Comment Number	Commenter	Comment	Response
48	Todd Cardiff	The overall health of the ecosystems in the BWER has been impacted by the channelization of Ballona Creek, construction of nearby roads, and modifications to the land surface during construction of Marina del Rey when the site was used as a receiving area for dredge spoils and fill materials (USEPA 2012). Again, a legitimate question remains as to whether dredge spoils were placed and never removed from the Ballona Wetlands in conjunction with the construction of Marina Del Rey. The Ballona Wetlands was private property at the time. It is unlikely that the Hughes Corporation would have volunteered their land for the deposition of dredge spoils. In addition, evidence indicates that the dredge soils were used to replenish beaches to the north and south of Marina Del Rey as part of the LA City/County beach replenishment program. (HD 389 and attachments)	Acknowledged. See above response.
49	Todd Cardiff	In the vicinity of the BWER, a 40 feet thick clay layer separates the Bellflower aquifer from the underlying Ballona aquifer (see Section 2.3.1 Geology). Grassroots Coalition questions the basis for such statement. According to the GSP, wells in the vicinity of Playa Vista showed a substantial drop in elevation likely because of drought. (GSP Report at 2-64.) Logically, if wells in the Ballona Aquifer experience a drop in elevations from lack of precipitation, then the aquifers are not hydraulically disconnected from the shallow Bellflower aquifer. Regardless, the Bellflower Aquitard is a source of groundwater that is directly connected to the Ballona Wetlands Ecological Reserve. Such freshwater source is entitled to protection to ensure that it continues to support the fresh and brackish water marsh habitat. The GSP should consider whether dredging for the proposed “restoration” will impact the Bellflower aquifer is such a manner to impact groundwater dependent ecosystems.	Language has been revised. There was an error in the draft GSP referring to the "Bellflower aquifer" that has been corrected to the "Bellflower aquitard" in this section. The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.
50	Todd Cardiff	The California Department of Fish and Wildlife and the U.S. Army Corps of Engineers have proposed a restoration project for the BWER to restore wetland and other ecological functions, while also maintaining flood management (USACE 2019). This does not appear to be an accurate statement. The original project was proposed by the State Coastal Conservancy in conjunction with the Santa Monica Bay Restoration Commission. Further, the Army Corp of Engineers appears to have pulled support from the project, as evidenced by the fact that they refused to participate in a Joint EIR/EIS. The Army Corp of Engineers also appears to be unwilling to fund either studies or project implementation. We would suggest the “and the U.S. Army Corps of Engineers” be deleted from this sentence. In addition, we would suggest that such section indicate that USACE has rejected CDFW’s design criteria for the berms.	Language has been revised "U.S. Army Corps of Engineers" has been deleted and the reference has been updated to CDFW 2019.
51	Todd Cardiff	The stated intent of the project is to restore tidal flow to BWER in all practicably feasible areas to reestablish native wetland vegetation and enhance physical and biological functions (USACE 2017). While the stated reason “to restore tidal flow” such statement is based on faulty interpretation of scientific studies that establish that the Ballona Wetlands is primarily freshwater and brackish water marsh ecosystem. Furthermore, the statement is contrary to the purpose and goals supporting the establishment of the Ballona Wetlands Ecological Reserve which cite to protection of the freshwater resources and salt marsh resources which does not imply full tidal exchange.	The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.

Comment Number	Commenter	Comment	Response
52	Todd Cardiff	These alterations are expected to establish 81 acres of new wetlands and 39 acres of new non-wetland waters of the U.S., as well as enhance 106 acres of native wetland and 58 acres of existing nonwetland waters of the U.S. Grassroots Coalition strongly disputes this characterization of the project. The project will create a saltwater embayment where none previously existed, directly adjacent to Marina Del Rey, that was also, historically, was also primarily freshwater lagoon system. Open water wetlands have increase in southern California, while coastal freshwater/brackish water marsh habitats have declined over 90%.	The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.
53	Ballona Ecosystem Education Foundation	The Ballona Ecosystem Education Project has been working to save and protect the Ballona Wetlands Ecosystem, Its bluffs, and its valuable groundwater for over 30 years.	Acknowledged.
54	Ballona Ecosystem Education Foundation	We STRONGLY support the comments submitted by Grassroots Coalition today to this plan. Grassroots Coalition has an outstanding history of accurate investigations and studies of the groundwater resources of Ballona, and the underground gas issues of SoCalGas and Playa Vista.	Acknowledged
55	Ballona Ecosystem Education Foundation	As with Grassroots Coalition, we are very concerned about Dudek concluding that they have completed their SGMA requirements for evaluation of the Ballona Wetlands Ecological Reserve (BWER) as a Groundwater Dependent Ecosystem (GDE). We are greatly concerned that the GSA will not further interagency consultation and information gathering for its evaluation of the Groundwater Dependent Ecosystem (GDE), Ballona Wetlands Ecological Reserve. The BWER has been a mostly freshwater wetland for the past 400 years and should remain that way. Fresh water coastal wetlands are becoming more and more rare in California.	CDFW has approved a Final EIR to restore ecosystem function to a full tidal salt water bay in the BWER. The GSP references this Final EIR and incorporates its assumptions into future planning. The SMBGSA remains committed to interagency cooperation.
56	Ballona Ecosystem Education Foundation	There is exigency to the performance of a prudent GDE study per SGMA requirements due to an approved plan of the California Department of Fish and Wildlife (CDFW) that would convert the Ballona Wetlands into a fully tidal saltwater bay.	GDEs are discussed in Section 2.4.7.
57	Ballona Ecosystem Education Foundation	Thus far, neither the Draft GSP nor the CDFW Environmental Impact Report have performed a hydrology evaluation of the Ballona Wetlands or performed a Land Management Plan of and for the Ballona Wetlands natural resources, and/or gathered readily available hydrological data and information that contradict comments made in the Draft GSP pertaining to this southern region of the Santa Monica Subbasin.	The GSP relies on the best available science per the requirements of SGMA (see 23 CCR Section 354.16(g)), as presented in CDFW documents on the BWER restoration project.

Comment Number	Commenter	Comment	Response
58	Ballona Ecosystem Education Foundation	For many years we have been asking for a hydrology study of this important wetland, but it has not been done. Now we are in a critical drought situation, one of the worst in many years. It makes more and more sense that we step up to know and protect our groundwater resources, including to study the hydrology resources of this wetland before these precious resources are destroyed.	The SMBGSA acknowledges this statement. The GSP was prepared using the best available science per the requirements of SGMA (23 CCR Section 354.16 (g)).
59	Ballona Ecosystem Education Foundation	The Ballona public trust land and water are also registered as a Sacred Site by John Tommy Rosas, of Tongva Ancestral Territorial Tribal Nation (TATTN). The TATTN issues are also not addressed in the Draft GSP and need inclusion.	Acknowledged.
60	Ballona Ecosystem Education Foundation	Thank you for your attention to this matter, and we strongly request that you perform a Groundwater Dependent Ecosystem evaluation for the entirety of Ballona Wetlands and Ballona Wetlands Ecological Reserve, as requested by Dr. Margot Griswold PhD (Restoration Ecologist) during her presentation to you at a recent GSA meeting. We request that a full evaluation of the region under SGMA necessarily includes all of the issues raised by Grassroots Coalition.	The GSP assessed GDEs in Section 2.4.7 and discusses undesirable results related to loss of interconnected surface and groundwater in Section 3.2.6.
61	GC1	The Santa Monica Basin Groundwater Sustainability Agency (GSA), is comprised of the lead City of Santa Monica (Lisette Gold), the City of Los Angeles via its Department of Water and Power, which will necessitate input participation from the LA Department of Sanitation that has not yet occurred or been requested by the GSA. This data gap is explained in more detail below. The Cities of Culver City, Beverly Hills, and the County of Los Angeles comprise the GSA.	This description is inaccurate: The SMBGSA comprises the Cities of Santa Monica, Los Angeles (via its Department of Water and Power), Culver City, Beverly Hills, and the County of Los Angeles (see GSP Section 1.1). The LA Department of Sanitation is not required to participate in development of the GSP. Sunny Wang, City of Santa Monica Water Resources Director, invited LA Sanitation to participate in the August stakeholder meeting, per the request from the Grassroots Coalition.
62	GC1	The August 2021 GSA Meeting Link is below with a presentation by Grassroots Coalition, Patricia McPherson & Dr. Margot Griswold, Restoration Ecologist, at 1:04:30. Our presentation provides an overview of key SGMA & GDE issues for the southern portion of the Santa Monica Subbasin with focus upon the Ballona Wetlands Ecological Reserve, a Groundwater Dependent Ecosystem (GDE). Meeting Video	The SMBGSA invited the Grassroots Coalition to speak at the August 2021 Stakeholder Meeting and acknowledges the PowerPoint presentation and discussion of the Grassroots Coalition's concerns at this meeting.
63	GC1	The Santa Monica Draft Groundwater Sustainability Plan (Draft GSP) was to be prepared by the GSA in compliance with the 2014 Sustainable Groundwater Management Act (SGMA), codified in California Water Code (CWC), Part 2.75 (Sustainable Groundwater Management), 10720 et seq. The Draft GSP was to be developed in accordance with the Department of Water Resources (DWR) GSP Regulations to apply to the entirety of the Subbasin that is not adjudicated (DWR Basin 4-011.01).	The draft and final GSP were prepared in compliance with SGMA. See Appendix A for the GSP Checklist.

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64	GC1	Grassroots Coalition believes that the Draft GSP of the Santa Monica Subbasin to be out of compliance with the investigative requirements of SGMA and believes that the Groundwater Dependent Ecosystem elements of SGMA have been excluded in whole and/or in part pertaining to the BALLONA WETLANDS and the sw region of the Subbasin. The BALLONA WETLANDS ECOLOGICAL RESERVE, as well as the underlying regional freshwater aquifers known individually as the Ballona, Bellflower and Silverado Aquifers, which act in this region as one unit, were not meaningfully addressed and the GSA excluded readily available data made known to the GSA and requested for inclusion.	The SMBGSA disagrees with this statement. The GSP was prepared in compliance with SGMA. See Appendix A for the GSP Checklist. Ballona Wetlands are discussed in GSP sections 2.1.1, 2.1.2.3.1, 2.3.5,2.4.3,2.4.6, and 2.4.7. GDEs are discussed in GSP sections 2.4.6, 2.4.7, 3.2.6, 3.3.6, and 3.4.6. Ballona Wetlands Ecological Reserve is discussed in GSP section 2.4.7. The aquifers are discussed in GSP section 2.3.2. The GSP was prepared using the best available science per the requirements of SGMA (see 23 CCR Section 354.16).
65	GC1	Despite our repeated requests for inclusion of critically important data, the GSA consultant company response at the August GSA 2021 Meeting was, "I think you know we have done the groundwater dependent ecosystem work under SGMA to the requirements of SGMA"… Jill Weinberger, Dudek consulting company at 1:31:21 Meeting Video. Per the Santa Monica Subbasin GSA Meeting of August 2021, comment above from the GSAs' consultant company Dudek, and their Draft GSP response, Grassroots Coalition believes that the Draft should not be accepted by the Department of Water Resources due to numerous inaccurate conclusory statements and extensive data gaps pertaining to the southern region of the Subbasin and in particular, the Ballona Wetlands Ecological Reserve and all of Ballona's public trust lands and water as a Groundwater Dependent Ecosystem (GDE).	The draft GSP acknowledges data gaps, as required by SGMA, and was prepared in accordance with SGMA. Please see Appendix A for the GSP Checklist.
66	GC1	Grassroots Coalition seeks an independent Groundwater Dependent Ecosystem investigation and evaluation that will inform, refine and discuss threshold objectives for developing a management plan for the freshwater resources of Ballona Wetlands Ecological Reserve and its public trust land and freshwater.	Acknowledged. The SMBGSA welcomes stakeholders interested in improving ecosystem health and function within the Santa Monica Subbasin.
67	GC1	Grassroots Coalition seeks, on behalf of the Public Trust land and water of Ballona Wetlands, the restoration to Ballona Wetlands as a Groundwater Dependent Ecosystem -- any and all freshwater being diverted, drained and otherwise compromised and also seeks the protection from degradation to the multiple underlying freshwater aquifers.	Acknowledged.
68	GC1	Water Code, Article X, section 2 and Water Code sections 100 and 275 appear to apply to the GDE circumstances of the LARWQCB's oversight pertaining to their NPDES permits for discharge of the Playa Vista development site's pumped and discharged groundwater away from Ballona Wetlands. It is clearly obvious that the pumping and discharge of Playa Vista's (Ballona's) groundwater away from Ballona via discharge into the sanitary sewer or into the ocean is a waste of precious freshwater that Ballona Wetlands/ Ballona Wetlands Ecological Reserve needs. Section 100 places on the State Board, a non-discretionary affirmative duty to determine whether a water use is reasonable and beneficial and to prevent the waste and unreasonable use of all water resources in California. Section 275 directs the State Water Board to take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, or unreasonable methods of use.	The SMBGSA acknowledges LARWQCB's regulatory role in issuing NPDES permits for the Playa Vista site.

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69	GC1	And, It was stated in People of the State of California v. United States (9th Cir. 1956) 235 F.2d 647, 663: "[Everyone] must admit that the purpose of the constitutional amendment [now art. X, § 2] was to vest with a public interest the use of all the waters of the state, so that no part of the precious supply [***14] should flow uselessly into the sea or otherwise go to waste. This characterization applies to flood waters as well as to the normal flow."	Acknowledged.
70	GC1	And, “SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing undesirable results. Under SGMA, undesirable results occur when significant and unreasonable effects for any six sustainability indicators are caused by groundwater conditions occurring throughout the Subbasin.” Page 1 of 6 Draft Subbasin. “- Chronic lowering of groundwater levels -Groundwater storage -Seawater intrusion -Degraded water quality -Land Subsidence -Depletions of interconnected surface water”. pg.1 of 6 Draft Subbasin.	Acknowledged.
71	GC1	Ballona is a predominantly seasonal freshwater wetland that but for extreme storm events, was closed to the ocean. Ballona Wetlands historical background is documented in the Historical Ecology of the Ballona Creek Watershed 2011 by Dark, Shawna; Stein, Eric; Bram, Danielle; Osuna, Joel; Monteferante, Joseph; Longcore, Travis; Grossinger, Robin; Beller, Erin. HISTORICAL ECOLOGY OF THE BALLONA CREEK WATERSHED — LONGCORE et. al.	Acknowledged.

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72	GC1	The LA Department of Sanitation, under industrial wastewater permits, provides for the disposal of approved NPDES permitted pumped, clean groundwater from under the buildings of the Playa Vista (Ballona Conservancy managed) development site. While the Playa Vista Environmental Impact Report (EIR) disallows long term pumping of groundwater and has mitigation requirements that provide for cleansed or clean groundwater that is pumped to the surface, to be used onsite for recharging of the underlying aquifers, this has not been occurring. Instead of recharging the aquifers, the long-term pumping and disposal of clean groundwater away from Playa Vista's gas mitigation systems has been being sent to LA Sanitation as the site has been developed from 2001 to the present (page 16 of 28 in the PPT below contains example 'spider maps' that show locations of dewatering permits of Phase 1 west side of Playa Vista & Phase 2. (The east end of Phase 1 is unknown at this time.) Other NPDES permitted locations in Playa Vista similarly pump and dispose of clean groundwater for various reasons. Additionally, the Los Angeles Regional Water Quality Control Board (LARWQCB), under the Clean Up and Abatement Order (CAO) No. 98-125 for the historic Howard Hughes Aircraft Company's and McDonnell Douglas Helicopter Company's legacy of contaminated groundwater, sends this pumped and cleansed groundwater to either the L.A. Department of Sanitation or into the ocean via a flood control system for Playa Vista known as the Freshwater Marsh System. The Freshwater Marsh System (FWM) is designed to allow for the cleansed freshwater of the CAO, as well as runoff into it from adjacent rainfall areas, to spread out and remain in Ballona Wetlands to nurture the wetlands via an overflow area. The Freshwater Marsh System itself has HDPE liners along the Riparian Corridor portion precluding downward percolation of water and the catch basin itself, has a clay liner designed to prevent percolation of the FWM's catch-basin's water into the underlying aquifers. Instead of allowing for the overflow of this pumped water to spread out into Ballona Wetlands to also percolate and recharge the underlying aquifers, the cleansed water, for the most part, is thrown away into the ocean via what is called the Main Drain of the FWM which exits to the Ballona Channel which, in turn empties into the Santa Monica Bay and Pacific Ocean.	The SMBGSA acknowledges that NPDES permits exist in the vicinity of the Playa Vista site and that shallow dewatering is a common practice to prevent damage to infrastructure in the Subbasin. The GSP does not interfere with the jurisdiction of the LARWQCB or the rights of existing permit holders to continue to pump shallow groundwater under the jurisdiction of the LARWQCB.
73	GC1	The Draft GSP has not addressed the ongoing dewatering of the Ballona Wetlands/ Playa Vista area of the Subbasin but to explain that it is not the GSA's role to deal with permitting of groundwater withdrawal. This response is both off-point and fails to gather available, essential data that would provide for a clear picture of hydrological impacts, including undesirable impacts that affect the GDE and have the potential, once identified, to be addressed that would assist in: compliance with Water Code laws, the Playa Vista mitigation requirements including Vesting Tract agreements and best management practices, that provide for sustainable yield acknowledgements and suggestions for combatting undesirable results.	This statement is inaccurate. The SMBGSA acknowledges its role in permitting groundwater withdrawal (see GSP Chapter 1 - Section 1.3.2 and Chapter 4 - Sections 4.1 and 4.4). The SMBGSA does not have legal authority under SGMA to issue permits for well construction, modification or abandonment (See California Water Code 10726.4 (b): "This section does not authorize a groundwater sustainability agency to issue permits for the construction, modification, or abandonment of groundwater wells, except as authorized by a county with authority to issue those permits. A groundwater sustainability agency may request of the county, and the county shall consider, that the county forward permit requests for the construction of new groundwater wells, the enlarging of existing groundwater wells, and the reactivation of abandoned groundwater wells to the groundwater sustainability agency before permit approval.") Additionally, the GSP has been prepared with the best available science, per the requirements of SGMA (See 23 CCR Section 351 (h) and Section 354.16). Undesirable results relating to Interconnected Surface Waters are discussed in GSP Section 3.2.6.

Comment Number	Commenter	Comment	Response
74	GC1	The GSA is meant to clarify how it intends to wield its powers to stakeholders as the GSA also has the ability to consult with water right stakeholders and relevant stakeholders. Consultation has the potential in and of itself to alleviate negative impacts of groundwater withdrawal as consultation allows for sharing of critical information that may give rise to positive consentual agreements. Grassroots Coalition is unaware of an attempt by the GSA, the City of Santa Monica as lead of the GSP response, to consult with the available SGMA bound agencies and departments regarding Ballona Wetlands. Specifically, no information gathering has occurred for Playa Vista's & LARWQCB's cumulative dewatering and waste/ throw away of clean and/or cleansed freshwater from this area. The information gathering would necessarily include, but not be limited to: the City of Los Angeles, LA DWP, the LA Department of Sanitation, the County of Los Angeles, LARWQCB, and Playa Vista itself including but not limited to the Playa Vista- Ballona Conservancy which includes the California Department of Fish & Wildlife as a Board Member according to CDFW leadership, Rich Burg. Additionally, the California State Lands Commission, steward of the public trust property known as the Freshwater Marsh System (FWM), needs to be included in the information gathering loop. Multiple legal agreements are already in place that dictate protective ecological measures required for Ballona Wetlands, including but not limited to Playa Vista EIR mitigation measures, Vesting Tract Agreements, and the California Coastal Commission Settlement Agreements (2006 Case No. C525 826 Friends of Ballona et al v Ca. Coastal Commission and earlier) that require protective measures pertaining to groundwater and surface water specific to Ballona Wetlands and Ballona Wetlands Ecological Reserve. None of these agreements, and issues have been investigated and/or addressed in any meaningful way as yet by the GSA. https://youtu.be/VPsSlqo5Tzc Freshwater diversion to Sanitation & Santa Monica Bay. Presentation to the California Coastal Commission 3/6/19 https://youtu.be/YHU9G0AKLAo Unpermitted drainage of Ballona Wetlands (20 years). Presentation 3/8/2019, to the California Coastal Commission (CCC). (Update - CCC Staff, rescinded its language, as requested by Grassroots Coalition and changed the language, cited at the end of this video, to comport with the ruling by the Commissioners.)	Discussion of the SMBGSA legal authority is provided in Section 1.3.2 and projects and management actions that are proposed or may become necessary are discussed in Chapter 4. The SMBGSA welcomes collaboration with all stakeholders, and has met with the Grassroots Coalition to discuss the preparation of the GSP. Furthermore the SMBGSA welcomes ongoing participation by the Grassroots Coalition and all stakeholders as the GSP is implemented. Section 2.3.2.2 of the GSP discusses the Playa Vista dewatering wells and estimates the volume produced from these wells each year. The City of Los Angeles is a member agency of the GSP and, therefore, has been included in the preparation of this GSP. Reports from the other agencies mentioned have been reviewed, as necessary, to provide the best available science for development of the GSP per the requirements of SGMA (See 23 CCR Section 354.16). The SMBGSA respects existing legal agreements in the Subbasin and asserts no jurisdiction over court mandated activities.
75	GC1	The Draft GSP cites that it discusses historical degradation of the groundwater quality as a result of industrial development and activities dating back to the mid -1900s, yet appears to exclude the most readily available, cogent, scientific and baseline hydrology data accrued via the grandfather of hydrology of the entire LA Basin—Poland et al 1959, as well as excluding readily available data collected by the United States federal government accrued for the creation of Marina del Rey in the 1960s timeframe by congress in the document known as House Document 389. (Santa Monica Subbasin Section attached- 1959 J.F. Poland, A.A. Garrett, and Allen Sinnott) Complete 47 pages MDR House Document No. 389 SMB - Public Law 389 5:11:1954 47 page pdf The 1959 Poland et al report portion pertaining to the Santa Monica subbasin is attached.	This statement is inaccurate. The Poland report, Poland et al. 1959, cited by the Grassroots Coalition was one of many sources used to construct the hydrogeologic conceptual model of the Subbasin, as described in Chapter 2 of the GSP. The reference, as cited in the GSP is USGS 1959, rather than Poland et al. 1959. There are 22 citations of USGS 1959 in Sections 2.3 and 2.4 of the GSP. House Document 389 was not used in the development of the GSP as this document primarily focuses on construction of the Playa del Rey Harbor in the 1960s, rather than on Subbasin-wide hydrogeology.

Comment Number	Commenter	Comment	Response
76	GC1	The Draft GSP states in relevant part, " The City of Santa Monica is engaged in multiple programs to remediate the degraded groundwater in the Subbasin….overseen by Division of Drinking Water (DDW), Regional Water Quality Control Board…. Degradation of water that occurred before 2015, the year in which SGMA became effective, is not required to be addressed in this GSP (SWRCB 2019). Water quality in the Subbasin was degraded prior to 2015, the extent of degradation is well characterized, the City of Santa Monica is actively treating the groundwater under programs overseen by DDW, the RWQCB, and the SWRCB, and the degradation was not caused by groundwater production. Emphasis added. The statement on page 1-1 , again reinforces that the Draft GSP's focus is on drinking water wells in the City of Santa Monica area as the degradation cited above ostensibly references the recent MTBE contamination remediation. While evident that the MTBE degradation was not caused by seawater intrusion, the Draft excludes the well-studied and readily available historical and hydrologic data which demonstrates seawater intrusion degradation, caused by over-drafting in the southern portion of the Subbasin, was not included for review (Poland et al 1959; House Document 389 and later LARWQCB data of the Playa Vista site and the Playa Vista EIR data). Drinking water wells existed into the mid to late 1950's in Playa del Rey, the coastal beach town at the west end of the Ballona Wetlands. The Palisades Del Rey Water Company operated until seawater intrusion and issues pertaining to the SoCalGas underground gas storage operations gave rise to its closure. During this timeframe saltwater intrusion due to over-drafting was, according to Poland et al., occurring further south along the coast of the West Basin. The West Basin's protection from saltwater intrusion is being offset south of the Santa Monica Subbasin by freshwater injection. The Subbasin and West Basin do interface and overlap slightly in the Ballona Wetlands area as is pointed out in the Draft and as cited in the Poland et al Geology, Hydrology, and Chemical Character of Groundwaters in Torrance-Santa Monica Area, California. 1959 California Coastal Commission Meeting, May 8 2019, Ballona Wetlands History, a PDF SlideShow Presentation pgs. 18-21 are relevant excerpts	The statement on page 1-1 pertains to groundwater degradation related to groundwater production under SGMA. Seawater intrusion is a separate sustainability indicator under SGMA and is discussed on page 1-2 of the GSP ("Portions of the Subbasin have experienced seawater intrusion in the past but shifting groundwater production away from the coast and to deeper aquifers have prevented further seawater intrusion (DWR 2019)"), as well as GSP Section 2.4.3, which includes a subsection (2.4.3.1) on historical seawater intrusion. The lateral extent of historical seawater intrusion into the Subbasin is also shown in GSP Figure 2-26. The hydrogeologic interaction between the West Coast Basin and the Santa Monica Subbasins documented in Section 2.5 of the GSP. The "overlap" that is referenced by the Grassroots Coalition comment is in reference only to the surficial mapped adjudicated portion of the West Coast Basin and does not substitute for or define the subsurface hydrogeologic interaction between the two basins in the GSP.
77	GC1	For adequate and prudent protection of the Groundwater Dependent Ecosystem that is Ballona Wetlands, protecting its predominantly freshwater nature and the underlying multiple freshwater aquifers, investigation into and inculcation of the data from the past is critical. It is also critical for the GSA to seek out pertinent dewatering data and information of the potentials for saltwater intrusion due to potential over-drafting from Playa Vista whose dewatering has, according to Los Angeles Regional Water Quality Control Board (LARWQCB) added to the lowering of the historic groundwater under Playa Vista. As much as 20' was expressed by LARWQCB years ago, during meetings with Grassroots Coalition, and a recent LARWQCB report cites up to 45' of groundwater depletion in areas under Playa Vista.	See responses above for discussion of historical data and data regarding Playa Vista dewatering activities.

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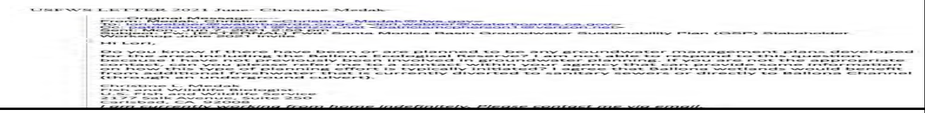
78	GC1	Harm to Ballona's hydrology due to freshwater diversion away from Ballona has already been noted as unacceptable by the California Department of Fish & Wildlife (CDFW) (https://saveballona.org/2017-california-department-fish-wildlife-cdfw-betty-courtney-cites-harm-ballona-due-reduced-water-flow-playa-vista.html (CDFW, Betty Courtney Letter). Hence, the reality of harm occurring to Ballona's down watershed habitat via dewatering by Playa Vista, has already been acknowledged by CDFW. The California Coastal Commission (CCC) has also already acknowledged that diversion of freshwater away from Ballona has harmed its hydrology. In 2014, the CCC cited that Playa Vista and CDFW were both in violation of the California Coastal Act for unpermitted drains in Ballona Wetlands that had been and were harming the hydrology of Ballona Wetlands California Coastal Commission (CCC) Letter (4/11/14) to Playa Vista and CDFW . After prevailing litigation by Grassroots Coalition against both Playa Vista and CDFW, alongside subsequent orders to end the drainage from the California Coastal Commissioners, the drains have since been sealed.	The SMBGSA acknowledges this statement by the Grassroots Coalition and the interactions the Grassroots Coalition has had with the CDFW and CCC regarding the Ballona Wetlands Ecological Reserve.
79	GC1	The positive effects of restoring the freshwater to Ballona has given rise to an expansive regrowth of pickleweed throughout the areas affected by the drains. Pickleweed expanses are a necessary nesting habitat for the endangered Belding's Savannah Sparrow. This sparrow and its pickleweed habitat needs are a key component of the Ecological Reserve's, Title 14, Section 630 Purpose and Goals.	The SMBGSA acknowledges this statement by the Grassroots Coalition.
80	GC1	It is also critical for the GSA to consider and include for evaluation, the fulfillment of the CDFW approved Final Environmental Impact Report Plan for digging out the Ballona area to allow seawater intrusion for conversion of Ballona into a saltwater bay. The state approved CDFW Plan is not some far away, vague conceptual plan hence, it is incumbent for inclusion in GS Planning.	The EIR is discussed in Section 2.4.7.3 of the GSP
81	GC1	Already, U.S. Fish and Wildlife Service (USFWS) has requested a prudent GDE study performance (USFWS 2021 LETTER). 	The email referenced as USFWS 2021 LETTER indicates that Ms. Medak is interested in determining whether there is a GSP (groundwater management plan) for the jurisdiction overlying the BWER, not "requesting a prudent GDE study performance." The SMBGSA has reached out to Ms. Medak to inform her of the GSP and answer any questions she may have about the plan.
82	GC1	And, in 1998 USFWS stated its concerns, "We believe any water resource development project, including a comprehensive plan for Ballona wetlands, warrants early Service involvement as set forth in the Transfer Funding Agreement, including preparation of the appropriate planning documents, alternative analysis, and finally a Coordination Act Report for a comprehensive plan." Ken Berg, Field Supervisor; Branch Chie USFWS Letter to Col. Davis, USACE. (Pa 	The SMBGSA acknowledges the USFWS statement from 1998.

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83	GC1	Additionally, without monitoring wells established in the Marina del Rey area and elsewhere in this general area, there is no data supplied in the Draft GSP to support that seawater intrusion has been prevented in the Subbasin, especially from Marina del Rey southward to the bluffs of Playa del Rey/ Westchester—as is noted in the Draft GSP. "Shifting groundwater production away from the coast and to deeper aquifers have prevented further seawater intrusion (DWR 2019)." PG 2 Draft GSP.	The GSP discusses seawater intrusion and the current extent of seawater intrusion in Section 2.4.3 and Figures 2-37 and 2-38. The GSP also acknowledges that additional monitoring wells would be helpful (See Section 3.5.8.2) and has proposed a project (See Section 4.9) to install monitoring wells to better monitor and understand seawater intrusion related to groundwater production. Additional monitoring wells south of Playa del Rey are not proposed at this time because the groundwater production for drinking water is several orders of magnitude larger than the groundwater remediation pumping in the Playa Vista area.
84	GC1	Groundwater dewatering metering in the Marina area is not something that Grassroots Coalition (GC) is aware of occurring. Even the Draft suggests inserting at least two monitoring wells between Marina del Rey and the Charnock wells as saltwater intrusion may be occurring. GC is aware of multiple NPDES permits granted for development sites in MDR for 'construction dewatering' that have become perpetual dewatering permits—in other words, not just short-term construction dewatering permits but forever dewatering permits. How such long- term dewatering is affecting the groundwater in the region is important, if not critical to include and understand in order for informed decision making. Furthermore, for GDE purposes and state laws such as Porter-Cologne and the federal Clean Water Act, all of the aquifers underlying this southern area of the Subbasin matter to prevent saltwater contamination, not just the Silverado.	The SMBGSA acknowledges the importance of additional monitoring wells between Playa del Rey and the primary production well fields in the Subbasin and agrees with the Grassroot Coalition that all aquifers in the Subbasin are important. Violations of an NPDES permit can be reported to the LARWQCB: https://www.waterboards.ca.gov/losangeles/about_us/contact_us/staff_listing.html
85	GC1	"Land subsidence due to groundwater withdrawal has not been documented in the Subbasin (Bawden 2003; DWR 2014)." Grassroots Coalition (GC) respectfully disagrees with this finding as a subsidence bowl of nearly 2 feet as of 1970, was created in the Venice Peninsula/Ballona area due to brine water withdrawal from within the oilfield formation (SoCalGas, Riegle Report). In Playa del Rey, SoCalGas /SEMPRA (SCG) conducts an underground gas storage operation within the Venice oilfield. As part of the operations, SCG withdraws approximately 2700 barrels a day of formation brine water. As a result of litigation against SoCalGas/Playa del Rey by GC, subsidence monitoring was ordered to take place via InSar satellite monitoring. The monitoring did not reflect alleviation of the subsidence that had already occurred and began and ended between 2007- 2014 Settlement Agreement May 11, 2000, Decision 07-12-035 December 20, 2007 (Settlement Agreement GC v SoCalGas). Subsidence investigation has not taken place within the current Draft GSP of which GC is aware that would inculcate activities of SCG. Therefore, subsidence study appears to have not occurred. Further, USGS documented near surface water depletion as having caused subsidence (J. Riegle Gas Storage in the PDR oilfield; subsidence graph, Playa Vista EIR). The USGS documentation appears absent in the Draft GSP. The Playa Vista site also has been documented as having subsidence that has not been inculcated into the Draft GSP. (Endres PhD analysis of Playa Vista's subsidence study submitted to the Los Angeles Dept. of Building & Safety. The Endres evaluation was submitted by Grassroots Coalition in our response to the Draft CDFW/EIR Ballona.	The SMBGSA acknowledges the Grassroots Coalition concerns about historical subsidence related to oil field operations in the Santa Monica Subbasin. The statement in the GSP regarding historical subsidence limited to subsidence from groundwater withdrawal from the Subbasin. The historical subsidence referenced by the Grassroots Coalition would have occurred from withdrawals of deeper, brackish, and saline groundwater associated with oil production. Oil and natural gas withdrawals, and associated saline groundwater withdrawals occur beneath the base of the Santa Monica Subbasin. Language has been revised to reflect this clarification (see GSP Section 1.1).
86	GC1	By way of comparison of the established 'subsidence bowl' of nearly two feet in the Venice/Playa del Rey area due to SoCalGas operations (SoCalGas subsidence graphic), similarly two feet of subsidence in the manmade harbor, King Harbor in Redondo Beach, Ca.(Santa Monica Bay) experienced approximately two feet of subsidence due to oilfield subsidence issues and suffered severe damage and litigation following a storm event in 1988, ceqanet.opr.ca.gov/1988090901 , CEQA SCH Number 1988090901 provides the lead agency's (US Army Corp of Engineers) Storm Damage Reduction Summary.	Acknowledged

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87	GC1	The Draft GSP's discussion of subsidence as not a historical occurrence due to fluid withdrawal is inaccurate. Provided below are subsidence issues caused by fluid withdrawal at depth within the oilfield setting which the Draft appears to have no information hence, the following are simply provided to raise awareness of the subsidence issues in our area and nearby. There is a great deal of information available and a need for such consideration in the Santa Monica Subbasin.	Acknowledged with a correction to note that the GSP discusses the potential for fluid withdrawal to cause subsidence, but groundwater is one type of fluid, while oil and gas, or brines in deeper formations associated with oil and gas deposits are other types of fluids. The GSP is concerned with subsidence in the Santa Monica Subbasin related to extraction of groundwater for municipal, industrial, or agricultural use and the SMBGSA has no authority to regulate other types of fluid withdrawals from the Subbasin.
88	GC1	InSAR data from SoCalGas/Playa del Rey that provided subsidence monitoring as part of the Settlement Agreement between SCG v Grassroots Coalition for the Ballona region is available and has not been garnered by the GSA for evaluation in this Draft GSP. 1.History - Geotechnical and Civil Engineering firms in ... web.mst.edu/~rogersda/Geotechnical-Practice... By 1945 Los Angeles-Long Beach was the largest man-made port in the world, but the problems of flooding, siltation, earthquakes, and ground subsidence combined to make it one of the most geoetechnically challenging harbor facilities in the world. Subsidence - Overview Oilfields of Southern California Subsidence Overview - Redondo Beach King Harbor - Breakwater Evaluation / Inglewood Field 19 meg Chilingarian, George V; Endres, Bernard L; 199Subsidence - Beverly Hills, CA Urban Oil Production and Subsidence Control - Case History - Beverly Hills, CA Oilfield Erickson, R C; Spaulding, A O; Society of Petroleum Engineers - Annual Meeting, 1975 1.2	The GSP uses InSAR data from the European Space Agency Sentinel-1A satellite, as discussed in Section 2.4.5 and presented in Figure 2-50. These data do not indicate current subsidence related to groundwater withdrawals in the Subbasin.
89	GC1	*Additionally, the citation used in the Draft GSP of CADWR 2014, Summary of recent, historical, and estimated potential for future land subsidence in California 2014, does not address the Santa Monica Subbasin but instead the San Joaquin Valley. It does however, provide information on widespread land subsidence due to groundwater withdrawal and degradation of groundwater-dependent ecosystems (The Nature Conservancy 2014) and ventures further to discuss options to achieve groundwater sustainability that include increasing surface water supplies, and recharging from dedicated recharge basins or temporary wetlands on fallowed fields as options in some basins.	The first part of this statement is inaccurate. The Santa Monica Subbasin is ranked, along with all of the other groundwater basins in the appendix to DWR 2014 reference. In the category for "Overall Estimated Potential for Future Subsidence" DWR ranked the Santa Monica Subbasin as "Low" - See Appendix A of DWR 2014. The GSP states "DWR ranked the Subbasin as being at low risk for future subsidence related to groundwater withdrawals (DWR 2014)." This is a factually accurate statement and is backed up by the reference provided. The SMBGSA acknowledges the remainder of the Grassroots Commission's comment and agrees with DWR that under the right geologic conditions recharging groundwater aquifers can help alleviate multiple undesirable results.
90	GC1	The Draft GSP also cites as reference, The Bawden, Gerald 2003, Separating Groundwater and Hydrocarbon Induced Deformation… provides a 2003 writeup per a 2001 Subsidence Interest Group Conference. However there appears to be nothing in this referenced literature that cites to the Santa Monica Subbasin but instead, the literature references the presentation's discussions of the Houston/Galveston Texas area and Los Vegas, Nevada area. There is also reference to a presentation on the methodology of INSAR technology	The Bawden 2003 paper discusses subsidence in the Los Angeles area and provides figures that include the Santa Monica Subbasin.

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91	GC1	The following links provide further information pertaining to the SOCALGAS/PLAYA DEL REY operations and concerns: 1.SoCal Gas PDR Underground Gas Storage Operations saveballona.org/system/files/GRASSROOTS... Timeline of Incidents & Events in Playa del Rey / Ballona Wetlands Area Updated: June 15, 2019 2/24/11- SoCalGas Incident—mud/water, storage gas leaking to surface Riegle 1 2.Regional Geochemical Assessment of Methane, BTEX and H2S Gas ... www.eti-geochemistry.com/Regional The Playa del Rey Oil Field, and now Southern California Gas Storage Field lies immediately to the west of Lincoln Blvd. (Barton, 1931, Hodges, 1944 and Riegle, 1953). In order to determine whether or not this gas storage field had contributed as a source, ETI had suggested that additional studies needed to be conducted (ETI 1st and 2nd Progress Reports, 1999).	Acknowledged.
92	GC1	INTERCONNECTED WATER The Draft GSP cites that, “Depletions of interconnected surface water have not occurred historically in the Subbasin because, Ballona Creek, the primary surface water drainage, has been maintained as a lined and grouted flood-control channel since the 1950s (ACOE 1982; DWR 2019).” Grassroots Coalition disagrees with the GSA interpretation of ACOE AND DWR info cited above. The GDE- Ballona Wetlands is a predominantly seasonal freshwater wetland. This GDE relies upon groundwater that is part of the entire LA Basin watershed, that allows for the watershed to flow underground through Ballona Wetlands, keeping the groundwater at or near the surface (DWR Map & Playa Vista EIR) and recharge the underlying freshwater aquifers. Ballona also relies upon seasonal rains that typically and readily pond across Ballona Wetlands due to the near surface groundwater and various soils across this region. The ponding can last for months (Terry Huffman Phd 1986 USEPA , Region IX, Determination of the Presence of Aquatic and Wetland Habitats Subject to Federal Regulatory Jurisdiction Within The Ballona Creek Land Tract).	The SMBGSA acknowledges this statement and agrees that the BWER hosts groundwater dependent ecosystems. The groundwater that is relied upon by these ecosystems is, however, found in the Bellflower aquitard, and is disconnected from the primary aquifers - the Ballona and Silverado aquifers - in the Subbasin. Language has been added to GSP Section 2.4.7.3 clarifying the thickness of the Bellflower aquitard within the BWER based on boring logs collected in Areas A, B, and C (USACE 2017 [Appendix E]).
93	GC1	Depletion of the interconnected surface water for this region has been ongoing for the past 20 years, unbeknownst to the public until litigation against CDFW and Playa Vista by Grassroots Coalition began the process of transparency and closure of the illegal drainage. The unpermitted drains and numerous manmade drainage channels, which experts have stated should be blocked from allowing freshwater from emptying into the Ballona Channel and wasted at sea, were not accounted for in the CDFW Draft EIR. The Draft GSP similarly has not provided for any evaluation of the freshwater drainage upon Ballona Wetlands Ecological Reserve, as a GDE. Currently, the unpermitted drains’ below ground structures contain large weep holes for groundwater drainage, that have caulking in the weep holes. The caulking failed in an earlier sealing attempt. The top of the drains were resealed using other structures, but there has been no accounting for the subsurface potential for drainage that may be starting to occur as a result of caulking failure. As a GDE all of these interconnected surface water areas need to be evaluated and considered as part of a GSP.	The GDEs are discussed in Section 2.4.7 and the BWER is discussed in Section 2.4.7.3. The SMBGSA acknowledges this statement and agrees that the BWER hosts groundwater dependent ecosystems. The groundwater that is relied upon by these ecosystems is, however, found in the Bellflower aquitard, and is disconnected from the primary aquifers - the Ballona and Silverado aquifers - in the Subbasin.

