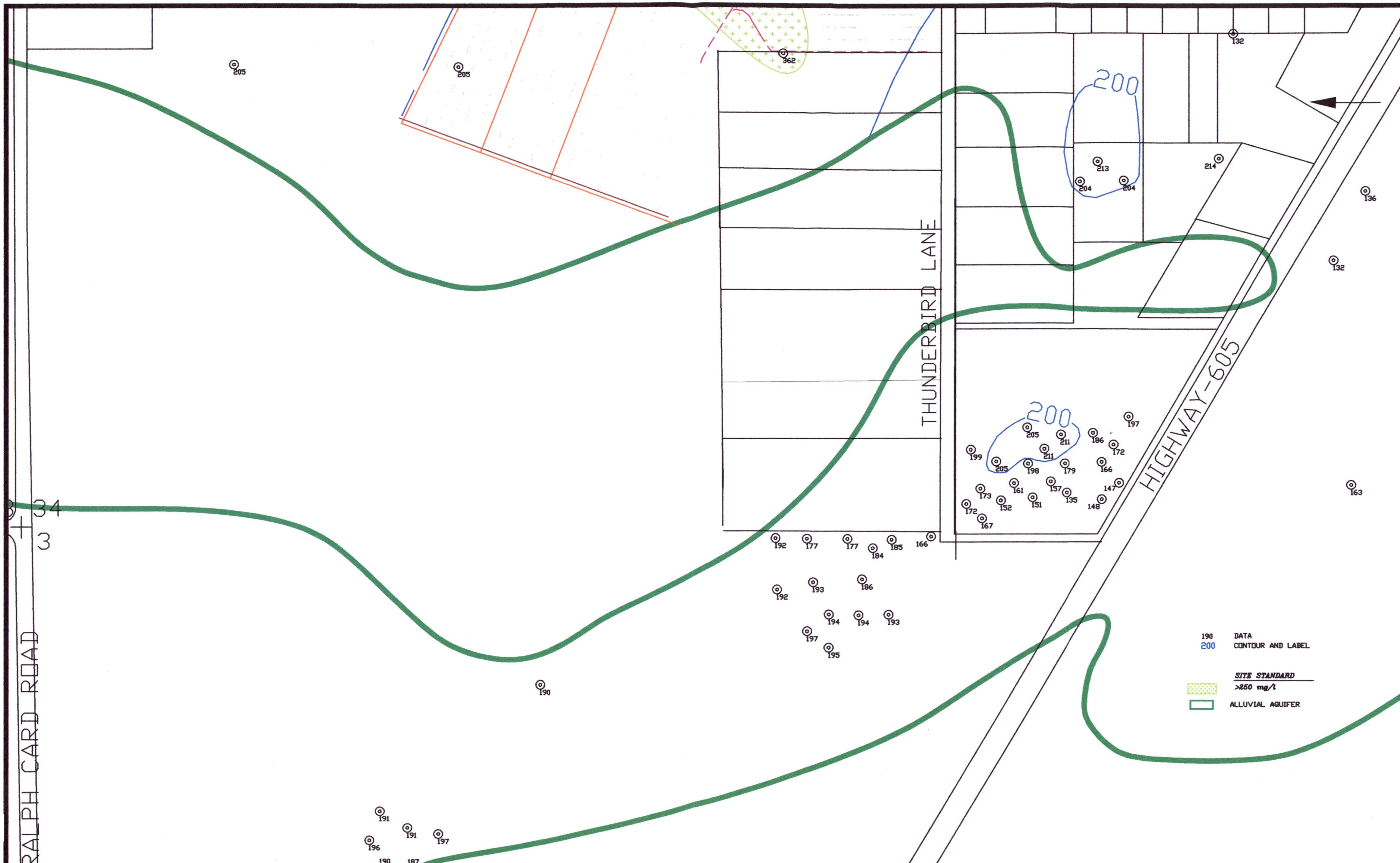

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FIGURE 4.3-36B. CHLORIDE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, SOS, 2015, mg/l