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94	GC1	Furthermore, rainwater at Playa Vista is collected (called nuisance dewatering/ LA Department of Building & Safety) and thrown away via NPDES permits that allow for the rainwater to be sent to the Sanitary Sewer System under Industrial Wastewater permits. All of this cumulative dewatering needs to have address.	The SMBGSA acknowledges that NPDES permits exist in the vicinity of the Playa Vista site and that shallow dewatering is a common practice to prevent damage to infrastructure in the Subbasin. The GSP does not interfere with the jurisdiction of the LARWQCB or the rights of existing permit holders to continue to pump shallow groundwater under the jurisdiction of the LARWQCB.
95	GC1	The Playa Vista (Ballona Conservancy) essentially walls off fresh watershed water from flowing west, seaward to Ballona Wetlands via pumping from below building sites then sending this clean water to the Sanitary Sewer System via NPDES permits and Industrial Wastewater permits. The wasting of this clean freshwater and the restriction of this water from flowing into Ballona Wetlands is contrary to agreements between Playa Vista and the City of Los Angeles within the Playa Vista EIR mitigation requirements, Vesting Tract Agreements, and a Settlement Agreement originating in the California Coastal Commission v Friends of Ballona et al and updated with the City/County of Los Angeles in 2006. This Agreement further defines that no harm will come to Ballona Wetlands through development activities of Playa Vista (Case No. C525 826 Friends of Ballona et al v Ca. Co. Commission).	The SMBGSA acknowledges previous settlement agreements and ongoing permitted activities at Playa Vista.
96	GC1	Cumulative dewatering activities that are ongoing directly adjacent to the wetlands are not evaluated or included in the GSP. None of the Ballona Wetland's unpermitted and permitted drainage of its seasonal freshwater have been included or evaluated in the GSP for Ballona Wetlands, a Groundwater Dependent Ecosystem.	The current groundwater conditions, which reflect all activities at the Playa Vista site, are discussed in Section 2.4
97	GC1	1.2 Sustainability Goal (DRAFT GSP) "Ensuring groundwater conditions in the Subbasin support sufficient seaward flow of fresh water to prevent significant and unreasonable seawater intrusion in the Silverado aquifer." emphasis added. The Sustainability Goal as cited above from the Draft GSP, demonstrates the focus of the Draft GSP has been upon the Silverado aquifer, the main source of drinking water for the City of Santa Monica and other stakeholders.	Acknowledged.
98	GC1	The following comment in the Draft GSP, while appearing to provide for the GDE's protection is contradicted by this Draft's conclusory statements regarding the GDE as receiving no effects from dewatering activities, which was ostensibly reached due to extremely limited and/or nonexistent investigation into the Ballona Wetland GDE area's groundwater production. "Continuing groundwater production at rates and in aquifers that do not impact the ability of groundwater dependent ecosystems to access groundwater."	The SMBGSA disagrees with this statement. The sustainability goal recognizes the potential to impact GDEs in the future and the sustainability criteria have been designed to avoid undesirable results for all sustainability indicators (See Chapter 3) .
99	GC1	The Draft GSP's conclusions pertaining to Ballona Wetlands are made while the Draft provides little to no data of groundwater production and/or seawater intrusion issues that pertain to Ballona Wetlands and its underlying freshwater aquifers that are classified by LARWQCB as Potential Drinking Water. In a recent court decision, the aquifers were classified as Drinking Water for purposes of remediation from SoCalGas oil/gas operations-- Settlement Agreement (Prop. 65; SCG v ELF Case No. BC 364555). This Settlement Agreement also iterates that IF the water quality changes, as it would most certainly should CDFW's Plan for digging out Ballona to create a new saltwater bay be carried out, THEN SoCalGas would no longer have to remediate their contaminated groundwater to Drinking Water standards. This would hold true for any new discoveries of contamination from SoCalGas/ Playa del Rey operations into the future as the city, county and state work to support the end of fossil fuel use, and specifically the closure of this facility and operations. Decommissioning studies of SoCalGas point out the likely contamination from their operations.	The BWER is discussed in Section 2.4.7.3 and groundwater pumping associated with groundwater remediation and dewatering activities in the vicinity of the BWER is discussed in Section 2.3.2.2.

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100	GC1	There is no meaningful investigation pertinent to the GDE- Ballona Wetlands demonstrated via the Draft GSP. However, conclusory statements that the GDE is not in any significant jeopardy from groundwater withdrawal/ surface water removal, and/or contamination potentials are rendered in the Draft.	The discussion of the GDEs was prepared using the best available science, per California Code of Regulations 354.16(g).
101	GC1	The following LINK relates to a legislatively ordered study of all the underground gas storage facilities in California. It singles out SoCalGas/Playa del Rey underground gas storage operations as a most hazardous operation due to its aging infrastructure, location and historical problems with control of the gas. Saltwater intrusion is well established as a cause of infrastructure corrosion for SoCalGas/Playa del Rey, causing pipeline leakage incidents and gas/oil well leakage especially along the coastal edge of Playa del Rey and Venice. Hundreds of old, poorly abandoned wells are included as part of and directly adjacent to the operational area. There is a lack of saltwater intrusion monitoring acknowledged in the Draft GSP for this area. This data gap also relates to the intended CDFW Plan to convert Ballona land mass into a saltwater bay.	Acknowledged.
102	GC1	The Draft GSP only cites to CDFW's Plan as providing more wetlands. Such conclusory comment, without any data support, is a recipe for disaster and fails to adhere to GDE proactive, protective planning as well as fails to adhere to proactive SGMA policies of protection to the built environment as well as the GDE environment of habitat protection.	The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.
103	GC1	CCST Report: RISK & VIABILITY OF SOCALGAS PLAYA DEL REY UNDERGROUND NATURAL GAS STORAGE 1.2Agency Information (Draft GSP) Grassroots Coalition has been party to multiple Public Meetings and has provided input and a video presentation as well as a Public Meeting presentation. The Draft does not reflect or include the issues presented to the GSA that were first provided to the GSA via an emailed Powerpoint and more recently as a Powerpoint Presentation. PATRICIA FINAL PPT 3.15.21 Presentation1 2 2.pptx	The GSP relies on the best available science (per 23 CCR Section 354.16(g)) and incorporated suggestions made by the Grassroots Coalition into both the draft and final GSP.
104	GC1	The Draft GSP also appears to exclude DWR data such as mapping done for the Ballona region's aquifers and faults.	The GSP relied on multiple DWR, USGS, and other documents to construct the hydrogeologic conceptual model of the Subbasin (See GSP Sections 2.3, 2.4 and 2.8). A geologic map with faults is presented in Figure 2-15. Cross sections are presented in Figures 2-18 through 2-21.
105	GC1	Readily available data and information known via press stories and agencies--their historical records that are pertinent to the GDE, also appear to have been excluded from the Draft prepared by Dudek et al.	The GSP relies on the best available science (per 23 CCR Section 354.16(g)).
106	GC1	As an historic stakeholder (30 years) and a key 501 c3, engaged in numerous successful litigations and administrative actions pertaining to the acquisition and protection of Ballona Wetlands and numerous public safety actions, Grassroots Coalition provides notification to California Division of Water Resources (DWR) of these exclusions and requests the Draft GSP be rejected due to its conclusory statements made without data support and/or evaluation that would have/should have included this basic water diversion and drainage data.	The SMBGSA has invited the Grassroots Coalition to participate in the GSP development process and has incorporated suggestions and edits made by the Grassroots Coalition in the GSP. The SMBGSA strongly disagrees with the Grassroots Coalition's characterization of the Draft GSP. The GSP was prepared in compliance with SGMA (see Appendix A for the GSP Checklist) and every effort was made to gather and use the best available science to develop GSP.

Comment Number	Commenter	Comment	Response
107	GC1	INTENDED SALTWATER INTRUSION BY THE CALIFORNIA DEPARTMENT OF FISH & WILDLIFE- •The GSA should have included the CDFW approved Plan of saltwater intrusion into Ballona and the region that is contained in their Final Environmental Impact Report (FEIR). There is no mention in the GSP Draft of the CDFW Plan or its potential implications of contamination via saltwater intrusion into the predominantly seasonal freshwater wetland of the GDE, and or implications upon the freshwater aquifers currently classified as Drinking Water. Thus far, saltwater intrusion into Ballona's multiple aquifers has not been addressed in the FEIR. During the May 27, 2021 California Coastal Conservancy meeting, when asked about a freshwater alternative, Coastal Conservancy's Mary Small cites that early on it was considered but not carried forward. This is likely why no cumulative hydrology evaluation was ever undertaken to include within the FEIR. (Meeting @ 3:17:15). When asked by Coastal Conservancy Chair Bosco about the potential of the CDFW project affecting the freshwater aquifers of Ballona, no explanation was offered. Only a conclusory opinion was offered from Ms. Small claiming there would be no impact from the project upon the aquifers (3:20:39). The FEIR contains no evaluation of this issue and contains no discussion of protection of the aquifers per Porter-Cologne; Clean Water Act and/ or the SGMA. Conclusory statements without data support.	The CDFW project is discussed in Section 2.1.1.2
108	GC1	•SEA LEVEL RISE In the May Coastal Conservancy Meeting, CDFW's Director Bonham opines at 2:42:28 that without the (CDFW) Project, seawater will overtake the area and that their Project improves upon things as a defense against sea level rise. Director Bonham's response to Board Members is contradicted by CDFW's FEIR sea level rise models that reveal the Project will enhance sea level rise problems thus destroying critical habitat. Dr. Margot Griswold, Restoration Ecologist, alerted the Coastal Conservancy Board Members at their 9/24/21 Meeting during public comment, that CDFW's Sea Level Rise Model does compare the CDFW Project to the 'No Project' but that it is buried in the FEIR indexes, hence easily missed. The CDFW Sea Level rise model clearly demonstrates the Project's degradation of Ballona Wetlands. At 15:26 Dr. Griswold displays the CDFW modeling, demonstrating that the proposed CDFW Project will not protect existing marsh species from expected Sea Level Rise, but instead, saltwater intrusion will destroy critical habitat, turning it into mudflats. https://youtu.be/Na3J6Z3bV0M	Acknowledged
109	GC1	•Recording of May 27 Meeting – Part 1 (5/27/2021 Ca. Coastal Conservancy Meeting)	Acknowledged
110	GC1	Meanwhile, it is already established that any digging out of the soils, per CDFW's Plan for conversion of Ballona into a full tidal bay, will provide for saltwater intrusion. The aquifers of Ballona are classified as Potential Drinking Water by the LARWQCB and needs protection under SGMA. During the construction of Marina del Rey, engineers provided warnings as to effects upon the aquifers from salt water intrusion. South of Marina del Rey, within the same soil conditions, lies Ballona Wetlands Ecological Reserve which needs protection from saltwater intrusion.	The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.
111	GC1	"In general a large portion of the impermeable material above the 50'gravel occurs near the land surface. ….. Average aggregate thickness of clay above the aquifer is about 9 feet." (HD 389 pgs. 8-9)	The SMBGSA acknowledges this statement and agrees that the surface sediments in the vicinity of the BWER are part of the low permeability Bellflower aquitard. Language has been added to Section 2.4.7.3 clarifying the thickness of the Bellflower aquitard within the BWER based on boring logs collected in Areas A, B, and C (USACE 2017 [Appendix E]).
112	GC1	Further, HD 389 further warns regarding the consequences of removing surface soils to saltwater intrusion , … "by increasing the landward slope of the water table and consequently the landward flow of saline water." (HD 389 pgs 8-9)	Acknowledged

Comment Number	Commenter	Comment	Response
113	GC1	The Draft GSP does not address the negative potentials of saltwater intrusion upon the GDE, the aquifers or the built environment.	The GSP relies on the best available science (per 23 CCR Section 354.16(g)), as presented in CDFW documents on the BWER restoration project.
114	GC1	Regarding the aquifers and potential contamination by CDFW's planned saltwater intrusion, the recording of the May 27, 2021 meeting establishes that both Director Bonham and Coastal Conservancy's Mary Small, in response to a direct board member query on this topic, only provided short conclusory statement of their own personal beliefs that there would be 'no effect' upon the aquifers due to the CDFW project. No data support for such an assumption was offered and no data or information regarding this issue is included in the FEIR. The FEIR contains no responsive response to either the Poland Report and/or House Document 389. (Link location 3:20:52-3:21:23) It is imperative to prudently and scientifically consider saltwater intrusion impacts upon all of the freshwater aquifers in the CDFW project plan area which has not occurred.	Acknowledged.
115	GC1	SOCALGAS/PLAYA DEL REY CONTAMINATION ISSUES Per the lack of address in the Draft GSP pertaining to potential contamination issues due to SoCalGas/Playa del Rey operations. This may be due to CDFW's FEIR containing no evaluation pertaining to SCG operational impacts from their Plan of conversion of the land mass of Ballona into a saltwater bay. However, the GSA needs to independently consider and gather readily available data and information, revealing contamination aspects pertinent to both the GDE and the built environment.	Groundwater quality is discussed throughout the GSP including, but not limited to, GSP Sections 1.1, 2.1,and 2.4.4. Regulatory clean-up sites are shown in Figure 2-47, Oil and Gas Fields are shown in Figure 2-48.
116	GC1	During the recent Coastal Conservancy Meeting noted above, both the Coastal Conservancy's lead Mary Small, who in the 2007-8 timeframe was also a Bay Foundation Board Member and contributed to the creation of the bay concept, and CDFW's Director Chuck Bonham repeatedly stated to Conservancy Board Members that the CDFW Plan for conversion of Ballona into a full tidal, saltwater bay—has no bearing on the continuing operations of the SoCalGas natural gas storage (operations). 2:54:57.	Acknowledged.

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117	GC1	While true in the sense that CAL GEM and the CPUC do provide oversight of the SoCalGas operations, what is omitted is that neither Cal Gem nor the CPUC have been consulted per CDFW's Plan of saltwater intrusion. Director Bonham at 2:33:00 cites that CDFW wants the infrastructure out of the Reserve….that CDFW wants the infrastructure to be removed from the land to be restored… What is omitted in such overly broad and simplistic comments spoken ostensibly for neophytes to oil/gas operations, is that there is nothing in the FEIR discussing the hazards of corrosion and inability to access the subsurface infrastructure that IS NOT REMOVED & WILL ALWAYS REMAIN as potential conduits of gas and oilfield contamination. What is not addressed are the enhanced corrosion dangers to all the SoCalGas infrastructures including any new drilled wells. The saltwater interface with oilwells causing leakage due to corrosion is already well documented in SoCalGas wells of Playa del Rey operations. One only needs to look at the Ballona Channel to see outgassing that originates from abandoned wells. It is easy to view abandoned oilwells leaking Playa del Rey oilfield gases, which can and do leak gases, to the surface in Ballona Lagoon Marine Preserve. SoCalGas reservoir gases are documented as part of oil/gas well leakage to the surface. Cal Gem (aka Division of Oil & Gas) shut down SoCalGas/Playa del Rey for a year in 2010 due to reservoir gas leakage to the surface. The leakage was discovered due to litigation by Grassroots Coalition against SoCalGas which culminated in gas monitoring to be done as part of our Settlement Agreement. A URS gas study found the reservoir gas leakage. These are all real and potential dangers that state legislators, the City of Los Angeles are already trying to see fixed and as yet, have not been.	Acknowledged.
118	GC1	Additionally, replacement wells are planned by SCG. The FEIR shows the placement of these replacement wells within one to a few hundred feet of homes. While cities, state legislators and the public are working toward phasing out oilfield operations, drilling new wells and/or at least having a 2,000 foot buffer zone, the SoCalGas replacement wells' locations contradict current efforts towards safety. The following Links provide SoCalGas/Playa del Rey internal documents that verify contamination to the environment. A timeline of some of SoCalGas/Playa del Rey incidents is provided. Patricia McPherson regarding SOCALGAS PLAYA DEL REY Operations (Slide Presentation) GRASSROOTS_COALITION-SoCalGas_PDR-Historical_Timeline-4_page_handout-6-15	Acknowledged.

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119	GC1	Note: Mary Small, Coastal Conservancy Meeting in May 27, 2021 (LINK @ 44:53:00-) provides additional misleading comments while presenting an image she claims shows Marina del Rey dredge fill on top of Area A as she further states that up to 20' of fill deposited upon Area A is the reason it needs to be dug out to remove the fill that turned Area A into uplands. The image she displays is NOT the private Howard Hughes estate landscape having fill placement but is instead a western edge (red circled area added by GC) of the LA County / Federal (USACE) project on County/Federal property that became what we know today as Marina del Rey. Inside the dotted lines is the historic Howard Hughes estate property. Congressional House Document 389 provides volumes and locations of MDR soil used for the creation of the marina's land properties and as part of the Beach Enhancement Program depositing soils to create beaches to the north and south of the Ballona Channel entrance. This Program created miles of new beach area for Santa Monica Bay. The HD 389 document also cites a federal comment-- that the creation of the marina would not affect the private Howard Hughes property -- made in response to concerns raised by the Hughes estate. Mapping performed by T.Huffman in the USEPA Report 1986, and mapping performed as part of a Playa Vista 1990 EIR Archaeology study both provide evidence that Area A (the area Ms. Small was addressing in her slide above containing an historic photo and a map for her unsubstantiated claim) was not filled with Marina del Rey dredged soil. oRecording of May 27 Meeting – Part 1	Acknowledged.
120	GC1	The GSP and GDE need to be based in reality and science and not in hearsay.	The SMBGSA agrees with the Grassroots Coalition comment. The SMBGSA prepared the GSP using the best available science per the requirements of SGMA (see 23 CCR Section 354.16). The documents cited are listed in the references sections at the end of each chapter and are uploaded to the DWR website for public review.
121	GC1	INVESTIGATION NEEDS- Grassroots Coalition (GC) also requests the GSA work to retrieve relevant data that has been omitted and/or not requested, found or even considered. This relevant data would include but not be limited to, LARWQCB freshwater metering and volume dewatering data accrued since 1998 to the present from Clean Up & Abatement Order No. 98-125 and, freshwater dewatering volume and metering data of the Playa Vista gas mitigation system dewatering that is and has been being disposed of via either the City of LA, Sanitation Dept. (including under the auspices of the LA Department of Water & Power) or sent to the ocean via Playa Vista's Freshwater Marsh System (FWM) under various National Pollution Discharge Elimination System (NPDES) permits, United States Army Corps of Engineers (USACE) permits, and California Coastal Commission (CCC) permits.	The SMBGSA reviewed and incorporated publicly available data in the GSP. Production from groundwater remediation wells in the Playa Vista Area is discussed in GSP Section 2.3.2.

Comment Number	Commenter	Comment	Response
122	GC1	GC recognizes that, in part at least, many of the GSA omissions may be due to the GSA's focus upon drinking water wells, including but not limited to the lead City of Santa Monica's attention to groundwater remediation programs related directly to drinking water needs. The GSA's Draft focus on drinking water wells has excluded dewatering from groundwater remediation programs focused singularly on decontamination of aquifers, and dewatering under gas mitigation systems, and proposed, future saltwater intrusion plans of CDFW for the Ballona Wetlands area, not specific to current drinking water uses. The LARWQCB's CAO 98-125 has been in operation since 1998, pumping and diverting cleansed groundwater from under Playa Vista within the historic Ballona Wetlands area. Playa Vista then, under NPDES and LA Sanitation permits, disposes the cleansed freshwater into both the sanitary sewer system and the ocean via the FWM and its Main Drain to Ballona Channel which exits in Santa Monica Bay of the Pacific Ocean. Lack of a coordinated agency/ city effort of oversight has likely afforded this outcome of wasting Ballona's freshwater resources as previous environmental agreements with Playa Vista have been overlooked. Much, if not most of this pumped, cleansed and diverted groundwater is not quantified for volume with best available volume metering technology. Metering with best available technology has also not been utilized for the dewatering ongoing since approximately 2000, for the gas mitigation systems under the buildings of the Playa Vista site, according to Public Record Act responses from LA's Dept. of Sanitation.	Acknowledged
123	GC1	The lack of relevant water data does not allow for a protective water security strategy for Ballona Wetlands, newly acknowledged by the GSA as a Groundwater Dependent Ecosystem. Instead, the lack of relevant water data is a recipe for the blind decisions and conclusory statements made within the current Draft GSP.	The SMBGSA strongly disagrees with the characterization of the Draft GSP. The SMBGSA prepared the GSP using the best available science per the requirements of SGMA (see 23 CCR Section 354.16). The documents cited are listed in the references sections at the end of each chapter and are uploaded to the DWR website for public review. The GSP does not include either "blind decisions" or "conclusory statements" as asserted by the Grassroots Coalition.
124	GC1	Grassroots Coalition over the past year has attempted to provide information to the GSA for inclusion of Ballona as a GDE and other issues ie. subsidence but, these issues appear not to have been included despite readily available data, and groundwater dewatering volume data retrieval has not been attempted. Dewatering volumes and metering capabilities have not been investigated and documented for the Ballona region and still needs to be performed. Grassroots Coalition has presented a portion of the GDE dewatering information to the GSA and provides further data support in this response.	The SMBGSA has invited the Grassroots Coalition to participate in the GSP development process and has incorporated suggestions and edits made by the Grassroots Coalition in the GSP. Subsidence related to fresh groundwater withdrawal is discussed in GSP Section 2.4.5 and measured subsidence between 2015 and 2019 is shown in GPS Figures 2-50 and 2-51. Production from groundwater remediation wells in the Playa Vista Area is discussed in GSP Section 2.3.2.
125	GC1	The Draft GSP also does not clarify how the GSA intends to wield its powers as they relate to consultation with water right holders or other stakeholders that have both, information to be gathered and/or have not installed best available technology that is required in order to provide reliable groundwater withdrawal volume information. The data lacking is contained both in NPDES permits and in LA City Industrial Wastewater Permits and do not pertain to established drinking water wells but instead pertain to pumping and dewatering of clean and/or cleansed groundwater under Playa Vista that affect the ecological needs of the GDE known as Ballona Wetlands.	Per CWC Section 10720.5 the GSP does not modify water rights or priorities and does not determine water rights. The SMBGSA has always welcomed and continues to welcome consultation with stakeholders and interagency coordination efforts. Furthermore, the SMBGSA acknowledges LARWQCB's regulatory role in issuing and enforcing NPDES permits for the Playa Vista site.

Comment Number	Commenter	Comment	Response
126	GC1	Contrary to the Draft GSP's comment on page 1-1 which cites that water quality in the Subbasin prior to 2015 need not be addressed, Grassroots Coalition disagrees per SGMA's broader support requirements for use of readily available historical data. The Playa Vista site has ongoing LARWQCB cleanup requirements that have affected the perpetual pumping and diversion of groundwater away from Ballona Wetlands. LARWQCB, in statements made to GC was unaware of the Freshwater Marsh throwaway of water sent into the system. LARWQCB stated that it was unaware of the clay liner of the Freshwater Marsh (FWM) and the HDPE liners in the Riparian Corridor, both of which were designed to act to preclude the cleansed freshwater from percolating downward into the underlying aquifers. LARWQCB also stated to GC that it was unaware of the cleansed freshwater sent into the FWM as ultimately being thrown away into the ocean via the Main Drain of the FWM that empties into the Ballona Channel which exits to the Pacific Ocean. In short, a lack of coordinated effort of protection to Ballona's freshwater resources and needs as a GDE have become absent, eroding from at least since 1998 to the present.	See California Water Code Section 10727.2(b)(4) "The plan may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015…"
127	GC1	The Santa Monica Subbasin is categorized as having medium priority status. This status was determined ostensibly for human drinking water purposes as this has been the focus by the GSA. Grassroots Coalition believes that the inclusion of its GDE, Ballona Wetlands adds to the exigency of protection to this Subbasin and potentially a higher status rank. The Ballona Wetlands Ecological Reserve was acquired into public trust in 2004, costing $140 million for its acquisition alone. Millions more have been allocated for its study and restoration. It's status of Ecological Reserve (CCR Title 14, Section 630) is the highest protective status available to the state and was applied by the Wildlife Conservation Board in 2003/4 with the legal Purpose and Goal of protection to its freshwater resources and saltmarsh aspects with the added endangered species, Belding's Savannah Sparrow habitat as an additional focus of protective need. (Wildlife Conservation Board Section 630, Purpose and Goal language)	DWR determines the basin prioritization rankings for each of the 515 groundwater basins in the State of California (see https://water.ca.gov/programs/groundwater-management/basin-prioritization).
128	GC1	1. California Regulatory Notice Register 2005, Volume No. 20-Z, Starting on page 663 Ballona Wetlands Ecological Reserve https://www.dhcs.ca.gov/services/medi-cal/Documents/AB1629/ZREG/ZREG%2020-Z_5.20.05_notice.pdf This unique, exceedingly rare, predominantly seasonal freshwater wetland (Historical Ecology of the Ballona Creek Watershed, Longcore et al) must be protected but has fallen through the cracks of drinking water focus, leaving it unstudied as a GDE.	The SMBGSA prepared the GSP using the best available science per the requirements of SGMA (see 23 CCR Section 354.16). The GDEs are discussed in GSP Section 2.4.7.

Comment Number	Commenter	Comment	Response
129	GC1	1.3.2 Legal Authority of the Groundwater Sustainability Agency (DRAFT GSP Pg. 3 0f 6) " The City of Santa Monica is the only local agency that currently produces groundwater from the Subbasin." And, " More recently, this management has included coordination with the SWRCB, the DDW, and the RWQCB to remove industrial pollutants that have contaminated the groundwater in the Subbasin." It appears that the industrial pollutants described above are confined to the City of Santa Monica and its interests, namely the MTBE contamination. There appears to be no cumulative discussion by the GSA of the groundwater contamination pumping and throwaway of cleansed freshwater from the Subbasin area of Playa Vista which is overseen under the LARWQCB's CAO No. 95-125 into either the ocean and/or the LA Sanitary Sewer system under Industrial Wastewater permits and NPDES permits. There is also no discussion of impacts that may or may not be avoided due to implementation of the approved CDFW Plan contained within their FEIR for Ballona Wetlands Ecological Reserve which proposes to convert the Ecological Reserve, the GDE, into a new, full tidal saltwater embayment.	Groundwater quality is discussed throughout the GSP including, but not limited to, GSP Sections 1.1, 2.1,and 2.4.4. Regulatory clean-up sites are shown in Figure 2-47, Oil and Gas Fields are shown in Figure 2-48. The water budget is discussed in GSP Section 2.5. The undesirable results are discussed in GSP Section 3.2. The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR.
130	GC1	"…the analyses conducted as part of the GSP suggest that the current and planned future groundwater production are within the estimated sustainable yield of the Subbasin, future demands not anticipated in the GSP may necessitate the adoption of measures to restrict groundwater production. These measures may include, but are not limited to, regulating, limiting, or suspending groundwater extraction from individual wells or wells in-aggregate, imposing extraction fees on groundwater producers in the GSA area, and developing a groundwater allocation." Draft GSP The comment in the Draft GSP is concerning due to: 1. The statement above suggests that current and future production (and ostensibly planned intrusion by saltwater) have not been taken into consideration pertaining to any of the GDE area sustainable yield needs within the Subbasin. The GDE is not mentioned here and the lack of anticipation of needs for potential restriction of groundwater and/or surface water removal from the GDE/ Ballona Wetlands is not discussed. Harm to Ballona's hydrology is already documented by CDFW via the Betty Courtney letter to Playa Vista/ Ballona Conservancy pertaining to harming Ballona's hydrology due to the restriction of freshwater into the Freshwater Marsh System; and the CCC acknowledgement of harm to Ballona's hydrology caused by both CDFW and Playa Vista (Ballona Conservancy) unpermitted drainage of ponding freshwater on the Ecological Reserve via unpermitted drains. USFWS, in their comments to the Draft EIR also cite that the freshwater diversions away from Ballona need to be stopped to return the freshwater to Ballona Wetlands Ecological Reserve. 2.The comment from the Draft GSP above, also suggests the legal ability of the GSA to potentially alleviate negative impacts of freshwater withdrawal, and diversion away from the GDE which is important however, currently the comment cites current and future groundwater production as being within a sustainable yield. This conclusory statement excludes analysis of the freshwater depletion occurring via NPDES and Industrial Wastewater Permits. Once again, the focus is demonstrated upon drinking water and not upon the groundwater depletion occurring outside of drinking water wells and the subsequent negative impacts upon Ballona Wetlands and the freshwater aquifers. Certainly, Grassroots Coalition believes that, at the very least, the issues of	The sustainable yield of the Subbasin was derived from historical data and the state-of-the-art numerical groundwater modeling effort conducted for this GSP. This state-of-the art effort fully aligns with the USGS understanding of hydrogeology and aquifer characterization in the Los Angeles Basin and fully complies with the requirements of SGMA. See above comments regarding the Final EIR.

Comment Number	Commenter	Comment	Response
131	GC1	The Draft GSP also opines and defines the exclusion of “de minimis wells” which the Draft GSP explains as wells from which 2 acre-feet per year or less of groundwater is produced. Grassroots Coalition believes that without an understanding of the GDE needs, and the clean freshwater that is readily available to it but is being diverted away, there is no prudent evaluation of ‘de minimus’ dewatering and/or diversion either explained or considered in the current Draft GSP. This informational gap needs to be filled with the cogent available information in order to establish an informed decision.	See CWC Section 10721(e) for the definition of a de minimis extractor. The GSP language has been revised to use the term "extractor" in place of "well" to better align with the California Water Code (See GSP Section 1.3).
132	GC1	The Draft GSP’s Figure 1-1 is inaccurate per the Ballona Wetlands Ecological Reserve as it excludes the portion north of the Ballona Channel known commonly as Area A. The map is also in error per the FWM portion of the Ballona Wetlands as the FWM has been removed from the Ecological Reserve’s boundaries while it is still Public Trust land under the stewardship of the State Lands Commission.	Figures 1-1 and 2-1 have been revised.
133	GC1	Below: August 31, 2021 SCP No. 0773 of Los Angeles Regional Water Quality Control Board’s Clean Up & Abatement Order (CAO) No. 98-125, originally dated Dec. 22, 1998. “The submittal of the technical reports above by the specified due dates constitutes an amendment to the requirements of CAO No. 98-125, originally dated December 22, 1998. All other aspects of CAO No. 98-125 originally dated December 22, 1998, and any amendments thereto, remain in full force and effect. Pursuant to section 13350 of the California Water Code, failure to comply with the requirements of CAO No. 98-125 by the specified due date, including dates in this amendment, may result in civil liability administratively imposed by the Regional Board in an amount up to five thousand dollars ($5,000) for each day of violation. In addition to the requirements of CAO No. 98-125 and all amendments thereto, Playa is responsible for compliance with applicable local, state, and federal permits or other requirements and conditions imposed by any other regulatory agency, for the actions described above. Such requirements and conditions include mitigation measures and mitigation monitoring and reporting associated with the Environmental Impact Report and other approvals for the project.”	Acknowledged
134	GC1	The LARWQCB, has undertaken numerous soils and groundwater investigations on Parcels A, B, C, D formerly owned and operated by the Howard Hughes Company and included the MacDonnell Douglas industrial complex of both aircraft industries located in Area D. All of the parcels comprised the Playa Vista development site. A,B,C are now Public Trust property areas of Ballona Wetlands that have been given No Further Action (NFA) designations to signify the property as clean and in need of no further actions of remediation. The Ballona Channel is not part of the Ballona Wetlands Ecological Reserve but is owned and operated by the federal government via USACE and by the County Flood Control District of Los Angeles. The Ballona Channel is an impaired waterway in need of remediation and TMDL discussions are directed to the Channel water, not the clean groundwater that is in the Ballona Ecological Reserve.	Acknowledged
135	GC1	Should the CDFW Plan for digging out Ballona occur, with the removal and perimeter replacement of the levees, the toxic Channel water flows would enter into and comingle with the NFA AREAS of Ballona Wetlands Ecological Reserve. Not only would the clean groundwater of Ballona, inclusive of its freshwater aquifers, be exposed to toxic Ballona Channel water flows but these currently clean areas would be exposed to contamination by saltwater intrusion and the Santa Monica Bay’s own toxic effluent.	The SMBGSA acknowledges the comment, but notes that the definition of "the Santa Monica Bay's own toxic effluent" is not clear.

Comment Number	Commenter	Comment	Response
136	GC1	Groundwater Dependent Ecosystem Ballona as a GDE extends the entirety of the Ballona Wetlands Ecological Reserve and the Ballona Wetlands Public Trust lands and waters. https://www.flickr.com/photos/stonebird/2389712523	The extent of the GDEs discussed in the GSP is based on the defined polygons for GDEs in the Natural Communities Commonly Associated With Groundwater (NCCAG) database created by DWR to assist GSAs in preparation and implementation of GSPs. See GSP Section 2.4.7.
137	GC1	USFWS has also expressed a desire for the GDE investigation to occur and for the study to include the diversion of groundwater away from Ballona Wetlands stemming from Playa Vista's dewatering and diversion of groundwater away from Ballona Wetlands/ Ballona Wetlands Ecological Reserve. (CDFW C. Medak Letter to LARWQCB 2021)	See comment above regarding the CDFW email from C. Medak.
138	GC1	The following link provides pertinent issues of the GDE to the Santa Monica Bay Restoration Commission. https://www.youtube.com/watch?v=pSmNLiXaO7Q Dr. Margot Griswold 10/22/20 discussion of Ballona for the Santa Monica Bay Restoration Commission.	Acknowledged.
139	GC1	The current Draft GSP only identifies some 40 acres of the Ballona Wetlands as Groundwater Dependent vis a vis an extremely narrow context. We believe that the identification is a starting point only as cited by the explanations for use of the NCCAG Data Set index, including its many disclaimers that point out the Data Set is not meant to represent any specific GDE but is intended as a starting point only. Grassroots Coalition also supports the comments and evaluations of Margot Griswold PhD, a leading state of California Restoration Ecologist. Dr. Griswold asserts, as provided in links contained herein, that the entire Ballona Wetlands Ecological Reserve is a Groundwater Dependent Ecosystem.	Acknowledged. See comment above regarding identification of freshwater emergent and freshwater forested/shrub wetlands.
140	GC1	Below, provided by Ballona Ecosystem Education Project, a 501c3 with over 30 years of experience and documentation of Ballona, is their website portion containing vegetation information of Ballona Wetlands Ecological Reserve. http://ballonaplants.blogspot.com/2006/09/complete-list-of-native-plants-of_22.html	Acknowledged.
141	GC1	Ballona Wetlands is a complex wetland, upland, ecosystem that supports a myriad of endangered and imperiled species, both in wildlife and vegetation. After decades of struggle and litigation to acquire Ballona Wetlands, it was finally acquired via public bond funds and was dedicated the highest California protective status, under Title 14, Section 630 as a specific Ecological Reserve with specific Purpose and Goals as can be viewed in the Regulatory Notice Register. 1.California Regulatory Notice Register 2005, Volume No. 20-Z, Starting on page 663 Ballona Wetlands Ecological Reserve	Acknowledged.
142	GC1	Additional links and background information pertaining to Ballona Wetlands are included in the document : Stop drying out Ballona Wetlands Ecological Reserve! Stop Playa Vista's confiscation and throw away of Ballona's freshwater resources.	Acknowledged.

Comment Number	Commenter	Comment	Response
143	GC2	-Chapter 2 Grassroots Coalition's Response to the Santa Monica Subbasin GSP Draft Response (Draft) continued 2.1 Description of Plan Area (Draft) Grassroots Coalition (GC) does not, at this time, dispute the overall description of the Los Angeles area basins which include the non-adjudicated Santa Monica Subbasin. However, overall it appears clear that similar to many other GSPs, the focus of the GSAs thus far has been upon human drinking water, potable water being pumped and utilized. The Santa Monica Draft GSP, overall contains little to no attention or data pertaining to the Groundwater Dependent Ecosystem of Grassroots Coalition's focus, namely Ballona Wetlands and Ballona Wetlands Ecological Reserve. Therefore, GC's comments below are generally specific to the southern portion of the Subbasin, Santa Monica Bay and Ballona Wetlands.	The discussion of the GDEs was prepared using the best available science, per California Code of Regulations 354.16(g).
144	GC2	2.1 Regarding the overlap of the Subbasin with the West Coast Basin (Adjudication ID No. A05), the Draft GSP suggests that the overlap is predominantly a 'mapping imprecision' and that "management of groundwater resources" are not impacted by one another. Ostensibly, as a result of this unsubstantiated conclusion, potential impacts to the West Basin's water quality and potential subsequent further necessitated management ie. seawater barrier injection of freshwater, have not been considered in the GSP.	The hydrogeologic interaction between the West Coast Basin and the Santa Monica Subbasin is documented in Section 2.5 of the GSP. The "overlap" that is referenced by the Grassroots Coalition comment is in reference only to the surficial mapped adjudicated portion of the West Coast Basin and does not substitute for or define the subsurface hydrogeologic interaction between the two basins in the GSP.
145	GC2	The Poland Report suggests, contrary to the "mapping imprecision" comment in the Draft, that there is interface between the Subbasin and West Basin (House Document 389 and Poland Report (Geology, Hydrology, and Chemical Character of Groundwaters in Torrance-Santa Monica Area, CA., J.F. Poland, A.A. Garrett & Allen Sinnott 1959) including but not limited to pages. 4-6)	See above comment.
146	GC2	"The groundwater basin on the southwest or coastal side of the uplift extends from Santa Monica to Long Beach and is flanked on the southwest by the Palos Verdes Hills and the Pacific Ocean. It was designated the west basin by Eckis, but in recent references by the California Division of Water Resources it has been called the west coast basin." Page 6 (25miles long, 7 miles wide, 180 square mile area. Page 6)	Acknowledged.
147	GC2	The CDFW approved Plan for digging out Ballona Wetlands Ecological Reserve and converting it into a new, fully tidal saltwater bay, and allowing the toxic flow of Ballona Channel outflow water into Ballona Wetlands Ecological Reserve, will most certainly negatively impact the freshwater aquifers that provide freshwater to the near surface areas of Ballona Wetlands. The creation of the Ballona Channel itself is documented by Poland et al, and Congressional House Document (HD) 389, as having allowed for saltwater contamination to the immediate area of the Channel, therefore it would appear that further industrial scale digging out of the area and removing another 3 million plus cubic yards of soils, to allow for full tidal inundation for the creation of a new bay would pose seawater/ toxic Channel contamination side effects. The seawater of the Santa Monica Bay is also well known for its toxic contamination that has, thus far, not been remediated. Such negative impacts would affect both the freshwater aquifers of Ballona and potentially the West Basin. No hydrologic modeling or studies of the effects of this approved saltwater intrusion, toxic Channel-water intrusion Plan are contained in CDFW's FEIR and/or the GSP Draft response. At the very least, prudent scientific study and evaluation should be undertaken.	The SMBGSA acknowledges the Grassroots Coalition concerns about conversion from a freshwater ecosystem to a saltwater ecosystem. The SMBGSA does not have jurisdiction to overturn a Final EIR. The SMBGSA also notes that the Draft GSP was not prepared as a response to the Final EIR, as potentially implied by the phrase "GSP Draft response" in the Grassroots Coalition comment.

Comment Number	Commenter	Comment	Response
148	GC2	Basin Setting The southern portion of the Santa Monica basin has historically been a predominantly seasonal freshwater wetland area that, due to its freshwater and rich alluvial soils nature, had also been a farming area growing, by the 1960's 1,200 acres of truck crops using, at least 26 active irrigation wells within 3,000 feet of the proposed marina area, with the most distant at 9,000 feet away from the harbor perimeter. At the time, irrigation wells provided 2,000- acre feet and well water provided 4,000- acre feet per annum (Poland, HD 389 pg. 7-8)	Acknowledged.
149	GC2	The watershed through Ballona Wetlands has provided the multiple underlying aquifers (DWR map) and provides for the water-table throughout Ballona Wetlands, including the Playa Vista site, to be at or near the surface (Playa Vista EIR).	Acknowledged.
150	GC2	"Ballona Creek was straightened and cemented between 1935 and 1939 by the U.S. Army Corps of Engineers, as part of a project to convert the formerly natural drainage to a flood control channel (USACE 1982)." Draft GSP The Dudek interpretation above is a very general narrative that needs clarification. While the Ballona Channel was 'straightened' in the general timeframe noted above, the straightening was due to damage and subsequent litigation against USACE's and the County of LA's original design that succumbed to over-topping by water during a large storm event, due to the flood control channel's curvilinear path. The curvilinear path gave rise to slowing the outflow of stormwater to the end point of the flood control channel, which then, ended by depositing the freshwater into the predominantly seasonal freshwater wetlands, Ballona Wetlands. The end of the channel was approximately at Lincoln Blvd.	Acknowledged.
151	GC2	There was no 'formerly natural drainage path" as stated in the Draft GSP, but instead the Ballona Creek petered out in water volume within the Ballona Wetlands and spread out into varying smaller waterways and/or simply was absorbed into the soils. Only during extreme storm events did Ballona Creek swell enough to break through the coastal dunes and flow out to sea. Thereafter, the area silted back up and was closed to the ocean which provided for Ballona's unique ecosystem and its underlying freshwater aquifers (Historical Ecology of the Ballona Creek Watershed, Dark et al 2011). As the City of Los Angeles grew and more hardscaping covered landscape that would ordinarily allow for rainwater percolation into the soils, there was a flood control need for Los Angeles to shed its water into a flood control system that would not overtop and allow flooding. The Ballona Channel was straightened to allow for faster flow of the stormwater and ultimately extended all the way to the Santa Monica Bay. Since, the straightening of the Channel for greater speed of conveyance, the Ballona Flood Control Channel has performed to prevent flooding. Ballona Wetlands Preservation and Restoration: California Coastal Commission Hearing June 2013 (First slides show ponding across Ballona and the Ballona Channel prior to its straightening.)	Language was revised in the GSP to remove "formerly natural drainage path." (See GSP Section 2.1.1)

Comment Number	Commenter	Comment	Response
152	GC2	Contrary to the conclusory statement made in the Draft GSP response by Dudek, pertaining to FILL, there are historical documents that refute the Draft GSP statement. “Dredge material from the straightening of the channel and from the later development of Marina del Rey in the 1960s was deposited in the Ballona Wetlands, raising its elevation (CDFW 2019).” Draft GSP The Draft GSP citation relies upon the CDFW Environmental Impact Report. There is a lack of data support in the CDFW Environmental Impact Report regarding the Marina del Rey dredge fill’s deposition locations. Neither CDFW nor the GSA provide data support for deposition of dredged soils placed upon the Howard Hughes private land adjacent to the County/Federal project either during its creation or left thereafter. To the contrary, numerous historic documents and photographs cite to the Marina del Rey dredged soils as deposited to the north and south of the Ballona Channel as part of an ongoing beach enhancement program (General Plan Development of the Santa Monica shoreline) and a beach erosion control study that was ongoing. The dredged soils were also deposited in the low marshy areas of the future marina’s moles and surrounding land mass utilized for the buildout of Marina del Rey, including its roadways and parking lots. The Draft GSP fails to address the readily available data that contradicts their conclusory statements including but not limited to Congressional House Document 389.	The GSP relies on the best available science per the requirements of SGMA (see 23 CCR Section 354.16(g)), as presented in CDFW documents on the BWER restoration project. Artificial fill is identified as extending from 5 to 15 feet below ground surface in Area A, 0 to 20 feet below ground surface in Area B, and 8 to 20 feet below ground surface in Area C in the Geotechnical Investigation Report for the Ballona Wetland Restoration Project (USACE 2017 [Appendix E]). Site specific geotechnical boring logs are presented on pages E-120 through E-203 of this document. Language has been added to Section 2.4.7.3 clarifying the thickness of the surficial fill deposits in Areas A, B, and C.
153	GC2	This is significant because the CDFW Plan for conversion of Ballona Wetlands Ecological Reserve (BWER) into a full tidal, saltwater bay, relies heavily upon the notion that Area A (northern parcel of BWER) must be dug out to bring back its historical ecological value. Numerous historical documents and studies demonstrate that Area A, within the area intended for CDFW removal of earth, is an undisturbed portion of Ballona Wetlands. (Poland 1959 et al., T. Huffman, USEPA 1986, Playa Vista Archaeology, EIR 1990; Congressional House Document 389 and attachments). The Ballona Channel excavation and levee construction is not disputed regarding the creation of the levee and its surface roadways that currently exist providing an unbroken track record of flood prevention to date. The lead GSA has been provided with this background information which appears to not be reflected in their Draft GSP comments.	Acknowledged, though the SMBGSA notes that there is no "lead GSA", that the GSP does not specify the exact location of the placement of dredge material from the 1960's, and that Poland et al. is cited extensively, as USGS 1959, in the GSP (see above comments regarding citation of USGS 1959).
154	GC2	“7. With respect to the effect of the improvement on adjacent shorelines, the district engineer finds that the shores of Santa Monica Bay down coast of the Santa Monica breakwater have been deprived of normal littoral nourishment since construction of the breakwater in 1933, and that the Playa del Rey jetties, 3 miles south of the breakwater, would act as a complete littoral barrier and would benefit the shore to the north. The plan of improvement proposed by the district engineer provides for deposition of 10, 130,000 cubic yards of material, dredged from the harbor, on the beaches immediately upcoast of the Playa del Rey jetties and downcoast between Playa del Rey and Ballona Creek jetties, and deposition of 3, 200,000 cubic yards of material downcoast of the Ballona Creek jetties.” Page 16 HD 389.	Acknowledged.