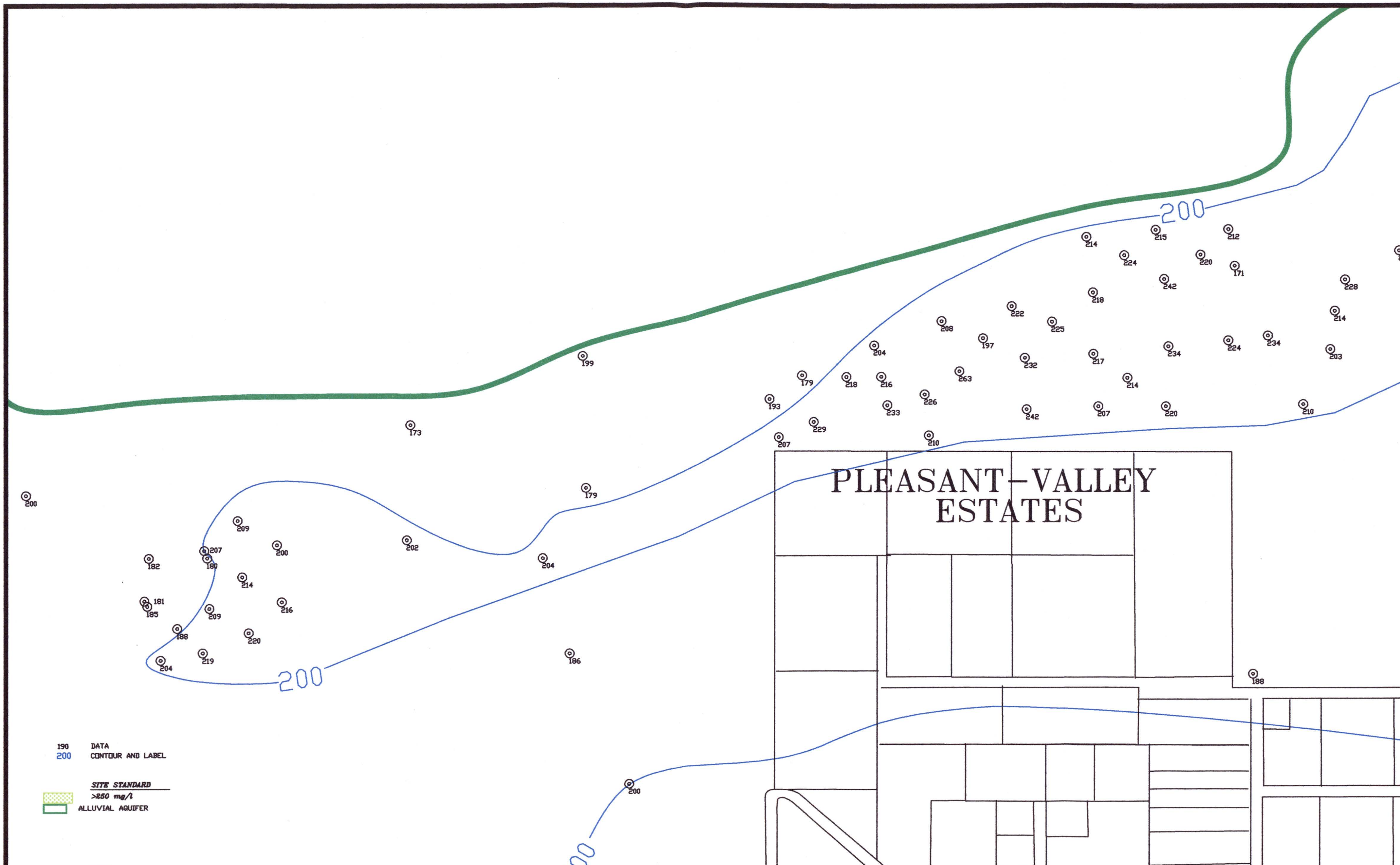

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FIGURE 4.3-36C. CHLORIDE CONCENTRATIONS OF THE ALLUVIAL AQUIFER, NOS, 2015, mg/l