Comment Number	Commenter	Comment	Response
155	GC2	The soils dredged for the creation of Marina del Rey are documented as being deposited to create the Marina's surrounding land mass and interior moles that support the marina's infrastructure of condominiums, businesses etc. The soils are also documented as having been deposited to create extended jetties another 580 feet and breakwaters etc. (HD 389). Neither the GSA nor the CDFW Environmental Impact Report provide data support for placement of the dredged soils upon the private property of Howard Hughes that is now Ballona Wetlands Ecological Reserve and was dubbed as Area A by the former landowners, of the Playa Vista development project.	The GSP relies on the best available science per the requirements of SGMA (see 23 CCR Section 354.16(g)), as presented in CDFW documents on the BWER restoration project and the GSP does not assert any specific location of dredge material within the BWER, but rather states "Dredge material from the straightening of the channel and from the later development of Marina del Rey in the 1960s was deposited in the Ballona Wetlands, raising its elevation (CDFW 2019)."
156	GC2	In fact, the Howard Hughes Company, the landowner of Area A and all of the Ballona property at issue here, explicitly informed the Board of Engineers for Rivers and Harbor, overseeing the development of the small craft harbor that the proposed improvement "would interfere with a contemplated expansion of its facilities and a proposed runway extension."(HD 389 p. 17) The response to Hughes Co. revealed, " that no aircraft operation difficulties or conflicts will result by the development and operation of the proposed improvement." (HD 389 p.17) The Hughes Company's concerns of interference upon their lands were alleviated by the acknowledgement by the state and federal officials that their property would not be affected. Area A contains multiple oilwells that were explicitly avoided in the marina construction.	Acknowledged.
157	GC2	Other scientific information (Playa Vista EIR 1990 Archaeology Report; T. Huffman, USEPA '86) also reveals that Area A maintained most of its area as undisturbed wetlands. See GSP August presentation by Dr. Margot Griswold and Grassroots Coalition, Patricia McPherson which includes mapping from the Archaeology section of Playa Vista's EIR, 1990, and mapping of Area A performed by T. Huffman for the USEPA & Army Corps of Engineers done in 1986.	Acknowledged.
158	GC2	"Local interests consider that the proposed harbor at Playa del Rey would be an integral unit of an adopted general plan for development of the Santa Monica shoreline. This plan includes widening and improving beaches, providing adequate bath houses, parking areas, picnic facilities, special recreation centers, bathing and wading beaches, fishing piers, youth organization camps, tourist parks with cabin and trailer accommodations, and a bird refuge." Page 6, Playa Del Rey Inlet and Basin, Venice, Calif., House of Representatives, Document No. 389 (HD 389)	Acknowledged.
159	GC2	Regarding the creation of the Ballona Channel by USACE and LA County Flood Control, soils were placed to either side of the Channel in order to create the levees of the flood control channel itself. Both north and south levees have roadways atop the levees for maintenance purposes. The north levee's paved roadway serves as a bike path and has a wider footprint of the levee on the sides of the bike path. The wider north levee also has an interior roadway that runs the length of Area A, creating a roadway on both sides of a fence. Area A also has raised roadways to the SoCalGas oil/gas derricks onsite, as does Area B, the southern portion of the wetlands for vehicular access to wells on the south side. It is not known where the soils that make up these raised roadways is from but the roadways can be seen in existence from when the wells were drilled. (Spence Collection)	Acknowledged.

Comment Number	Commenter	Comment	Response
160	GC2	Pg. 2-2 2.1.1.1.2 State The GSA appears to have omitted key jurisdictions in the Subbasin. “CDFW manages the Ballona Wetlands.” (Draft GSP) Correction, CDFW manages the Ballona Wetlands Ecological Reserve. The Public Trust lands of Ballona Wetlands include the Ecological Reserve however the freshwater marsh system which affects the ecosystem of Ballona Wetlands and is owned on behalf of the Public Trust land and water by the State Lands Commission but is managed via the Ballona Conservancy, the private development stakeholders that comprise Playa Vista (2006 Case No. C525 826 Ca. Coastal Commission v Friends of Ballona et al). This distinction is important. CDFW, despite legal documents to the contrary, claims itself as an active board member of the Ballona Conservancy and allows, without contracts or fees, for Playa Vista consultants to perform work on behalf of CDFW. (Rich Burg/CDFW letter to Ballona Wetlands Landtrust, ppt page 26 of 31 California Coastal Commission Meeting, May 8 2019, Ballona Wetlands History, a PDF SlideShow Presentation) “The Department is an active participant on the Ballona Wetlands Conservancy Board.” Richard Burg/CDFW, Environmental Program Manager, South Coast Region 5.	Acknowledged. Language has been revised in the GSP to state "CDFW manages the Ballona Wetlands Ecological Reserve (BWER) and to include the state lands commission in the list of state jurisdictions in the Subbasin. See GSP Section 2.1.1.1.2.
161	GC2	The GDE is Public Trust land and water. The GDE and all of Ballona Wetlands is also a registered Sacred Site by John Tommy Rosas of the Tongva Ancestral Tribal Territorial Nation (TATTN). Tribal interests have been working and continue to work to stop the diversion and throw-away of Ballona’s Sacred Freshwater into the City of L.A.’s Sanitary Sewer System and/or the ocean. Jeanette Vosburg has shared a OneDrive file with you. To view it, click the link below. ANTHONY MORALES SUPPORTING JOHN TOMMY ROSAS POSITIONS ON BALLONA WETLANDS 8.5.2020 1.pptx	Acknowledged.
162	GC2	Water Agencies within the Plan Area West Basin Municipal Water District (WBMWD) The West Basin supplies an unknown amount to Playa Vista in recycled water. CDFW has requested support from the West Basin board members for their FEIR PLAN for BWER. The Board members have responded with their intent to monitor ongoing issues and events which ostensibly would include the Groundwater Sustainability Planning for the Ballona area. Grassroots Coalition believes their interest and concern as an additional need to have an adequate GDE performed that would necessarily include the CDFW Plan and its potential effects upon all of the underlying aquifers/uneven aquitards	Acknowledged.
163	GC2	The California Coastal Commission has jurisdiction over the coast and over Ballona Wetlands and Playa Vista per agreements and permits such as 5-91-463.	Acknowledged.

Comment Number	Commenter	Comment	Response
164	GC2	'The Ballona Wetlands consist of approximately 575 acres of tidal and non-tidal marshes, grassland, coastal scrub, invasive vegetation, and developed land, located south of Marina del Rey, north of the Ballona escarpment, and west of the Marina Freeway (SR-90)(Figure 2-2). CDFW manages and maintains primary ownership of the Ballona Reserve, which is currently being restored, with a smaller interest owned by the California State Lands Commission (CDFW 2019). Los Angeles Department of Water and Power (LADWP)and LACDPW–Waterworks Division maintain water mains located along the perimeter of the Ballona Wetland; however, the Culver Marina Little League baseball field and restrooms are the only areas within the Ballona Wetlands that receive water from LADWP (CDFW 2019)'. Here again, the GSA appears to have its focus upon drinking water wells and does not include pertinent GDE information. LADWP is an oversight agency that includes the L.A. Department of Sanitation and has jurisdiction over NPDES permits for Playa Vista's waste of pumped fresh groundwater into the sanitary sewer system. Within the past two months, the LADWP was part of a request by Playa Vista to extend an NPDES permit for BaCEW-5 issued by the LARWQCB to continue to send pumped, cleansed groundwater discharge to the sanitary sewer system. Grassroots Coalition, in response to the LARWQCB's notification of such request, replied that the permit request should be denied based upon Best Management Practices and need for use of this clean water for the GDE- Ballona Wetlands. The LARWQCB subsequently denied Playa Vista's request for disposal of this clean groundwater via LADWP/ LA Sanitation and instead permitted the water flow into the Riparian Corridor of the FWM System (Aug. 4, 2021 email from LARWQCB to Grassroots Coalition). Efforts such as this by LARWQCB also signal their ability to review the GDE issues at stake and change ongoing negative practices of wasting freshwater in their disposal permits. This is exactly what Grassroots Coalition seeks assistance with and from the GSA per protecting Ballona Wetlands and the underlying aquifers--- positive administrative outcomes via consultation.	GDEs are discussed in Section 2.4.7 of the GSP. The SMBGSA acknowledges LARWQCB's regulatory role in issuing NPDES permits for the Playa Vista site. The SMBGSA remains committed to stakeholder engagement and interagency cooperation.
165	GC2	The Draft GSP's comment that Ballona Wetlands Ecological Reserve is "currently being restored" is highly misleading. There are currently multiple ongoing CEQA lawsuits and restraining orders against CDFW and the State Coastal Conservancy pertaining to the CDFW approved Final Environmental Impact Report (FEIR) for Ballona Wetlands Ecological Reserve. Thus far, the 'restoration efforts' constitute small areas of Ballona that the California Coastal Commission has allowed permits for hand work in performance of, for example, certain weeding of certain non-native vegetation. However, the mention of 'current restoration' by Dudek would imply to GC that Dudek is aware that any/all 'restoration' efforts need inclusion within the Draft GSP. And, that CDFW's approved FEIR Plans for restoration must be included in the Groundwater Sustainability Planning as SGMA includes future data and information, but Dudek as yet, has not.	Language was revised to remove "which is currently being restored" (See GSP Section 2.1.1.1.2). CDFW restoration work is discussed in Section 2.4.7. Future water budgets are discussed in Section 2.5.

Comment Number	Commenter	Comment	Response
166	GC2	An area of actual restoration aided by litigation and Mother Nature is shown below. The large expansion of pickleweed regrowth has been due to the restoration of freshwater ponding during seasonal rains. The restored pickleweed growth is a result of Grassroots Coalition's litigation against Playa Vista and CDFW, stopping their unpermitted drainage of the wetlands that had been ongoing for 20 years. The drainage of freshwater from this region of Ballona is not mentioned in the Draft EIR. The California Coastal Commission had previously written to Playa Vista and CDFW that they were in violation of the Coastal Act, harming the hydrology of Ballona Wetlands and to end the drainage. Neither Playa Vista nor CDFW was responsive to the CCC which led to the prevailing litigation by Grassroots Coalition against Playa Vista and CDFW. The CCC, in further action, supported GC and the sealing of these drains. August 2021 GSP Presentation slide from Margot Griswold Phd.	Acknowledged.
167	GC2	Federal—The US Army Corps of Engineers (USACE) has oversight jurisdiction of Ballona Wetlands and the Ballona Channel via the USACE permit 90-326- EV. This USACE permit also provides for the description portion of the California Coastal Commission's (CCC) 5-91-463 permit for Ballona Wetlands and the Freshwater Marsh System (FWM) resulting in the two tied permits. NOAA also has oversight of the Ballona area and is the umbrella federal agency to the CCC. USACE and the CCC are agencies having jurisdiction over permitting to Playa Vista and its dewatering activities, which once the cumulative data is assembled these agencies would have the tools for ecological assessments to provide protective amendments to permits allowing for proactive ecological protection to Ballona Wetlands Ecological Reserve and the underlying aquifers. A GDE study would provide such needed data and information to these agencies which conversely, the lack of such cumulative review which currently exists, leaves these agencies to piecemeal action and thwarts the purpose of SGMA and GDE evaluations.	The SMBGS acknowledges the jurisdictions, regulatory role, and oversight authority of the USACE, the CCC, and NOAA.
168	GC2	LARWQCB is tasked with enforcement of the federal Clean Water Act and numerous state laws of oversight to the Ballona area and has oversight of the Clean Up and Abatement Order No. 98-125 for the Playa Vista development site, situated on the historic Ballona Wetlands area. Similarly, the LARWQCB which is typically focused solely upon water quality issues is also, tasked with water volume concerns for protection of environmental needs. However, without inquiry via a prudent GDE study that would include freshwater sustainability management focus and species specific/ vegetation specific evaluation, Ballona's needs are black-holed into oblivion. The GSA, under its authority for retrieval of information, has not reached out to garner dewatering data that is readily available from LARWQCB as well as the City of LA's Sanitation Department data in order to accrue a cumulative big picture and fix this huge data gap. The GSA has made it apparent to Grassroots Coalition that we as volunteer stakeholders are either supposed to do that work and/or be the squeaky wheel stakeholder. Either way, Dudek appears to believe that they are not tasked with pulling this data together via interfacing with the multiple agencies now working in their own silos. This is the current situation and needs to be remedied via a good faith GDE study in order for informed decision making to occur that will be protective of the freshwater resources of Ballona Wetlands and its survival as a unique coastal, predominantly freshwater wetland/ upland ecosystem complex. This also holds true for protection of the underlying freshwater aquifers that have been off everyone's radar whether deliberate or out of disconnection in oversight.	The SMBGSA acknowledges LARWQCB's regulatory role in issuing NPDES permits for the Playa Vista site. Groundwater pumping associated with groundwater remediation conducted under the oversight of the LARWQCB in the vicinity of the BWER is discussed in Section 2.3.2.2.

Comment Number	Commenter	Comment	Response
169	GC2	The City of Los Angeles has jurisdiction vis a vis the Los Angeles Department of Building and Safety; Public Works, Flood Control; Los Angeles Dept. of Sanitation under the broader Los Angeles Department of Water and Power (LADWP).	Acknowledged.
170	GC2	DRAINAGE OF PUMPED GROUNDWATER & DRAINAGE OF PONDING SURFACE WATER LA City Public Works provides the city permitting for the Main Drain of the Freshwater Marsh System which is comprised of the Riparian Corridor, a mostly HDPE lined, waterway that extends from the east end of Playa Vista near the 405 freeway to the west end of Playa Vista ending at Lincoln Blvd. as the waterway cuts through underground, below Lincoln Blvd. and exits into the catch basin on the west side of Lincoln Blvd., known as the Freshwater Marsh (FWM). The FWM waters then exit to the ocean via the Main Drain on the north side of the catch basin which, in turn exits into Ballona Channel via the mechanical structure within the south Ballona levee that is maintained by the LA County Flood Control District and also permitted by USACE as part of EV 90-326. The entirety of the Freshwater Marsh System is also under the jurisdiction of the California Coastal Commission via Permit 5-91-463.	Acknowledged.
171	GC2	The Ballona Wetlands is a broader area that today is Public Trust land and water and encompasses approximately 600 plus acres. The Ballona Wetlands Ecological Reserve is approximately 533 plus acres.	Acknowledged.
172	GC2	Ballona Wetlands is also a registered Sacred Site by Tongva native American, John Tommy Rosas. His work is also supported and carried forward by Chief Anthony Morales. The issues of protecting the sacred freshwater resources are at stake as is stated by both in the following presentation. ANTHONY MORALES SUPPORTING JOHN TOMMY ROSAS POSITIONS ON BALLONA WETLANDS 8.5.2020 1.pptx	Acknowledged.
173	GC2	The GDE encompasses all of the areas of Public Trust land and water. Ballona is a very rare coastal, predominantly freshwater wetland/ upland complex of ecosystems, now exceedingly rare due to the unfortunate conversion of most southern California coastal wetland/ upland ecosystems into homogenized full tidal systems that are unsustainable, requiring costly maintenance including dredging year after year. (Dave Jacobs 4/13/2021 UCLA URSUS Environmental Symposium @ 23:16- 37:46) ; Margot Griswold PhD, Ballona Wetlands FEIR Inconsistencies and Overlooked Opportunities 1.4.20.21 Dr Margot Griswold Presents Ballona ... - youtube.com www.youtube.com/watch?v=avpCqRoEbdc This video on 4.20.21 Dr Margot Griswold Presentation on Ballona Wetlands Final Environmental Impact Report - Inconsistencies and Overlooked Opportunities: C... The Ursus Environmental Symposium: Ballona Wetlands & the ... www.youtube.com/watch?v=1CKrszkB-EM	Acknowledged.
174	GC2	After decades of legal battles, discoveries of oilfield gas issues that gave rise to a willing seller, Ballona was acquired with public bond funds explicitly directing the protection of the unique habitat that is Ballona Wetlands.	Acknowledged.
175	GC2	Interrelations especially during drought and/or little rainfall are especially important to be proactive in protecting Ballona's freshwater resources.	Acknowledged.

Comment Number	Commenter	Comment	Response
176	GC2	Ballona was provided the highest protective status the state offers when, in 2003/4, the Wildlife Conservation Board, the policy decision making body for the California Department of Fish & Wildlife (CDFW), approved the inclusion of Ballona into the Ecological Reserve status sites (132) in California. With this protective status change, specific Purposes and Goals were assigned to Ballona that designated the whys and whats of Ballona that had to be protected. Each individual Ecological Reserve that enters this special status has its own unique Purpose and Goals under California Code of Regulations (CCR) Title 14, Section 630 (Ecological Reserve) laws for the protection of sensitive habitats and species. Ballona's Section 630 language specifically asserted protection to its freshwater resources alongside its saltmarsh habitat while citing the Belding's Savannah Sparrow and its nesting habitat, pickleweed, as critical to preserve. During the hearing for the Section 630 status approval, CDFW's biologist informed the public that with the approval of the Ecological Reserve status that day, the following day a Section 1016 study could begin. A CDFW 1016 study would have been roughly equivalent to a GDE study. Unfortunately, that study was never fulfilled and is therefore not a part of the FEIR. The failure to perform the basic hydrology studies for the protection of the Ballona Wetlands Ecological Reserve, provides even more exigency to the need for fulfillment of a GDE study via SGMA.	Acknowledged.
177	GC2	The Reserve is home to a myriad of threatened and endangered species including the Belding's Savannah Sparrow, Least Tern, and special status species including Burrowing Owls, White-tailed Kite, Least Bell's Vireo, Saltmarsh Harvest Mouse, Ornate Shrew, Grey Fox. Over 200 species of wild birds rely on the Ballona Wetlands for their survival. Over 1,000 types of native animals and plants exist at Ballona. Today, it harbors rare, native grasslands, home to rabbits, moles, voles, insects, snakes, lizards, frogs and provides a foraging area for threatened flocks of meadowlarks, and kites, Red Tail, Northern Harrier & other hawks; Short Eared, Barn and Great Horned Owls. Larger mammals prowl through Ballona, including coyotes, fox and skunks. Insects on the wing over Ballona provide sustenance for bats, swallows and swifts. Wide areas of pickleweed exist both north and south of the Ballona Channel, necessary for Belding's to outcompete other sparrow species for nesting habitat. Willows spread across its breath that in certain areas-- the threatened Least Bell's Vireo is documented as nesting. Upland species of native coyote bush, saltbush, and a myriad of mallows, meadows of Yerba Mansa and Goldenrod, Buckwheat and Coastal Sages, special status - Lewis' Evening Primrose grow across Ballona. Rare salt pans that secure the existence of copapods during the dry season extend across Area B and are found in Area A. Ponding in the rainy season precipitates the emergence of the tiny copapods, to swim in the freshwater ponds that in turn entice wading bird species that migrate here for this special orgy bonus food supply. Similarly, the emergence of chorus frogs across Ballona swells with the winter rains that typically pond across the entire Reserve.	Acknowledged.
178	GC2	All of the above require the seasonal, rainwater ponding and a fresh, groundwater table to remain at or near surface for the habitat and the species that rely upon that habitat to remain and flourish.	Acknowledged.

Comment Number	Commenter	Comment	Response
179	GC2	GSP DRAFT discussion of phreatophytes- Perhaps, the GSA construes and/or starts fundamentally from a point of view that considers native vegetation of an Ecological Reserve as a threat to water supply? A GDE may be considered in a far more universal, reasonable manner of investigation and protection to ensure that the ordinarily present freshwater is there to provide water to the root systems of plants of Ballona rather than allowing for, as is the case of Ballona, diversion and throw away of its water resources. Ballona's freshwater needs are not a waste to society, as society has paid millions of dollars to protect Ballona and its natural resources. "Phreatophytes are plants that depend for their water supply upon ground water that lies within reach of their roots." T.W. Robinson Abstract; U.S. Dept. of the Interior-Geological Survey Water-Supply Paper 1423. https://pubs.usgs.gov/wsp/1423/report.pdf	The SMBGSA does not consider native vegetation "a threat to water supply." The discussion of phreatophytes and reference to Robinson 1958 occurs in GSP Section 2.4.7.1, which discusses vegetation communities listed in the NCCAG along the Pacific Coast Highway, and does not pertain to the BWER which is discussed in GSP section 2.4.7.3.
180	GC2	The paper does acknowledge that definitions of phreatophytes and non- phreatophytes becomes really vague to indistinguishable per whether a plant obtains it water supply from soil moisture or from ground water (which also is acknowledged as difficult to determine). However, the paper continues, "The nonphreatophytic plants indirectly affect the water supply of a region by utilizing water in the soil column that might otherwise reach the water table as recharge. Phreatophytic plants, on the other hand, directly affect the available water supply by drawing from the ground-water reservoir as described earlier, thus reducing ground-water storage and related streamflow." p. 8 Paper 1423. 1.SGMA Planning | Groundwater Resource Hub groundwaterresourcehub.org/sgma-tools Plant rooting depth information can provide a useful insight on what groundwater levels may be needed to sustain GDEs. This species-specific rooting depth database of California groundwater-dependent plants provides a reference point for understanding whether GDEs are hydrologically connected to groundwater. Learn More 1. Plant Rooting Depth Database | Groundwater Resource Hub groundwaterresourcehub.org/sgma-tools/gde... The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NCCAG Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes [1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet.	Acknowledged.

Comment Number	Commenter	Comment	Response
181	GC2	This paper features plants that rely upon groundwater to survive as a negative in the role of water supply. It includes many vegetation types of Ballona that endangered species expressly rely upon as nesting habitat, ie. Belding Savannah Sparrow's need for large swaths of pickleweed for nesting habitat in order to out compete other sparrow types using the area. The Belding and its nesting habitat are expressly singled out for protection under the Purpose and Goals of the Ecological Reserve, Section 630 status to Ballona Wetlands. Use of this terminology by the GSA consultants Dudek, raises concern for its Draft GSP investigation to include only 40 acres of Ballona as a GDE. Rare grasses of Ballona and other vegetation that are considered to not have 'high economic value' does not preclude their critical value to wildlife species that rely upon them. Critical vegetation for Ballona includes pickleweed, willows and other vegetation. "In fact, it was pointed out by Douglas (1954, p. 8-12) that the word 'phreatophyte" is becoming a group of destructive enemies that formerly were regarded as nuisances." P. 8 of 92 Paper 1423.	The discussion of phreatophytes and reference to Robinson 1958 occurs in GSP Section 2.4.7.1, which discusses vegetation communities listed in the NCCAG along the Pacific Coast Highway, and does not pertain to the BWER, which is discussed separately in GSP Section 2.4.7.3. See discussion above regarding differentiation of freshwater emergent and freshwater forested/scrub wetlands from estuarine wetlands.
182	GC2	SGMA does utilize the NCCAG Data Set as a starting point for review of a GDE but also provides numerous disclaimers as to not using it as a sole source in determining the management of water resources for any given GDE.	Acknowledged.
183	GC2	DRAINAGE OF PUMPED GROUNDWATER & DRAINAGE OF PONDING SURFACE WATER LA City Public Works provides the city permitting for the Main Drain of the Freshwater Marsh System which is comprised of the Riparian Corridor, a mostly HDPE lined, waterway that extends from the east end of Playa Vista near the 405 freeway to the west end of Playa Vista ending at Lincoln Blvd. as the waterway cuts through underground, below Lincoln Blvd. and exits into the catch basin on the west side of Lincoln Blvd., known as the Freshwater Marsh (FWM). The FWM waters then exit to the ocean via the Main Drain on the north side of the catch basin which, in turn exits into Ballona Channel via the mechanical structure within the south Ballona levee that is maintained by the LA County Flood Control District and also permitted by USACE 90-326-EV. The entirety of the Freshwater Marsh System is also under the jurisdiction of the California Coastal Commission via Permit 5-91-463.	Acknowledged.
184	GC2	UNPERMITTED DRAINS in Ballona Wetlands are under the jurisdiction of the California Coastal Commission (CCC). The CCC ordered the unpermitted drains sealed and ultimately their removal in order to protect Ballona's freshwater resources and its habitat.	Acknowledged.
185	GC2	Draft GSP Page 15 of 230; Table 2-5, Basin Plan Beneficial Uses, Select Water Quality Objectives, and Water Quality Impairments for Receiving Waters within the Santa Monica Subbasin Ballona Wetlands has the designations as EST, WILD, RARE, MIGR, SPWN, WET, REC1, REC2, and none of lands and groundwater/ seasonal ponds within the boundaries of the Ecological Reserve or the greater Ballona Wetlands area of the State Lands Commission (SLC) property are currently known to be impaired (LARWQCB NFAs (No Further Actions designations for clean-up needs)).	The designations listed in Table 2-5 are maintained by the LARWQCB.

Comment Number	Commenter	Comment	Response
186	GC2	(BIOL) is not attributed to Ballona Wetlands Ecological Reserve in the designations of the Basin Plan Beneficial Uses. Why is this? Considering Ballona's designation as a Title 14 Section 630-Ecological Reserve status should provide for the Basin Plan to include the BIOL designation to Ballona Wetlands and the Ballona Wetlands Ecological Reserve. 28 Preservation of Biological Habitats (BIOL): Uses of water that support designated areas or habitats, such as Areas of Special Biological Significance (ASBS), established refuges, parks, sanctuaries, ecological reserves, or other areas where the preservation or enhancement of natural resources requires special protection. (pg. 17 of 230 GSP Draft, emphasis added)	The designations listed in Table 2-5 are maintained by the LARWQCB.
187	GC2	The Water Quality Impairment (303(d)Listing) designation would and/or will likely be extended into Ballona Wetlands Ecological Reserve and the SLC property, if the 303 impaired waters of Ballona Channel, Ballona Lagoon/Venice Canals and toxics from the ocean are allowed to enter into the Ecological Reserve as planned by CDFW. The Draft GSP, in prudent review of potential future negative impacts upon the GDE, should include an evaluation and/or comment upon this matter of great public concern. Page 14 of 230 lists the designations cited above from Chapter Two of the Draft GSP.	Acknowledged.
188	GC2	Grassroots Coalition believes the text cited within the column Water Quality Impairments (303(d)Listed) to be off-point and/or inaccurate/unreasonable per this listing. "Exotic Vegetation, Habitat Alterations, Reduced Tidal Flushing, Trash" : 1. Ballona does have nonnative vegetation that has been acknowledged however, the nonnative vegetation does not pose a threat to water quality or quantity and serves, in many instances to act beneficially for species nesting, foraging, and provides cover for wildlife while any restoration process is sorted. Some of its non- native vegetation supports species awaiting 'endangered' status listing, such as Eucalyptus Trees that provide critical overwintering sites for Monarch Butterflys. 2.Habitat alterations do not create water impairment issues unless that alteration introduces contaminated water into the Ecological Reserve which will only occur if the CDFW Plan is allowed.	Acknowledged. The Impairments listed in Table 2-5 are those listed on the 2018 303(d) list prepared by the LARWQCB and being addressed by the U.S. Environmental Protection Agency.
189	GC2	Currently, the approved FEIR Plan of CDFW is acknowledged by CDFW as inaccurate and must be redone for a third attempt per its Ballona Channel, flood control data. Additionally, due to numerous deficiencies under the California Environmental Quality Act, at least five CEQA lawsuits have been merged against CDFW. The State Coastal Conservancy has been recently sued for its approval of the CDFW Plan via its grant award to CDFW for another attempt to perform adequate Ballona Channel flood control studies.	Acknowledged.

Comment Number	Commenter	Comment	Response
190	GC2	3.“Reduced Tidal Flushing.” The Draft GSP states, without data support, that reduced tidal flushing is the impairment to Ballona’s existence. Tidal flushing of Ballona Wetlands Ecological Reserve as cited in Historical Ecology of Ballona Creek Watershed, Dark et al.2011, and by Dave Jacobs, UCLA URSUS Symposium 2021), demonstrates that Ballona did not have regular tidal flushing, hence this text is misleading and without merit. Tidal flushing provides for contaminated saltwater intrusion into Ballona. The Ballona Channel waters are also impaired/toxic. Intrusion into Ballona of the contaminated Channel water is a concern and not discussed by the Draft GSP. The current tide gates (1135 USACE Project) did not fulfill legal requirements for the insertion of the gates as cited by USFWS Field Supervisor, Ken S. Berg and John Hanlon, Chief, Branch of Federal Projects in a 1998 letter to Col. Robert L. Davis (Conclusion portion of letter seen below). The improper insertion of the tide gates is still being contested for the unfulfilled legal and environmental evaluation needs. (Documents by John Tommy Rosas of Tongva Ancestral Territorial Tribal Nation (TATTN). GC is not aware of any 408 studies done since the 1998 timeframe on the tide gates installed in the western end of the Ecological Reserve that would evaluate the potential negative impacts of contaminated saltwater intrusion upon the underlying freshwater aquifers and/or other potential negative impacts as cited in the USFWS August 4, 1998 letter to USACE.	Acknowledged. The Impairments listed in Table 2-5 are those listed on the 2018 303(d) list prepared by the LARWQCB.
191	GC2	Ballona is a predominantly freshwater, upland, wetland complex of ecosystems that include riparian and brackish/salt marsh habitat, all uniquely situated over freshwater aquifers classified by LARWQCB as Potential Drinking Water. The seasonal rains and the underground fresh watershed have been at or near the surface (Playa Vista EIR). Ongoing dewatering of the freshwater via pumping, draining and otherwise compromising these waters has not been addressed by the Draft GSP.	Historical groundwater conditions are discussed in Section 2.4 of the GSP.
192	GC2	Proper process and data gathering needs to be accomplished.	The GSP was prepared in compliance with SGMA. See Appendix A for the GSP Checklist.
193	GC2	4.Trash. Trash exists wherever humans travel. It is interesting that Ballona Wetlands has been singled out as having trash as a 303 impairment, while Santa Monica Canyon, Rustic Canyon, Sullivan Canyon and our Santa Monica Mountain trail and fire roads---all have trash, and homeless/transients living, passing through at any given moment and area, and trash is not mentioned from these areas in the Draft GSP. The Ecological Reserve has no water runoff into Ballona Channel that would avail itself to carrying trash. The exit areas of Ballona’s drainage areas are confined to outlets that, as far as GC is aware, do not allow for trash to exit. The Ballona Channel however, is heavily impacted with trash that becomes apparent during storm events that flush many storm drains areas from inland, into Ballona Channel and out to sea. Hence, not just toxins but also trash make their way down the Ballona Channel to the Santa Monica Bay. It is also due to this problem, that opening up Ballona Wetlands Ecological Reserve via the CDFW Plan to remove the current levees, dig out Ballona and reestablish new, larger levees on the perimeter of a new, tidal bay would expose most of the Ecological Reserve to this toxic/ trash reality of Ballona Channel waters and Santa Monica Bay trashed/ contaminated saltwater. The Draft GSP has no address of these issues and the FEIR does not address these problematical issues. There is a need to address these issues for the GDE, Ballona Wetlands Ecological Reserve.	Acknowledged. The Impairments listed in Table 2-5 are those listed on the 2018 303(d) list prepared by the LARWQCB (see: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired).

Comment Number	Commenter	Comment	Response
194	GC2	Table 2-6 SWRCB and Los Angeles RWQCB General Permits Applicable to the Plan Area (Draft pg. 17 of 230) "Notes: There currently are no active individual SWRCB or RWQCB permits applicable to the Plan Area BMP –Best management practice" pg. 18 of 230 Chapter 2 Draft GSP. The Draft note above is extremely confusing. Playa Vista does have LARWQCB wastewater discharge under CAO No. 98-125 which includes NPDES permits for treated/cleansed groundwater to surface waters of Ballona Channel and the catch basin known as the Freshwater Marsh which is Public Trust property stewarded by the State Lands Commission and CDFW in its participation as a board member of the Ballona Conservancy (a Playa Vista private development group).	Note has been removed to avoid confusion between individual and general permits (See Table 2-6).
195	GC2	There are also NPDES permits for the building sites and other areas of Playa Vista that discharge pumped, clean groundwater to the LA Sanitary Sewer under industrial wastewater discharge permits.	Acknowledged.
196	GC2	The GSP appears to have excluded these dewatering permits, both of which do not adhere to Best Management Practices and instead waste clean and/or cleansed groundwater from the Playa Vista development project by sending the freshwater to either the sanitary sewer or out to sea. Playa Vista is now under additional ownership by Brookfield Residential.	The SMBGSA acknowledges that NPDES permits exist in the vicinity of the Ballona Wetlands and that shallow dewatering is a common practice to prevent damage to infrastructure in the Subbasin. The GSP does not interfere with the jurisdiction of the LARWQCB or the rights of existing permit holders to continue to pump shallow groundwater under the jurisdiction of the LARWQCB.
197	GC2	Best Management Practices that would allow for all of this clean groundwater to be utilized by the GDE-Ballona Wetlands have not been addressed in this Draft GSP. The data gaps pertaining to this wasting of clean freshwater appear to include lack of input from multiple agencies and city/county entities that have allowed the pumping and diversion of clean groundwater away from the GDE without consideration of the GDE and/or each other.	See above comment.
198	GC2	Please note page 6, paragraph 2 pertaining to LARWQCB, NPDES permit denial to Playa Vista after Grassroots Coalition requested, on behalf of the GDE, Ballona Wetlands, for the NPDES permit to allow for discharge to Ballona Wetlands and NOT to allow the Playa Vista request for discharge of the clean groundwater to Sanitation.	Acknowledged.
199	GC2	"City of Los Angeles General Plan Open Space Element Policy 1. Ecologically important areas are generally considered as open space and shall be so designated. The following shall apply: a. To the extent feasible, ecologically important areas should be kept in a natural state. Policy 2. Flood endangered areas should be set aside for appropriate open space" Pg. 32 of 230 GSP Draft The General Plan above would appear to disallow the CDFW Plan and support restoration. While the Draft GSP includes this information, the Open Space Policy is not discussed in the Draft GSP in pertinent relationship to the GDE, Ballona Wetlands/ Ballona Wetlands Ecological Reserve.	Acknowledged.
200	GC2	The protection of the underlying freshwater aquifers of the Ballona region, classified by LARWQCB as Potential Drinking Water, should be evaluated for how to best protect this source of freshwater as Drinking Water as well as its role in sustaining Ballona Wetlands Ecological Reserve.	Evaluation of the sustainability indicators relied on historical data and the numerical groundwater modeling conducted for this GSP. This state-of-the art effort fully aligns with the USGS understanding of hydrogeology and aquifer characterization in the Los Angeles Basin and fully complies with the requirements of SGMA.
201	GC2	And, the Open Space Element's Goal 0S4: Recharge Groundwater Resources (Draft pg. 33 of 230) would also appear to support the cessation of diversion of groundwater and ponding rainwater away from Ballona to instead allow for Ballona to act as a wetland, allowing the freshwater to recharge its underlying aquifers.	Acknowledged.

Comment Number	Commenter	Comment	Response
202	GC2	The General Plan per OS 4.2 and OS 4.3 This section of the General Plan also lend itself to protection from wasting Ballona's freshwater from being thrown away into either the sanitary sewer or the ocean. However, the Draft GSP does not provide discussion of this in context with the GDE, Ballona Wetlands and Ballona Wetlands Ecological Reserve. "OS 4.2 Shallow Groundwater -Further enhance the City's efforts to minimize shallow groundwater being discharged into the storm water system and encourage alternative means such as groundwater recharging when dewatering subterranean structures .OS 4.3 Recycled Stormwater -Explore methods of retaining and using storm water that would otherwise go into storm drains as runoff. "	Acknowledged.
203	GC2	Efforts to utilize parks for stormwater capture and recharge such as is being done by many cities (ie. Beverly Hills General Plan/ Open Space Element) which today for Ballona Wetlands, would encompass sealing the drainage channels that exit to the Ballona Channel but for during very large storm events where the Channel could still act as a backup plan for discharge to prevent any potential street flooding. Such closure has already been supported by scientists knowledgeable about Ballona.(UCLA URSUS Environmental Symposium 4/13/21 Dave Jacobs 23:16-37:46 youtube Presentation discussing negative impacts of full tidal saltwater intrusion and discussing the freshwater nature of Ballona Wetlands)	Acknowledged.
204	GC2	"Table 2-11. Stakeholder Categories in the Plan Area" pg. 46 of 230 Draft GSP Category of Interest Examples of Stakeholder Groups Engagement Purpose Environment and Ecosystem Ballona Creek Renaissance Inform and involve to sustain Friends of Ballona Wetlands vital ecosystems Heal the Bay Grassroots Coalition, Sierra Club- Airport Marina Group, and Ballona Ecosystem Education Project are not included in the stakeholder groups cited above in the Draft GSP. We have attended at least 3 of the 6 public meetings.	Grassroots Coalition, Sierra Club - Airport Marina Group, and Ballona Ecosystem Education Project have been added to Table 2-11 in the GSP.
205	GC2	Despite our requests provided to the leadership of the Santa Monica GSA over the past year, for inclusion of the Department of Sanitation and LARWQCB to participate in public meetings, as both are key to protection of the freshwater resources of Ballona, we have not had the opportunity to speak directly with their representatives at any public GSA meeting. We do appreciate the availability of Santa Monica's Lisette Gold who has made herself readily available.	Acknowledged.
206	GC2	However, it is clear from the extensive data gaps in the Draft GSP pertaining to the Ballona Wetlands GDE, that such interface is needed between GSA members and stakeholders. Such interface, which the City of Santa Monica is authorized to request, would, no doubt, help bring GSA parties to the table, to discuss the harmful, wasteful diversion of groundwater away from Ballona Wetlands. Especially since certain GSA members are party to the dewatering permits to Playa Vista. "2.2.2 Surface Water and Drainage Features" (GSP Draft p 48 of 230)	Acknowledged. Sunny Wang, City of Santa Monica Water Resources Director, invited LA Sanitation to participate in the August stakeholder meeting, per the request from the Grassroots Coalition. The SMBGSA has always welcomed and continues to welcome interagency coordination efforts.

Comment Number	Commenter	Comment	Response
207	GC2	Faults pg. 57 of 230—The GSP contains no discussion of Lincoln Blvd. as an area of 'disrupted strata' and potential fault as discussed by the City of Los Angeles' oil and gas expert Exploration Technologies Inc, in the Chief Legislative Analyst's Report on Ballona Wetlands/ Playa Vista and ETI Regional Geochemical Assessment of BTEX and H2S Gas Occurrences. (prepared for LADBS)	Acknowledged. The faulting discussion in the GSP is based on both regional faults mapped by the USGS, DWR, and Diblee and local BWER specific seismic hazards discussed in Appendix E of USACE 2017 (cited in the GSP). The local seismic hazard study for the BWER, which refers to the BWER as the 'site' states: "The site is not within the Alquist-Priolo Earthquake Fault Zone, or a Fault Rupture Study Area. The closest Alquist-Priolo Earthquake Fault Zone is associated with the Newport-Inglewood fault, and is located approximately 3.5 miles east of the site. Based on the available geologic data, active or potentially active faults with the potential for surface fault rupture are not known to be located directly beneath or projecting toward the site." (USACE 2017 [Appendix E], p. E-41)
208	GC2	"The only known wells that produce groundwater from the Ballona aquifer are associated with groundwater quality remediation and dewatering activities at the Playa Vista development in the southern part of the Subbasin adjacent to the Ballona Escarpment (Playa Capital Company 2020).In the third quarter of 2020 these wells produced approximately 174-acrefeet of groundwater from the Ballona aquifer (Playa Capital Company 2020). Analysis of hydrographic for this GSP (Section 2.4.1.3) indicate that the Ballona aquifer is hydraulically connected to the underlying Silverado aquifer in the Playa Vista area. Pgs. 59-60 of 230 Chapter 2 Draft GSP." Emphasis added. The information above from the GSP Draft, appears to agree with the DWR/Playa Vista EIR mapping which also points out the hydraulic connections between the aquifers however, there is no additional mention of the area west of Playa Vista and inclusion of the Poland et al and House Document 389's comments per hydrologic connections that exist west of Lincoln Blvd. for these same aquifers/aquitards. This issue needs address in the Draft GSP.	The Poland report, Poland et al. 1959, was one of many sources used to construct the hydrogeologic conceptual model of the Subbasin, as described in Chapter 2 of the GSP. The reference, as cited in the GSP is USGS 1959, rather than Poland et al. 1959. There are 22 citations of USGS 1959 in Sections 2.3 and 2.4 of the GSP. House Document 389 was not used in the development of the GSP as this document primarily focuses on construction of the Playa del Rey Harbor in the 1960s, rather than on Subbasin-wide hydrogeology. The statement regarding determination of a connection between the Ballona aquifer and Silverado aquifer in the vicinity of Playa Vista was based on a review of data from wells screened in these aquifers. There are no known wells screened in the Ballona and Silverado aquifers within the BWER. Therefore, the GSP cannot make an independent determination of the connectedness of these aquifers to the west of Lincoln Blvd.
209	GC2	The Draft GSP section above also only vaguely mentions, 'dewatering activities at the Playa Vista development …" There is a need for full engagement and investigation and evaluation of the cumulative ongoing dewatering activities of Playa Vista and CDFW.	The draft GSP has been revised to remove a reference to "dewatering activities" as it is not clear from the review of available documentation that there are dewatering wells on the Playa Vista site. Rather, the Playa Vista final EIR from 2004 (State Clearinghouse No. 20021111065; City of LA EIR No. ENV-2002-6129-EIR; page 58) describes the dewatering system as a "'contingent' system that would operate only if/as groundwater elevations occur at the level of the dewatering pipes." Furthermore the EIR states "the dewatering system does not include dewatering by pumping from deep wells or any specific well points." (page 58).
210	GC2	It is clear from Interra's (GSA's consultant firm performing water modeling) comment below that there are serious data gaps which need to be filled. INTERRA "6.2 Data Gaps The LACPGM regional-scale model was built using a new sequence stratigraphy geologic model of the Los Angeles Coastal Plain, and incorporates all available pumping, injection and recharge datasets. Nevertheless, data gaps exist in certain areas of the LACPGM, including the Santa Monica Basin. Currently there are no multi-level monitoring wells between the Marina del Rey area and the inland areas of the Basin, where most pumping occurs. As a result there are no water level and water quality data to comprehensively evaluate the potential for groundwater flow from the Marina del Rey area. This represents a significant data gap in conceptualizing groundwater flow beneath the Marina del Rey area and the potential for salt water intrusion due to inland groundwater gradients. 7.0 REFERENCES"	The SMBGSA prepared the GSP using the best available science (per 23 CCR 354.16). Data gaps were acknowledged (See Sections 2.4.3, 2.5.5, 2.6, 3.2, 3.5.4, and 3.5.8) and will be addressed as the program is implemented (see Chapter 4).