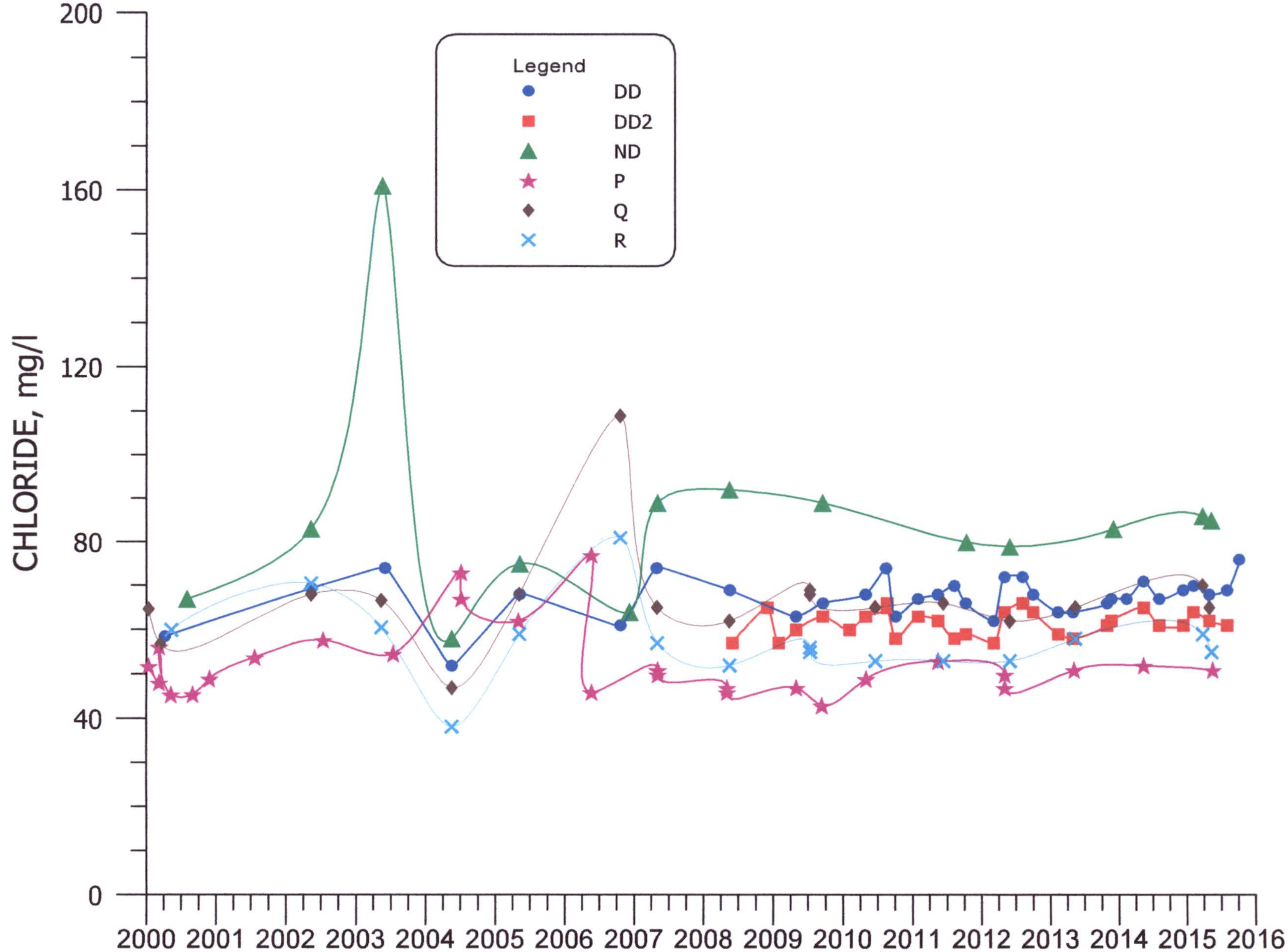

FIGURE 4.3-37. CHLORIDE CONCENTRATIONS FOR WELLS DD, DD2, ND, P, Q, AND R.

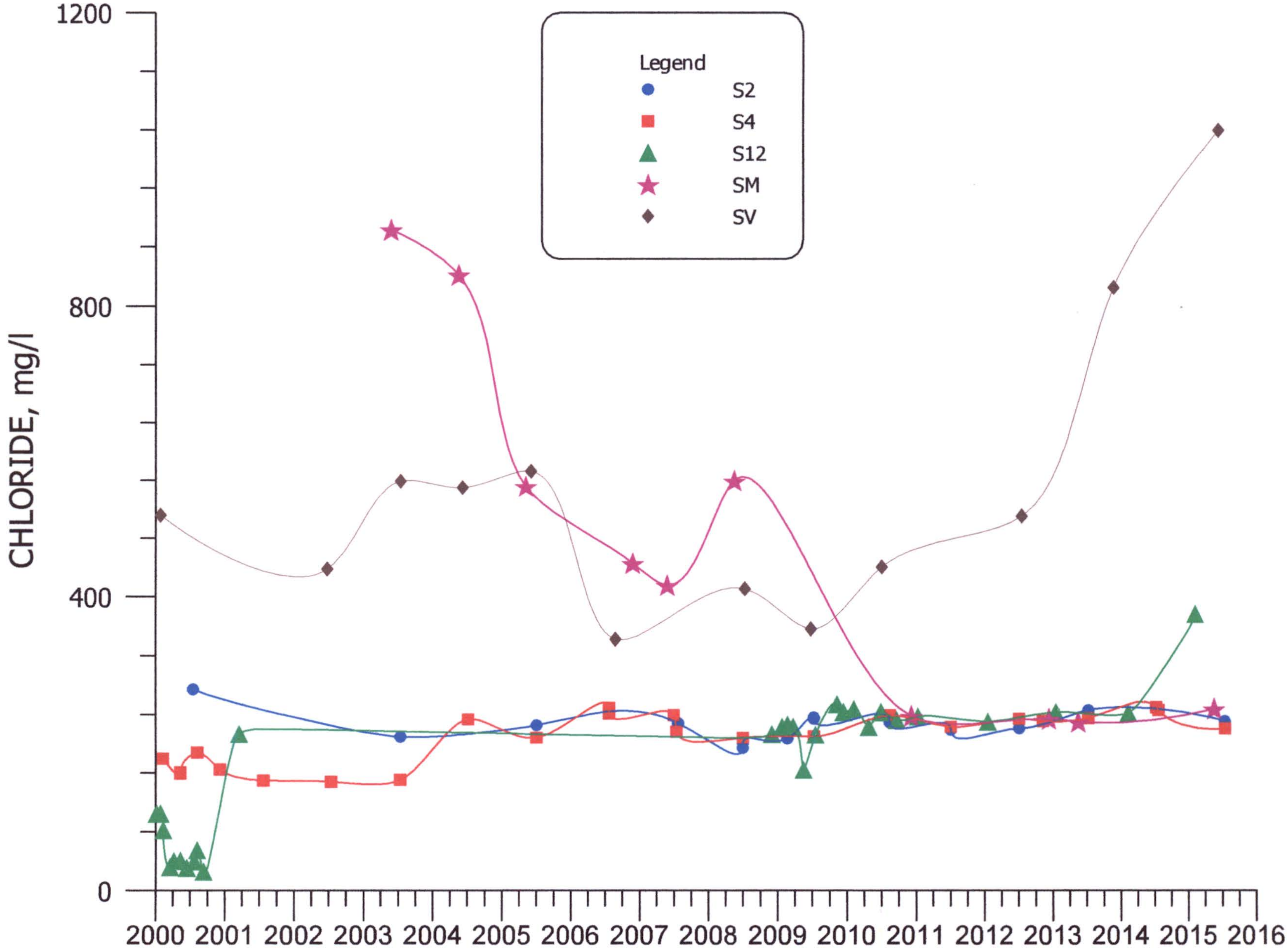

FIGURE 4.3-38. CHLORIDE CONCENTRATIONS FOR WELLS S2, S4, S12, SM AND SV.

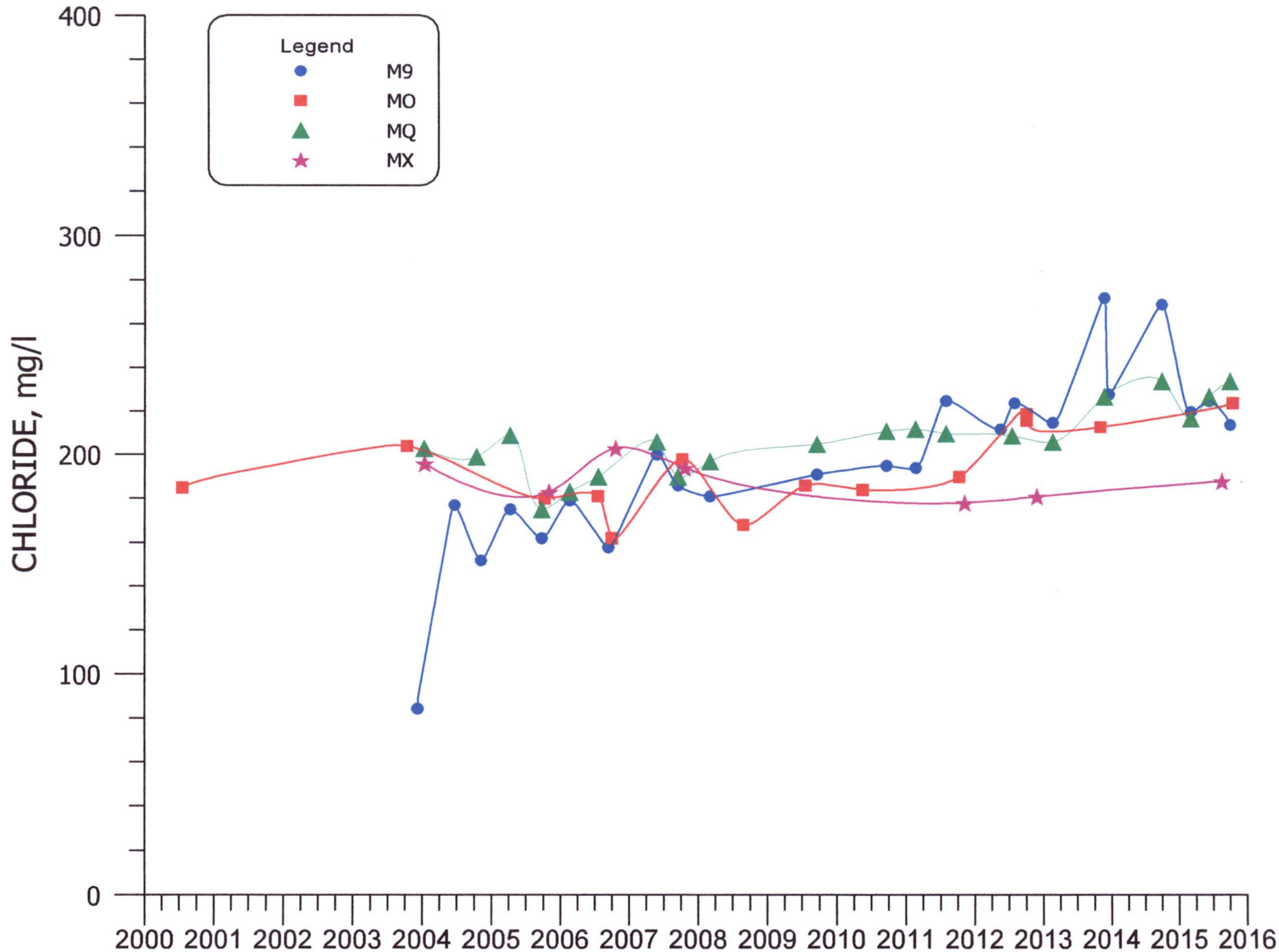

FIGURE 4.3-39. CHLORIDE CONCENTRATIONS FOR WELLS M9, MO, MQ, AND MX.