Comment Number	Commenter	Comment	Response
211	GC2	2.2.2 continued- Draft discussion per Ballona Channel and Storm Drain System While much of the precipitation does flow into concrete lined creekways throughout the Plan area, no studies have been performed to gather information on leakage of these systems and/or the seamed concrete bottoms that are free to leach into the soils below just as the underlying gases that accumulate under the concrete sections, are free to escape upwards (Centinela Creek). This holds true for the length of the Ballona Channel with its numerous seamed areas. West of Centinela Blvd. the Ballona Channel is not lined but has a soft bottom with the Channel sides having not cement but a slurry through which cracks have not had consequential negative impacts (LA Flood Control study, Playa Vista area) but do allow for vegetation growth and permeability to an unstudied amount in the BWER area.	Acknowledged.
212	GC2	The storm drain system is old and likely does not provide 100% containment as cited in the Draft GSP.	The GSP does not cite "100% containment" of flows in Ballona Creek.
213	GC2	The groundwater in the Playa Vista/ Ballona Wetlands area is at or near the surface. (PV EIR)	Acknowledged.
214	GC2	2.4.7 Groundwater Dependent Ecosystems The NCCAG information provided by DWR is intended, as stated in the Draft GSP, as a 'starting point' only. All of Ballona Wetlands/ Ballona Wetlands Ecological Reserve is a GDE within the context of the full parameters of a GSP within SGMA. Natural Communities Commonly Associated with Groundwater ...map.dfg.ca.gov/metadata/ds2788.html	Acknowledged.
215	GC2	Additionally, the biodiversity that relies upon the many habitats of Ballona Wetlands Ecological Reserve are as interrelated as the surface water and groundwater. The interconnectedness is part of a GDE evaluation for ensuring best management practices are performed under SGMA to protect the ecosystems and the underlying freshwater aquifers.	Acknowledged.
216	GC2	It would appear that the preparer of this Draft GSP has focused upon drinking water needs of humans, as is common in many GSPs rather than delving into the needs of the largest and most critical remaining habitat area remaining along the Los Angeles coastline- Ballona Wetlands Ecological Reserve. https://www.flickr.com/photos/stonebird/ - Jonathan Coffin photography of Ballona Wetlands.	The GSP addresses all of the sustainability indicators, including interconnected surface water and groundwater. See Section 2.4.
217	GC2	Interrelationships during drought and/or little rainfall are especially important to understand as the plants/wildlife are ever more dependent.	Acknowledged.
218	GC2	2.4.7.3 Ballona Wetlands Ecological Reserve Pg. 80 Draft Chapter 2 "In the vicinity of the BWER, a 40 feet thick clay layer separates the Bellflower aquifer from the underlying Ballona aquifer. (see Section 2.3.1 Geology/ Appendix E USACE 2017) The comment above appears to skew its citation's intent. Nevertheless, the DWR Map and studies done for the Playa Vista EIR demonstrate that the 'clay layer' discussed above varies in thickness and its existence is not uniformly distributed across Ballona. (Poland et al, HD 389, Exploration Technologies Inc.) This is ostensibly why the DWR Map and Playa Vista consultants determined the aquifers act as one. Additional studies across the Ballona Wetlands, via geotechnical borings, soundings and gas investigations and the development of the Playa Vista site itself, have revealed the groundwater as interfacing between the aquifers. (Exploration Technologies Inc; DWR Map; PV EIR geology, drilling logs SoCalGas)	The draft GSP has been revised to correct the error in the statement cited by Grassroots Coalition. The statement now reads "In the vicinity of the BWER, a 40 feet thick clay layer separates the Bellflower *aquitard* from the underlying Ballona aquifer." The GSP incorrected referred to the Bellflower as an "aquifer" (see Section 2.4.7.3 of the GSP). Language has been added to Section 2.4.7.3 clarifying the thickness of the Bellflower aquitard within the BWER based on boring logs collected in Areas A, B, and C (USACE 2017 [Appendix E]).

Comment Number	Commenter	Comment	Response
219	GC2	Tables 2-19. NCCAG Vegetation Communities in BWER (pg. 80-81) are, in the Dudek Draft GSP, inexplicably lacking in native plant communities that reside in the Ballona Wetlands. Grassroots Coalition acknowledges the Natural Communities Commonly Associated with Groundwater- Vegetation (NCCAG) that Dudek has utilized for its response to GDE engagement. However, what appears from the listing itself, as cited in the link below, is that NCCAG is a starting point and contains numerous disclaimers pertaining to its pertinence and quality for any given GDE. This disclaimer is not found in the Santa Monica Draft GSP for the average reader to understand the significance of the NCCAG only being a starting point as an aide to addressing a GDE study and not being a definitive regulation of study fulfilled in and of itself as it appears that Dudek has done and as cited by Ms. Weinberger in the August GSA Meeting. After Grassroots Coalition's request again for the GSA, Santa Monica leadership/ Dudek to ask for the LA Department of Sanitation and LARWQCB to come to the table and participate in providing the dewatering data and information for evaluation within the Draft GSP, Ms. Weinberger's reply at 1:31:21 (August 2021 GSA Meeting)	Sunny Wang, City of Santa Monica Water Resources Director, invited LA Sanitation to participate in the August stakeholder meeting, per the request from the Grassroots Coalition. The GSP investigated the information contained in the NCCAG database and included that information in the description of the GDES - See GSP Section 2.4.7.
220	GC2	…" I appreciate that and I think you know we have done the groundwater dependent ecosystem work under SGMA to the requirements of SGMA, but we're happy to go over that in more detail with you." August 2021 GSP Meeting transcript. Our take-away from this response is that our efforts at seeking assistance in the retrieval and evaluation of cumulative dewatering data and information has been dismissed as this issue was already completed in the Draft GSP by Dudek. And, while it was also expressed by Dudek's, Ms. Weinberger, that the Draft is a beginning process, the past year's lack of information gathering pertaining to Ballona Wetlands and its aquifers does not provide an indication that the data gaps will be pursued in a timely, meaningful, prudent fashion.	Acknowledged. The quote cited by the Grassroots Coalition includes an invitation to discuss the delineation of GDEs under SGMA in more detail and, as mentioned by the Grassroots Coalition, the discussion of the draft GSP emphasized that this is the start of a long-term effort to manage the Subbasin.
221	GC2	The Draft provides no meaningful explanation of its 40 acres of groundwater dependent vegetation conclusion. The NCCAG is characterized by agencies as a starting point for investigation. And, the varying types of GDEs and their interconnectedness to seasonal surface water that promotes the dry season water table availability to vegetation is not discussed or reflected in the Draft's conclusory statements.	The GSP cites the NCCAG, which is "a compilation of 48 publicly available State and Federal agency dataset that map vegetation, wetlands, springs, and seeps in California." The data were compiled and screened by DWR, CDFW, and The Nature Conservancy to "exclude vegetation and wetland types less likely to be associated with groundwater and retain types commonly associated with groundwater." (NCCAG Information page: https://gis.water.ca.gov/app/NCDatasetViewer/sitedocs/#). Estuarine areas were excluded from the database, because "the ocean is their main source of water." (NCCAG Information page: https://gis.water.ca.gov/app/NCDatasetViewer/sitedocs/#). One of the datasets used in the NCCAG is the National Wetlands Inventory (version 2.0) maintained by the U.S. Fish and Wildlife Service (https://www.fws.gov/wetlands/data/Mapper.html). The National Wetlands Inventory maps the majority of the BWER as "estuarine and marine wetland habitat" and was therefore not included in the NCCAG. To clarify between the estuarine/ marine habitat and the palustrine/ freshwater habitat, the language has been changed in the GSP to read "The NCCAG identifies 37.3 acres of freshwater emergent wetland and freshwater forested/shrub wetland vegetation communities within the BWER (Table 2-18)." See GSP Section 2.4.7.3.

Comment Number	Commenter	Comment	Response
222	GC2	Various rare grassland areas in Area A and elsewhere in Ballona, along with extensive areas of rare species including but not limited to Lewis' Evening Primrose in Area A and Area C of BWER are excluded in the Draft GSP's discussion of GDE needs. The following link includes but is not complete of Ballona's vegetation: 1.Ballona Native Plants Compendium ballonaplants.blogspot.com Published by the Ballona Ecosystem Education Project PLANT LISTS AND MAPS: MASTER LIST OF Plants of the Ballona Wetlands, Baldwin Hills, El Segundo Dunes and smaller Open Spaces	Lewis's Evening Primrose and other special status species are listed in Table 2-20 of the GSP.
223	GC2	For example, Area A, B, C have pickleweed growth that is critical as Belding's Savannah Sparrow habitat.	Acknowledged. Belding's Savannah Sparrow and other special status species are listed in Table 2-20 of the GSP.
224	GC2	The seasonal rainwater ponding across Ballona is also dependent upon the underlying groundwater level for ponding to occur. If the normal water table level is not present, the seasonal rains can percolate downward more rapidly and ponding can be reduced and/or not timely occur to aid in seed dispersal, or allow for frog eggs and tadpoles to fulfill their cycle of life and so on. Removal of the surface ponding has occurred at Ballona due to Playa Vista's and CDFW's illegal drains. These activities have harmed the hydrology of Ballona as cited by the California Coastal Commission. (CCC 2014 Letter to Playa Vista /CDFW) Negative impacts can occur when surface water percolation downward is removed or reduced which further reduces recharge to the freshwater aquifers. At Ballona, the time it takes for rainwater to pond has appeared to increase through the years as Playa Vista dewaters the upper water-table and aquifers. There has been no exploration or gathering of information to determine what is occurring overall and cumulatively between Playa Vista and CDFW's dewatering activities for the past 20 years.	Acknowledged.
225	GC2	Without data and information support, the private business used by CDFW, the Bay Foundation, has promoted claims of Ballona Channel as the sole source of freshwater to Ballona and that its channelization is the reason for Ballona drying out, thereby promoting CDFW's plan to dig out 3 million plus cubic yards of soil to convert Ballona into a full tidal, saltwater bay. This is a false premise being delivered to the public using public dollars.	Acknowledged.
226	GC2	The GSP Draft, without data support, also cites the lack of tidal flux into Ballona as its main reason for degradation. Such echoing of misinformation is contrary to legitimate SGMA and GDE study.	The GSP does not posit a "main reason for degradation" of the BWER . The GSP does cite the 303(d) list of water quality impairments for the Ballona Wetlands prepared by the LARWQCB, which includes "reduced tidal flushing" (See Table 2-18 of the GSP).
227	GC2	What we do see as actual cause and effect- The sealing of the unpermitted drainage in Area B, in just a couple years has given rise to ponding and the widespread regrowth of pickleweed throughout this area. Belding's need wide areas of pickleweed growth to out compete other sparrows for nesting habitat. Grassroots Coalition's prevailing litigation and the California Coastal Commission's subsequent orders to seal the illegal drains, has resulted in the restoration of widespread pickleweed regrowth throughout this area. (Griswold PhD, photos, August 2021 GSP presentation).	Acknowledged.

Comment Number	Commenter	Comment	Response
228	GC2	“” 2 –Plan Area and Basin Setting Groundwater Sustainability Plan for the Santa Monica Groundwater Subbasin12169July 20212-82a natural meander-shaped pattern, and removing historical dredge materials north of Ballona creek to create a floodplain (USACE 2017). These alterations are expected to establish 81 acres of new wetlands and 39 acres of new non-wetland waters of the U.S., as well as enhance 106 acres of native wetland and 58 acres of existing non-wetland waters of the U.S” Draft GSP The CDFW Plan noted above is set forth in a FEIR, and is currently under CEQA litigation by five environmental organizations due to numerous deficiencies and inaccuracies. Ballona Wetlands has been closed to daily tidal flow for hundreds of years. Only during irregular, severe rainfall events did enough freshwater flow to break through the coastal dune system to the ocean. This is why Ballona is a rare coastal, predominantly seasonal freshwater wetland (Historical Ecology of Ballona Creek Watershed, Dark et al 2011) The CDFW Plan to convert Ballona into a full tidal saltwater bay is not restoration as defined by the California Coastal Commission’s definition of restoration. The USFWS in their response to the Draft EIR, comments that CDFW’s thinly disguised cover story of ‘creating upland’ with over 3 million cubic yards of soils dug out from Ballona is simply filling of wetlands which is not permitted under the California Coastal Act. (USFWS Ballona Draft EIR response)	Acknowledged.
229	GC2	And, while the Ballona Channel’s creation has impacted the wetland, the flow of fresh groundwater has continued throughout Ballona as is easily evidenced in: the construction records of the buildout of Playa Vista; boring log records; vegetation existence, including trees that would not continue to exist in saltwater; and the continued existence of the near surface aquifers. Seasonal ponding continues across Ballona, but for the illegal drainage of the ponding water, violating the Coastal Act by CDFW and Playa Vista. (GC v Playa Vista/CDFW; CCC 2014 letter to Playa Capital LLC/ CDFW) The illegal drainage of rainwater ponding in Area B has since been halted via litigation by Grassroots Coalition against both CDFW and Playa Vista. The California Coastal Commission then required the sealing of the unpermitted drains.)	Acknowledged.
230	GC2	FILL PLACEMENT FROM CONSTRUCTION OF MARINA DEL REY Another one of the inaccuracies to which CDFW and the FEIR do not provide data support, is the unsupported claim by CDFW that Area A of Ballona Wetlands has been filled with Marina del Rey dredged soils. The Draft GSP, without data support makes the same claim as it simply cites to the unsupported claim by CDFW in their FEIR. The FEIR’s challenge via CEQA litigation includes this unsupported claim by CDFW.	CDFW has approved a Final EIR to restore ecosystem function to a full tidal salt water bay in the BWER. The GSP references this Final EIR and incorporates its assumptions into future planning. Artificial fill is identified as extending from 5 to 15 feet below ground surface in Area A, 0 to 20 feet below ground surface in Area B, and 8 to 20 feet below ground surface in Area C in the Geotechnical Investigation Report for the Ballona Wetland Restoration Project, which was prepared by Group Delta Consultants (USACE 2017 [Appendix E]). Site specific geotechnical boring logs are presented on pages E-120 through E-203 of this document. Language has been added to Section 2.4.7.3 clarifying the thickness of the surficial fill deposits in Areas A, B, and C.
231	GC2	Data demonstrating the Marina del Rey dredged soils were used to create miles of extended/enhanced beaches to the north and south of the Ballona Channel as well as for the creation of the marina’s landscape infrastructure is readily available within the congressional document known as House Document 389. The Draft GSP fails to include or discuss this data and information which needs to be included. Instead, the Draft GSP simply echoes unsubstantiated claims without checking for their accuracy via readily available data.	See above comment.

Comment Number	Commenter	Comment	Response
232	GC2	The USACE reference as a 2017 reference appears to be a general statement simply echoing CDFW but having no actual data support. USACE permits are being sought by CDFW hence USACE has been engaged in reviewing materials provided by CDFW ie. the Flood Control study which has been twice rejected by the Corps as inaccurate and cost taxpayers $4 million. No new Flood Control study has been produced via CDFW. However, another $2 million has been approved by the State Coastal Conservancy for CDFW to have another attempt. The State Coastal Conservancy has since been sued by Grassroots Coalition and Ballona Ecosystem Education Project (BEEP)for their approval of the FEIR. The California Coastal Commission is facing another legal challenge should it disburse the approved funds to CDFW.	The USACE 2017 reference is to the Draft Environmental Impact Report, and is included in the references section at the end of GSP Chapter 2.
233	GC2	The land to the north of the Ballona Channel is known as Area A. Area A historical documentation also demonstrates that the central and largest area of Area A is undisturbed habitat (Huffman, USEPA '86 map; Playa Vista EIR Archaeology Map) This area is also noted via various drillings to have freshwater available to the root systems of vegetation as the water table is noted as at or near surface (Playa Vista EIR).	Acknowledged.
234	GC2	Area A, during a normal rainy season has ponding across much of the site which can remain for months (Huffman 1986) GC has experienced first- hand the ponding and has long documented the various areas inundated which also gives rise to prolific use of the area for feeding great blue herons and other predators as small mammals relocate from the inundation and become more vulnerable to predation out in the open. Area A also has rare salt pannes that act as reservoirs for copapods to emerge with winter rainwater ponding and attract Pacific Flyway migratory birds as well as Ballona homesteader birds that feed upon the copapods. The copapods are a 'forage species' as are discussed in the 2011 AB 1299, Forage Species Conservation and Management Bill. Area B supports large salt pannes. Salt pannes have become critically rare along southern California and need to be considered as part of the GDE evaluation. (@ 15:30 Graph, Margo Griswold Phd presentation link below) 1.4.20.21 Dr Margot Griswold Presents Ballona Wetlands FEIR ... www.youtube.com/watch?v=avpCqRoEbdc This video on 4.20.21 Dr Margot Griswold Presentation on Ballona Wetlands Final Environmental Impact Report - Inconsistencies and Overlooked Opportunities: C...	Acknowledged.
235	GC2	Area A is a critical portion of the GDE that provides habitat to multiple endangered species including the Belding Savannah Sparrow and multiple listed species such as the White-tailed Kite, dependent upon the wide areas of grasslands and pickleweed. The water table in Area A, out of the rainy season is deep enough to allow moles, voles and rabbit dens within the very near surface and their use of root systems as nourishment. During the rainy season the ponding gives literal rise to soil burrowing creatures to surface which in turn brings in foraging herons, hawks and other predators. (Griswold Phd LINK to presentation Ballona FEIR- Inconsistencies.)	Acknowledged.
236	GC2	The proposed new levees are also planned to be around the entire perimeter of the proposed industrial scale dig out that will remove over 3 million cubic yards of wetland, salt pan, upland soils in order to create the new full tidal bay. The levees per USACE regulations will not be allowed to have small burrowing wildlife existing in/on the levees as the levees will be regulated by Vector Control to exterminate such wildlife. Vegetation, ie. grasses having very small root systems are allowed with the need for keeping such vegetation mowed in order to visibly inspect the levees for rodent abatement.	Acknowledged.

Comment Number	Commenter	Comment	Response
237	GC2	The LARWQCB, has undertaken numerous soils and groundwater investigations on Parcels A, B, C, D formerly owned and operated by the Howard Hughes Company and included the MacDonnell Douglas industrial complex of both aircraft industries located in Area D. All of the parcels comprised the Playa Vista development site. A,B,C are now Public Trust property areas of Ballona Wetlands that have been given No Further Action (NFA) designations to signify the property as clean and in need of no further actions of remediation. The Ballona Channel is not part of the Ballona Wetlands Ecological Reserve but is owned and operated by the federal government via USACE and by the County Flood Control District of Los Angeles. The Ballona Channel is an impaired waterway in need of remediation and TMDL discussions are directed to the Channel water, not the clean groundwater that is in the Ballona Ecological Reserve.	Acknowledged.
238	GC2	Should the CDFW Plan for digging out Ballona occur, with the removal and perimeter replacement of the levees, the toxic Channel water flows would enter into and comingle with the NFA AREAS of Ballona Wetlands Ecological Reserve. Not only would the clean groundwater of Ballona, inclusive of its freshwater aquifers, be exposed to toxic Ballona Channel water flows but these currently clean areas would be exposed to contamination by saltwater intrusion and the Santa Monica Bay's own toxic effluent.	The SMBGSA acknowledges the comment, but notes that the definition of "the Santa Monica Bay's own toxic effluent" is not clear.
239	GC2	"There is no direct link between the shallow surface water in the Bellflower aquitard at BWER and the Silverado aquifer in the vicinity of the primary production wellfields. Therefore, groundwater production from existing wells will not impact groundwater elevations or the identified GDEs within the BWER". Draft GSP The production wells of the City of Santa Monica are important to not impede or lower the water table to the GDE, Ballona Wetlands. Monitoring for such potential effects is important.	Acknowledged.
240	GC2	However, GC's concern has been the 20 years of dewatering effects due to illegal drains on Area B of the wetlands that are now temporarily capped and the dewatering effects of 20 years plus of pumping and dewatering the groundwater under Playa Vista from both the Clean Up and Abatement Order as well as dewatering for the gas mitigation systems under Playa Vista buildings. Playa Vista also captures its rainfall into building systems for what is called, "nuisance dewatering". The normal watershed flow from east to west has been systematically pumped and removed from reaching Ballona Wetlands which historically underlies Playa Vista and is the Public Trust lands and freshwater stewarded by the State Lands Commission and the Ballona Ecological Reserve which extends to the west of Playa Vista to the dunes on the west end in Playa del Rey. The dewatering has been ignored as permits have been given for this dewatering simply due to requests by Playa Vista for sending the clean freshwater to Sanitation.	Acknowledged.

Comment Number	Commenter	Comment	Response
241	GC2	EPA has also ignored such dewatering while citing only to the acknowledgement that the freshwater is clean thereby allowing for its throw away into the sanitary sewer system under industrial wastewater permits. EPA and LARWQCB have not considered the environmental impacts of VOLUME needs of Ballona Wetlands and have predominantly only considered Water Quality. This lack of attention to the biological, hydrological needs of the GDE are now front and center and need to be prudently addressed to protect the Ballona Wetlands. Interagency discussions need to occur to offset past damage to Ballona's hydrology via wasteful pumping and discharge of this clean freshwater to the sanitary sewer system of Los Angeles. Interagency discussions necessitate inclusion of ie. EPA Erica Strauss, whose email comments of agreement that clean fresh, Playa Vista groundwater is ok for discharge into the sanitary sewer system have laid the groundwork for waste of Ballona's precious freshwater resources.	Acknowledged.
242	GC2	The DWR Map from the studies also performed by Playa Vista consultants and mapping done by Exploration Technologies Inc; reveal the non-uniform nature of the underlying clay and other soils which provide for the multiple underlying aquifers to act as one unit.	Acknowledged.
243	GC2	The maintenance of the freshwater table for sustainability of the GDE is paramount for this unique coastal wetland.	Acknowledged.
244	GC2	"2.4.7.4 Ballona Freshwater Marsh Adjacent to the northeastern boundary of Area B, the California State Lands Commission owns 26 acres of freshwater marsh that was constructed between 2001 and 2003 as a mitigation site for the Playa Vista development (USEPA 2012). Groundwater that is pumped from the Ballona aquifer and Bellflower aquitard in Playa Vista is treated to remove VOCs and other contaminants of concern at the site and discharged to Centinela Creek. This treated discharge is a primary component of flow in the freshwater marsh. Because the freshwater marsh is a managed ecosystem that would not exist without the surface water flows in Centinela Creek, no natural communities commonly associated with groundwater were identified in the NCCAG database within the boundaries of the freshwater marsh." Draft GSP Grassroots Coalition has been unaware of groundwater being pumped into Centinela Creek. The comment regarding nonexistence of the FWM without the surface water flows of Centinela Creek, makes no sense and needs explanation. Centinela Creek does not exist as it did historically, any longer at the surface. Perhaps, the GSA is referencing the Riparian Corridor? However, such reference would be inaccurate as well since the Riparian Corridor does receive seasonal runoff from the adjacent bluff area and a portion of that bluff area does have spring water flow year-round, the bulk of the freshwater into the Riparian Corridor year- round comes from the pumped and cleansed water of the CAO 95-125. If disposal occurs into the concreted Centinela Creek portion of the local flood control system, then that would be an additional NPDES permitted throw away of clean freshwater that would ordinarily nurture the GDE needs.	Language has been changed in the GSP to "The freshwater marsh treats urban runoff and stormwater from the Playa Vista development and also receives treated groundwater that is pumped from the Ballona aquifer and Bellflower aquitard in Playa Vista (USEPA 2012; RWQCB 2018)." See GSP Section 2.4.7.4.
245	GC2	The Freshwater Marsh System and its Riparian Corridor has a designed overflow that allows for freshwater to flow into the Ballona Wetlands Ecological Reserve. This is what Grassroots Coalition and USFWS (USFWS- EIR comments) wish to see utilized instead of allowing Playa Vista to control the overflow's direction out to sea via the Main Drain and/or send to Sanitation.	Acknowledged.

Comment Number	Commenter	Comment	Response
246	GC2	The Draft GSP response appears to misunderstand the basic functions within this area and numerous other dewatering activities as it renders conclusory statements without data support.	See responses above for discussion of language regarding the freshwater marsh and dewatering activities. The SMBGSA disagrees with the statement that the GSP "renders conclusory statements without data support." The SMBGSA prepared the GSP using the best available science (per 23 CCR 354.16). References are cited in the text and provided in the references section at the end of each chapter.
247	GC2	This Draft GSP is critical to gathering all the dewatering data and disposal information in order to stop such waste of freshwater that is critical to sustaining the GDE. Furthermore, as discussed in GC's response in Chapter One, sending freshwater into the Riparian Corridor to ultimately outlet into the ocean via the Main Drain of the Freshwater Marsh System, is also unacceptable for maintaining the nurturing freshwater that needs to remain on Ballona and allowed to percolate down into the underlying aquifers for recharge.	Acknowledged.

The Nature Conservancy | Audubon California | Local Government Commission — Leaders for Livable Communities

Union of Concerned Scientists — Science for a healthy planet and safer world | Clean Water Action | Clean Water Fund

September 28, 2021

The Santa Monica Basin Groundwater Sustainability Agency

Submitted via email: lisette.gold@santamonica.gov

Re: Public Comment Letter for Santa Monica Groundwater Subbasin Draft GSP

Dear Lisette Gold,

On behalf of the above-listed organizations, we appreciate the opportunity to comment on the Draft Groundwater Sustainability Plan (GSP) for the Santa Monica Subbasin being prepared under the Sustainable Groundwater Management Act (SGMA). Our organizations are deeply engaged in and committed to the successful implementation of SGMA because we understand that groundwater is critical for the resilience of California's water portfolio, particularly in light of changing climate. Under the requirements of SGMA, Groundwater Sustainability Agencies (GSAs) must consider the interests of all beneficial uses and users of groundwater, such as domestic well owners, environmental users, surface water users, federal government, California Native American tribes and disadvantaged communities (Water Code 10723.2).

As stakeholder representatives for beneficial users of groundwater, our GSP review focuses on how well disadvantaged communities, drinking water users, tribes, climate change, and the environment were addressed in the GSP. While we appreciate that some basins have consulted us directly via focus groups, workshops, and working groups, we are providing public comment letters to all GSAs as a means to engage in the development of 2022 GSPs across the state. Recognizing that GSPs are complicated and resource intensive to develop, the intention of this letter is to provide constructive stakeholder feedback that can improve the GSP prior to submission to the State.

Based on our review, we have significant concerns regarding the treatment of key beneficial users in the Draft GSP and consider the GSP to be **insufficient** under SGMA. We highlight the following findings:

1. Beneficial uses and users **are not sufficiently** considered in GSP development.
    a. Human Right to Water considerations **are not sufficiently** incorporated.
    b. Public trust resources **are not sufficiently** considered.
    c. Impacts of Minimum Thresholds, Measurable Objectives and Undesirable Results on beneficial uses and users **are not sufficiently** analyzed.
2. Climate change **is not sufficiently** considered.
3. Data gaps **are not sufficiently** identified and the GSP **does not have a plan** to eliminate them.

4. Projects and Management Actions **do not sufficiently consider** potential impacts or benefits to beneficial uses and users.

Our specific comments related to the deficiencies of the Santa Monica Subbasin Draft GSP along with recommendations on how to reconcile them, are provided in detail in **Attachment A.**

Please refer to the enclosed list of attachments for additional technical recommendations:

Attachment A	GSP Specific Comments
Attachment B	SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users
Attachment C	Freshwater species located in the subbasin
Attachment D	The Nature Conservancy's "Identifying GDEs under SGMA: Best Practices for using the NC Dataset"

Thank you for fully considering our comments as you finalize your GSP.

Best Regards,

Ngodoo Atume
Water Policy Analyst
Clean Water Action/Clean Water Fund

J. Pablo Ortiz-Partida, Ph.D.
Western States Climate and Water Scientist
Union of Concerned Scientists

Samantha Arthur
Working Lands Program Director
Audubon California

Danielle V. Dolan
Water Program Director
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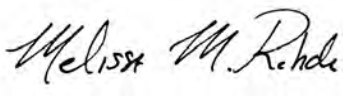
The Nature Conservancy



Melissa M. Rohde
Groundwater Scientist
The Nature Conservancy

Attachment A

Specific Comments on the Santa Monica Subbasin Draft Groundwater Sustainability Plan

1. Consideration of Beneficial Uses and Users in GSP development

Consideration of beneficial uses and users in GSP development is contingent upon adequate identification and engagement of the appropriate stakeholders. The (A) identification, (B) engagement, and (C) consideration of disadvantaged communities, drinking water users, tribes, groundwater dependent ecosystems, streams, wetlands, and freshwater species are essential for ensuring the GSP integrates existing state policies on the Human Right to Water and the Public Trust Doctrine.

A. Identification of Key Beneficial Uses and Users

Disadvantaged Communities and Drinking Water Users

The identification of Disadvantaged Communities (DACs) and drinking water users is **incomplete**. While the GSP provides basic information on DACs, including identification by name, location, and population densities on a map (Figure 2-8) as determined by the California Department of Water Resources DAC Mapping Tool, the plan fails to identify the population dependent on groundwater as their source of drinking water in these communities. The plan also fails to provide a density map of domestic wells in the subbasin, or other information about location and depth of domestic wells. These missing elements are required for the GSA to fully understand the specific interests and water demands of these beneficial users, and to support the development of sustainable management criteria and projects and management actions that are protective of these users.

RECOMMENDATIONS

- Include a map and inventory of all domestic wells by location and by depth, and a domestic well density map.
- Identify the sources of drinking water for DAC members, including an estimate of how many people rely on groundwater (e.g., domestic wells, state small water systems, and public water systems). The GSP states that “DAC block groups are located in portions of the City of Santa Monica, the City of Los Angeles including the UCLA campus and Venice Beach, and the unincorporated area around the West Los Angeles Veterans Affair campus.” However, the GSP does not currently provide clear information on how and to what extent DAC members rely on groundwater.

Interconnected Surface Waters

The identification of Interconnected Surface Waters (ISWs) is **insufficient**. ISWs were inadequately dismissed based on the incorrect assertion that the shallow aquifers are not principal aquifers, despite the recognition in the Water Budget section of the GSP that there is a likely connection between shallow groundwater and surface water. The GSP states (p. 2-95): “Groundwater outflows occur to ephemeral streams that enter the Subbasin from the Santa Monica Mountains and to Ballona Creek (Figure 2-3). During dry years the modeled outflows are typically less than a few hundred AFY (Table 2-25). However, in wet years such as 1998 and

2005, these flows can exceed 4,000AF (Table 2-25). The combined outflows to ephemeral streams and to Ballona Creek totaled 7,300 AFY and 6,400 AFY in 1998 and 2005, respectively." The GSP further states (p. 2-78): "Infiltration of surface water into the Bellflower aquitard downstream of Centinela Avenue, contributes to the palustrine Ballona Creek Wetlands, located approximately half a mile downstream. These wetlands constitute the primary area of groundwater-surface water interaction in the Subbasin."

SGMA defines principal aquifers as "aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems" [23 CCR § 351 (aa)]. The shallow groundwater system, consisting of the Bellflower aquitard and the Ballona aquifer, are indeed principal aquifers that must be protected under SGMA. Because the shallow aquifers are not recognized as principal aquifers, potential ISWs are not being identified, described, nor managed in the GSP. Until a disconnection can be proven, include all potential ISWs in the GSP. This is necessary to assess whether surface water depletions caused by groundwater use are having an adverse impact on environmental beneficial users of surface water.

RECOMMENDATIONS

- Include a map of stream reaches in the subbasin. Label the reaches as interconnected, disconnected, or potential ISWs.
- Include the shallow groundwater system as a principal aquifer in this GSP to ensure adequate monitoring and management of this critical groundwater resource for current and future beneficial users.
- Provide depth-to-groundwater contour maps using the best practices presented in Attachment D, to aid in the determination of ISWs. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a DEM to estimate depth-to-groundwater contours across the landscape. This will provide accurate contours of depth to groundwater along streams and other land surface depressions where GDEs are commonly found.
- Use seasonal data over multiple water year types to capture the variability in environmental conditions inherent in California's climate, when mapping ISWs. We recommend that data is used from the pre-SGMA baseline period of 2005-2015.
- Reconcile ISW data gaps with specific measures (shallow monitoring wells, stream gauges, and nested/clustered wells) along surface water features in the Monitoring Network section of the GSP.

Groundwater Dependent Ecosystems

The identification of Groundwater Dependent Ecosystems (GDEs) is **insufficient**, due to a lack of description of supporting data for the analysis of the subbasin's GDEs.

The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset). The GSP retains nearly all of the NC dataset polygons in the subbasin as potential GDEs (with the exception of a small paved pond area at the

Kenneth Hahn State Recreation Area Unit). However, the GSP does not fully describe how groundwater data from the underlying shallow aquifer was used to verify the NC dataset. The GSP text refers to Appendix E (Groundwater Elevation Hydrographs), but more information should be provided in the text regarding specific wells and temporal data used to verify the NC dataset polygons. Without an adequate analysis of groundwater data to verify the NC dataset polygons, it will be difficult or impossible to adequately monitor and manage the GDEs throughout GSP implementation.

We commend the GSA for including an inventory of fauna and flora species in the subbasin's GDEs (Tabe 2-19) and a list of special status species present in the Ballona Wetlands Ecological Reserve (Table 2-20).

RECOMMENDATIONS

- Overlay GDE locations with depth-to-groundwater contour maps. Show well locations on these maps. For the contour maps, note the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a digital elevation model (DEM) to estimate depth to groundwater contours across the landscape.

- Use and describe depth to groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) to determine the range of depth to groundwater around NC dataset polygons. We recommend that a baseline period (10 years from 2005 to 2015) be established to characterize groundwater conditions over multiple water year types. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer.

Native Vegetation and Managed Wetlands

Native vegetation and managed wetlands are water use sectors that are required[1,2] to be included into the water budget. The integration of these ecosystems into the water budget is **insufficient**. The water budget did not include the current, historical, and projected demands of native vegetation and managed wetlands. The omission of explicit water demands for native vegetation and managed wetlands is problematic because key environmental uses of groundwater are not being accounted for as water supply decisions are made using this budget, nor will they likely be considered in project and management actions.

[1] "'Water use sector' refers to categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation." [23 CCR §351(al)]

[2] "The water budget shall quantify the following, either through direct measurements or estimates based on data: (3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow." [23 CCR §354.18]

RECOMMENDATION

- Quantify and present all water use sector demands in the historical, current, and projected water budgets with individual line items for each water use sector, including native vegetation and managed wetlands.

B. Engaging Stakeholders

Stakeholder Engagement during GSP development

Stakeholder engagement during GSP development is **insufficient**. SGMA's requirement for public notice and engagement of stakeholders[3] is not fully met by the description in the Public Outreach and Engagement Plan (Appendix D). We note the following deficiencies with the overall stakeholder engagement process:

- The opportunities for public involvement and engagement are described in very general terms. They include attendance at public workshops and updates to the GSP website. There is no specific outreach described for members of the DAC communities.

- The Public Outreach and Engagement Plan does not include outreach and engagement that is specifically directed to environmental stakeholders.

RECOMMENDATION

- Include a more detailed and robust Public Outreach and Engagement Plan that describes active and targeted outreach to engage DAC members, domestic well owners, and environmental stakeholders during the remainder of the GSP development process and throughout the GSP implementation phase. Refer to Attachment B for specific recommendations on how to actively engage stakeholders during all phases of the GSP process.

C. Considering Beneficial Uses and Users When Establishing Sustainable Management Criteria and Analyzing Impacts on Beneficial Uses and Users

The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is **insufficient**. The consideration of potential impacts on all beneficial users of groundwater in the subbasin are required when defining undesirable results[4] and establishing minimum thresholds.[5,6]

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[3] "A communication section of the Plan shall include a requirement that the GSP identify how it encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin." [23 CCR §354.10(d)(3)]

[4] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results." [23 CCR §354.26(b)(3)]

[5] "The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[6] "The description of minimum thresholds shall include [...] how state, federal, or local standards relate to the relevant sustainability indicator. If the minimum threshold differs from other regulatory standards, the agency shall explain the nature of and the basis for the difference." [23 CCR §354.28(b)(5)]

Disadvantaged Communities and Drinking Water Users

For chronic lowering of groundwater levels, the GSP does not specifically analyze direct and indirect impacts on DACs and drinking water users when defining undesirable results, or evaluate the cumulative or indirect impacts of proposed minimum thresholds on these stakeholders. As discussed above in our comments under Section 1A (Identification of Key Beneficial Uses and Users), these stakeholders were not sufficiently identified in the subbasin.

Identified constituents of concern (COCs) in the subbasin are TDS, sulfate, chloride, boron, nitrate, and total coliform bacteria. No SMC are set for the degraded water quality sustainability indicator in the subbasin. The GSP states (p. 3-14): "Minimum thresholds for significant and unreasonable degradation of groundwater quality were not established for the Subbasin because the groundwater quality in the Subbasin was impacted by industrial activity prior to 2015." However, the GSA should ensure that there is sufficient monitoring for these contaminants to ensure that groundwater use and groundwater management within the basin does not lead to groundwater quality degradation.

RECOMMENDATIONS

Chronic Lowering of Groundwater Levels

- Describe direct and indirect impacts on DACs and drinking water users when defining undesirable results for chronic lowering of groundwater levels.
- Consider and evaluate the impacts of selected minimum thresholds and measurable objectives on DACs and drinking water users within the subbasin. Further describe the impact of passing the minimum threshold for drinking water users. For example, provide the number of domestic wells that would be de-watered at the minimum threshold.

Degraded Water Quality

- Establish a monitoring network for the degraded water quality sustainability indicator to ensure that groundwater use and groundwater management does not lead to groundwater quality degradation within the basin.
- Evaluate the cumulative or indirect impacts of degraded water quality on DACs and drinking water users.

Groundwater Dependent Ecosystems and Interconnected Surface Waters

Because the shallow aquifer is disregarded as a principal aquifer in the GSP, SMC provided in the GSP do not consider potential impacts to environmental beneficial users. The GSP states (p. 3-8): "Potential wetlands, shallow groundwater (less than 30 feet), and GDEs have been identified in the PCH Unit and BWER in the Subbasin (Section 2.4.7, Groundwater Dependent Ecosystems). Depletion of groundwater supporting these areas is not currently occurring and will not occur as a result of groundwater production because the groundwater that supports the GDE habitats occurs within the Bellflower aquitard, a shallow surface layer that is hydraulically disconnected from the underlying Ballona and Silverado aquifers in much, though not all, of the Subbasin." However, the GSP has not provided sufficient supporting information for the claim that

the aquifers are not connected. The GSP uses groundwater depths in the center of the subbasin from the Ballona and Silverado aquifers to compare to shallow groundwater measurements near the Ballona Creek wetlands in the southern portion of the subbasin to dismiss the connection between the aquifers.

Therefore, the GSP neither describes nor analyzes direct or indirect impacts on environmental users of groundwater or surface water when defining undesirable results. This is problematic because without identifying potential impacts to GDEs and beneficial users of interconnected surface waters, minimum thresholds may compromise, or even destroy, environmental beneficial users. Since potential GDEs and ISWs are present in the subbasin, they must be considered when developing SMC for the subbasin.

RECOMMENDATIONS

- When defining undesirable results for chronic lowering of groundwater levels, provide specifics on what biological responses (e.g., extent of habitat, growth, recruitment rates) would best characterize a significant and unreasonable impact to GDEs. Undesirable results to environmental users occur when 'significant and unreasonable' effects on beneficial users are caused by one of the sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, or depletion of interconnected surface water). Thus, potential impacts on environmental beneficial uses and users need to be considered when defining undesirable results[7] in the subbasin. Defining undesirable results is the crucial first step before the minimum thresholds[8] can be determined.

- When defining undesirable results for depletion of interconnected surface water, include a description of potential impacts on instream habitats within ISWs when defining minimum thresholds in the subbasin[9]. The GSP should confirm that minimum thresholds for ISWs avoid adverse impacts to environmental beneficial users of interconnected surface waters as these environmental users could be left unprotected by the GSP. These recommendations apply especially to environmental beneficial users that are already protected under pre-existing state or federal law[6,10].

[7] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results". [23 CCR §354.26(b)(3)]

[8] The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[9] "The minimum threshold for depletions of interconnected surface water shall be the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results." [23 CCR §354.28(c)(6)]

[10] Rohde MM, Seapy B, Rogers R, Castañeda X, editors. 2019. Critical Species LookBook: A compendium of California's threatened and endangered species for sustainable groundwater management. The Nature Conservancy, San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/Critical_Species_LookBook_91819.pdf

2. Climate Change

The SGMA statute identifies climate change as a significant threat to groundwater resources and one that must be examined and incorporated in the GSPs. The GSP Regulations[11] require integration of climate change into the projected water budget to ensure that projects and management actions sufficiently account for the range of potential climate futures.

The integration of climate change into the projected water budget is **insufficient**. The GSP does incorporate climate change into the projected water budget using DWR change factors for 2030 and 2070. However, the GSP did not consider the 2030 or 2070 extremely wet and extremely dry climate scenarios in the projected water budget. The GSP should clearly and transparently incorporate the extremely wet and dry scenarios provided by DWR into projected water budgets or select more appropriate extreme scenarios for the subbasin. While these extreme scenarios may have a lower likelihood of occurring, their consequences could be significant, therefore they should be included in groundwater planning.

The GSP included climate change into precipitation, evapotranspiration, and sea level inputs of the projected water budget. However, climate change was not incorporated into surface water flow inputs. Furthermore, the GSP does not calculate a sustainable yield based on the projected water budget with climate change incorporated, but instead states that the sustainable yield is based on a historical range of estimates until data gaps are filled. If the water budgets are incomplete, including the omission of extremely wet and dry scenarios, and sustainable yield is not calculated based on climate change projections, then there is increased uncertainty in virtually every subsequent calculation used to plan for projects, derive measurable objectives, and set minimum thresholds. Plans that do not adequately include climate change projections may underestimate future impacts on vulnerable beneficial users of groundwater such as ecosystems and DACs.

RECOMMENDATIONS

- Integrate climate change, including extremely wet and dry scenarios, into all elements of the projected water budget to form the basis for development of sustainable management criteria and projects and management actions.
- Incorporate climate change into surface water flow inputs for the projected water budget.
- Calculate sustainable yield based on the projected water budget with climate change incorporated.
- Incorporate climate change scenarios into projects and management actions.

[11] "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow." [23 CCR §354.18(e)]

3. Data Gaps

The consideration of beneficial users when establishing monitoring networks is **insufficient**, due to lack of specific plans to increase the Representative Monitoring Points (RMPs) in the monitoring network that represent water quality conditions and shallow groundwater elevations around DACs, domestic wells, GDEs, and ISWs. Figure 3-7 (Future/Potential New Monitoring Network Wells) shows that no existing or new proposed monitoring wells are located across large portions of the subbasin, including near GDEs, ISWs, or DACs. Beneficial users of groundwater may remain unprotected by the GSP without adequate monitoring and identification of data gaps in the shallow aquifer. The Plan therefore fails to meet SGMA's requirements for the monitoring network[12].

RECOMMENDATIONS

- Provide maps that overlay monitoring well locations with the locations of DACs, domestic wells, GDEs, and ISWs to clearly identify potentially impacted areas. Increase the number of representative monitoring points (RMPs) in the shallow aquifer across the basin for all groundwater condition indicators. Prioritize proximity to GDEs, ISWs, DACs, and drinking water users when identifying new RMPs.
- Provide specific plans to fill data gaps in the monitoring network. Evaluate how the gathered data will be used to identify and map GDEs and ISWs, and identify DACs and shallow domestic well users that are vulnerable to undesirable results.
- Describe biological monitoring that can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the subbasin.