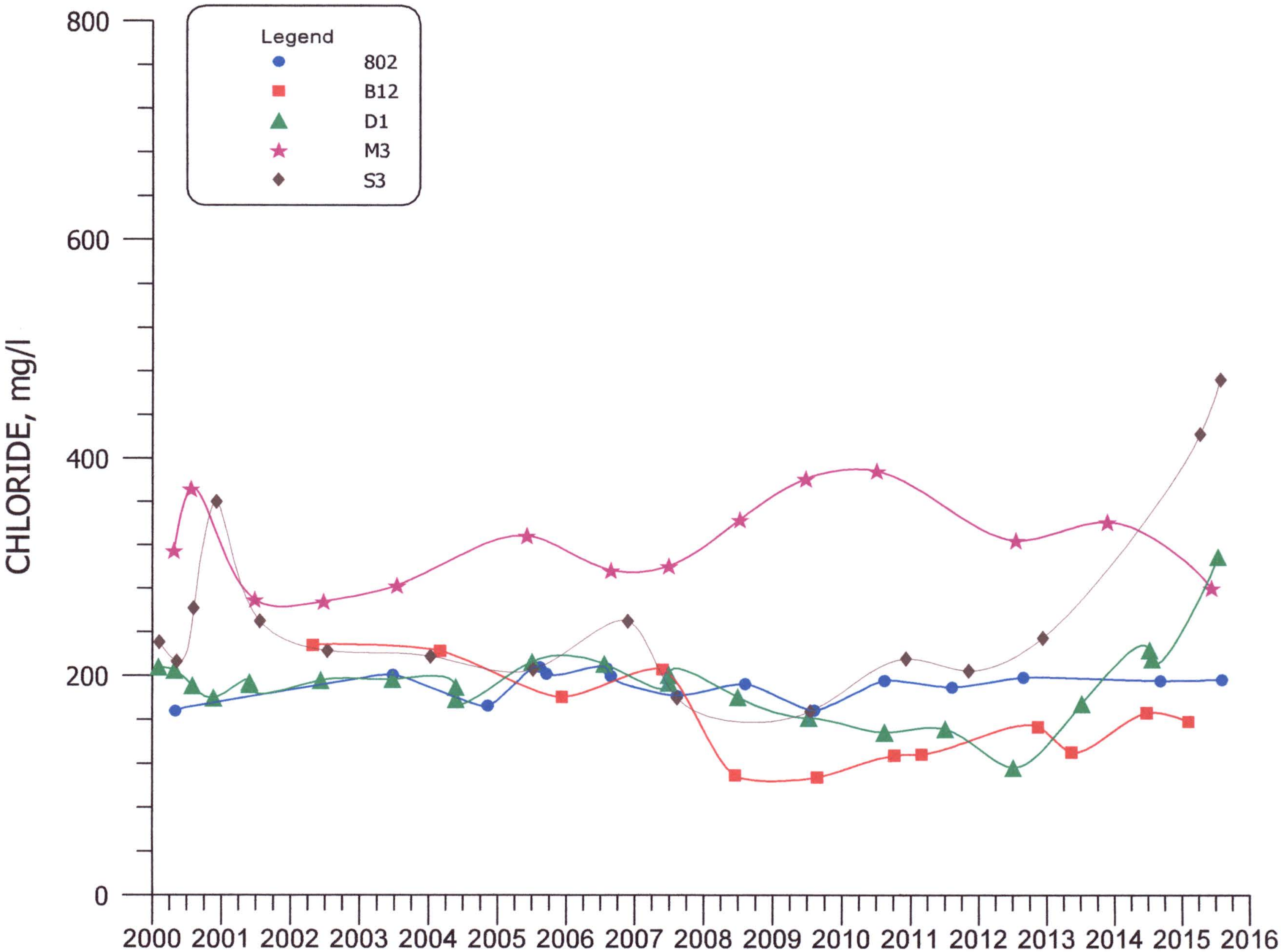

FIGURE 4.3-40. CHLORIDE CONCENTRATIONS FOR WELLS 802, B12, D1, M3, AND S3.

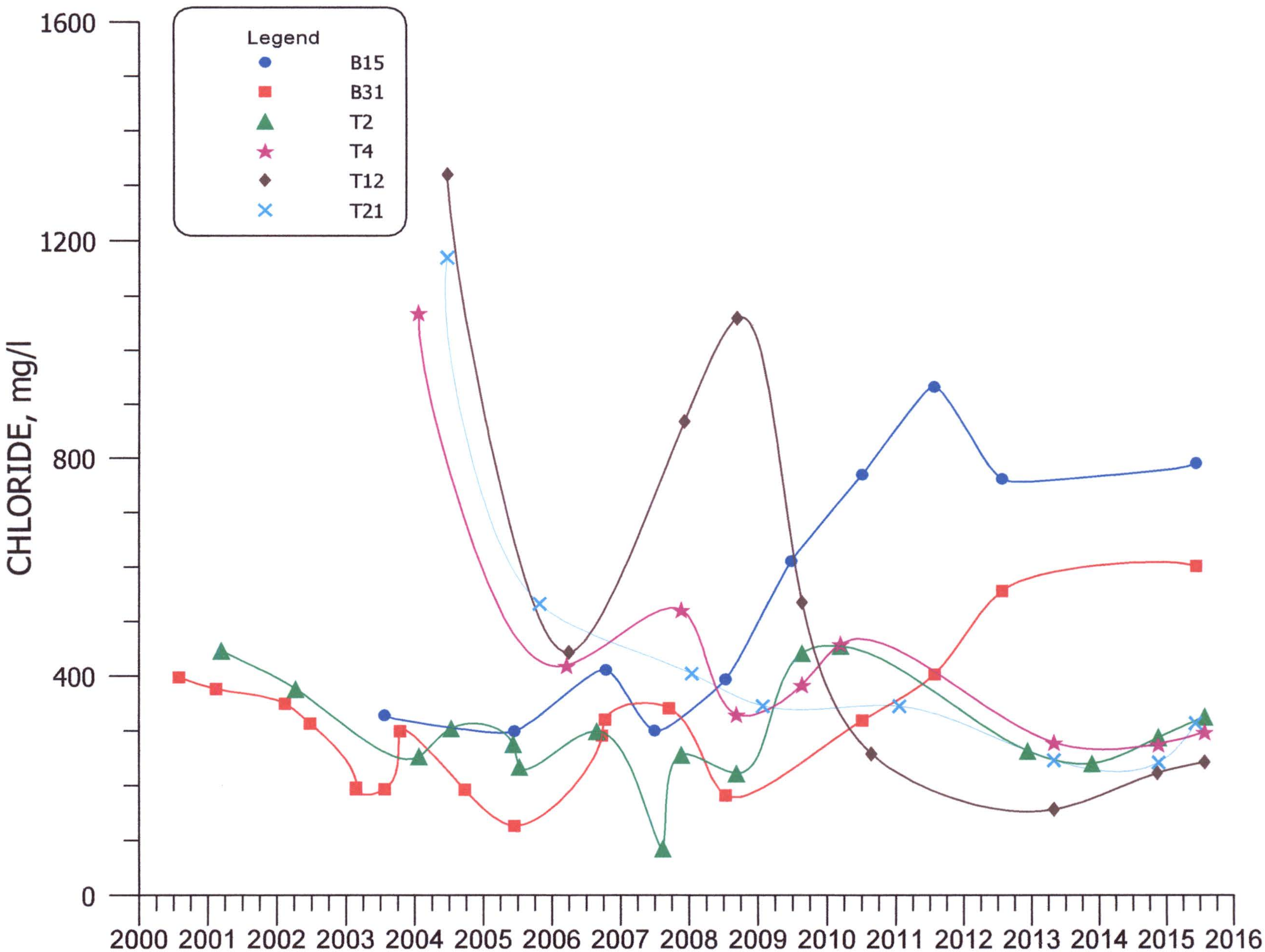

FIGURE 4.3-41. CHLORIDE CONCENTRATIONS FOR WELLS B5, B11, T2, T4, T12, AND T21.