4. Addressing Beneficial Users in Projects and Management Actions

The consideration of beneficial users when developing projects and management actions is **insufficient**. due to the failure to completely identify benefits or impacts of identified projects and management actions to key beneficial users of groundwater such as GDEs, aquatic habitats, surface water users, DACs, and drinking water users. Therefore, potential project and management actions may not protect these beneficial users. Groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for *all* beneficial users. The plan states that public notice is not required for Management Action 1 & 5 because the action would be undertaken under the City of Santa Monica's authority.

RECOMMENDATIONS

- For DACs and domestic well owners, include a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program.

[12] "The monitoring network objectives shall be implemented to accomplish the following: [...] (2) Monitor impacts to the beneficial uses or users of groundwater." [23 CCR §354.34(b)(2)]

- For DACs and domestic well owners, include a discussion of whether potential impacts to water quality from projects and management actions could occur and how the GSA plans to mitigate such impacts.

- Recharge ponds, reservoirs, and facilities for managed stormwater recharge can be designed as multiple-benefit projects to include elements that act functionally as wetlands and provide a benefit for wildlife and aquatic species. For guidance on how to integrate multi-benefit recharge projects into your GSP, refer to the "Multi-Benefit Recharge Project Methodology Guidance Document"[13].

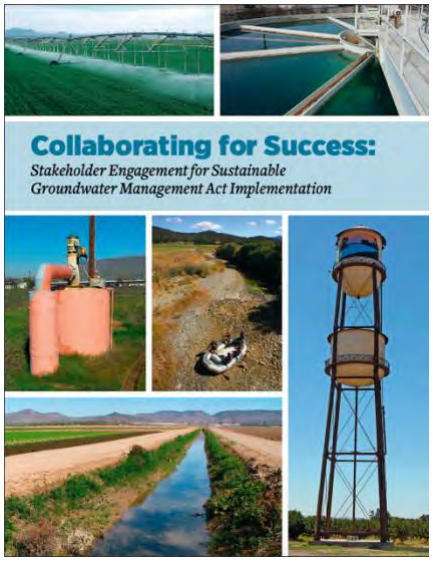
- Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.

- Ensure that public notice and avenue for stakeholder engagement is provided before undertaking all proposed management actions.

[13] The Nature Conservancy. 2021. Multi-Benefit Recharge Project Methodology for Inclusion in Groundwater Sustainability Plans. Sacramento. Available at: https://groundwaterresourcehub.org/sgma-tools/multi-benefit-recharge-project-methodology-guidance/

Attachment B
SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users

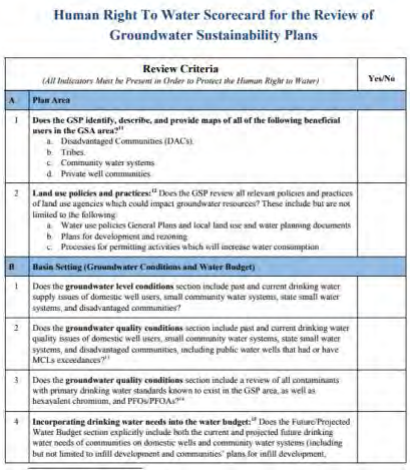
Stakeholder Engagement and Outreach



Clean Water Action, Community Water Center and Union of Concerned Scientists developed a guidance document called Collaborating for success: Stakeholder engagement for Sustainable Groundwater Management Act Implementation. It provides details on how to conduct targeted and broad outreach and engagement during Groundwater Sustainability Plan (GSP) development and implementation. Conducting a targeted outreach involves:

- Developing a robust Stakeholder Communication and Engagement plan that includes outreach at frequented locations (schools, farmers markets, religious settings, events) across the plan area to increase the involvement and participation of disadvantaged communities, drinking water users and the environmental stakeholders.
- Providing translation services during meetings and technical assistance to enable easy participation for non-English speaking stakeholders.
- GSP should adequately describe the process for requesting input from beneficial users and provide details on how input is incorporated into the GSP.

The Human Right to Water

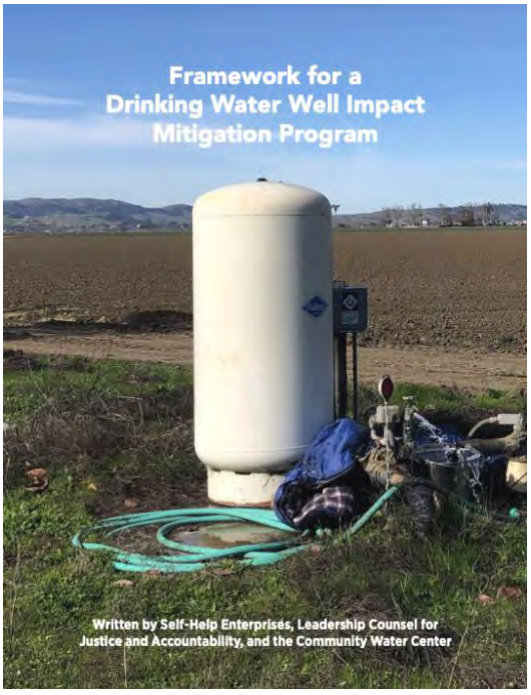


Human Right To Water Scorecard for the Review of Groundwater Sustainability Plans

	Review Criteria *(All Indicators Must be Present in Order to Protect the Human Right to Water)*	Yes/No
A	**Plan Area**	
1	**Does the GSP identify, describe, and provide maps of all of the following beneficial users in the GSA area?**[43] a. Disadvantaged Communities (DACs). b. Tribes. c. Community water systems. d. Private well communities.	
2	**Land use policies and practices:**[44] Does the GSP review all relevant policies and practices of land use agencies which could impact groundwater resources? These include but are not limited to the following: a. Water use policies General Plans and local land use and water planning documents b. Plans for development and rezoning. c. Processes for permitting activities which will increase water consumption.	
B	**Basin Setting (Groundwater Conditions and Water Budget)**	
1	Does the **groundwater level conditions** section include past and current drinking water supply issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities?	
2	Does the **groundwater quality conditions** section include past and current drinking water quality issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities, including public water wells that had or have MCLs exceedances?[45]	
3	Does the **groundwater quality conditions** section include a review of all contaminants with primary drinking water standards known to exist in the GSP area, as well as hexavalent chromium, and PFOs/PFOAs?[46]	
4	**Incorporating drinking water needs into the water budget:**[47] Does the Future/Projected Water Budget section explicitly include both the current and projected future drinking water needs of communities on domestic wells and community water systems (including but not limited to infill development and communities' plans for infill development,	

The Human Right to Water Scorecard was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid Groundwater Sustainability Agencies (GSAs) in prioritizing drinking water needs in SGMA. The scorecard identifies elements that must exist in GSPs to adequately protect the Human Right to Drinking water.

Drinking Water Well Impact Mitigation Framework



The Drinking Water Well Impact Mitigation Framework was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid GSAs in the development and implementation of their GSPs. The framework provides a clear roadmap for how a GSA can best structure its data gathering, monitoring network and management actions to proactively monitor and protect drinking water wells and mitigate impacts should they occur.

Groundwater Resource Hub

The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at GroundwaterResourceHub.org. The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Rooting Depth Database

The Plant Rooting Depth Database provides information that can help assess whether groundwater-dependent vegetation are accessing groundwater. Actual rooting depths will depend on the plant species and site-specific conditions, such as soil type and

availability of other water sources. Site-specific knowledge of depth to groundwater combined with rooting depths will help provide an understanding of the potential groundwater levels are needed to sustain GDEs.

How to use the database

The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NC Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes[1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet. However, it is important to note that deeper thresholds are necessary for other plants that have reported maximum root depths that exceed the averaged 30 feet threshold, such as valley oak (*Quercus lobata*), Euphrates poplar (*Populus euphratica*), salt cedar (*Tamarix spp.*), and shadescale (*Atriplex confertifolia*). The Nature Conservancy advises that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to groundwater threshold of 80 feet should be used instead of the 30 ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

The Plant Rooting Depth Database is an Excel workbook composed of four worksheets:

1. California phreatophyte rooting depth data (included in the NC Dataset)
2. Global phreatophyte rooting depth data
3. Metadata
4. References

How the database was compiled

The Plant Rooting Depth Database is a compilation of rooting depth information for the groundwater-dependent plant species identified in the NC Dataset. Rooting depth data were compiled from published scientific literature and expert opinion through a crowdsourcing campaign. As more information becomes available, the database of rooting depths will be updated. Please Contact Us if you have additional rooting depth data for California phreatophytes.

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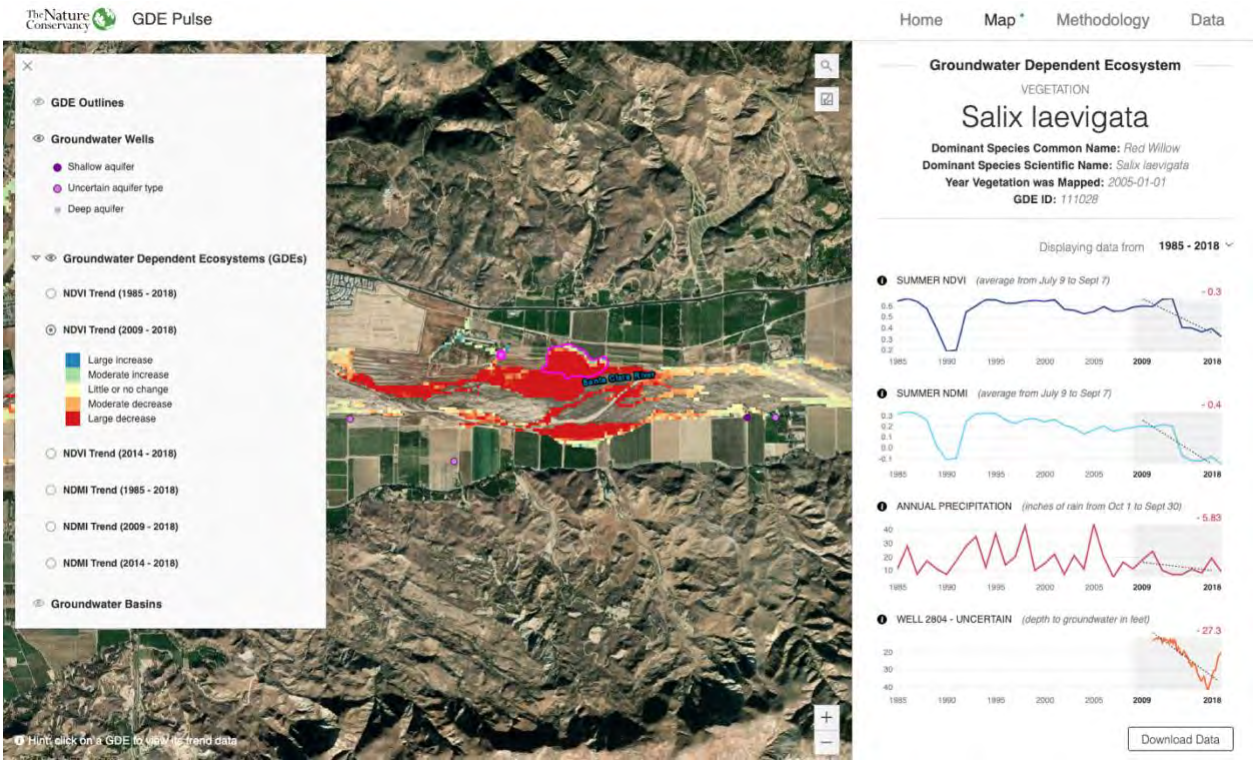
[1] Canadell, J., Jackson, R.B., Ehleringer, J.B. et al. 1996. Maximum rooting depth of vegetation types at the global scale. Oecologia 108, 583–595. https://doi.org/10.1007/BF00329030

GDE Pulse



GDE Pulse is a free online tool that allows Groundwater Sustainability Agencies to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data. Remote sensing data from satellites has been used to monitor the health of vegetation all over the planet. GDE pulse has compiled 35 years of satellite imagery from NASA's Landsat mission for every polygon in the Natural Communities Commonly Associated with Groundwater Dataset. The following datasets are available for downloading:

Normalized Difference Vegetation Index (NDVI) is a satellite-derived index that represents the greenness of vegetation. Healthy green vegetation tends to have a higher NDVI, while dead leaves have a lower NDVI. We calculated the average NDVI during the driest part of the year (July - Sept) to estimate vegetation health when the plants are most likely dependent on groundwater.

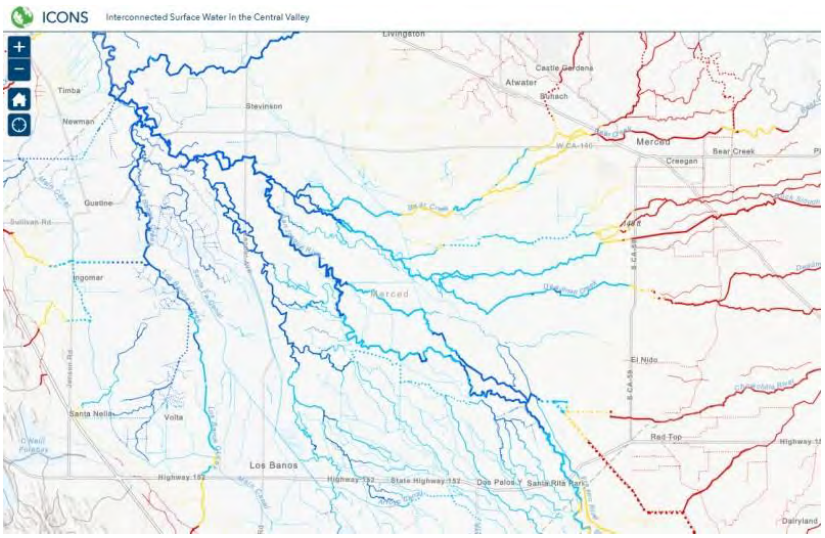
Normalized Difference Moisture Index (NDMI) is a satellite-derived index that represents water content in vegetation. NDMI is derived from the Near-Infrared (NIR) and Short-Wave Infrared (SWIR) channels. Vegetation with adequate access to water tends to have higher NDMI, while vegetation that is water stressed tends to have lower NDMI. We calculated the average NDVI during the driest part of the year (July–September) to estimate vegetation health when the plants are most likely dependent on groundwater.

Annual Precipitation is the total precipitation for the water year (October 1st – September 30th) from the PRISM dataset. The amount of local precipitation can affect vegetation with more precipitation generally leading to higher NDVI and NDMI.

Depth to Groundwater measurements provide an indication of the groundwater levels and changes over time for the surrounding area. We used groundwater well measurements from nearby (<1km) wells to estimate the depth to groundwater below the GDE based on the average elevation of the GDE (using a digital elevation model) minus the measured groundwater surface elevation.

ICONOS Mapper

Interconnected Surface Water in the Central Valley



ICONS maps the likely presence of interconnected surface water (ISW) in the Central Valley using depth to groundwater data. Using data from 2011-2018, the ISW dataset represents the likely connection between surface water and groundwater for rivers and streams in California's Central Valley. It includes information on the mean, maximum, and minimum depth to groundwater for each stream segment over the years with available data, as well as the likely presence of ISW based on the minimum depth to groundwater. The Nature Conservancy developed this database, with guidance and input from expert academics, consultants, and state agencies.

We developed this dataset using groundwater elevation data available online from the California Department of Water Resources (DWR). DWR only provides this data for the Central Valley. For GSAs outside of the valley, who have groundwater well measurements, we recommend following our methods to determine likely ISW in your region. The Nature Conservancy's ISW dataset should be used as a first step in reviewing ISW and should be supplemented with local or more recent groundwater depth data.

Attachment C

Freshwater Species Located in the Santa Monica Basin

To assist in identifying the beneficial users of surface water necessary to assess the undesirable result "depletion of interconnected surface waters", Attachment C provides a list of freshwater species located in the Santa Monica Basin. To produce the freshwater species list, we used ArcGIS to select features within the California Freshwater Species Database version 2.0.9 within the basin boundary. This database contains information on ~4,000 vertebrates, macroinvertebrates and vascular plants that depend on fresh water for at least one stage of their life cycle. The methods used to compile the California Freshwater Species Database can be found in Howard et al. 2015[1]. The spatial database contains locality observations and/or distribution information from ~400 data sources. The database is housed in the California Department of Fish and Wildlife's BIOS[2] as well as on The Nature Conservancy's science website[3].

Scientific Name	Common Name	Legal Protected Status		
		Federal	State	Other
BIRDS				
Vireo bellii pusillus	Least Bell's Vireo	Endangered	Endangered	
Actitis macularius	Spotted Sandpiper			
Aechmophorus clarkii	Clark's Grebe			
Aechmophorus occidentalis	Western Grebe			
Agelaius tricolor	Tricolored Blackbird	Bird of Conservation Concern	Special Concern	BSSC - First priority
Aix sponsa	Wood Duck			
Anas acuta	Northern Pintail			
Anas americana	American Wigeon			
Anas clypeata	Northern Shoveler			
Anas crecca	Green-winged Teal			
Anas cyanoptera	Cinnamon Teal			
Anas discors	Blue-winged Teal			
Anas platyrhynchos	Mallard			
Anas strepera	Gadwall			
Anser albifrons	Greater White-fronted Goose			
Ardea alba	Great Egret			
Ardea herodias	Great Blue Heron			
Aythya affinis	Lesser Scaup			
Aythya americana	Redhead		Special Concern	BSSC - Third priority

[1] Howard, J.K. et al. 2015. Patterns of Freshwater Species Richness, Endemism, and Vulnerability in California. PLoSONE, 11(7). Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130710

[2] California Department of Fish and Wildlife BIOS: https://www.wildlife.ca.gov/data/BIOS

[3] Science for Conservation: https://www.scienceforconservation.org/products/california-freshwater-species-database

Aythya collaris	Ring-necked Duck			
Aythya marila	Greater Scaup			
Aythya valisineria	Canvasback		Special	
Botaurus lentiginosus	American Bittern			
Bucephala albeola	Bufflehead			
Bucephala clangula	Common Goldeneye			
Butorides virescens	Green Heron			
Calidris alpina	Dunlin			
Calidris mauri	Western Sandpiper			
Calidris minutilla	Least Sandpiper			
Chen caerulescens	Snow Goose			
Chen rossii	Ross's Goose			
Chroicocephalus philadelphia	Bonaparte's Gull			
Cistothorus palustris palustris	Marsh Wren			
Cygnus columbianus	Tundra Swan			
Cypseloides niger	Black Swift	Bird of Conservation Concern	Special Concern	BSSC - Third priority
Egretta thula	Snowy Egret			
Empidonax traillii	Willow Flycatcher	Bird of Conservation Concern	Endangered	
Fulica americana	American Coot			
Gallinago delicata	Wilson's Snipe			
Gallinula chloropus	Common Moorhen			
Haliaeetus leucocephalus	Bald Eagle	Bird of Conservation Concern	Endangered	
Himantopus mexicanus	Black-necked Stilt			
Histrionicus histrionicus	Harlequin Duck		Special Concern	BSSC - Second priority
Icteria virens	Yellow-breasted Chat		Special Concern	BSSC - Third priority
Ixobrychus exilis hesperis	Western Least Bittern		Special Concern	BSSC - Second priority
Limnodromus scolopaceus	Long-billed Dowitcher			
Lophodytes cucullatus	Hooded Merganser			
Megaceryle alcyon	Belted Kingfisher			
Mergus merganser	Common Merganser			

Mergus serrator	Red-breasted Merganser			
Numenius americanus	Long-billed Curlew			
Numenius phaeopus	Whimbrel			
Nycticorax nycticorax	Black-crowned Night-Heron			
Oxyura jamaicensis	Ruddy Duck			
Pelecanus erythrorhynchos	American White Pelican		Special Concern	BSSC - First priority
Phalacrocorax auritus	Double-crested Cormorant			
Phalaropus tricolor	Wilson's Phalarope			
Piranga rubra	Summer Tanager		Special Concern	BSSC - First priority
Plegadis chihi	White-faced Ibis		Watch list	
Pluvialis squatarola	Black-bellied Plover			
Podiceps nigricollis	Eared Grebe			
Podilymbus podiceps	Pied-billed Grebe			
Porzana carolina	Sora			
Rallus limicola	Virginia Rail			
Recurvirostra americana	American Avocet			
Riparia riparia	Bank Swallow		Threatened	
Rynchops niger	Black Skimmer			
Setophaga petechia	Yellow Warbler			BSSC - Second priority
Tachycineta bicolor	Tree Swallow			
Tringa melanoleuca	Greater Yellowlegs			
Tringa semipalmata	Willet			
Tringa solitaria	Solitary Sandpiper			
Vireo bellii	Bell's Vireo			
Xanthocephalus xanthocephalus	Yellow-headed Blackbird		Special Concern	BSSC - Third priority
CRUSTACEANS				
Americorophium spp.	Americorophium spp.			
Cyprididae fam.	Cyprididae fam.			
Hyalella spp.	Hyalella spp.			
Stygobromus spp.	Stygobromus spp.			
HERPS				
Actinemys marmorata marmorata	Western Pond Turtle		Special Concern	ARSSC

Anaxyrus boreas boreas	Boreal Toad			
Pseudacris cadaverina	California Treefrog			ARSSC
Rana draytonii	California Red-legged Frog	Threatened	Special Concern	ARSSC
Spea hammondii	Western Spadefoot	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Taricha torosa	Coast Range Newt		Special Concern	ARSSC
Thamnophis hammondii hammondii	Two-striped Gartersnake		Special Concern	ARSSC
Thamnophis sirtalis sirtalis	Common Gartersnake			
Pseudacris regilla	Northern Pacific Chorus Frog			
Rana aurora	Northern Red-legged Frog		Special Concern	ARSSC
INSECTS & OTHER INVERTS				
Aeshna spp.	Aeshna spp.			
Agabus spp.	Agabus spp.			
Anax junius	Common Green Darner			
Apedilum spp.	Apedilum spp.			
Argia spp.	Argia spp.			
Argia vivida	Vivid Dancer			
Baetis adonis	A Mayfly			
Baetis spp.	Baetis spp.			
Brillia spp.	Brillia spp.			
Callibaetis spp.	Callibaetis spp.			
Chironomidae fam.	Chironomidae fam.			
Conchapelopia spp.	Conchapelopia spp.			
Corisella inscripta				Not on any status lists
Corixidae fam.	Corixidae fam.			
Cricotopus bicinctus				Not on any status lists
Cricotopus spp.	Cricotopus spp.			
Cricotopus trifascia				Not on any status lists
Dicrotendipes spp.	Dicrotendipes spp.			
Dytiscidae fam.	Dytiscidae fam.			
Enallagma carunculatum	Tule Bluet			
Enallagma civile	Familiar Bluet			
Eukiefferiella spp.	Eukiefferiella spp.			
Fallceon quilleri	A Mayfly			
Hydropsyche spp.	Hydropsyche spp.			
Hydroptila spp.	Hydroptila spp.			

Hydroptilidae fam.	Hydroptilidae fam.			
Ischnura cervula	Pacific Forktail			
Ischnura denticollis	Black-fronted Forktail			
Labrundinia spp.	Labrundinia spp.			
Lepidostoma spp.	Lepidostoma spp.			
Limnophyes spp.	Limnophyes spp.			
Meringodixa chalonensis				Not on any status lists
Micropsectra spp.	Micropsectra spp.			
Microtendipes spp.	Microtendipes spp.			
Nanocladius spp.	Nanocladius spp.			
Pantala hymenaea	Spot-winged Glider			
Paracymus spp.	Paracymus spp.			
Paraleptophlebia spp.	Paraleptophlebia spp.			
Parametriocnemus spp.	Parametriocnemus spp.			
Peltodytes spp.	Peltodytes spp.			
Pentaneura spp.	Pentaneura spp.			
Polypedilum spp.	Polypedilum spp.			
Pseudochironomus spp.	Pseudochironomus spp.			
Psychodidae fam.	Psychodidae fam.			
Rheotanytarsus spp.	Rheotanytarsus spp.			
Simulium spp.	Simulium spp.			
Sperchon spp.	Sperchon spp.			
Tanytarsus spp.	Tanytarsus spp.			
Thienemannimyia spp.	Thienemannimyia spp.			
Tinodes spp.	Tinodes spp.			
MOLLUSKS				
Assiminea californica				Not on any status lists
Gyraulus spp.	Gyraulus spp.			
Helisoma spp.	Helisoma spp.			
Lymnaea spp.	Lymnaea spp.			
Menetus spp.	Menetus spp.			
Physa spp.	Physa spp.			
Pisidium spp.	Pisidium spp.			
Pyrgulopsis spp.	Pyrgulopsis spp.			
PLANTS				
Anemopsis californica	Yerba Mansa			
Arundo donax	NA			
Baccharis salicina				Not on any status lists
Batis maritima	Saltwort			

Bolboschoenus maritimus paludosus	NA			Not on any status lists
Bolboschoenus robustus				Not on any status lists
Cicuta douglasii	Western Water-hemlock			
Cotula coronopifolia	NA			
Cyperus involucratus	NA			
Eleocharis macrostachya	Creeping Spikerush			
Eleocharis montevidensis	Sand Spikerush			
Euthamia occidentalis	Western Fragrant Goldenrod			
Helenium puberulum	Rosilla			
Jaumea carnosa	Fleshy Jaumea			
Juncus acutus leopoldii	Spiny Rush		Special	CRPR - 4.2
Limonium californicum	California Sea-lavender			
Mimulus guttatus	Common Large Monkeyflower			
Oenanthe sarmentosa	Water-parsley			
Phacelia distans	NA			
Platanus racemosa	California Sycamore			
Rumex fueginus				Not on any status lists
Rumex salicifolius salicifolius	Willow Dock			
Ruppia maritima	Ditch-grass			
Sagittaria montevidensis calycina				Not on any status lists
Salicornia bigelovii	Dwarf Glasswort			
Salix exigua exigua	Narrowleaf Willow			
Salix gooddingii	Goodding's Willow			
Salix laevigata	Polished Willow			
Salix lasiolepis lasiolepis	Arroyo Willow			
Schoenoplectus americanus	Three-square Bulrush			
Schoenoplectus californicus	California Bulrush			
Sidalcea neomexicana	Rocky Mountain Checker-mallow		Special	CRPR - 2B.2
Sinapis alba	NA			

Stachys ajugoides	Bugle Hedge-nettle			
Suaeda calceoliformis	American Sea-blite			
Suaeda californica	California Sea-blite	Endangered	Special	CRPR - 1B.1
Suaeda esteroa	Estuary Suaeda		Special	CRPR - 1B.2
Triglochin maritima	Common Bog Arrow-grass			
Typha domingensis	Southern Cattail			
Typha latifolia	Broadleaf Cattail			

Attachment D

The Nature Conservancy

July 2019

IDENTIFYING GDEs UNDER SGMA
Best Practices for using the NC Dataset

The Sustainable Groundwater Management Act (SGMA) requires that groundwater dependent ecosystems (GDEs) be identified in Groundwater Sustainability Plans (GSPs). As a starting point, the Department of Water Resources (DWR) is providing the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) online[1] to help Groundwater Sustainability Agencies (GSAs), consultants, and stakeholders identify GDEs within individual groundwater basins. To apply information from the NC Dataset to local areas, GSAs should combine it with the best available science on local hydrology, geology, and groundwater levels to verify whether polygons in the NC dataset are likely supported by groundwater in an aquifer (Figure 1)[2]. This document highlights six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater.

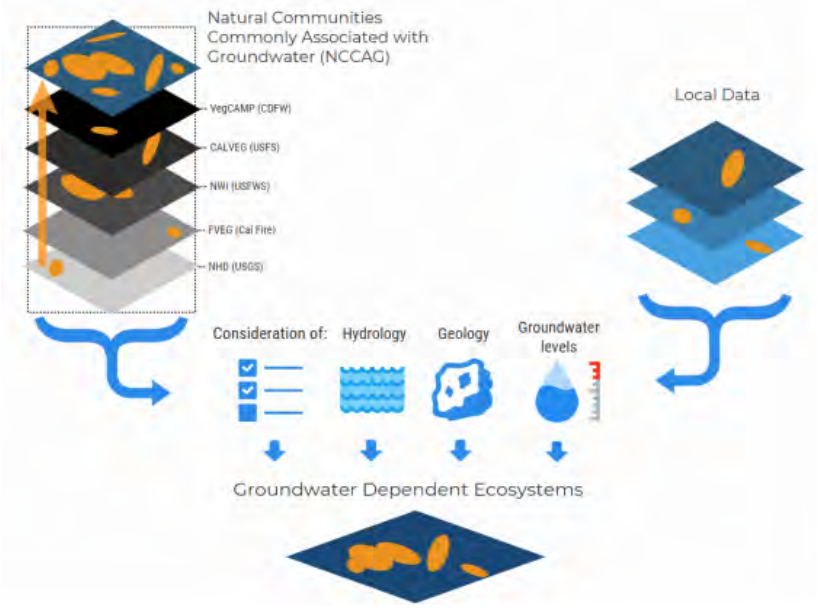


Figure 1. Considerations for GDE identification.
Source: DWR[2]

[1] NC Dataset Online Viewer: https://gis.water.ca.gov/app/NCDatasetViewer/
[2] California Department of Water Resources (DWR). 2018. Summary of the "Natural Communities Commonly Associated with Groundwater" Dataset and Online Web Viewer. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf

The NC Dataset identifies vegetation and wetland features that are good indicators of a GDE. The dataset is comprised of 48 publicly available state and federal datasets that map vegetation, wetlands, springs, and seeps commonly associated with groundwater in California[3]. It was developed through a collaboration between DWR, the Department of Fish and Wildlife, and The Nature Conservancy (TNC). TNC has also provided detailed guidance on identifying GDEs from the NC dataset[4] on the Groundwater Resource Hub[5], a website dedicated to GDEs.

BEST PRACTICE #1. Establishing a Connection to Groundwater

Groundwater basins can be comprised of one continuous aquifer (Figure 2a) or multiple aquifers stacked on top of each other (Figure 2b). In unconfined aquifers (Figure 2a), using the depth-to-groundwater and the rooting depth of the vegetation is a reasonable method to infer groundwater dependence for GDEs. If groundwater is well below the rooting (and capillary) zone of the plants and any wetland features, the ecosystem is considered disconnected and groundwater management is not likely to affect the ecosystem (Figure 2d). However, it is important to consider local conditions (e.g., soil type, groundwater flow gradients, and aquifer parameters) and to review groundwater depth data from multiple seasons and water year types (wet and dry) because intermittent periods of high groundwater levels can replenish perched clay lenses that serve as the water source for GDEs (Figure 2c). Maintaining these natural groundwater fluctuations are important to sustaining GDE health.

Basins with a stacked series of aquifers (Figure 2b) may have varying levels of pumping across aquifers in the basin, depending on the production capacity or water quality associated with each aquifer. If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water. The goal of SGMA is to sustainably manage groundwater resources for current and future social, economic, and environmental benefits. While groundwater pumping may not be currently occurring in a shallower aquifer, use of this water may become more appealing and economically viable in future years as pumping restrictions are placed on the deeper production aquifers in the basin to meet the sustainable yield and criteria. Thus, identifying GDEs in the basin should done irrespective to the amount of current pumping occurring in a particular aquifer, so that future impacts on GDEs due to new production can be avoided. A good rule of thumb to follow is: *if groundwater can be pumped from a well - it's an aquifer*.

[3] For more details on the mapping methods, refer to: Klausmeyer, K., J. Howard, T. Keeler-Wolf, K. Davis-Fadtke, R. Hull, A. Lyons. 2018. Mapping Indicators of Groundwater Dependent Ecosystems in California: Methods Report. San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/iGDE_data_paper_20180423.pdf
[4] "Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans" is available at: https://groundwaterresourcehub.org/gde-tools/gsp-guidance-document/
[5] The Groundwater Resource Hub: www.GroundwaterResourceHub.org

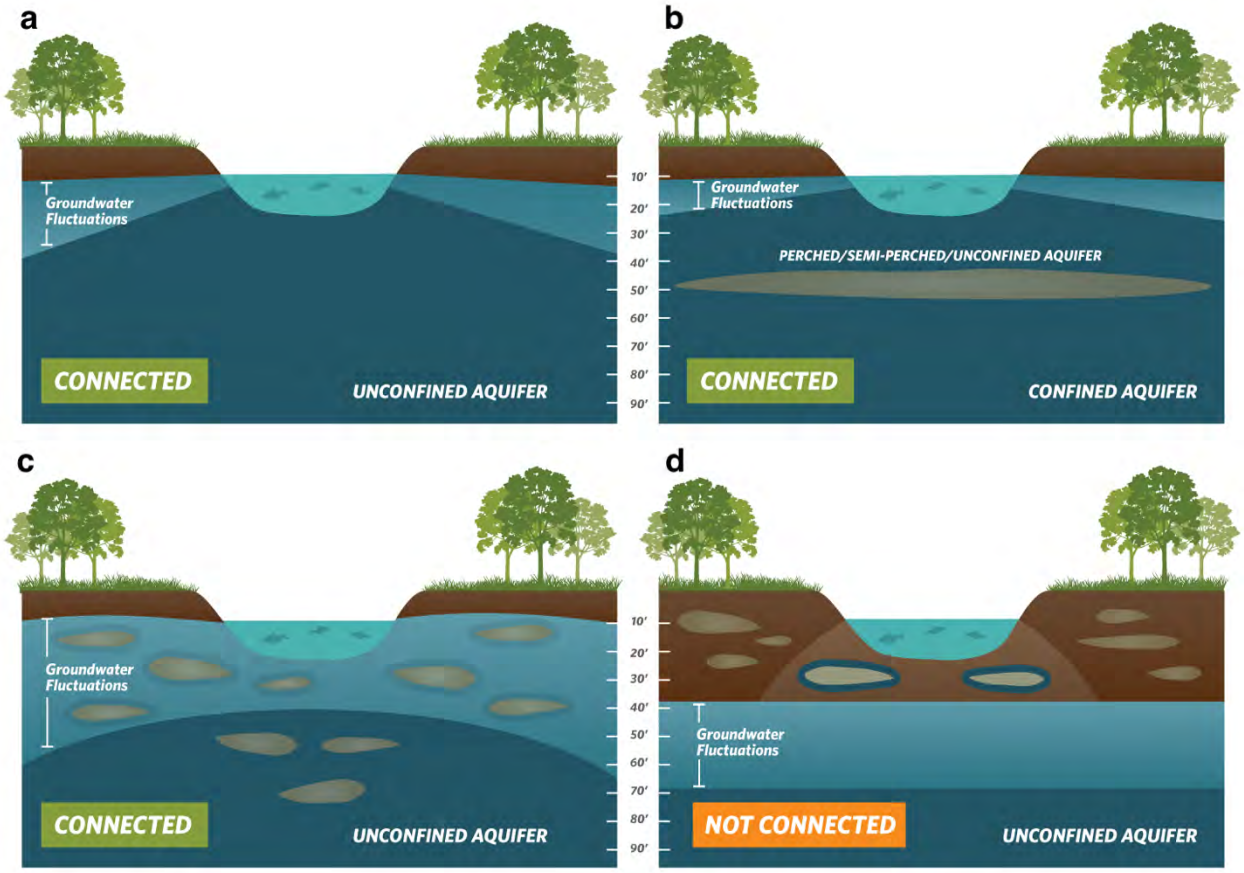


Figure 2. Confirming whether an ecosystem is connected to groundwater. Top: (a) Under the ecosystem is an unconfined aquifer with depth-to-groundwater fluctuating seasonally and interannually within 30 feet from land surface. (b) Depth-to-groundwater in the shallow aquifer is connected to overlying ecosystem. Pumping predominately occurs in the confined aquifer, but pumping is possible in the shallow aquifer. Bottom: (c) Depth-to-groundwater fluctuations are seasonally and interannually large, however, clay layers in the near surface prolong the ecosystem's connection to groundwater. (d) Groundwater is disconnected from surface water, and any water in the vadose (unsaturated) zone is due to direct recharge from precipitation and indirect recharge under the surface water feature. These areas are not connected to groundwater and typically support species that do not require access to groundwater to survive.

BEST PRACTICE #2. Characterize Seasonal and Interannual Groundwater Conditions

SGMA requires GSAs to describe current and historical groundwater conditions when identifying GDEs [23 CCR §354.16(g)]. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions (e.g., depth-to-groundwater) is inadequate because managing groundwater conditions with data from one time point fails to capture the seasonal and interannual variability typical of California's climate. DWR's Best Management Practices document on water budgets[6] recommends using 10 years of water supply and water budget information to describe how historical conditions have impacted the operation of the basin within sustainable yield, implying that a baseline[7] could be determined based on data between 2005 and 2015. Using this or a similar time period, depending on data availability, is recommended for determining the depth-to-groundwater.

GDEs depend on groundwater levels being close enough to the land surface to interconnect with surface water systems or plant rooting networks. The most practical approach[8] for a GSA to assess whether polygons in the NC dataset are connected to groundwater is to rely on groundwater elevation data. As detailed in TNC's GDE guidance document[4], one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5).

Groundwater levels fluctuate over time and space due to California's Mediterranean climate (dry summers and wet winters), climate change (flood and drought years), and subsurface heterogeneity in the subsurface (Figure 3). Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. While depth-to-groundwater levels within 30 feet[4] of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. Utilizing groundwater data from one point in time can misrepresent groundwater levels required by GDEs, and inadvertently result in adverse impacts to the GDEs. Time series data on groundwater elevations and depths are available on the SGMA Data Viewer[9]. However, if insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons in the GSP until data gaps are reconciled in the monitoring network (see Best Practice #6).

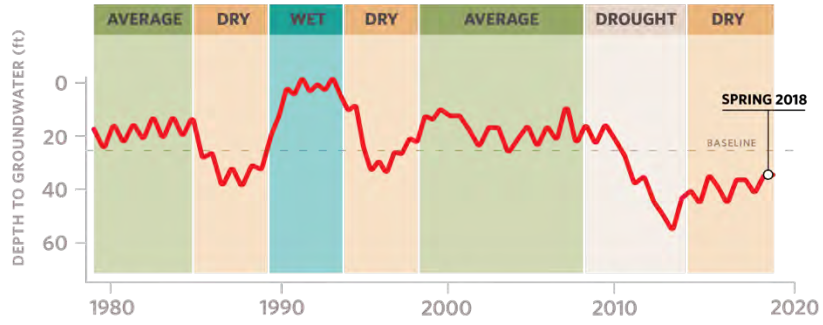


Figure 3. Example seasonality and interannual variability in depth-to-groundwater over time. Selecting one point in time, such as Spring 2018, to characterize groundwater conditions in GDEs fails to capture what groundwater conditions are necessary to maintain the ecosystem status into the future so adverse impacts are avoided.

[6] DWR. 2016. Water Budget Best Management Practice. Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Water_Budget_Final_2016-12-23.pdf

[7] Baseline is defined under the GSP regulations as "historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin." [23 CCR §351(e)]

[8] Groundwater reliance can also be confirmed via stable isotope analysis and geophysical surveys. For more information see The GDE Assessment Toolbox (Appendix IV, GDE Guidance Document for GSPs[4]).

[9] SGMA Data Viewer: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer

BEST PRACTICE #3. Ecosystems Often Rely on Both Groundwater and Surface Water

GDEs are plants and animals that rely on groundwater for all or some of its water needs, and thus can be supported by multiple water sources. The presence of non-groundwater sources (e.g., surface water, soil moisture in the vadose zone, applied water, treated wastewater effluent, urban stormwater, irrigated return flow) within and around a GDE does not preclude the possibility that it is supported by groundwater, too. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" [23 CCR §351(m)]. Hence, depth-to-groundwater data should be used to identify whether NC polygons are supported by groundwater and should be considered GDEs. In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals[10], which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water.

GSAs are only responsible for impacts to GDEs resulting from groundwater conditions in the basin, so if adverse impacts to GDEs result from the diversion of applied water, treated wastewater, or irrigation return flow away from the GDE, then those impacts will be evaluated by other permitting requirements (e.g., CEQA) and may not be the responsibility of the GSA. However, if adverse impacts occur to the GDE due to changing groundwater conditions resulting from pumping or groundwater management activities, then the GSA would be responsible (Figure 4).

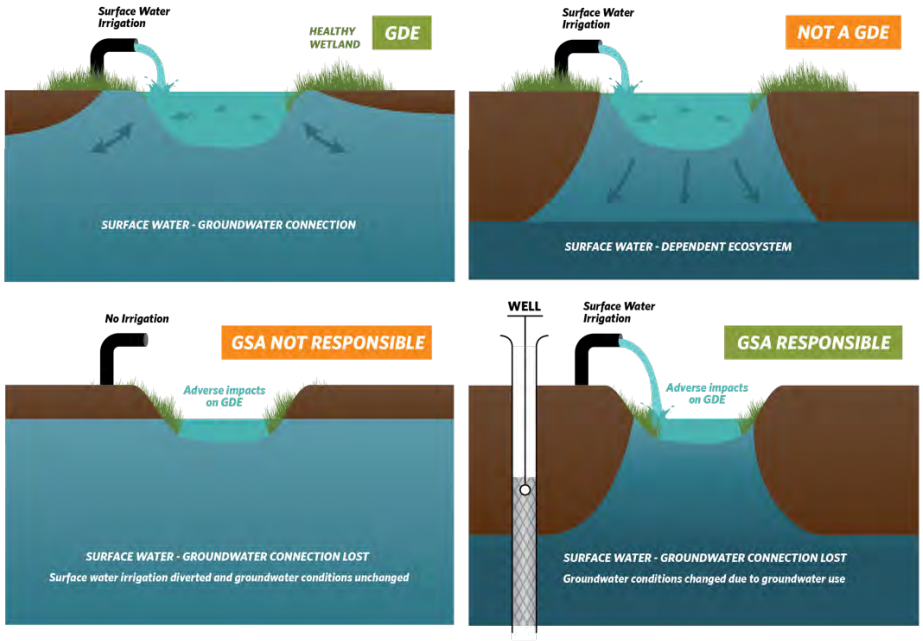


Figure 4. Ecosystems often depend on multiple sources of water. Top: (Left) Surface water and groundwater are interconnected, meaning that the GDE is supported by both groundwater and surface water. (Right) Ecosystems that are only reliant on non-groundwater sources are not groundwater-dependent. Bottom: (Left) An ecosystem that was once dependent on an interconnected surface water, but loses access to groundwater solely due to surface water diversions may not be the GSA's responsibility. (Right) Groundwater dependent ecosystems once dependent on an interconnected surface water system, but loses that access due to groundwater pumping is the GSA's responsibility.