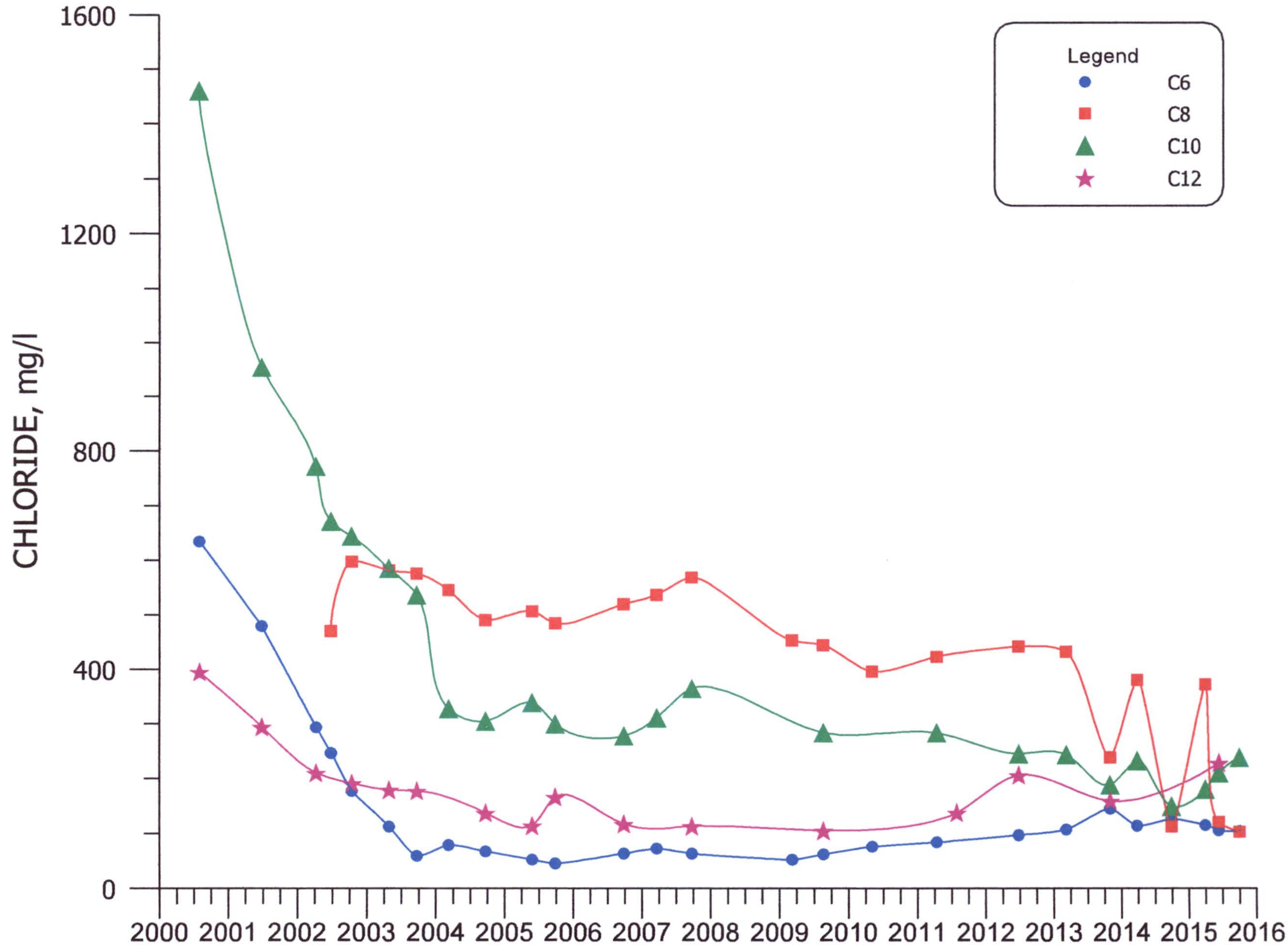

FIGURE 4.3-42. CHLORIDE CONCENTRATIONS FOR WELLS C6, C8, C10, AND C12.