[10] For a list of environmental beneficial users of surface water by basin, visit: https://groundwaterresourcehub.org/gde-tools/environmental-surface-water-beneficiaries/

BEST PRACTICE #4. Select Representative Groundwater Wells

Identifying GDEs in a basin requires that groundwater conditions are characterized to confirm whether polygons in the NC dataset are supported by the underlying aquifer. To do this, proximate groundwater wells should be identified to characterize groundwater conditions (Figure 5). When selecting representative wells, it is particularly important to consider the subsurface heterogeneity around NC polygons, especially near surface water features where groundwater and surface water interactions occur around heterogeneous stratigraphic units or aquitards formed by fluvial deposits. The following selection criteria can help ensure groundwater levels are representative of conditions within the GDE area:

- Choose wells that are within 5 kilometers (3.1 miles) of each NC Dataset polygons because they are more likely to reflect the local conditions relevant to the ecosystem. If there are no wells within 5km of the center of a NC dataset polygon, then there is insufficient information to remove the polygon based on groundwater depth. Instead, it should be retained as a potential GDE until there are sufficient data to determine whether or not the NC Dataset polygon is supported by groundwater.

- Choose wells that are screened within the surficial unconfined aquifer and capable of measuring the true water table.

- Avoid relying on wells that have insufficient information on the screened well depth interval for excluding GDEs because they could be providing data on the wrong aquifer. This type of well data should not be used to remove any NC polygons.

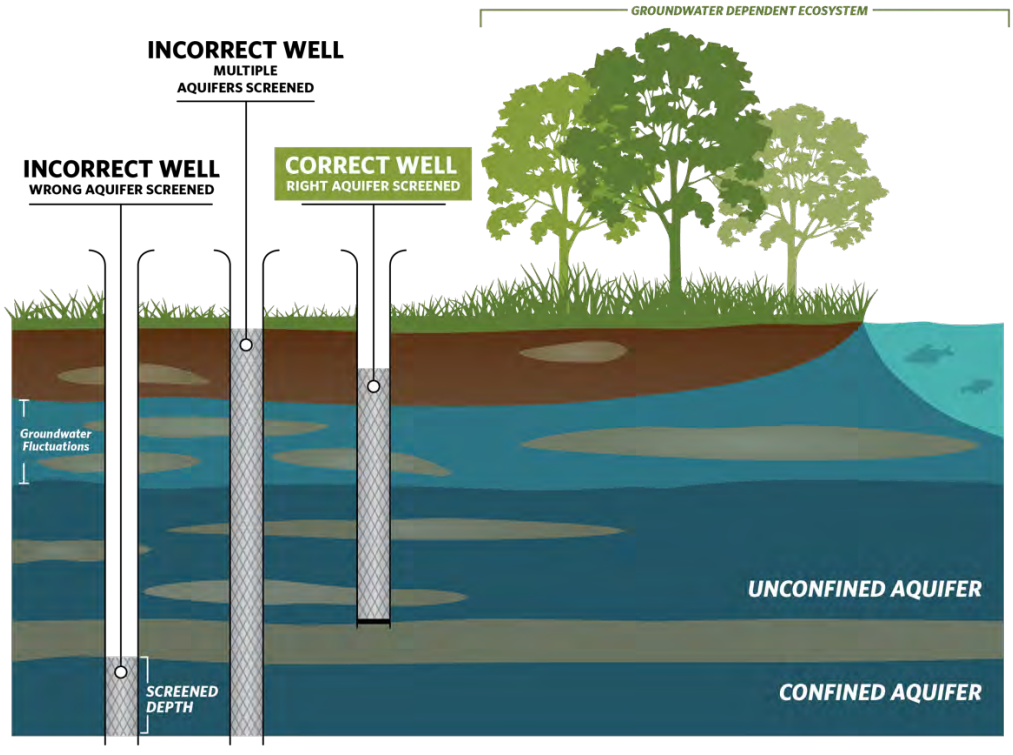


Figure 5. Selecting representative wells to characterize groundwater conditions near GDEs.

BEST PRACTICE #5. Contouring Groundwater Elevations

The common practice to contour depth-to-groundwater over a large area by interpolating measurements at monitoring wells is unsuitable for assessing whether an ecosystem is supported by groundwater. This practice causes errors when the land surface contains features like stream and wetland depressions because it assumes the land surface is constant across the landscape and depth-to-groundwater is constant below these low-lying areas (Figure 6a). A more accurate approach is to interpolate groundwater elevations at monitoring wells to get groundwater elevation contours across the landscape. This layer can then be subtracted from land surface elevations from a Digital Elevation Model (DEM)[11] to estimate depth-to-groundwater contours across the landscape (Figure b; Figure 7). This will provide a much more accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.

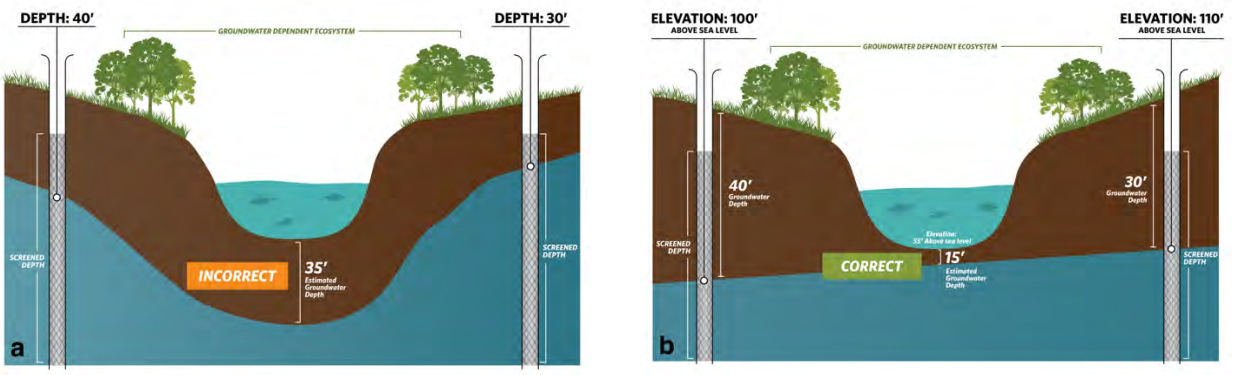


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. (b) Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

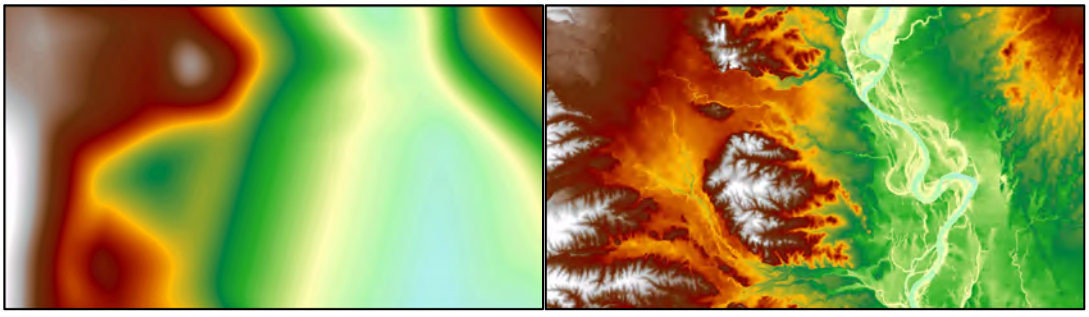


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. (Right) Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

[11] USGS Digital Elevation Model data products are described at: https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services and can be downloaded at: https://iewer.nationalmap.gov/basic/

BEST PRACTICE #6. Best Available Science

Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decisions, and using the data collected through monitoring programs to revise decisions in the future. In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network. Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.

KEY DEFINITIONS

Groundwater basin is an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom. *23 CCR §341(g)(1)*

Groundwater dependent ecosystem (GDE) are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. *23 CCR §351(m)*

Interconnected surface water (ISW) surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted. *23 CCR §351(o)*

Principal aquifers are aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems. *23 CCR §351(aa)*

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and waters on which all life depends*. To support successful SGMA implementation that meets the future needs of people, the economy, and the environment, TNC has developed tools and resources (www.groundwaterresourcehub.org) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

September 28, 2021
Comments on the Draft GSP, Santa Monica Sub Basin
Submitted by: Margot Griswold

The following lack of specific data and analysis in the Draft GSP includes:

1. The Draft GSP relies on inaccurate information and has large, easily remedied data gaps that would provide information for prudent, adequate scientific assessment to quantify the groundwater conditions that are not currently dealt with in the Plan to provide an objective way to determine whether the Subbasin is being managed sustainably in accordance with SGMA.

2. The sustainable management criteria and goal to stop seawater intrusion and maintaining protective groundwater levels are not sufficiently justified and explained.

3. The Draft GSP does not provide data and/or information to increase freshwater storage potential of the Ballona, Bellflower and Silverado aquifers/aquitard or to prevent negative consequences of seawater intrusion upon the Public Trust lands and water.

4. The Draft GSP has data gaps and does not demonstrate a commitment to eliminate those data gaps. Specifically, the Draft GSP has data gaps for depletion of interconnected surface water and groundwater that is critical to understanding the Ballona Wetlands Ecological Reserve, a Groundwater Dependent Ecosystem. The Draft plan needs this data on groundwater and groundwater pumping to obtain a better understanding of the hydraulic connectivity of surface water and groundwater of the Ballona Wetlands and adjacent area.

5. The Draft GSP does not adequately address the Groundwater Dependent Ecosystem (GDE) at the Ballona Wetlands Ecological Reserve. Only 40 acres are identified over the area of approximately 600 acres as GDE. The entire reserve must be considered as a GDE first, because there are many more acres categorized as wetlands than 40, and that rely on near surface groundwater and surface water that percolates into the ground from rainwater; and second, all the wildlife species that use the entire Ballona Wetlands Ecological Reserve, including endangered, threatened, and rare species, constitute part of the GDE. These wildlife may prey on species that use marsh vegetation while spending other parts of their life in upland buffer vegetation surrounding the wetlands. Therefore, the underestimation of the acreage of GDE in the Ballona Wetlands does not allow adequate planning to protect the Ballona Wetlands Ecological Reserve, a Groundwater Dependent Ecosystem.

6. The Draft GSP does not provide a detailed explanation of how the varied interests of groundwater uses and users in the Subbasin were considered in developing the sustainable management criteria and how those interests, including the pumping, draining and diversion of clean ground and surface water into the ocean and/or the Los Angeles Sanitation System can be remedied in order to protect the Ballona Wetlands Ecological Reserve (all public trust land and water) a Groundwater Dependent Ecosystem and/or the multiple freshwater aquifers of the Ballona area of the sub basin.

7. The Draft GSP does not adequately address the potential for seawater intrusion upon the adjacent West Basin, which currently utilizes roughly 3/4 of its funding to inject freshwater to offset seawater intrusion into this drinking water basin. The Draft GSP cites the CDFW Plan for the Ballona Ecological Reserve, but it does not address the potential for saltwater intrusion into the aquifers from the removal of over 3 million cubic yards of soils to convert Ballona Wetlands into a saltwater bay as described in the CDFW Final EIR for the Ballona Wetlands.

8. The Ballona Wetlands Ecological Reserve, public trust land and water, are also registered as a Sacred Site by John Tommy Rosas, of Tongva Ancestral Territorial Tribal Nation (TATTN). The TATTN issues are not addressed in the Draft GSP and need to be included.

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September 28, 2021 *Delivered via email only*

Lisette A. Gold, D.Env.
Environmental Remediation Coordinator
City of Santa Monica
Public Works | Water Resources
(310) 458-8231 | lisette.gold@santamonica.gov

RE: Comments on Santa Monica Basin Draft GSP Report

Dear Dr. Gold,

My office represents Grassroots Coalition. Please accept these comments on the Draft Groundwater Sustainability Plan for the Santa Monica Basin. These comments are intended to supplement, not supersede any comments submitted directly by Grassroots Coalition and its members. The bolded text below indicates the section of the GSP report referred to in the comments.

INTRODUCTION Page 1-1 to 1-2.

Water quality in the Subbasin was degraded prior to 2015, the extent of degradation is well characterized, the City of Santa Monica is actively treating the groundwater under programs overseen by DDW, the RWQCB, and the SWRCB, and the degradation was not caused by groundwater production. Therefore, this GSP does not address undesirable results relating to water quality degradation.

The Introduction indicates that the GSP need not consider degradation of groundwater caused by sources prior to 2015. It fails to provide a legal citation to such statement. Grassroots Coalition disagrees that ongoing remediation efforts at Playa Vista is not having a significant impact on the adjacent Ballona Wetlands Ecological Reserve. In addition, there is an unknown quantity of water that is being extracted as part of Playa Vista's methane mitigation systems. The cumulative quantity of water that is being extracted from Playa Vista must be identified.

The extracted water is being treated to drinking water standards. Instead of using such water to benefit the Ballona Wetlands Ecologic Reserve, such water is either discharged into the sanitary sewer system, or it is discharged into the Ballona Freshwater Marsh, which is a clay lined open water pond, then discharged into the Ballona Channel and out to the Ocean. Such water should be permitted to recharge the aquifer, and aid in maintaining the Ballona Wetlands Ecological Reserve, a groundwater dependent ecosystem.

Thus, while perhaps the GSP need not consider existing contamination, it should and must consider ongoing extraction and treatment activities at Playa Vista. Such water could be instrumental in preventing or reversing other impacts, such as salt-water intrusion into the aquifers.

Sustainability Goals 1-2

Ensuring groundwater conditions in the Subbasin support sufficient seaward flow of fresh water to prevent significant and unreasonable seawater intrusion in the Silverado aquifers.

Grassroots Coalition objects to a sustainability goal of preventing significant and unreasonable seawater intrusion in the Silverado Aquifer, when, particularly near the water bearing zones do not appear to have separation. (See, F. Poland, A. A. Garret, and Allen Sinnott "Geology, Hydrology, and Chemical Character of Ground Waters in the Torrance-Santa Monica Area, California, Geological Water Supply Paper 1561 (1959) (hereinafter "Poland Report") As noted in the Poland Report:

> The complex structure of the San Pedro formation makes it difficult to trace the extent of hydraulic continuity, except were logs are closed spaced wells are available. However, the hydraulic continuity is known to be most free coastward from the Charnock fault, and is very poor to absent inland from the Overland Avenue fault.

(Poland Report at 199. See also, Poland Report at 50.) In addition, historically, drinking water has been extracted from shallow aquifers near Playa Del Rey. (Poland Report at 215.) The GSP also states that the Silverado and Ballona aquifers are connected in the Playa Vista area. (GSP Report 2.3.2.2, at 2-60.) Furthermore, the overlying Bellflower Aquifer is incredibly important to the Ballona Wetlands as a Groundwater Dependent Ecosystem (GDE). Contamination of the Bellflower Aquifer will likely not only contaminate the Ballona and Silverado Aquifer but potentially impacts the character of the low, mid and upper marsh habitat.

Thus, the sustainability goals should include protecting all freshwater aquifers from further saltwater intrusion. Fifty years in the future, the shallower aquifers may be critical to maintaining sufficient potable water to support the population in the Santa Monica subbasin and groundwater dependent ecosystems such as the Ballona Wetlands.

1.5 References

ACOE (Army Corps of Engineers). 1982. Ballona Creek and Tributaries, Los Angeles County Drainage Area, California. December.

Is this a map or a study? If it was a study, we were unable to locate such document in the appendices. Can you please insert links into the reference section for easier access to the relevant documents? It would also be useful to provide links to any citations throughout the GSP.

2.1.1.1.1 County/Municipal

Dredge material from the straightening of the channel and from the later development of Marina del Rey in the 1960s was deposited in the Ballona Wetlands, raising its elevation (CDFW 2019)

Grassroots Coalition disputes that dredge material was placed on Ballona Wetlands raising its elevation. First, the source of such information, the 2019 CDFW EIR on the Ballona Wetlands Restoration Plan, is of dubious quality and is the subject of at least five separate lawsuits based on its inadequacy as a CEQA document. CDFW's EIR does not provide supporting data for such comment and numerous documents supplied by Grassroots Coalition demonstrate that Marina del Rey dredged soils were not deposited on the private lands of the Howard Hughes estate. A comparison of photographs of Ballona Wetlands before the creation of Marina Del Rey, and shortly after Marina Del Rey was established does not support the contention that fill was placed on the private Hughes property, particularly since Area A contained active oil wells along its western edge, adjacent to the Marina Project.

The elevation of much of what is now contained in the Ballona Wetland Ecological Reserve does not appear to have been changed. The creation Ballona Channel did provide the soils for the Channel's levees, which on the north side to support access roadways on the former Playa Vista property and another roadway on the levee outside of Area A. But, this is clearly not 2.3 million cubic yards of material. Even the EIR, as poorly written as such document is, admits no fill was placed to the south of the Ballona Creek Channel. We have yet to see documents that support that fill was deposited to the north of Ballona Channel, from the creation of Marina del Rey. It should be noted that the area of BWER was private property in the 1960's owned, in fee, by the Hughes Corporation.

The Draft GSP needs to provide supportive data and information for conclusory statements and/or ensure that CDFW has supportive data. One would expect that there would be agreements available for public inspection before the government could deposit significant material on private property for a public. The documents submitted by Grassroots Coalition appears to contradict the contention that Marina del Rey dredge spoils were deposited on the Ballona Wetland Ecological Reserve. (Congressional House Document 389; T. Huffman 1986 EPA Report- mapping of Area A; Playa Vista Archaeology EIR 1990; Spence Historical Photography; LA City/County Beach Replenishment Program)

2.1.1.1.2 State

CDFW manages and maintains primary ownership of the Ballona Reserve, which is currently being restored, with a smaller interest owned by the California State Lands Commission (CDFW 2019)

There are two inaccuracies in this statement. First, the proposed plan, known as the Ballona Wetlands Restoration Project, is not restoration, and, secondly, the project is not currently occurring, nor likely to occur in the near future.

First, the proposed plan constitutes the creation of large flood control berms along Area A north of the Ballona Flood Control Channel, and dredging out material to below MLLW, to create a full tidal bay. Multiple studies indicate that, historically, the Ballona Wetlands was primarily a freshwater marsh, closed to the ocean, that would occasionally open to the ocean during major storm events.

The mechanisms that created the freshwater nature of the Ballona Wetlands was discussed in a scientific paper prepared pursuant to the National Sea Grant Program (Grant # NA 06OAR4170012.) (Jacobs, Stein and Longcore "*Classification of California Estuaries Based on Natural Closure Patterns: Templates for Restoration and Management*" Southern California Coastal Water Research Project, Technical Report 619.a (August 2011 revised).) In the paper, Jacobs et. al. opine that:

> [T]he longshore drift of sand rapidly closed the berm connecting Ballona to the sea after major storms and a large freshwater lake was the rule, rather than the exception for the wetlands, even reaching inland up to five miles presumably as a consequence of perching of water behind a berm during modest stream flow episodes. These data are consistent with core data which show intermittent freshwater conditions in Ballona over the last 4,0000 [sic] years (Palacios-Fest et al. 2006).

(Classification of California Estuaries, at 34.)

Jacobs et. al., conclude that the Ballona Wetlands is not historically a saltwater marsh subject to tidal influence on a daily basis, but a freshwater wetlands (often a lake) that is intermittently open to the ocean after large storm events. (Id. at 25.) In fact, based on narrative histories, it appears that after a flood event in 1825, where the Los Angeles River shifted away from Ballona Creek, the estuary mouth was increasingly closed. In fact, evidence suggests that a double berm would form, with one berm at the mouth of Ballona Creek (or Los Angeles River), separating the Ballona Wetlands from the elongated freshwater lake, along what is now Marina Del Rey, and another between the lake and the ocean, further insulating the Ballona Wetlands from salt water intrusion. (*Id*. at 28.) Thus, creating a saltwater embayment is not "restoration" as that term is commonly used.

In addition, the statement is inaccurate because the project is not current, or even close to coming to fruition. Five separate lawsuits, including two by Grassroots Coalition and Ballona Ecosystem Education Project, are currently in active litigation seeking to prevent the destruction of the Ballona Wetlands. During litigation, the project is unlikely to proceed. Litigation is likely to take three-to-five years to resolve, assuming that CDFW prevails at every level, which is doubtful.

In addition, CDFW must also obtain a Coastal Development Permit. Flood Control and dredging for the "creation" of wetlands is not permitted in wetlands. (Pub. Res. Code § 30233.) If granted, Grassroots Coalition will legally challenge such decision. Then, of

course, must obtain permits from the Army Corp. of Engineers, which must perform a similar NEPA review process. The NEPA process will also be challenged. Assuming that CDFW prevails at every step of the way, the conversion project may not proceed years.

In addition, although perhaps not critical, Grassroots objects to characterization of CDFW "managing" the BWER. While CDFW is supposed to "manage" the BWER, CDFW has acted as an absentee caretaker for the Ballona Wetlands, and does not "manage" the lands as one would typically expect from a resources management agency. The Ballona Wetlands was designated an ecological reserve in 2005. (14 Cal. Code Regs. § 1630.) Pursuant to Fish and Game Code section 1019, CDFW was required to prepare a land management plan for all ecological reserves acquired after 2002. Such land management plan was supposed to be created through a public process no later than 18 months after acquisition. Thus, a land management plan should have been prepared for the Ballona wetlands no later than 2008. Despite ample Proposition 12 funding, CDFW failed to prepare a Land Management Plan.

The failure to assess the Ballona Wetlands has had numerous deleterious effects. Most significantly for the GSP, an unknown quantity of freshwater is being extracted from the groundwater at the Playa Vista development to the east of the BWER. The purpose of such extraction includes pumping and treating contaminated groundwater, and the pumping for the methane mitigation system. Such extraction, which is lowering the water table, is either being sent to the freshwater marsh (a lined marsh), then diverted to the Pacific Ocean (by way of the Ballona Flood Control Channel), or is being dumped into the sanitary sewer system, which then goes to Hyperion Waste Water Treatment Plant, then dumped into the Ocean.

Clearly, if rainfall can help recharge aquifers, then the extraction and discharge of groundwater through lined channels deprives the aquifers of needed water for recharging. Any management plan, including the GSP being prepared for the Santa Monica Basin, must consider the adverse impacts of both the extraction of the water, but also its diversion to the ocean. Such water should be used for the benefit of the BWER and would also help replenish the aquifers underlying the Ballona Wetlands. (See Poland Report, at 81.)

Section 2.1.2.3.3 Groundwater Ambient Monitoring and Assessment and Surface Water Ambient Monitoring Program

Grassroots Coalition suggests that such section should include the groundwater testing, monitoring, extraction and treatment of contaminated groundwater at Playa Vista. In addition, there should be careful cumulative evaluation of how much water is being extracted.

Table 2-5. Basin Plan Beneficial Uses, Select Water Quality Objectives, and Water Quality Impairments for Receiving Waters within the Santa Monica Subbasin

Grassroots Coalition seeks to understand who determined that the Ballona Wetlands is a 303(d) listed waterbody based on "reduced tidal flushing". (GSP p. 2-15.) We would suggest that it is an impaired waterbody based on reduced freshwater inputs and lowering of the water table from groundwater extraction.

2.4.1.2 Historical Groundwater Elevation Trends

BALLONA AQUIFER

Grassroots Coalition has serious concerns with the accuracy and clarity of this section of the GSP. (GSP Report at 2-64.) it appears that some wells show a significant drop in elevation. In addition, the pump and treat project intentionally creates a gradient to cause the contaminated plume to migrate towards the remediation wells. It is important to properly calculate on an individual and cumulate basis all the extraction activities at Playa Vista before one can determine whether such activities are having a direct impact on the Ballona Aquifer, Bellflower 'aquitard' and possibly the Silverado Aquifer.

2.4.3.2 Current Understanding of Chloride and TDS Concentrations

Additional monitoring for seawater intrusion may be warranted if groundwater production from the Ballona aquifer increases in the future.

Grassroots Coalition would suggest that monitoring for seawater intrusion for both the Ballona, Bellflower and Silverado Aquifers be required if the Ballona Wetlands Restoration Project moves forward. As noted above, there is substantial hydraulic connectivity between the Ballona and Silverado aquifers in the vicinity of Playa Vista and, therefore, the Ballona Wetlands. (GSP Report 2.3.2.2, at 2-60.) Currently, seawater is primarily relegated to Marina Del Mar and the Ballona Channel, which is a lined and grouted water course. Opening the channel for the specific purpose of increasing tidal flushing will introduce saltwater to areas that are currently fresh and brackish water marsh areas. The introduction of seawater could impact also impact the Silverado aquifer in the area. Thus, any GSP should consider a plan on how to handle the increase in saltwater intrusion caused by the Ballona Wetlands "Restoration" Project. No evaluation for potential harm to the West Basin due to the CDFW prpoject has been done by CDFW and/or the GSA and needs to be done per SGMA.

2.4.7.3 Ballona Wetlands Ecological Reserve

The largest area of unfilled wetlands within the BWER are found in Area B (USEPA 2012). (GSP Report at 2-80.)

This language seems to indicate, with certainty that Area A and Area C, within the Ballona Wetlands Ecological Reserve have been filled. As indicated earlier, the majority of Area A has not changed in elevation and was not filled. To the extent that fill was deposited, it was to support access roads on the perimeter of Area A. There does not appear to be any

evidentiary support that 2.3 million cubic yards of dredge material was placed on the Ballona Wetlands, drastically altering the elevation and habitat. Photographic evidence contradicts this supposed fact.

The overall health of the ecosystems in the BWER has been impacted by the channelization of Ballona Creek, construction of nearby roads, and modifications to the land surface during construction of Marina del Rey when the site was used as a receiving area for dredge spoils and fill materials (USEPA 2012).

Again, a legitimate question remains as to whether dredge spoils were placed and never removed from the Ballona Wetlands in conjunction with the construction of Marina Del Rey. The Ballona Wetlands was private property at the time. It is unlikely that the Hughes Corporation would have volunteered their land for the deposition of dredge spoils. In addition, evidence indicates that the dredge soils were used to replenish beaches to the north and south of Marina Del Rey as part of the LA City/County beach replenishment program. (HD 389 and attachments)

In the vicinity of the BWER, a 40 feet thick clay layer separates the Bellflower aquifer from the underlying Ballona aquifer (see Section 2.3.1 Geology).

Grassroots Coalition questions the basis for such statement. According to the GSP, wells in the vicinity of Playa Vista showed a substantial drop in elevation likely because of drought. (GSP Report at 2-64.) Logically, if wells in the Ballona Aquifer experience a drop in elevations from lack of precipitation, then the aquifers are not hydraulically disconnected from the shallow Bellflower aquifer.

Regardless, the Bellflower Aquitard is a source of groundwater that is directly connected to the Ballona Wetlands Ecological Reserve. Such freshwater source is entitled to protection to ensure that it continues to support the fresh and brackish water marsh habitat. The GSP should consider whether dredging for the proposed "restoration" will impact the Bellflower aquifer is such a manner to impact groundwater dependent ecosystems.

The California Department of Fish and Wildlife and the U.S. Army Corps of Engineers have proposed a restoration project for the BWER to restore wetland and other ecological functions, while also maintaining flood management (USACE 2019).

This does not appear to be an accurate statement. The original project was proposed by the State Coastal Conservancy in conjunction with the Santa Monica Bay Restoration Commission. Further, the Army Corp of Engineers appears to have pulled support from the project, as evidenced by the fact that they refused to participate in a Joint EIR/EIS. The Army Corp of Engineers also appears to be unwilling to fund either studies or project implementation. We would suggest the "and the U.S. Army Corps of Engineers" be deleted from this sentence. In addition, we would suggest that such section indicate that USACE has rejected CDFW's design criteria for the berms.

The stated intent of the project is to restore tidal flow to BWER in all practicably feasible areas to reestablish native wetland vegetation and enhance physical and biological functions (USACE 2017).

While the stated reason "to restore tidal flow" such statement is based on faulty interpretation of scientific studies that establish that the Ballona Wetlands is primarily freshwater and brackish water marsh ecosystem.

Furthermore, the statement is contrary to the purpose and goals supporting the establishment of the Ballona Wetlands Ecological Reserve which cite to protection of the freshwater resources and salt marsh resources which does not imply full tidal exchange.

These alterations are expected to establish 81 acres of new wetlands and 39 acres of new non-wetland waters of the U.S., as well as enhance 106 acres of native wetland and 58 acres of existing nonwetland waters of the U.S.

Grassroots Coalition strongly disputes this characterization of the project. The project will create a saltwater embayment where none previously existed, directly adjacent to Marina Del Rey, that was also, historically, was also primarily freshwater lagoon system. Open water wetlands have increase in southern California, while coastal freshwater/brackish water marsh habitats have declined over 90%.

CONCLUSION

Thank you for this opportunity to comment on the Draft GSP. We look forward to learning more about the extraction activities at Playa Vista and how such activities can both recharge the aquifers and support a functioning wetland ecosystem at the Ballona Wetlands Ecological Reserve. We look forward to reviewing additional drafts of the GSP.

Sincerely,

Todd T. Cardiff, Esq.

Jill Weinberger

From: Kathy Knight <kathyknight66@gmail.com>
Sent: Tuesday, September 28, 2021 4:47:03 PM
To: jennifer.wong@water.ca.gov <jennifer.wong@water.ca.gov>; Lisette A. Gold <Lisette.Gold@santamonica.gov>
Cc: saveballona@hotmail.com <saveballona@hotmail.com>; kathyknight66@gmail.com <kathyknight66@gmail.com>; rexfrankel@yahoo.com <rexfrankel@yahoo.com>; thehikerjoe@gmail.com <thehikerjoe@gmail.com>; mfaugnos@gmail.com <mfaugnos@gmail.com>; jwilson@bos.lacounty.gov <jwilson@bos.lacounty.gov>; westbasinboardsecretary@westbasin.org <westbasinboardsecretary@westbasin.org>; edwardc@westbasin.org <edwardc@westbasin.org>; fgc@fgc.ca.gov <fgc@fgc.ca.gov>; hollyjmitchell@bos.lacounty.gov <hollyjmitchell@bos.lacounty.gov>; dgonzalez@bos.lacounty.gov <dgonzalez@bos.lacounty.gov>; lrichards@bos.lacounty.gov <lrichards@bos.lacounty.gov>; andy.sawyer@waterboards.ca.gov <andy.sawyer@waterboards.ca.gov>; andy.shrader@lacity.org <andy.shrader@lacity.org>; christine_medak@fws.gov <christine_medak@fws.gov>; hamilton.cloud@mail.house.gov <hamilton.cloud@mail.house.gov>; jwaldron@bos.lacounty.gov <jwaldron@bos.lacounty.gov>; adam.taing@waterboards.ca.gov <adam.taing@waterboards.ca.gov>; jim.kang@waterboards.ca.gov <jim.kang@waterboards.ca.gov>; david.mcneill@bhc.ca.gov <david.mcneill@bhc.ca.gov>; lmuraida@bos.lacounty.gov <lmuraida@bos.lacounty.gov>; lori.webber@waterboards.ca.gov <lori.webber@waterboards.ca.gov>; erik.howell@coastal.ca.gov <erik.howell@coastal.ca.gov>; dayna.bochco@coastal.ca.gov <dayna.bochco@coastal.ca.gov>; donne.brownsey@coastal.ca.gov <donne.brownsey@coastal.ca.gov>; ari.ruiz@asm.ca.gov <ari.ruiz@asm.ca.gov>; aaron.o.allen@usace.army.mil <aaron.o.allen@usace.army.mil>; joey.apodaca@mail.house.gov <joey.apodaca@mail.house.gov>; chiefrbwife@aol.com <chiefrbwife@aol.com>; sara.aminzadeh@coastal.ca.gov <sara.aminzadeh@coastal.ca.gov>; arthur.heath@waterboards.ca.gov <arthur.heath@waterboards.ca.gov>; ari.cornman@fgc.ca.gov <ari.cornman@fgc.ca.gov>; rafiqul.i.talukder@usace.army.mil <rafiqul.i.talukder@usace.army.mil>; sheila@bos.lacounty.gov <sheila@bos.lacounty.gov>; jonathan.bishop@waterboards.ca.gov <jonathan.bishop@waterboards.ca.gov>; mike@11thdistrict.com <mike@11thdistrict.com>; sfreeman@bos.lacounty.gov <sfreeman@bos.lacounty.gov>; timeyin.dafeta@lacity.org <timeyin.dafeta@lacity.org>; todd@tcardifflaw.com <todd@tcardifflaw.com>; todd@cardifflaw.com <todd@cardifflaw.com>; effie.turnbull-sanders@coastal.ca.gov <effie.turnbull-sanders@coastal.ca.gov>; robinasuwol@earthlink.net <robinasuwol@earthlink.net>; carolyn_lieberman@fws.gov <carolyn_lieberman@fws.gov>; manuel.aguilar@ladwp.com <manuel.aguilar@ladwp.com>; andrew.willis@coastal.ca.gov <andrew.willis@coastal.ca.gov>; mike.wilson@coastal.ca.gov <mike.wilson@coastal.ca.gov>; olina.wibroe@sen.ca.gov <olina.wibroe@sen.ca.gov>; katharine.moore@sen.ca.gov <katharine.moore@sen.ca.gov>; kate.huckelbridge@coastal.ca.gov <kate.huckelbridge@coastal.ca.gov>; katie.rice@coastal.ca.gov <katie.rice@coastal.ca.gov>; roberto.uranga@coastal.ca.gov <roberto.uranga@coastal.ca.gov>; nancy.vogel@resources.ca.gov <nancy.vogel@resources.ca.gov>; samuel.liu@sen.ca.gov <samuel.liu@sen.ca.gov>; jennifer.lucchesi@slc.ca.gov <jennifer.lucchesi@slc.ca.gov>
Subject: Response Comments to the Santa Monica Subbasin Draft Groundwater Sustainability Plan

EXTERNAL

September 28, 2021

To: Department of Water Resources, SGMP and Point of Contact, Jennifer Wong
GSA, City of Santa Monica, Lisette Gold

From: Ballona Ecosystem Education Project, Kathy Knight Board Member

Re: Ballona Ecosystem Education Project's response comments to the Santa Monica Subbasin Draft Groundwater Sustainability Plan

The Ballona Ecosystem Education Project has been working to save and protect the Ballona Wetlands Ecosystem, Its bluffs, and its valuable groundwater for over 30 years.

We STRONGLY support the comments submitted by Grassroots Coalition today to this plan. Grassroots Coalition has an outstanding history of accurate investigations and studies of the groundwater resources of Ballona, and the underground gas issues of SoCalGas and Playa Vista.

As with Grassroots Coalition, we are very concerned about Dudek concluding that they have completed their SGMA requirements for evaluation of the Ballona Wetlands Ecological Reserve (BWER) as a Groundwater Dependent Ecosystem (GDE). We are greatly concerned that the GSA will not further interagency consultation and information gathering for its evaluation of the Groundwater Dependent Ecosystem (GDE), Ballona Wetlands Ecological Reserve. The BWER has been a mostly freshwater wetland for the past 400 years and should remain that way. Fresh water coastal wetlands are becoming more and more rare in California.

There is exigency to the performance of a prudent GDE study per SGMA requirements due to an approved plan of the California Department of Fish and Wildlife (CDFW) that would convert the Ballona Wetlands into a fully tidal saltwater bay.

Thus far, neither the Draft GSP nor the CDFW Environmental Impact Report have performed a hydrology evaluation of the Ballona Wetlands or performed a Land Management Plan of and for the Ballona Wetlands natural resources, and/or gathered readily available hydrological data and information that contradict comments made in the Draft GSP pertaining to this southern region of the Santa Monica Subbasin.

For many years we have been asking for a hydrology study of this important wetland, but it has not been done. Now we are in a critical drought situation, one of the worst in many years. It makes more and more sense that we step up to know and protect our groundwater resources, including to study the hydrology resources of this wetland before these precious resources are destroyed.

The Ballona public trust land and water are also registered as a Sacred Site by John Tommy Rosas, of Tongva Ancestral Territorial Tribal Nation (TATTN). The TATTN issues are also not addressed in the Draft GSP and need inclusion.

Thank you for your attention to this matter, and we strongly request that you perform a Groundwater Dependent Ecosystem evaluation for the entirety of Ballona Wetlands and Ballona Wetlands Ecological Reserve, as requested by Dr. Margot Griswold PhD (Restoration Ecologist) during her presentation to you at a recent GSA meeting. We request that a full evaluation of the region under SGMA necessarily includes all of the issues raised by Grassroots Coalition.

Thank you,
Kathy Knight, Board Member
Ballona Ecosystem Education Project
1122 Oak St., Santa Monica, CA 90405
(310) 450-5961
kathyknight66@gmail.com

1. Introduction
   1.1 Purpose of the Groundwater Sustainability Plan

The Santa Monica Basin Groundwater Sustainability Agency (GSA), is comprised of the lead City of Santa Monica (Lisette Gold), the City of Los Angeles via its Department of Water and Power, which will necessitate input participation from the LA Department of Sanitation that has not yet occurred or been requested by the GSA. This data gap is explained in more detail below. The Cities of Culver City, Beverly Hills, and the County of Los Angeles comprise the GSA.

The August 2021 GSA Meeting Link is below with a presentation by Grassroots Coalition, Patricia McPherson & Dr. Margot Griswold, Restoration Ecologist, at 1:04:30. Our presentation provides an overview of key SGMA & GDE issues for the southern portion of the Santa Monica Subbasin with focus upon the **Ballona Wetlands Ecological Reserve, a Groundwater Dependent Ecosystem (GDE).**

Meeting Video

The Santa Monica Draft Groundwater Sustainability Plan (Draft GSP) was to be prepared by the GSA in compliance with the 2014 Sustainable Groundwater Management Act (SGMA), codified in California Water Code (CWC), Part 2.75 (Sustainable Groundwater Management), 10720 et seq. The Draft GSP was to be developed in accordance with the Department of Water Resources (DWR) GSP Regulations to apply to the entirety of the Subbasin that is not adjudicated (DWR Basin 4-011.01).

Grassroots Coalition believes that the Draft GSP of the Santa Monica Subbasin to be out of compliance with the investigative requirements of SGMA and believes that the Groundwater Dependent Ecosystem elements of SGMA have been excluded in whole and/or in part pertaining to the BALLONA WETLANDS and the sw region of the Subbasin. The BALLONA WETLANDS ECOLOGICAL RESERVE, as well as the underlying regional freshwater aquifers known individually as the Ballona, Bellflower and Silverado Aquifers, which act in this region as one unit, were not meaningfully addressed and the GSA excluded readily available data made known to the GSA and requested for inclusion. Despite our repeated requests for inclusion of critically important data, the GSA consultant company response at the August GSA 2021 Meeting was,

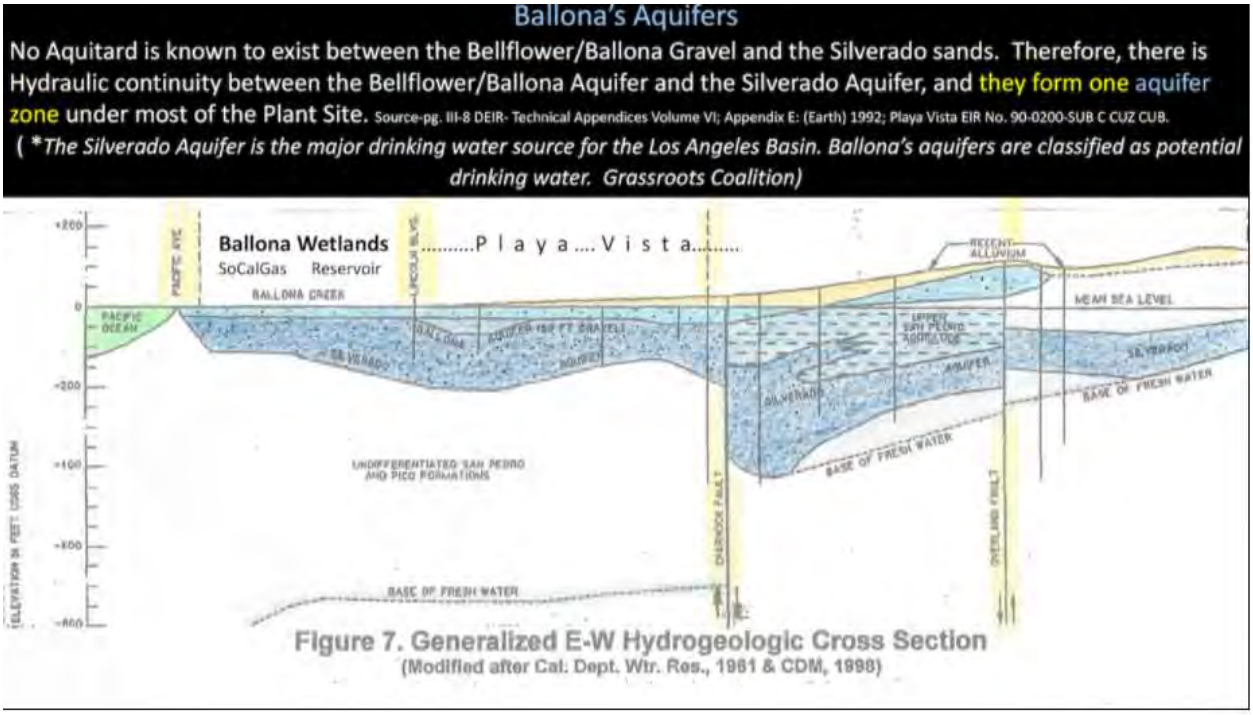
***"I think you know we have done the groundwater dependent ecosystem work under SGMA to the requirements of SGMA"…* Jill Weinberger, Dudek consulting company at 1:31:21 Meeting Video.**

Per the Santa Monica Subbasin GSA Meeting of August 2021, comment above from the GSAs' consultant company Dudek, and their Draft GSP response, Grassroots Coalition believes that the Draft should not be accepted by the Department of Water Resources due to numerous inaccurate conclusory statements and extensive data gaps pertaining to the southern region of the Subbasin and in particular, the Ballona Wetlands Ecological Reserve and all of Ballona's public trust lands and water as a Groundwater Dependent Ecosystem (GDE).

https://www.flickr.com/photos/stonebird/ - Jonathan Coffin photography of Ballona Wetlands.

Grassroots Coalition seeks an independent Groundwater Dependent Ecosystem investigation and evaluation that will inform, refine and discuss threshold objectives for developing a management plan for the freshwater resources of Ballona Wetlands Ecological Reserve and its public trust land and freshwater.

Grassroots Coalition seeks, on behalf of the Public Trust land and water of Ballona Wetlands, the restoration to Ballona Wetlands as a Groundwater Dependent Ecosystem -- any and all freshwater being diverted, drained and otherwise compromised and also seeks the protection from degradation to the multiple underlying freshwater aquifers.



Water Code, Article X, section 2 and Water Code sections 100 and 275 appear to apply to the GDE circumstances of the LARWQCB's oversight pertaining to their NPDES permits for discharge of the Playa Vista development site's pumped and discharged groundwater away from Ballona Wetlands. It is clearly obvious that the pumping and discharge of Playa Vista's (Ballona's) groundwater away from Ballona via discharge into the sanitary sewer or into the ocean is a waste of precious freshwater that Ballona Wetlands/ Ballona Wetlands Ecological Reserve needs. Section 100 places on the State Board, a non-discretionary affirmative duty to determine whether a water use is reasonable and beneficial and to prevent the waste and unreasonable use of all water resources in California. Section 275 directs the State Water Board to take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, or unreasonable methods of use.

And,

It was stated in *People of the State of California* v. *United States* (9th Cir. 1956) 235 F.2d 647, 663: "[Everyone] must admit that the purpose of the constitutional amendment [now art. X, § 2] was to vest with a public interest the use of all the waters of the state, so that no part of the precious supply [***14] should flow uselessly into the sea or otherwise go to waste. This characterization applies to flood waters as well as to the normal flow."

And,

"SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing

undesirable results. Under SGMA, undesirable results occur when significant and unreasonable effects for any six sustainability indicators are caused by groundwater conditions occurring throughout the Subbasin." Page 1 of 6 Draft Subbasin.

"- Chronic lowering of groundwater levels

-Groundwater storage

-Seawater intrusion

-Degraded water quality

-Land Subsidence

-Depletions of interconnected surface water". pg.1 of 6 Draft Subbasin.

Ballona is a predominantly seasonal freshwater wetland that but for extreme storm events, was closed to the ocean. Ballona Wetlands historical background is documented in the Historical Ecology of the Ballona Creek Watershed 2011 by Dark, Shawna; Stein, Eric; Bram, Danielle; Osuna, Joel; Monteferante, Joseph; Longcore, Travis; Grossinger, Robin; Beller, Erin.

HISTORICAL ECOLOGY OF THE BALLONA CREEK WATERSHED — LONGCORE et. al.

Background of Data Gaps

The LA Department of Sanitation, under industrial wastewater permits, provides for the disposal of approved NPDES permitted pumped, clean groundwater from under the buildings of the Playa Vista (Ballona Conservancy managed) development site. While the Playa Vista Environmental Impact Report (EIR) disallows long term pumping of groundwater and has mitigation requirements that provide for cleansed or clean groundwater that is pumped to the surface, to be used onsite for recharging of the underlying aquifers, this has not been occurring. Instead of recharging the aquifers, the long-term pumping and disposal of clean groundwater away from Playa Vista's gas mitigation systems has been being sent to LA Sanitation as the site has been developed from 2001 to the present (page 16 of 28 in the PPT below contains example 'spider maps' that show locations of dewatering permits of Phase 1 west side of Playa Vista & Phase 2. (The east end of Phase 1 is unknown at this time.) Other NPDES permitted locations in Playa Vista similarly pump and dispose of clean groundwater for various reasons. Additionally, the Los Angeles Regional Water Quality Control Board (LARWQCB), under the Clean Up and Abatement Order (CAO) No. 98-125 for the historic Howard Hughes Aircraft Company's and McDonnell Douglas Helicopter Company's legacy of contaminated groundwater, sends this pumped and cleansed groundwater to either the L.A. Department of Sanitation or into the ocean via a flood control system for Playa Vista known as the Freshwater Marsh System. The Freshwater Marsh System (FWM) is designed to allow for the cleansed freshwater of the CAO, as well as runoff into it from adjacent rainfall areas, to spread out and remain in Ballona Wetlands to nurture the wetlands via an overflow area. The Freshwater Marsh System itself has HDPE liners along the Riparian Corridor portion precluding downward percolation of water and the catch basin itself, has a clay liner designed to prevent percolation of the FWM's catch-basin's water into the underlying aquifers. Instead of allowing for the overflow of this pumped water to spread out into Ballona Wetlands to also percolate and recharge the underlying aquifers, the cleansed water, for the most part, is thrown away into the ocean via what is

called the Main Drain of the FWM which exits to the Ballona Channel which, in turn empties into the Santa Monica Bay and Pacific Ocean.

PATRICIA FINAL PPT 3.15.21 Presentation1 2 2.pptx

The Draft GSP has not addressed the ongoing dewatering of the Ballona Wetlands/ Playa Vista area of the Subbasin but to explain that it is not the GSA's role to deal with permitting of groundwater withdrawal. This response is both off-point and fails to gather available, essential data that would provide for a clear picture of hydrological impacts, including undesirable impacts that affect the GDE and have the potential, once identified, to be addressed that would assist in: compliance with Water Code laws, the Playa Vista mitigation requirements including Vesting Tract agreements and best management practices, that provide for sustainable yield acknowledgements and suggestions for combatting undesirable results.

The GSA is meant to clarify how it intends to wield its powers to stakeholders as the GSA also has the ability to consult with water right stakeholders and relevant stakeholders. Consultation has the potential in and of itself to alleviate negative impacts of groundwater withdrawal as consultation allows for sharing of critical information that may give rise to positive consentual agreements. Grassroots Coalition is unaware of an attempt by the GSA, the City of Santa Monica as lead of the GSP response, to consult with the available SGMA bound agencies and departments regarding Ballona Wetlands. Specifically, no information gathering has occurred for Playa Vista's & LARWQCB's cumulative dewatering and waste/ throw away of clean and/or cleansed freshwater from this area. The information gathering would necessarily include, but not be limited to: the City of Los Angeles, LA DWP, the LA Department of Sanitation, the County of Los Angeles, LARWQCB, and Playa Vista itself including but not limited to the Playa Vista- Ballona Conservancy which includes the California Department of Fish & Wildlife as a Board Member according to CDFW leadership, Rich Burg. Additionally, the California State Lands Commission, steward of the public trust property known as the Freshwater Marsh System (FWM), needs to be included in the information gathering loop. Multiple legal agreements are already in place that dictate protective ecological measures required for Ballona Wetlands, including but not limited to Playa Vista EIR mitigation measures, Vesting Tract Agreements, and the California Coastal Commission Settlement Agreements (2006 Case No. C525 826 Friends of Ballona et al v Ca. Coastal Commission and earlier) that require protective measures pertaining to groundwater and surface water specific to Ballona Wetlands and Ballona Wetlands Ecological Reserve. None of these agreements, and issues have been investigated and/or addressed in any meaningful way as yet by the GSA.

https://youtu.be/VPsSlqo5Tzc Freshwater diversion to Sanitation & Santa Monica Bay. Presentation to the California Coastal Commission 3/6/19

https://youtu.be/YHU9G0AKLAo Unpermitted drainage of Ballona Wetlands (20 years). Presentation 3/8/2019, to the California Coastal Commission (CCC). (Update - CCC Staff, rescinded its language, as requested by Grassroots Coalition and changed the language, cited at the end of this video, to comport with the ruling by the Commissioners.)

The Draft GSP cites that it discusses historical degradation of the groundwater quality as a result of industrial development and activities dating back to the mid -1900s, yet appears to exclude the most readily available, cogent, scientific and baseline hydrology data accrued via the grandfather of

hydrology of the entire LA Basin—Poland et al 1959, as well as excluding readily available data collected by the United States federal government accrued for the creation of Marina del Rey in the 1960s timeframe by congress in the document known as House Document 389. (Santa Monica Subbasin Section attached- 1959 J.F. Poland, A.A. Garrett, and Allen Sinnott)

Complete 47 pages MDR House Document No. 389 SMB - Public Law 389 5:11:1954 47 page pdf

The 1959 Poland et al report portion pertaining to the Santa Monica subbasin is attached.

The Draft GSP states in relevant part, *" The City of Santa Monica is engaged in multiple programs to remediate the degraded groundwater in the Subbasin….overseen by Division of Drinking Water (DDW), Regional Water Quality Control Board…. Degradation of water that occurred before 2015, the year in which SGMA became effective, is not required to be addressed in this GSP (SWRCB 2019). Water quality in the Subbasin was degraded prior to 2015, the extent of degradation is well characterized, the City of Santa Monica is actively treating the groundwater under programs overseen by DDW, the RWQCB, and the SWRCB, and the degradation was not caused by groundwater production*. Emphasis added.

The statement on page 1-1 , again reinforces that **the Draft GSP's focus is on drinking water wells in the City of Santa Monica area** as the degradation cited above ostensibly references the recent MTBE contamination remediation. While evident that the MTBE degradation was not caused by seawater intrusion, the Draft excludes the well-studied and readily available historical and hydrologic data which demonstrates **seawater intrusion degradation,** caused by over-drafting **in the southern portion of the Subbasin, was not included for review** (Poland et al 1959; House Document 389 and later LARWQCB data of the Playa Vista site and the Playa Vista EIR data). Drinking water wells existed into the mid to late 1950's in Playa del Rey, the coastal beach town at the west end of the Ballona Wetlands. The Palisades Del Rey Water Company operated until seawater intrusion and issues pertaining to the SoCalGas underground gas storage operations gave rise to its closure. During this timeframe saltwater intrusion due to over-drafting was, according to Poland et al., occurring further south along the coast of the West Basin. The West Basin's protection from saltwater intrusion is being offset south of the Santa Monica Subbasin by freshwater injection. The Subbasin and West Basin do interface and overlap slightly in the Ballona Wetlands area as is pointed out in the Draft and as cited in the Poland et al Geology, Hydrology, and Chemical Character of Groundwaters in Torrance-Santa Monica Area, California. 1959

California Coastal Commission Meeting, May 8 2019, Ballona Wetlands History, a PDF SlideShow Presentation pgs. 18-21 are relevant excerpts

For adequate and prudent protection of the Groundwater Dependent Ecosystem that is Ballona Wetlands, protecting its predominantly freshwater nature and the underlying multiple freshwater aquifers, investigation into and inculcation of the data from the past is critical. It is also critical for the GSA to seek out pertinent dewatering data and information of the potentials for saltwater intrusion due to potential over-drafting from Playa Vista whose dewatering has, according to Los Angeles Regional Water Quality Control Board (LARWQCB) added to the lowering of the historic groundwater under Playa Vista. As much as 20' was expressed by LARWQCB years ago, during meetings with Grassroots Coalition, and a recent LARWQCB report cites up to 45' of groundwater depletion in areas under Playa Vista.

Harm to Ballona's hydrology due to freshwater diversion away from Ballona has already been noted as

unacceptable by the California Department of Fish & Wildlife (CDFW) (https://saveballona.org/2017-california-department-fish-wildlife-cdfw-betty-courtney-cites-harm-ballona-due-reduced-water-flow-playa-vista.html (CDFW, Betty Courtney Letter). Hence, the reality of harm occurring to Ballona's down watershed habitat via dewatering by Playa Vista, has already been acknowledged by CDFW. The California Coastal Commission (CCC) has also already acknowledged that diversion of freshwater away from Ballona has harmed its hydrology. In 2014, the CCC cited that Playa Vista and CDFW were both in violation of the California Coastal Act for unpermitted drains in Ballona Wetlands that had been and were harming the hydrology of Ballona Wetlands **California Coastal Commission (CCC) Letter (4/11/14) to Playa Vista and CDFW** . After prevailing litigation by Grassroots Coalition against both Playa Vista and CDFW, alongside subsequent orders to end the drainage from the California Coastal Commissioners, the drains have since been sealed.

The positive effects of restoring the freshwater to Ballona has given rise to an expansive regrowth of pickleweed throughout the areas affected by the drains. Pickleweed expanses are a necessary nesting habitat for the endangered Belding's Savannah Sparrow. This sparrow and its pickleweed habitat needs are a key component of the Ecological Reserve's, Title 14, Section 630 Purpose and Goals.

It is also critical for the GSA to consider and include for evaluation, the fulfillment of the CDFW approved Final Environmental Impact Report Plan for digging out the Ballona area to allow seawater intrusion for conversion of Ballona into a saltwater bay. The state approved CDFW Plan is not some far away, vague conceptual plan hence, it is incumbent for inclusion in GS Planning.

Already, U.S. Fish and Wildlife Service (USFWS) has requested a prudent GDE study performance (USFWS 2021 LETTER).

USFWS LETTER 2021 June- Christine Medak-

-----Original Message-----
From: Medak, Christine <Christine_Medak@fws.gov>
To: lori.webber@waterboards.ca.gov <lori.webber@waterboards.ca.gov>
Cc: patriciamcpherson1@verizon.net <patriciamcpherson1@verizon.net>
Sent: Mon, Jun 7, 2021 2:53 pm
Subject: Fw: [EXTERNAL] Fwd: Santa Monica Basin Groundwater Sustainability Plan (GSP) Stakeholder Workshop June 2021 Invite

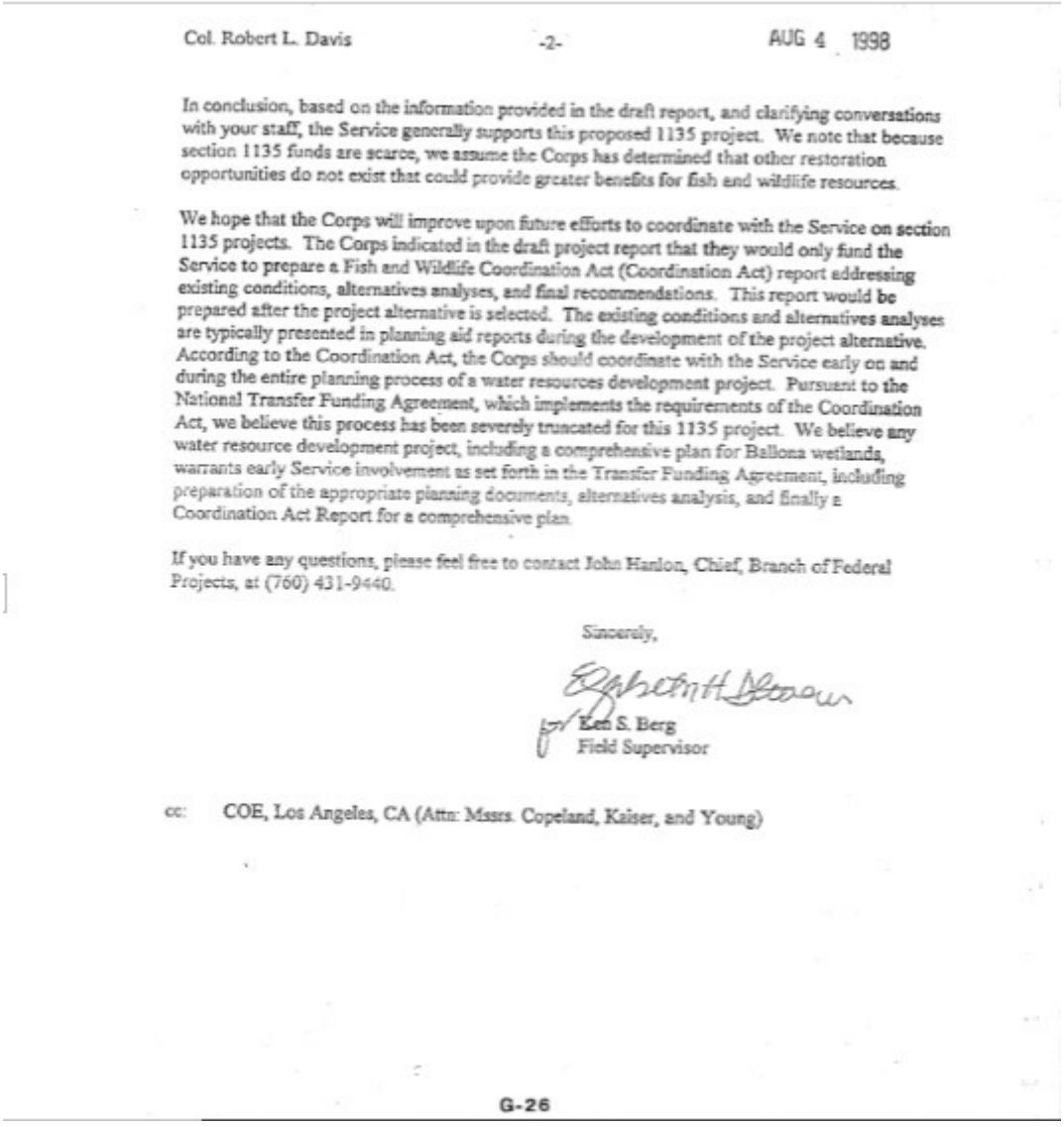
Hi Lori,

Do you know if there have been or are planned to be any groundwater management plans developed for the area including the Ballona Ecological Reserve? I am not able to respond to this question because I have not previously been involved in groundwater planning. If you are not the appropriate contact, can you please refer me to a contact within your agency that can provide some information on how this type of planning effort is typically initiated? I agree that Ballona wetlands would benefit from additional freshwater that is currently diverted to sanitary sewers or directly to Ballona Channel (through an underground culvert).

Christine L. Medak
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008
I am currently working from home indefinitely. Please contact me via email.

And, in 1998 USFWS stated its concerns,

"We believe any water resource development project, including a comprehensive plan for Ballona wetlands, warrants early Service involvement as set forth in the Transfer Funding Agreement, including preparation of the appropriate planning documents, alternative analysis, and finally a Coordination Act Report for a comprehensive plan."
Ken Berg, Field Supervisor; Branch Chief, John Hanlon, Branch of Federal Projects. Aug. 4, 1998 USFWS Letter to Col. Davis, USACE. (Page 2 of Letter below)



Col. Robert L. Davis -2- AUG 4 1998

In conclusion, based on the information provided in the draft report, and clarifying conversations with your staff, the Service generally supports this proposed 1135 project. We note that because section 1135 funds are scarce, we assume the Corps has determined that other restoration opportunities do not exist that could provide greater benefits for fish and wildlife resources.

We hope that the Corps will improve upon future efforts to coordinate with the Service on section 1135 projects. The Corps indicated in the draft project report that they would only fund the Service to prepare a Fish and Wildlife Coordination Act (Coordination Act) report addressing existing conditions, alternatives analyses, and final recommendations. This report would be prepared after the project alternative is selected. The existing conditions and alternatives analyses are typically presented in planning aid reports during the development of the project alternative. According to the Coordination Act, the Corps should coordinate with the Service early on and during the entire planning process of a water resources development project. Pursuant to the National Transfer Funding Agreement, which implements the requirements of the Coordination Act, we believe this process has been severely truncated for this 1135 project. We believe any water resource development project, including a comprehensive plan for Ballona wetlands, warrants early Service involvement as set forth in the Transfer Funding Agreement, including preparation of the appropriate planning documents, alternatives analysis, and finally a Coordination Act Report for a comprehensive plan.

If you have any questions, please feel free to contact John Hanlon, Chief, Branch of Federal Projects, at (760) 431-9440.

Sincerely,

Ken S. Berg
Field Supervisor

cc: COE, Los Angeles, CA (Attn: Mssrs. Copeland, Kaiser, and Young)

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Additionally, without monitoring wells established in the Marina del Rey area and elsewhere in this general area, there is no data supplied in the Draft GSP to support that seawater intrusion has been prevented in the Subbasin, especially from Marina del Rey southward to the bluffs of Playa del Rey/

Westchester—as is noted in the Draft GSP. *"Shifting groundwater production away from the coast and to deeper aquifers have prevented further seawater intrusion (DWR 2019)."* PG 2 Draft GSP. Groundwater dewatering metering in the Marina area is not something that Grassroots Coalition (GC) is aware of occurring. Even the Draft suggests inserting at least two monitoring wells between Marina del Rey and the Charnock wells as saltwater intrusion may be occurring. GC is aware of multiple NPDES permits granted for development sites in MDR for 'construction dewatering' that have become perpetual dewatering permits—in other words, not just short- term construction dewatering permits but forever dewatering permits. How such long- term dewatering is affecting the groundwater in the region is important, if not critical to include and understand in order for informed decision making. Furthermore, for GDE purposes and state laws such as Porter-Cologne and the federal Clean Water Act, all of the aquifers underlying this southern area of the Subbasin matter to prevent saltwater contamination, not just the Silverado.

SUBSIDENCE

"Land subsidence due to groundwater withdrawal has not been documented in the Subbasin (Bawden 2003; DWR 2014)." Grassroots Coalition (GC) respectfully disagrees with this finding as a subsidence bowl of nearly 2 feet as of 1970, was created in the Venice Peninsula/Ballona area due to brine water withdrawal from within the oilfield formation (SoCalGas, Riegle Report). In Playa del Rey, SoCalGas /SEMPRA (SCG) conducts an underground gas storage operation within the Venice oilfield. As part of the operations, SCG withdraws approximately 2700 barrels a day of formation brine water. As a result of litigation against SoCalGas/Playa del Rey by GC, subsidence monitoring was ordered to take place via InSar satellite monitoring. The monitoring did not reflect alleviation of the subsidence that had already occurred and began and ended between 2007- 2014 **Settlement Agreement May 11, 2000, Decision 07-12-035 December 20, 2007** (Settlement Agreement GC v SoCalGas). Subsidence investigation has not taken place within the current Draft GSP of which GC is aware that would inculcate activities of SCG. Therefore, subsidence study appears to have not occurred. Further, USGS documented near surface water depletion as having caused subsidence (J. Riegle Gas Storage in the PDR oilfield; subsidence graph, Playa Vista EIR). The USGS documentation appears absent in the Draft GSP. The Playa Vista site also has been documented as having subsidence that has not been inculcated into the Draft GSP. (Endres PhD analysis of Playa Vista's subsidence study submitted to the Los Angeles Dept. of Building & Safety. The Endres evaluation was submitted by Grassroots Coalition in our response to the Draft CDFW/EIR Ballona.

By way of comparison of the established 'subsidence bowl' of nearly two feet in the Venice/Playa del Rey area due to SoCalGas operations (SoCalGas subsidence graphic), similarly two feet of subsidence in the manmade harbor, King Harbor in Redondo Beach, Ca.(Santa Monica Bay) experienced approximately two feet of subsidence due to oilfield subsidence issues and suffered severe damage and litigation following a storm event in 1988, ceqanet.opr.ca.gov/1988090901 , CEQA SCH Number 1988090901 provides the lead agency's (US Army Corp of Engineers) Storm Damage Reduction Summary.

The Draft GSP's discussion of subsidence as not a historical occurrence due to fluid withdrawal is inaccurate. Provided below are subsidence issues caused by fluid withdrawal at depth within the oilfield setting which the Draft appears to have no information hence, the following are simply

provided to raise awareness of the subsidence issues in our area and nearby. There is a great deal of information available and a need for such consideration in the Santa Monica Subbasin.

InSAR data from SoCalGas/Playa del Rey that provided subsidence monitoring as part of the Settlement Agreement between SCG v Grassroots Coalition for the Ballona region is available and has not been garnered by the GSA for evaluation in this Draft GSP.

1. History - Geotechnical and Civil Engineering firms in ...
   web.mst.edu/~rogersda/Geotechnical-Practice...
   By 1945 Los Angeles-Long Beach was the largest man-made port in the world, but the problems of flooding, siltation, earthquakes, and ground subsidence combined to make it one of the most geoetechnically challenging harbor facilities in the world.

Subsidence - Overview Oilfields of Southern California
Subsidence Overview - Redondo Beach King Harbor - Breakwater Evaluation / Inglewood Field 19 meg
Chilingarian, George V; Endres, Bernard L; 199**Subsidence** - Beverly Hills, CA

Urban Oil Production and Subsidence Control - Case History - Beverly Hills, CA Oilfield
Erickson, R C; Spaulding, A O; Society of Petroleum Engineers - Annual Meeting, 1975

1. 2

*Additionally, the citation used in the Draft GSP of CADWR 2014, Summary of recent, historical, and estimated potential for future land subsidence in California 2014, does not address the Santa Monica Subbasin but instead the San Joaquin Valley. It does however, provide information on widespread land subsidence due to groundwater withdrawal and degradation of groundwater-dependent ecosystems (The Nature Conservancy 2014) and ventures further to discuss options to achieve groundwater sustainability that include increasing surface water supplies, and recharging from dedicated recharge basins or temporary wetlands on fallowed fields as options in some basins.

The Draft GSP also cites as reference, The Bawden, Gerald 2003, Separating Groundwater and Hydrocarbon Induced Deformation… provides a 2003 writeup per a 2001 Subsidence Interest Group Conference. However there appears to be nothing in this referenced literature that cites to the Santa Monica Subbasin but instead, the literature references the presentation's discussions of the Houston/Galveston Texas area and Los Vegas, Nevada area. There is also reference to a presentation on the methodology of INSAR technology.

The following links provide further information pertaining to the SOCALGAS/PLAYA DEL REY operations and concerns:

1. SoCal Gas PDR Underground Gas Storage Operations
   saveballona.org/system/files/GRASSROOTS...

Timeline of Incidents & Events in Playa del Rey / Ballona Wetlands Area Updated: June 15, 2019 2/24/11- SoCalGas Incident—mud/water, storage gas leaking to surface Riegle 1

2. Regional Geochemical Assessment of Methane, BTEX and H2S Gas ...
   www.eti-geochemistry.com/Regional
   The Playa del Rey Oil Field, and now Southern California Gas Storage Field lies immediately to the west of Lincoln Blvd. (Barton, 1931, Hodges, 1944 and Riegle, 1953). In order to determine whether or not this gas storage field had contributed as a source, ETI had suggested that additional studies needed to be conducted (ETI 1st and 2nd Progress Reports, 1999).

INTERCONNECTED WATER

The Draft GSP cites that, *"Depletions of interconnected surface water have not occurred historically in the Subbasin because, Ballona Creek, the primary surface water drainage, has been maintained as a lined and grouted flood-control channel since the 1950s (ACOE 1982; DWR 2019)."*

Grassroots Coalition disagrees with the GSA interpretation of ACOE AND DWR info cited above. The GDE- Ballona Wetlands is a predominantly seasonal freshwater wetland. This GDE relies upon groundwater that is part of the entire LA Basin watershed, that allows for the watershed to flow underground through Ballona Wetlands, keeping the groundwater at or near the surface (DWR Map & Playa Vista EIR) and recharge the underlying freshwater aquifers. Ballona also relies upon seasonal rains that typically and readily pond across Ballona Wetlands due to the near surface groundwater and various soils across this region. The ponding can last for months (Terry Huffman Phd 1986 USEPA , Region IX, Determination of the Presence of Aquatic and Wetland Habitats Subject to Federal Regulatory Jurisdiction Within The Ballona Creek Land Tract).

Depletion of the interconnected surface water for this region has been ongoing for the past 20 years, unbeknownst to the public until litigation against CDFW and Playa Vista by Grassroots Coalition began the process of transparency and closure of the illegal drainage. The unpermitted drains and numerous manmade drainage channels, which experts have stated should be blocked from allowing freshwater from emptying into the Ballona Channel and wasted at sea, were not accounted for in the CDFW Draft EIR. The Draft GSP similarly has not provided for any evaluation of the freshwater drainage upon Ballona Wetlands Ecological Reserve, as a GDE. Currently, the unpermitted drains' below ground structures contain large weep holes for groundwater drainage, that have caulking in the weep holes. The caulking failed in an earlier sealing attempt. The top of the drains were resealed using other structures, but there has been no accounting for the subsurface potential for drainage that may be starting to occur as a result of caulking failure. As a GDE all of these interconnected surface water areas need to be evaluated and considered as part of a GSP.

Furthermore, rainwater at Playa Vista is collected (called nuisance dewatering/ LA Department of Building & Safety) and thrown away via NPDES permits that allow for the rainwater to be sent to the Sanitary Sewer System under Industrial Wastewater permits. All of this cumulative dewatering needs to have address.

The Playa Vista (Ballona Conservancy) essentially walls off fresh watershed water from flowing west, seaward to Ballona Wetlands via pumping from below building sites then sending this clean water to the

Sanitary Sewer System via NPDES permits and Industrial Wastewater permits. The wasting of this clean freshwater and the restriction of this water from flowing into Ballona Wetlands is contrary to agreements between Playa Vista and the City of Los Angeles within the Playa Vista EIR mitigation requirements, Vesting Tract Agreements, and a Settlement Agreement originating in the California Coastal Commission v Friends of Ballona et al and updated with the City/County of Los Angeles in 2006. This Agreement further defines that no harm will come to Ballona Wetlands through development activities of Playa Vista (Case No. C525 826 Friends of Ballona et al v Ca. Co. Commission).

Cumulative dewatering activities that are ongoing directly adjacent to the wetlands are not evaluated or included in the GSP. None of the Ballona Wetland's unpermitted and permitted drainage of its seasonal freshwater have been included or evaluated in the GSP for Ballona Wetlands, a Groundwater Dependent Ecosystem.

1.2 Sustainability Goal (DRAFT GSP)

"Ensuring groundwater conditions in the Subbasin support sufficient seaward flow of fresh water to prevent significant and unreasonable seawater intrusion in the Silverado aquifer." emphasis added.

The Sustainability Goal as cited above from the Draft GSP, demonstrates the focus of the Draft GSP has been upon the Silverado aquifer, the main source of drinking water for the City of Santa Monica and other stakeholders. The following comment in the Draft GSP, while appearing to provide for the GDE's protection is contradicted by this Draft's conclusory statements regarding the GDE as receiving no effects from dewatering activities, which was ostensibly reached due to extremely limited and/or nonexistent investigation into the Ballona Wetland GDE area's groundwater production.

"Continuing groundwater production at rates and in aquifers that do not impact the ability of groundwater dependent ecosystems to access groundwater."

The Draft GSP's conclusions pertaining to Ballona Wetlands are made while the Draft provides little to no data of groundwater production and/or seawater intrusion issues that pertain to Ballona Wetlands and its underlying freshwater aquifers that are classified by LARWQCB as Potential Drinking Water. In a recent court decision, the aquifers were classified as Drinking Water for purposes of remediation from SoCalGas oil/gas operations-- Settlement Agreement (Prop. 65; SCG v ELF Case No. BC 364555). This Settlement Agreement also iterates that IF the water quality changes, as it would most certainly should CDFW's Plan for digging out Ballona to create a new saltwater bay be carried out, THEN SoCalGas would no longer have to remediate their contaminated groundwater to Drinking Water standards. This would hold true for any new discoveries of contamination from SoCalGas/ Playa del Rey operations into the future as the city, county and state work to support the end of fossil fuel use, and specifically the closure of this facility and operations. Decommissioning studies of SoCalGas point out the likely contamination from their operations.

There is no meaningful investigation pertinent to the GDE- Ballona Wetlands demonstrated via the Draft GSP. However, conclusory statements that the GDE is not in any significant jeopardy from groundwater withdrawal/ surface water removal, and/or contamination potentials are rendered in the Draft.

The following LINK relates to a legislatively ordered study of all the underground gas storage facilities in California. It singles out SoCalGas/Playa del Rey underground gas storage operations as a most hazardous operation due to its aging infrastructure, location and historical problems with control of the gas. Saltwater intrusion is well established as a cause of infrastructure corrosion for SoCalGas/Playa del Rey, causing pipeline leakage incidents and gas/oil well leakage especially along the coastal edge of Playa del Rey and Venice. Hundreds of old, poorly abandoned wells are included as part of and directly adjacent to the operational area. There is a lack of saltwater intrusion monitoring acknowledged in the Draft GSP for this area. This data gap also relates to the intended CDFW Plan to convert Ballona land mass into a saltwater bay**.**

The Draft GSP only cites to CDFW's Plan as providing more wetlands. Such conclusory comment, without any data support, is a recipe for disaster and fails to adhere to GDE proactive, protective planning as well as fails to adhere to proactive SGMA policies of protection to the built environment as well as the GDE environment of habitat protection.

CCST Report: RISK & VIABILITY OF SOCALGAS PLAYA DEL REY UNDERGROUND NATURAL GAS STORAGE

1.2Agency Information (Draft GSP)

Grassroots Coalition has been party to multiple Public Meetings and has provided input and a video presentation as well as a Public Meeting presentation. The Draft does not reflect or include the issues presented to the GSA that were first provided to the GSA via an emailed Powerpoint and more recently as a Powerpoint Presentation.

PATRICIA FINAL PPT 3.15.21 Presentation1 2 2.pptx

The Draft GSP also appears to exclude DWR data such as mapping done for the Ballona region's aquifers and faults.

Readily available data and information known via press stories and agencies--their historical records that are pertinent to the GDE, also appear to have been excluded from the Draft prepared by Dudek et al.

As an historic stakeholder (30 years) and a key 501 c3, engaged in numerous successful litigations and administrative actions pertaining to the acquisition and protection of Ballona Wetlands and numerous public safety actions, Grassroots Coalition provides notification to California Division of Water Resources (DWR) of these exclusions and requests the Draft GSP be rejected due to its conclusory statements made without data support and/or evaluation that would have/should have included this basic water diversion and drainage data.

INTENDED SALTWATER INTRUSION BY THE CALIFORNIA DEPARTMENT OF FISH & WILDLIFE-

- The GSA should have included the CDFW approved Plan of saltwater intrusion into Ballona and the region that is contained in their Final Environmental Impact Report (FEIR). There is no mention in the GSP Draft of the CDFW Plan or its potential implications of contamination via saltwater intrusion into the predominantly seasonal freshwater wetland of the GDE, and or implications upon the freshwater aquifers currently classified as Drinking Water. Thus far, saltwater intrusion into Ballona's multiple aquifers has not been addressed in the FEIR. During the May 27, 2021 California Coastal Conservancy meeting, when asked about a freshwater alternative, Coastal Conservancy's Mary Small cites that early on it was considered but not carried forward. This is likely why no cumulative hydrology evaluation was ever undertaken to include within the FEIR. (Meeting @ 3:17:15). When asked by Coastal Conservancy Chair Bosco about the potential of the CDFW project affecting the freshwater aquifers of Ballona, no explanation was offered. Only a conclusory opinion was offered from Ms. Small claiming there would be no impact from the project upon the aquifers (3:20:39). The FEIR contains no evaluation of this issue and contains no discussion of protection of the aquifers per Porter-Cologne; Clean Water Act and/ or the SGMA. Conclusory statements without data support.
- **SEA LEVEL RISE** In the May Coastal Conservancy Meeting, CDFW's Director Bonham opines at 2:42:28 that without the (CDFW) Project, seawater will overtake the area and that their Project improves upon things as a defense against sea level rise. Director Bonham's response to Board Members is contradicted by CDFW's FEIR sea level rise models that reveal the Project will enhance sea level rise problems thus destroying critical habitat. Dr. Margot Griswold, Restoration Ecologist, alerted the Coastal Conservancy Board Members at their 9/24/21 Meeting during public comment, that CDFW's Sea Level Rise Model does compare the CDFW Project to the 'No Project' but that it is buried in the FEIR indexes, hence easily missed. The CDFW Sea Level rise model clearly demonstrates the Project's degradation of Ballona Wetlands. **At 15:26 Dr. Griswold displays the CDFW modeling, demonstrating that the proposed CDFW Project will not protect existing marsh species from expected Sea Level Rise, but instead, saltwater intrusion will destroy critical habitat, turning it into mudflats.** https://youtu.be/Na3J6Z3bV0M
-
- Recording of May 27 Meeting – Part 1 (5/27/2021 Ca. Coastal Conservancy Meeting)

Meanwhile, it is already established that any digging out of the soils, per CDFW's Plan for conversion of Ballona into a full tidal bay, will provide for saltwater intrusion. The aquifers of Ballona are classified as Potential Drinking Water by the LARWQCB and needs protection under SGMA. During the construction of Marina del Rey, engineers provided warnings as to effects upon the aquifers from salt water intrusion. South of Marina del Rey, within the same soil conditions, lies Ballona Wetlands Ecological Reserve which needs protection from saltwater intrusion.

"In general a large portion of the impermeable material above the 50'gravel occurs near the land surface. ….. Average aggregate thickness of clay above the aquifer is about 9 feet." (HD 389 pgs. 8-9)

Further, HD 389 further warns regarding the consequences of removing surface soils to saltwater intrusion , … "by increasing the landward slope of the water table and consequently the landward flow of saline water." (HD 389 pgs 8-9)

The Draft GSP does not address the negative potentials of saltwater intrusion upon the GDE, the aquifers or the built environment.

Regarding the aquifers and potential contamination by CDFW's planned saltwater intrusion, the recording of the May 27, 2021 meeting establishes that both Director Bonham and Coastal Conservancy's Mary Small, in response to a direct board member query on this topic, only provided short conclusory statement of their own personal beliefs that there would be 'no effect' upon the aquifers due to the CDFW project. No data support for such an assumption was offered and no data or information regarding this issue is included in the FEIR. The FEIR contains no responsive response to either the Poland Report and/or House Document 389. (Link location 3:20:52-3:21:23) It is imperative to prudently and scientifically consider saltwater intrusion impacts upon all of the freshwater aquifers in the CDFW project plan area which has not occurred.

SOCALGAS/PLAYA DEL REY CONTAMINATION ISSUES

Per the lack of address in the Draft GSP pertaining to potential contamination issues due to SoCalGas/Playa del Rey operations. This may be due to CDFW's FEIR containing no evaluation pertaining to SCG operational impacts from their Plan of conversion of the land mass of Ballona into a saltwater bay. However, the GSA needs to independently consider and gather readily available data and information, revealing contamination aspects pertinent to both the GDE and the built environment.

During the recent Coastal Conservancy Meeting noted above, both the Coastal Conservancy's lead Mary Small, who in the 2007-8 timeframe was also a Bay Foundation Board Member and contributed to the creation of the bay concept, and CDFW's Director Chuck Bonham repeatedly stated to Conservancy Board Members that the CDFW Plan for conversion of Ballona into a full tidal, saltwater bay—has no bearing on the continuing operations of the SoCalGas natural gas storage (operations). 2:54:57.

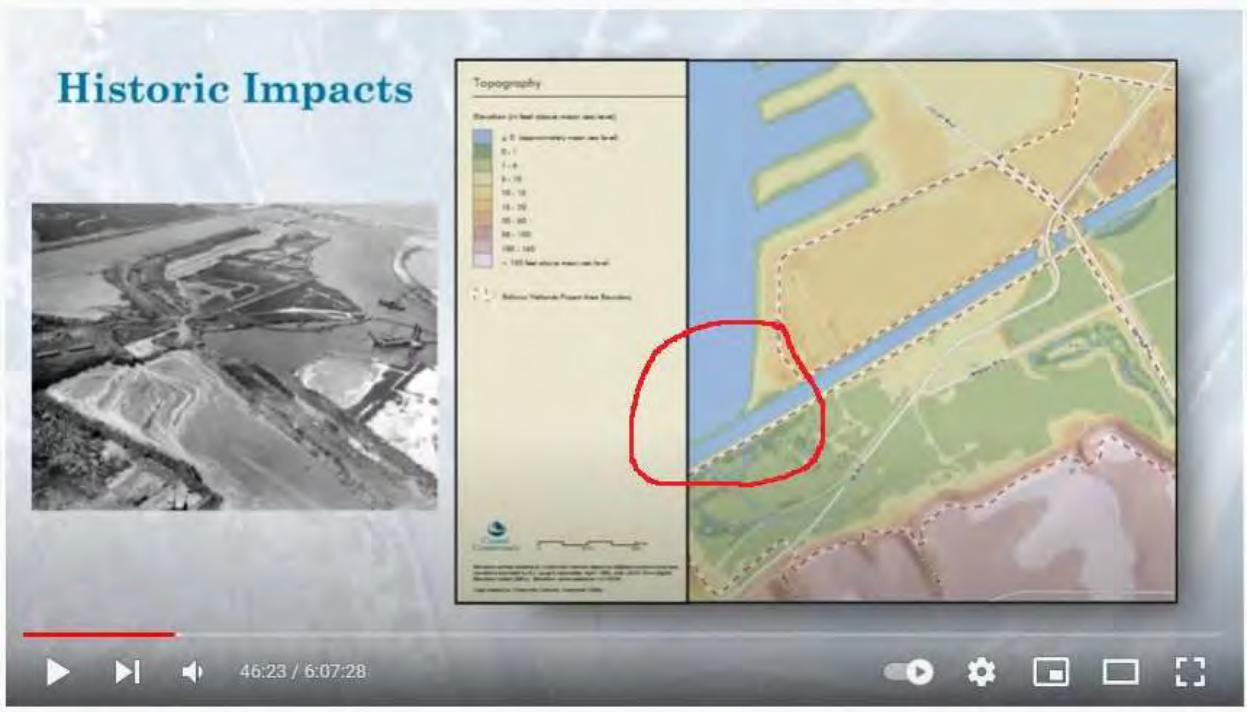
While true in the sense that CAL GEM and the CPUC do provide oversight of the SoCalGas operations, what is omitted is that neither Cal Gem nor the CPUC have been consulted per CDFW's Plan of saltwater intrusion. Director Bonham at 2:33:00 cites that CDFW wants the infrastructure out of the Reserve….that CDFW wants the infrastructure to be removed from the land to be restored… What is omitted in such overly broad and simplistic comments spoken ostensibly for neophytes to oil/gas operations, is that there is nothing in the FEIR discussing the hazards of corrosion and inability to access **the subsurface infrastructure that IS NOT REMOVED & WILL ALWAYS REMAIN** as potential conduits of gas and oilfield contamination. What is not addressed are the enhanced corrosion dangers to all the SoCalGas infrastructures including any new drilled wells. The saltwater interface with oilwells causing leakage due to corrosion is already well documented in SoCalGas wells of Playa del Rey operations. One only needs to look at the Ballona Channel to see outgassing that originates from abandoned wells. It is easy to view abandoned oilwells leaking Playa del Rey oilfield gases, which can and do leak gases, to the surface in Ballona Lagoon Marine Preserve. SoCalGas reservoir gases are documented as part of oil/gas well leakage to the surface. Cal Gem (aka Division of Oil & Gas) shut down SoCalGas/Playa del Rey for a year in 2010 due to reservoir gas leakage to the surface. The leakage was discovered due to litigation by Grassroots Coalition against SoCalGas which culminated in gas monitoring to be done as part of our Settlement Agreement. A URS gas study found the reservoir gas leakage. These are all real and potential dangers that state legislators, the City of Los Angeles are already trying to see fixed and as yet, have not been.

Additionally, replacement wells are planned by SCG. The FEIR shows the placement of these replacement wells within one to a few hundred feet of homes. While cities, state legislators and the public are working toward phasing out oilfield operations, drilling new wells and/or at least having a 2,000 foot buffer zone, the SoCalGas replacement wells' locations contradict current efforts towards safety. The following Links provide SoCalGas/Playa del Rey internal documents that verify contamination to the environment. A timeline of some of SoCalGas/Playa del Rey incidents is provided.

Patricia McPherson regarding SOCALGAS PLAYA DEL REY Operations (Slide Presentation)

GRASSROOTS_COALITION-SoCalGas_PDR-Historical_Timeline-4_page_handout-6-15

Note: Mary Small, Coastal Conservancy Meeting in May 27, 2021 (LINK @ 44:53:00-) provides additional misleading comments while presenting an image she claims shows Marina del Rey dredge fill on top of Area A as she further



states that up to 20' of fill deposited upon Area A is the reason it needs to be dug out to remove the fill that turned Area A into uplands. The image she displays is NOT the private Howard Hughes estate landscape having fill placement but is instead a western edge (red circled area added by GC) of the LA County / Federal (USACE) project on County/Federal property that became what we know today as Marina del Rey. Inside the dotted lines is the historic Howard Hughes estate property. Congressional House Document 389 provides volumes and locations of MDR soil used for the creation of the marina's land properties and as part of the Beach Enhancement Program depositing soils to create beaches to the north and south of the Ballona Channel entrance. This Program created

miles of new beach area for Santa Monica Bay. The HD 389 document also cites a federal comment-- that the creation of the marina would not affect the private Howard Hughes property -- made in response to concerns raised by the Hughes estate. Mapping performed by T.Huffman in the USEPA Report 1986, and mapping performed as part of a Playa Vista 1990 EIR Archaeology study both provide evidence that Area A (the area Ms. Small was addressing in her slide above containing an historic photo and a map for her unsubstantiated claim) was not filled with Marina del Rey dredged soil.

- Recording of May 27 Meeting – Part 1

The GSP and GDE need to be based in reality and science and not in hearsay.