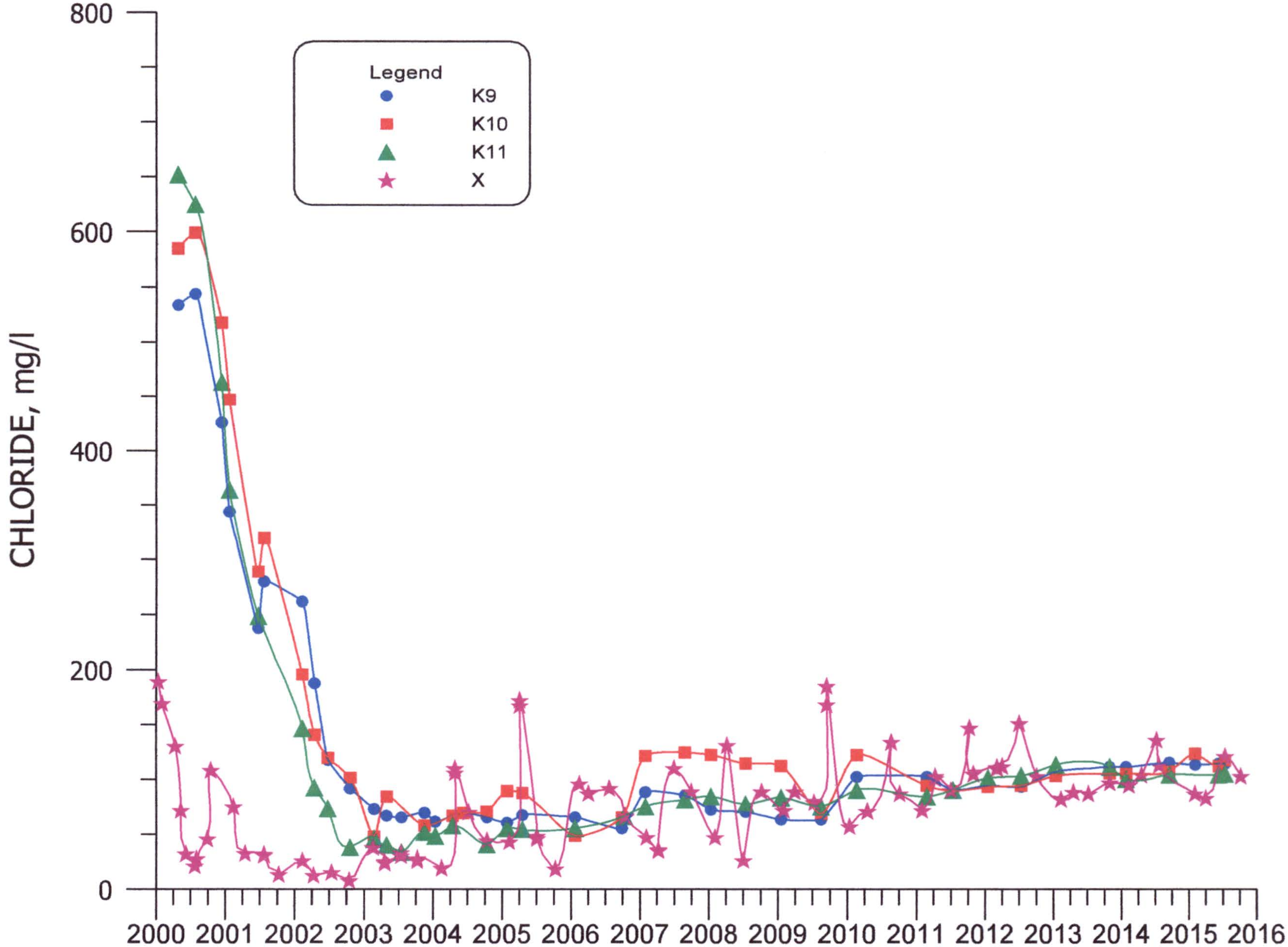

FIGURE 4.3-43. CHLORIDE CONCENTRATIONS FOR WELLS K9, K10, K11, AND X.

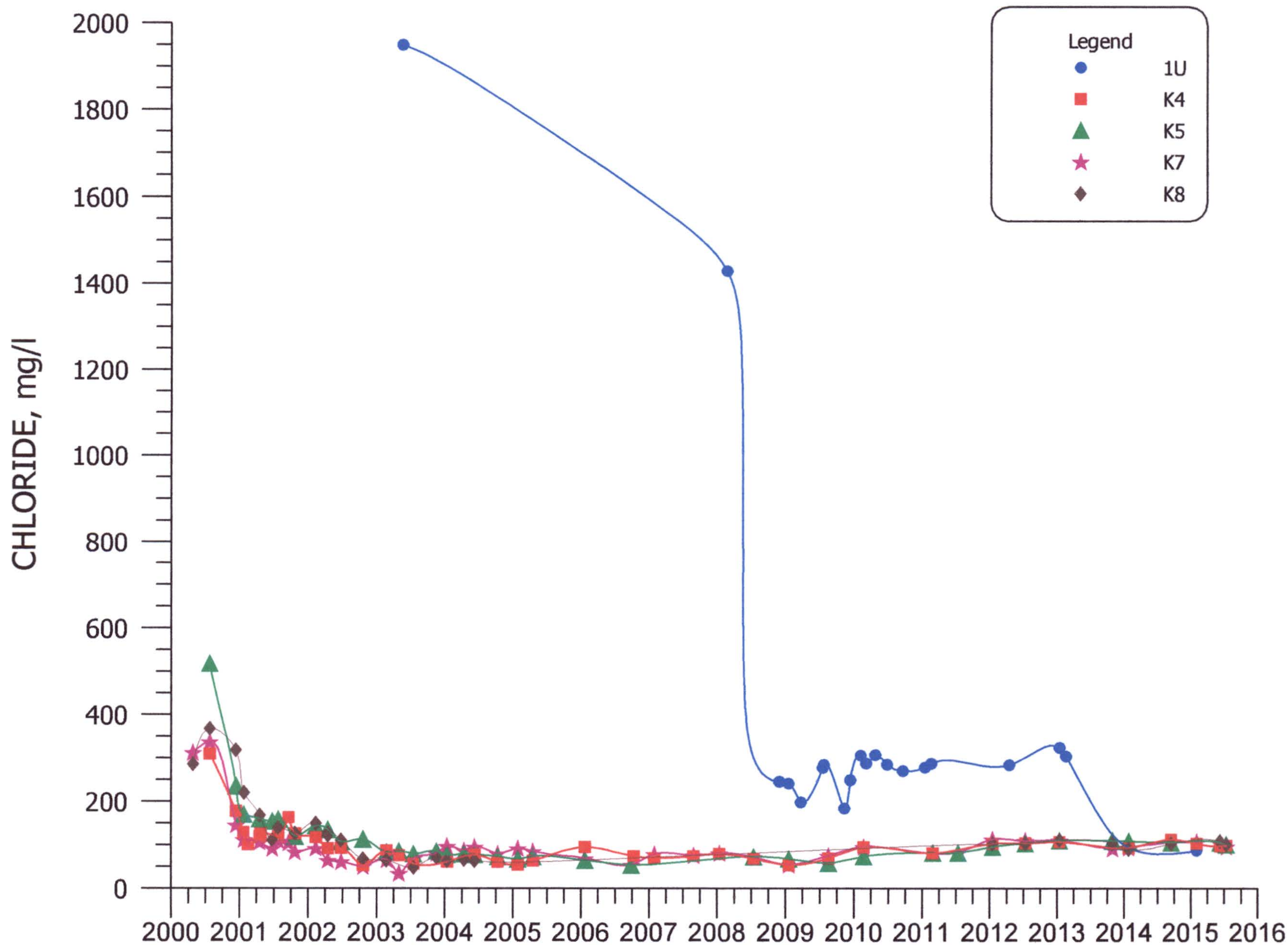

FIGURE 4.3-44. CHLORIDE CONCENTRATIONS FOR WELLS 1U, K4, K5, K7, AND K8.