INVESTIGATION NEEDS-

Grassroots Coalition (GC) also requests the GSA work to retrieve relevant data that has been omitted and/or not requested, found or even considered. This relevant data would include but not be limited to, LARWQCB freshwater metering and volume dewatering data accrued since 1998 to the present from Clean Up & Abatement Order No. 98-125 and, freshwater dewatering volume and metering data of the Playa Vista gas mitigation system dewatering that is and has been being disposed of via either the City of LA, Sanitation Dept. (including under the auspices of the LA Department of Water & Power) or sent to the ocean via Playa Vista's Freshwater Marsh System (FWM) under various National Pollution Discharge Elimination System (NPDES) permits, United States Army Corps of Engineers (USACE) permits, and California Coastal Commission (CCC) permits.

GC recognizes that, in part at least, many of the GSA omissions may be due to the GSA's focus upon drinking water wells, including but not limited to the lead City of Santa Monica's attention to groundwater remediation programs related directly to drinking water needs. The GSA's Draft focus on drinking water wells has excluded dewatering from groundwater remediation programs focused singularly on decontamination of aquifers, and dewatering under gas mitigation systems, and proposed, future saltwater intrusion plans of CDFW for the Ballona Wetlands area, not specific to current drinking water uses. The LARWQCB's CAO 98-125 has been in operation since 1998, pumping and diverting cleansed groundwater from under Playa Vista within the historic Ballona Wetlands area. Playa Vista then, under NPDES and LA Sanitation permits, disposes the cleansed freshwater into both the sanitary sewer system and the ocean via the FWM and its Main Drain to Ballona Channel which exits in Santa Monica Bay of the Pacific Ocean. Lack of a coordinated agency/ city effort of oversight has likely afforded this outcome of wasting Ballona's freshwater resources as previous environmental agreements with Playa Vista have been overlooked. Much, if not most of this pumped, cleansed and diverted groundwater is not quantified for volume with best available volume metering technology. Metering with best available technology has also not been utilized for the dewatering ongoing since approximately 2000, for the gas mitigation systems under the buildings of the Playa Vista site, according to Public Record Act responses from LA's Dept. of Sanitation.

The lack of relevant water data does not allow for a protective water security strategy for Ballona Wetlands, newly acknowledged by the GSA as a Groundwater Dependent Ecosystem. Instead, the lack of relevant water data is a recipe for the blind decisions and conclusory statements made within the current Draft GSP.

Grassroots Coalition over the past year has attempted to provide information to the GSA for inclusion of Ballona as a GDE and other issues ie. subsidence but, these issues appear not to have been included despite readily available data, and groundwater dewatering volume data retrieval has not been attempted. Dewatering volumes and metering capabilities have not been investigated and documented for the Ballona region and still needs to be performed. Grassroots Coalition has presented a portion of the GDE dewatering information to the GSA and provides further data support in this response.

The Draft GSP also does not clarify how the GSA intends to wield its powers as they relate to consultation with water right holders or other stakeholders that have both, information to be gathered and/or have not installed best available technology that is required in order to provide reliable groundwater withdrawal volume information**. The data lacking is contained both in NPDES permits and in LA City Industrial Wastewater Permits and do not pertain to established drinking water wells but instead pertain to pumping and dewatering of clean and/or cleansed groundwater under Playa Vista that affect the ecological needs of the GDE known as Ballona Wetlands.**

Contrary to the Draft GSP's comment on page 1-1 which cites that water quality in the Subbasin prior to 2015 need not be addressed, Grassroots Coalition disagrees per SGMA's broader support requirements for use of readily available historical data. The Playa Vista site has ongoing LARWQCB cleanup requirements that have affected the perpetual pumping and diversion of groundwater away from Ballona Wetlands. LARWQCB, in statements made to GC was unaware of the Freshwater Marsh throwaway of water sent into the system. LARWQCB stated that it was unaware of the clay liner of the Freshwater Marsh (FWM) and the HDPE liners in the Riparian Corridor, both of which were designed to act to preclude the cleansed freshwater from percolating downward into the underlying aquifers. LARWQCB also stated to GC that it was unaware of the cleansed freshwater sent into the FWM as ultimately being thrown away into the ocean via the Main Drain of the FWM that empties into the Ballona Channel which exits to the Pacific Ocean**. In short, a lack of coordinated effort of protection to Ballona's freshwater resources and needs as a GDE have become absent, eroding from at least since 1998 to the present.**

The Santa Monica Subbasin is categorized as having medium priority status. This status was determined ostensibly for human drinking water purposes as this has been the focus by the GSA. Grassroots Coalition believes that the inclusion of its GDE, Ballona Wetlands adds to the exigency of protection to this Subbasin and potentially a higher status rank**. The Ballona Wetlands Ecological Reserve was acquired into public trust in 2004, costing $140 million for its acquisition alone. Millions more have been allocated for its study and restoration. It's status of Ecological Reserve (CCR Title 14, Section 630) is the highest protective status available to the state and was applied by the Wildlife Conservation Board in 2003/4 with the legal Purpose and Goal of protection to its freshwater resources and saltmarsh aspects with the added endangered species, Belding's Savannah Sparrow habitat as an additional focus of protective need.** (Wildlife Conservation Board Section 630, Purpose and Goal language)

1. California Regulatory Notice Register 2005, Volume No. 20-Z, Starting on page 663 Ballona Wetlands Ecological Reserve
https://www.dhcs.ca.gov/services/medi-cal/Documents/AB1629/ZREG/ZREG%2020-Z_5.20.05_notice.pdf

This unique, exceedingly rare, predominantly seasonal freshwater wetland (Historical Ecology of the Ballona Creek Watershed, Longcore et al) must be protected but has fallen through the cracks of drinking water focus, leaving it unstudied as a GDE.

1.3.2 Legal Authority of the Groundwater Sustainability Agency (DRAFT GSP Pg. 3 0f 6)

" The City of Santa Monica is the only local agency that currently produces groundwater from the Subbasin." And, " More recently, this management has included coordination with the SWRCB, the DDW, and the RWQCB to remove industrial pollutants that have contaminated the groundwater in the Subbasin."

It appears that the industrial pollutants described above are confined to the City of Santa Monica and its interests, namely the MTBE contamination. There appears to be no cumulative discussion by the GSA of the groundwater contamination pumping and throwaway of cleansed freshwater from the Subbasin area of Playa Vista which is overseen under the LARWQCB's CAO No. 95-125 into either the ocean and/or the LA Sanitary Sewer system under Industrial Wastewater permits and NPDES permits. There is also no discussion of impacts that may or may not be avoided due to implementation of the approved CDFW Plan contained within their FEIR for Ballona Wetlands Ecological Reserve which proposes to convert the Ecological Reserve, the GDE, into a new, full tidal saltwater embayment.

"*…the analyses conducted as part of the GSP suggest that the current and planned future groundwater production are within the estimated sustainable yield of the Subbasin, future demands not anticipated in the GSP may necessitate the adoption of measures to restrict groundwater production. These measures may include, but are not limited to, regulating, limiting, or suspending groundwater extraction from individual wells or wells in-aggregate, imposing extraction fees on groundwater producers in the GSA area, and developing a groundwater allocation."* Draft GSP

The comment in the Draft GSP is concerning due to:

1. The statement above suggests that current and future production (and ostensibly planned intrusion by saltwater) have not been taken into consideration pertaining to any of the GDE area sustainable yield needs within the Subbasin. The GDE is not mentioned here and the lack of anticipation of needs for potential restriction of groundwater and/or surface water removal from the GDE/ Ballona Wetlands is not discussed. Harm to Ballona's hydrology is already documented by CDFW via the Betty Courtney letter to Playa Vista/ Ballona Conservancy pertaining to harming Ballona's hydrology due to the restriction of freshwater into the Freshwater Marsh System; and the CCC acknowledgement of harm to Ballona's hydrology caused by both CDFW and Playa Vista (Ballona Conservancy) unpermitted drainage of ponding freshwater on the Ecological Reserve via unpermitted drains. USFWS, in their comments to the Draft EIR also cite that the freshwater diversions away from Ballona need to be stopped to return the freshwater to Ballona Wetlands Ecological Reserve.
2. The comment from the Draft GSP above, also suggests the legal ability of the GSA to potentially alleviate negative impacts of freshwater withdrawal, and diversion away from the GDE which is important however, currently the comment cites current and future groundwater production as being within a sustainable yield. This conclusory statement excludes analysis of the freshwater depletion occurring via NPDES and Industrial Wastewater Permits. Once again, the focus is demonstrated upon drinking water and not upon the groundwater depletion occurring outside

of drinking water wells and the subsequent negative impacts upon Ballona Wetlands and the freshwater aquifers. Certainly, Grassroots Coalition believes that, at the very least, the issues of pumping, diversion and wasting of Ballona's freshwater as well as ramifications of the approved CDFW Plan, need investigation and address by the GSA which has not yet occurred.

The Draft GSP also opines and defines the exclusion of *"de minimis wells"* which the Draft GSP explains as wells from which 2 acre-feet per year or less of groundwater is produced. Grassroots Coalition believes that without an understanding of the GDE needs, and the clean freshwater that is readily available to it but is being diverted away, there is no prudent evaluation of *'de minimus'* dewatering and/or diversion either explained or considered in the current Draft GSP. This informational gap needs to be filled with the cogent available information in order to establish an informed decision.

The Draft GSP's Figure 1-1 is inaccurate per the Ballona Wetlands Ecological Reserve as it excludes the portion north of the Ballona Channel known commonly as Area A. The map is also in error per the FWM portion of the Ballona Wetlands as the FWM has been removed from the Ecological Reserve's boundaries while it is still Public Trust land under the stewardship of the State Lands Commission.

Below: August 31, 2021 SCP No. 0773 of Los Angeles Regional Water Quality Control Board's Clean Up & Abatement Order (CAO) No. 98-125, originally dated Dec. 22, 1998.

"The submittal of the technical reports above by the specified due dates constitutes an amendment to the requirements of CAO No. 98-125, originally dated December 22, 1998. All other aspects of CAO No. 98-125 originally dated December 22, 1998, and any amendments thereto, remain in full force and effect. Pursuant to section 13350 of the California Water Code, failure to comply with the requirements of CAO No. 98-125 by the specified due date, including dates in this amendment, may result in civil liability administratively imposed by the Regional Board in an amount up to five thousand dollars ($5,000) for each day of violation. In addition to the requirements of CAO No. 98-125 and all amendments thereto, Playa is responsible for compliance with applicable local, state, and federal permits or other requirements and conditions imposed by any other regulatory agency, for the actions described above. Such requirements and conditions include mitigation measures and mitigation monitoring and reporting associated with the Environmental Impact Report and other approvals for the project."

The LARWQCB, has undertaken numerous soils and groundwater investigations on Parcels A, B, C, D formerly owned and operated by the Howard Hughes Company and included the MacDonnell Douglas industrial complex of both aircraft industries located in Area D. All of the parcels comprised the Playa Vista development site**. A,B,C are now Public Trust property areas of Ballona Wetlands that have been given No Further Action (NFA) designations to signify the property as clean and in need of no further actions of remediation. The Ballona Channel is not part of the Ballona Wetlands Ecological Reserve but is owned and operated by the federal government via USACE and by the County Flood Control District of Los Angeles. The Ballona Channel is an impaired waterway in need of remediation and TMDL discussions are directed to the Channel water, not the clean groundwater that is in the Ballona Ecological Reserve.**

Should the CDFW Plan for digging out Ballona occur, with the removal and perimeter replacement of the levees, the toxic Channel water flows would enter into and comingle with the NFA AREAS of Ballona Wetlands Ecological Reserve. Not only would the clean groundwater of Ballona, inclusive of

its freshwater aquifers, be exposed to toxic Ballona Channel water flows but these currently clean areas would be exposed to contamination by saltwater intrusion and the Santa Monica Bay's own toxic effluent.

Groundwater Dependent Ecosystem

Ballona as a GDE extends the entirety of the Ballona Wetlands Ecological Reserve and the Ballona Wetlands Public Trust lands and waters. https://www.flickr.com/photos/stonebird/2389712523

USFWS has also expressed a desire for the GDE investigation to occur and for the study to include the diversion of groundwater away from Ballona Wetlands stemming from Playa Vista's dewatering and diversion of groundwater away from Ballona Wetlands/ Ballona Wetlands Ecological Reserve. (CDFW C. Medak Letter to LARWQCB 2021)

The following link provides pertinent issues of the GDE to the Santa Monica Bay Restoration Commission. https://www.youtube.com/watch?v=pSmNLiXaO7Q Dr. Margot Griswold 10/22/20 discussion of Ballona for the Santa Monica Bay Restoration Commission.

The current Draft GSP only identifies some 40 acres of the Ballona Wetlands as Groundwater Dependent vis a vis an extremely narrow context. We believe that the identification is a starting point only as cited by the explanations for use of the NCCAG Data Set index, including its many disclaimers that point out the Data Set is not meant to represent any specific GDE but is intended as a starting point only. Grassroots Coalition also supports the comments and evaluations of Margot Griswold PhD, a leading state of California Restoration Ecologist. Dr. Griswold asserts, as provided in links contained herein, that the entire Ballona Wetlands Ecological Reserve is a Groundwater Dependent Ecosystem.

Below, provided by Ballona Ecosystem Education Project, a 501c3 with over 30 years of experience and documentation of Ballona, is their website portion containing vegetation information of Ballona Wetlands Ecological Reserve.

http://ballonaplants.blogspot.com/2006/09/complete-list-of-native-plants-of_22.html

Ballona Wetlands is a complex wetland, upland, ecosystem that supports a myriad of endangered and imperiled species, both in wildlife and vegetation. After decades of struggle and litigation to acquire Ballona Wetlands, it was finally acquired via public bond funds and was dedicated the highest California protective status, under Title 14, Section 630 as a specific Ecological Reserve with specific Purpose and Goals as can be viewed in the Regulatory Notice Register.

1. California Regulatory Notice Register 2005, Volume No. 20-Z, Starting on page 663 Ballona Wetlands Ecological Reserve

Additional links and background information pertaining to Ballona Wetlands are included in the document :

Stop drying out Ballona Wetlands Ecological Reserve! Stop Playa Vista's confiscation and throw away of Ballona's freshwater resources.

-Chapter 2 Grassroots Coalition's Response to the Santa Monica Subbasin GSP Draft Response (Draft) continued

2.1 Description of Plan Area (Draft)

Grassroots Coalition (GC) does not, at this time, dispute the overall description of the Los Angeles area basins which include the non-adjudicated Santa Monica Subbasin. However, overall it appears clear that similar to many other GSPs, the focus of the GSAs thus far has been upon human drinking water, potable water being pumped and utilized. The Santa Monica Draft GSP, overall contains little to no attention or data pertaining to the Groundwater Dependent Ecosystem of Grassroots Coalition's focus, namely Ballona Wetlands and Ballona Wetlands Ecological Reserve. Therefore, GC's comments below are generally specific to the southern portion of the Subbasin, Santa Monica Bay and Ballona Wetlands.

2.1

Regarding the overlap of the Subbasin with the West Coast Basin (Adjudication ID No. A05), the Draft GSP suggests that the overlap is predominantly a 'mapping imprecision' and that "management of groundwater resources" are not impacted by one another. Ostensibly, as a result of this unsubstantiated conclusion, potential impacts to the West Basin's water quality and potential subsequent further necessitated management ie. seawater barrier injection of freshwater, have not been considered in the GSP.

The Poland Report suggests, contrary to the "mapping imprecision" comment in the Draft, that there is interface between the Subbasin and West Basin (House Document 389 and Poland Report (Geology, Hydrology, and Chemical Character of Groundwaters in Torrance-Santa Monica Area, CA., J.F. Poland, A.A. Garrett & Allen Sinnott 1959) including but not limited to pages. 4-6)

"The groundwater basin on the southwest or coastal side of the uplift extends from Santa Monica to Long Beach and is flanked on the southwest by the Palos Verdes Hills and the Pacific Ocean. It was designated the west basin by Eckis, but in recent references by the California Division of Water Resources it has been called the west coast basin." Page 6 (25miles long, 7 miles wide, 180 square mile area. Page 6)

The CDFW approved Plan for digging out Ballona Wetlands Ecological Reserve and converting it into a new, fully tidal saltwater bay, and allowing the toxic flow of Ballona Channel outflow water into Ballona Wetlands Ecological Reserve, will most certainly negatively impact the freshwater aquifers that provide freshwater to the near surface areas of Ballona Wetlands. The creation of the Ballona Channel itself is documented by Poland et al, and Congressional House Document (HD) 389, as having allowed for saltwater contamination to the immediate area of the Channel, therefore it would appear that further industrial scale digging out of the area and removing another 3 million plus cubic yards of soils, to allow for full tidal inundation for the creation of a new bay would pose seawater/ toxic Channel contamination side effects. The seawater of the Santa Monica Bay is also well known for its toxic contamination that has, thus far, not been remediated. Such negative impacts would affect both the freshwater aquifers of Ballona and potentially the West Basin**. No hydrologic modeling or studies of the effects of this approved saltwater intrusion, toxic Channel-water intrusion Plan are contained in CDFW's FEIR and/or**

the GSP Draft response. At the very least, prudent scientific study and evaluation should be undertaken.

Basin Setting

The southern portion of the Santa Monica basin has historically been a predominantly seasonal freshwater wetland area that, due to its freshwater and rich alluvial soils nature, had also been a farming area growing, by the 1960's 1,200 acres of truck crops using, at least 26 active irrigation wells within 3,000 feet of the proposed marina area, with the most distant at 9,000 feet away from the harbor perimeter. At the time, irrigation wells provided 2,000- acre feet and well water provided 4,000- acre feet per annum (Poland, HD 389 pg. 7-8)

The watershed through Ballona Wetlands has provided the multiple underlying aquifers (DWR map) and provides for the water-table throughout Ballona Wetlands, including the Playa Vista site, to be at or near the surface (Playa Vista EIR).

"Ballona Creek was straightened and cemented between 1935 and 1939 by the U.S. Army Corps of Engineers, as part of a project to convert the formerly natural drainage to a flood control channel (USACE 1982)." Draft GSP

The Dudek interpretation above is a very general narrative that needs clarification. While the Ballona Channel was 'straightened' in the general timeframe noted above, the straightening was due to damage and subsequent litigation against USACE's and the County of LA's original design that succumbed to over-topping by water during a large storm event, due to the flood control channel's curvilinear path. The curvilinear path gave rise to slowing the outflow of stormwater to the end point of the flood control channel, which then, ended by depositing the freshwater into the predominantly seasonal freshwater wetlands, Ballona Wetlands. The end of the channel was approximately at Lincoln Blvd.

There was no *'formerly natural drainage path*" as stated in the Draft GSP, but instead the Ballona Creek petered out in water volume within the Ballona Wetlands and spread out into varying smaller waterways and/or simply was absorbed into the soils. Only during extreme storm events did Ballona Creek swell enough to break through the coastal dunes and flow out to sea. Thereafter, the area silted back up and was closed to the ocean which provided for Ballona's unique ecosystem and its underlying freshwater aquifers (Historical Ecology of the Ballona Creek Watershed, Dark et al 2011). As the City of Los Angeles grew and more hardscaping covered landscape that would ordinarily allow for rainwater percolation into the soils, there was a flood control need for Los Angeles to shed its water into a flood control system that would not overtop and allow flooding. The Ballona Channel was straightened to allow for faster flow of the stormwater and ultimately extended all the way to the Santa Monica Bay. Since, the straightening of the Channel for greater speed of conveyance, the Ballona Flood Control Channel has performed to prevent flooding. Ballona Wetlands Preservation and Restoration: California Coastal Commission Hearing June 2013 (First slides show ponding across Ballona and the Ballona Channel prior to its straightening.)

GSP Draft Response- Unsupported Comments Regarding Fill on Ballona Wetlands

Contrary to the conclusory statement made in the Draft GSP response by Dudek, pertaining to FILL, there are historical documents that refute the Draft GSP statement.

"Dredge material from the straightening of the channel and from the later development of Marina del Rey in the 1960s was deposited in the Ballona Wetlands, raising its elevation (CDFW 2019)." Draft GSP

The Draft GSP citation relies upon the CDFW Environmental Impact Report. There is a lack of data support in the CDFW Environmental Impact Report regarding the Marina del Rey dredge fill's deposition locations. Neither CDFW nor the GSA provide data support for deposition of dredged soils placed upon the Howard Hughes private land adjacent to the County/Federal project either during its creation or left thereafter. To the contrary, numerous historic documents and photographs cite to the Marina del Rey dredged soils as deposited to the north and south of the Ballona Channel as part of an ongoing beach enhancement program (General Plan Development of the Santa Monica shoreline) and a beach erosion control study that was ongoing. The dredged soils were also deposited in the low marshy areas of the future marina's moles and surrounding land mass utilized for the buildout of Marina del Rey, including its roadways and parking lots. The Draft GSP fails to address the readily available data that contradicts their conclusory statements including but not limited to Congressional House Document 389.

This is significant because the CDFW Plan for conversion of Ballona Wetlands Ecological Reserve (BWER) into a full tidal, saltwater bay, relies heavily upon the notion that Area A (northern parcel of BWER) must be dug out to bring back its historical ecological value. Numerous historical documents and studies demonstrate that Area A, within the area intended for CDFW removal of earth, is an undisturbed portion of Ballona Wetlands. (Poland 1959 et al., T. Huffman, USEPA 1986, Playa Vista Archaeology, EIR 1990; Congressional House Document 389 and attachments). The Ballona Channel excavation and levee construction is not disputed regarding the creation of the levee and its surface roadways that currently exist providing an unbroken track record of flood prevention to date. The lead GSA has been provided with this background information which appears to not be reflected in their Draft GSP comments.

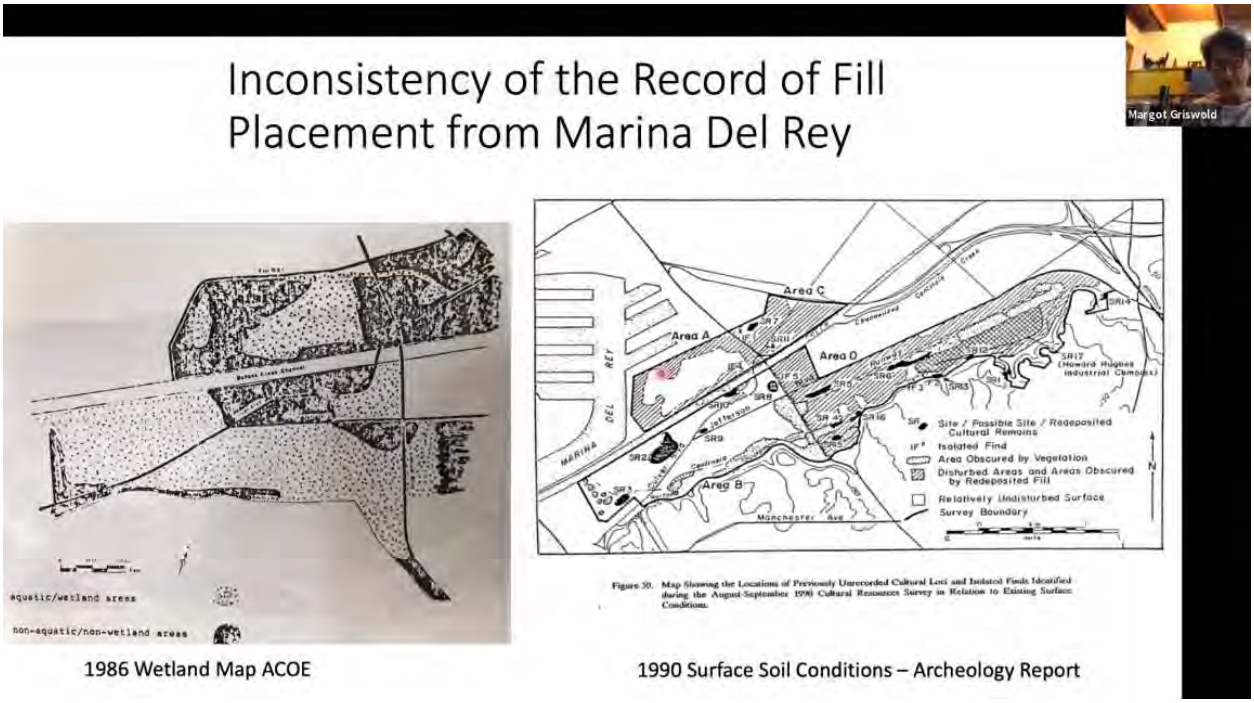
"7. With respect to the effect of the improvement on adjacent shorelines, the district engineer finds that the shores of Santa Monica Bay down coast of the Santa Monica breakwater have been deprived of normal littoral nourishment since construction of the breakwater in 1933, and that the Playa del Rey jetties, 3 miles south of the breakwater, would act as a complete littoral barrier and would benefit the shore to the north. The plan of improvement proposed by the district engineer provides for deposition of 10, 130,000 cubic yards of material, dredged from the harbor, on the beaches immediately upcoast of the Playa del Rey jetties and downcoast between Playa del Rey and Ballona Creek jetties, and deposition of 3, 200,000 cubic yards of material downcoast of the Ballona Creek jetties." Page 16 HD 389.

The soils dredged for the creation of Marina del Rey are documented as being deposited to create the Marina's surrounding land mass and interior moles that support the marina's infrastructure of condominiums, businesses etc. The soils are also documented as having been deposited to create extended jetties another 580 feet and breakwaters etc. (HD 389). Neither the GSA nor the CDFW Environmental Impact Report provide data support for placement of the dredged soils upon the private property of Howard Hughes that is now Ballona Wetlands Ecological Reserve and was dubbed as Area A by the former landowners, of the Playa Vista development project.

In fact, the Howard Hughes Company, the landowner of Area A and all of the Ballona property at issue here, explicitly informed the Board of Engineers for Rivers and Harbor, overseeing the development of the small craft harbor that the proposed improvement "would interfere with a contemplated expansion of its facilities and a proposed runway extension."(HD 389 p. 17) The response to Hughes Co. revealed, " that no aircraft operation difficulties or conflicts will result by the development and operation of the

proposed improvement." (HD 389 p.17) The Hughes Company's concerns of interference upon their lands were alleviated by the acknowledgement by the state and federal officials that their property would not be affected. Area A contains multiple oilwells that were explicitly avoided in the marina construction.

Other scientific information (Playa Vista EIR 1990 Archaeology Report; T. Huffman, USEPA '86) also reveals that Area A maintained most of its area as undisturbed wetlands. See GSP August presentation by Dr. Margot Griswold and Grassroots Coalition, Patricia McPherson which includes mapping from the Archaeology section of Playa Vista's EIR, 1990, and mapping of Area A performed by T. Huffman for the USEPA & Army Corps of Engineers done in 1986.



"Local interests consider that the proposed harbor at Playa del Rey would be an integral unit of an adopted general plan for development of the Santa Monica shoreline. This plan includes widening and improving beaches, providing adequate bath houses, parking areas, picnic facilities, special recreation centers, bathing and wading beaches, fishing piers, youth organization camps, tourist parks with cabin and trailer accommodations, and a bird refuge." Page 6, Playa Del Rey Inlet and Basin, Venice, Calif., House of Representatives, Document No. 389 (HD 389)

Regarding the creation of the Ballona Channel by USACE and LA County Flood Control, soils were placed to either side of the Channel in order to create the levees of the flood control channel itself. Both north and south levees have roadways atop the levees for maintenance purposes. The north levee's paved roadway serves as a bike path and has a wider footprint of the levee on the sides of the bike path. The wider north levee also has an interior roadway that runs the length of Area A, creating a roadway on both sides of a fence. Area A also has raised roadways to the SoCalGas oil/gas derricks onsite, as does Area B, the southern portion of the wetlands for vehicular access to wells on the south side. It is not

known where the soils that make up these raised roadways is from but the roadways can be seen in existence from when the wells were drilled. (Spence Collection)

Pg. 2-2

2.1.1.1.2 State

The GSA appears to have omitted key jurisdictions in the Subbasin.

"CDFW manages the Ballona Wetlands." (Draft GSP) Correction, CDFW manages the Ballona Wetlands Ecological Reserve. The Public Trust lands of Ballona Wetlands include the Ecological Reserve however the freshwater marsh system which affects the ecosystem of Ballona Wetlands and is owned on behalf of the Public Trust land and water by the State Lands Commission but is managed via the Ballona Conservancy, the private development stakeholders that comprise Playa Vista (2006 Case No. C525 826 Ca. Coastal Commission v Friends of Ballona et al). This distinction is important. CDFW, despite legal documents to the contrary, claims itself as an active board member of the Ballona Conservancy and allows, without contracts or fees, for Playa Vista consultants to perform work on behalf of CDFW. (Rich Burg/CDFW letter to Ballona Wetlands Landtrust, ppt page 26 of 31 **California Coastal Commission Meeting, May 8 2019, Ballona Wetlands History, a PDF SlideShow Presentation**)

"*The Department is an active participant on the Ballona Wetlands Conservancy Board*." Richard Burg/CDFW, Environmental Program Manager, South Coast Region 5.

The GDE is Public Trust land and water. The GDE and all of **Ballona Wetlands is also a registered Sacred Site by John Tommy Rosas of the Tongva Ancestral Tribal Territorial Nation** (TATTN). Tribal interests have been working and continue to work to stop the diversion and throw-away of Ballona's Sacred Freshwater into the City of L.A.'s Sanitary Sewer System and/or the ocean.

Jeanette Vosburg has shared a OneDrive file with you. To view it, click the link below.

ANTHONY MORALES SUPPORTING JOHN TOMMY ROSAS POSITIONS ON BALLONA WETLANDS 8.5.2020 1.pptx

Water Agencies within the Plan Area

West Basin Municipal Water District (WBMWD) The West Basin supplies an unknown amount to Playa Vista in recycled water. CDFW has requested support from the West Basin board members for their FEIR PLAN for BWER. The Board members have responded with their intent to monitor ongoing issues and events which ostensibly would include the Groundwater Sustainability Planning for the Ballona area. Grassroots Coalition believes their interest and concern as an additional need to have an adequate GDE performed that would necessarily include the CDFW Plan and its potential effects upon all of the underlying aquifers/uneven aquitards .

The California Coastal Commission has jurisdiction over the coast and over Ballona Wetlands and Playa Vista per agreements and permits such as 5-91-463.

Per the Draft GSP:

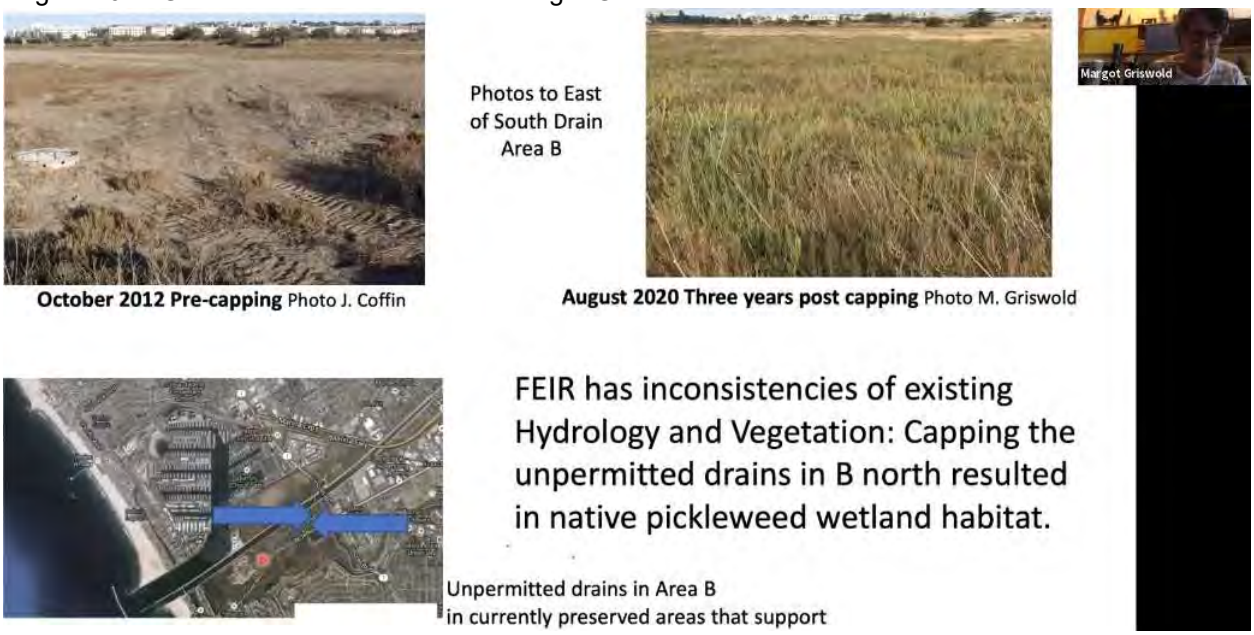
'The Ballona Wetlands consist of approximately 575 acres of tidal and non-tidal marshes, grassland, coastal scrub, invasive vegetation, and developed land, located south of Marina del Rey, north of the Ballona escarpment, and west of the Marina Freeway (SR-90)(Figure 2-2). CDFW manages and maintains primary ownership of the Ballona Reserve, which is currently being restored, with a smaller interest owned by the California State Lands Commission (CDFW 2019). Los Angeles Department of Water and Power (LADWP)and LACDPW–Waterworks Division maintain water mains located along the perimeter of the Ballona Wetland; however, the Culver Marina Little League baseball field and restrooms are the only areas within the Ballona Wetlands that receive water from LADWP (CDFW 2019)'.

Here again, the GSA appears to have its focus upon drinking water wells and does not include pertinent GDE information. LADWP is an oversight agency that includes the L.A. Department of Sanitation and has jurisdiction over NPDES permits for Playa Vista's waste of pumped fresh groundwater into the sanitary sewer system. Within the past two months, the LADWP was part of a request by Playa Vista to extend an NPDES permit for BaCEW-5 issued by the LARWQCB to continue to send pumped, cleansed groundwater discharge to the sanitary sewer system. Grassroots Coalition, in response to the LARWQCB's notification of such request, replied that the permit request should be denied based upon Best Management Practices and need for use of this clean water for the GDE- Ballona Wetlands. The LARWQCB subsequently denied Playa Vista's request for disposal of this clean groundwater via LADWP/ LA Sanitation and instead permitted the water flow into the Riparian Corridor of the FWM System (Aug. 4, 2021 email from LARWQCB to Grassroots Coalition). Efforts such as this by LARWQCB also signal their ability to review the GDE issues at stake and change ongoing negative practices of wasting freshwater in their disposal permits. This is exactly what Grassroots Coalition seeks assistance with and from the GSA per protecting Ballona Wetlands and the underlying aquifers--- positive administrative outcomes via consultation.

The Draft GSP's comment that Ballona Wetlands Ecological Reserve is "currently being restored" is highly misleading. There are currently multiple ongoing CEQA lawsuits and restraining orders against CDFW and the State Coastal Conservancy pertaining to the CDFW approved Final Environmental Impact Report (FEIR) for Ballona Wetlands Ecological Reserve. Thus far, the 'restoration efforts' constitute small areas of Ballona that the California Coastal Commission has allowed permits for hand work in performance of, for example, certain weeding of certain non-native vegetation. However, the mention of 'current restoration' by Dudek would imply to GC that Dudek is aware that any/all 'restoration' efforts need inclusion within the Draft GSP. And, that CDFW's approved FEIR Plans for restoration must be included in the Groundwater Sustainability Planning as SGMA includes future data and information, but Dudek as yet, has not.

An area of actual restoration aided by litigation and Mother Nature is shown below. The large expansion of pickleweed regrowth has been due to the restoration of freshwater ponding during seasonal rains. The restored pickleweed growth is a result of Grassroots Coalition's litigation against Playa Vista and CDFW, stopping their unpermitted drainage of the wetlands that had been ongoing for 20 years. The drainage of freshwater from this region of Ballona is not mentioned in the Draft EIR. The California Coastal Commission had previously written to Playa Vista and CDFW that they were in violation of the Coastal Act, harming the hydrology of Ballona Wetlands and to end the drainage. Neither Playa Vista nor CDFW was responsive to the CCC which led to the prevailing litigation by Grassroots Coalition against Playa Vista and CDFW. The CCC, in further action, supported GC and the sealing of these drains.

August 2021 GSP Presentation slide from Margot Griswold Phd.



Federal—The US Army Corps of Engineers (USACE) has oversight jurisdiction of Ballona Wetlands and the Ballona Channel via the USACE permit 90-326- EV. This USACE permit also provides for the description portion of the California Coastal Commission's (CCC) 5-91-463 permit for Ballona Wetlands and the Freshwater Marsh System (FWM) resulting in the two tied permits. NOAA also has oversight of the Ballona area and is the umbrella federal agency to the CCC. USACE and the CCC are agencies having jurisdiction over permitting to Playa Vista and its dewatering activities, which once the cumulative data is assembled these agencies would have the tools for ecological assessments to provide protective amendments to permits allowing for proactive ecological protection to Ballona Wetlands Ecological Reserve and the underlying aquifers. A GDE study would provide such needed data and information to these agencies which conversely, the lack of such cumulative review which currently exists, leaves these agencies to piecemeal action and thwarts the purpose of SGMA and GDE evaluations.

LARWQCB is tasked with enforcement of the federal Clean Water Act and numerous state laws of oversight to the Ballona area and has oversight of the Clean Up and Abatement Order No. 98-125 for the Playa Vista development site, situated on the historic Ballona Wetlands area. Similarly, the LARWQCB which is typically focused solely upon water quality issues is also, tasked with water volume concerns for protection of environmental needs. However, without inquiry via a prudent GDE study that would include freshwater sustainability management focus and species specific/ vegetation specific evaluation, Ballona's needs are black-holed into oblivion**. The GSA, under its authority for retrieval of information, has not reached out to garner dewatering data that is readily available from LARWQCB as well as the City of LA's Sanitation Department data in order to accrue a cumulative big picture and fix this huge data gap. The GSA has made it apparent to Grassroots Coalition that we as volunteer stakeholders are either supposed to do that work and/or be the squeaky wheel stakeholder. Either way, Dudek appears to believe that they are not tasked with pulling this data together via interfacing with the multiple agencies now working in their own silos. This is the current situation and needs to be remedied via a good faith GDE study in order for informed decision making to occur that will be**

protective of the freshwater resources of Ballona Wetlands and its survival as a unique coastal, predominantly freshwater wetland/ upland ecosystem complex. This also holds true for protection of the underlying freshwater aquifers that have been off everyone's radar whether deliberate or out of disconnection in oversight.

The City of Los Angeles has jurisdiction vis a vis the Los Angeles Department of Building and Safety; Public Works, Flood Control; Los Angeles Dept. of Sanitation under the broader Los Angeles Department of Water and Power (LADWP).

DRAINAGE OF PUMPED GROUNDWATER & DRAINAGE OF PONDING SURFACE WATER

LA City Public Works provides the city permitting for the Main Drain of the Freshwater Marsh System which is comprised of the Riparian Corridor, a mostly HDPE lined, waterway that extends from the east end of Playa Vista near the 405 freeway to the west end of Playa Vista ending at Lincoln Blvd. as the waterway cuts through underground, below Lincoln Blvd. and exits into the catch basin on the west side of Lincoln Blvd., known as the Freshwater Marsh (FWM). The FWM waters then exit to the ocean via the Main Drain on the north side of the catch basin which, in turn exits into Ballona Channel via the mechanical structure within the south Ballona levee that is maintained by the LA County Flood Control District and also permitted by USACE as part of EV 90-326. The entirety of the Freshwater Marsh System is also under the jurisdiction of the California Coastal Commission via Permit 5-91-463.

The Ballona Wetlands is a broader area that today is Public Trust land and water and encompasses approximately 600 plus acres. The Ballona Wetlands Ecological Reserve is approximately 533 plus acres.

Ballona Wetlands is also a registered Sacred Site by Tongva native American, John Tommy Rosas. His work is also supported and carried forward by Chief Anthony Morales. The issues of protecting the sacred freshwater resources are at stake as is stated by both in the following presentation.

ANTHONY MORALES SUPPORTING JOHN TOMMY ROSAS POSITIONS ON BALLONA WETLANDS 8.5.2020 1.pptx

The GDE encompasses all of the areas of Public Trust land and water. Ballona is a very rare coastal, predominantly freshwater wetland/ upland complex of ecosystems, now exceedingly rare due to the unfortunate conversion of most southern California coastal wetland/ upland ecosystems into homogenized full tidal systems that are unsustainable, requiring costly maintenance including dredging year after year. (Dave Jacobs 4/13/2021 UCLA URSUS Environmental Symposium @ 23:16-37:46) ; Margot Griswold PhD, Ballona Wetlands FEIR Inconsistencies and Overlooked Opportunities

1. 4.20.21 Dr Margot Griswold Presents Ballona ... - youtube.com
   www.youtube.com/watch?v=avpCqRoEbdc
   This video on 4.20.21 Dr Margot Griswold Presentation on Ballona Wetlands Final Environmental Impact Report - Inconsistencies and Overlooked Opportunities: C...

The Ursus Environmental Symposium: Ballona Wetlands & the ...
www.youtube.com/watch?v=1CKrszkB-EM

After decades of legal battles, discoveries of oilfield gas issues that gave rise to a willing seller, Ballona was acquired with public bond funds explicitly directing the protection of the unique habitat that is Ballona Wetlands.

https://www.flickr.com/photos/stonebird/ - Jonathan Coffin photography of Ballona Wetlands.

Interrelations especially during drought and/or little rainfall are especially important to be proactive in protecting Ballona's freshwater resources.

Ballona was provided the highest protective status the state offers when, in 2003/4, the Wildlife Conservation Board, the policy decision making body for the California Department of Fish & Wildlife (CDFW), approved the inclusion of Ballona into the Ecological Reserve status sites (132) in California. With this protective status change, specific Purposes and Goals were assigned to Ballona that designated the whys and whats of Ballona that had to be protected. Each individual Ecological Reserve that enters this special status has its own unique Purpose and Goals under California Code of Regulations (CCR) Title 14, Section 630 (Ecological Reserve) laws for the protection of sensitive habitats and species. Ballona's Section 630 language specifically asserted protection to its freshwater resources alongside its saltmarsh habitat while citing the Belding's Savannah Sparrow and its nesting habitat, pickleweed, as critical to preserve. During the hearing for the Section 630 status approval, CDFW's biologist informed the public that with the approval of the Ecological Reserve status that day, the following day a Section 1016 study could begin. A CDFW 1016 study would have been roughly equivalent to a GDE study. Unfortunately, that study was never fulfilled and is therefore not a part of the FEIR. The failure to perform the basic hydrology studies for the protection of the Ballona Wetlands Ecological Reserve, provides even more exigency to the need for fulfillment of a GDE study via SGMA.

The Reserve is home to a myriad of threatened and endangered species including the Belding's Savannah Sparrow, Least Tern, and special status species including Burrowing Owls, White-tailed Kite, Least Bell's Vireo, Saltmarsh Harvest Mouse, Ornate Shrew, Grey Fox. Over 200 species of wild birds rely on the Ballona Wetlands for their survival. Over 1,000 types of native animals and plants exist at Ballona. Today, it harbors rare, native grasslands, home to rabbits, moles, voles, insects, snakes, lizards, frogs and provides a foraging area for threatened flocks of meadowlarks, and kites, Red Tail, Northern Harrier & other hawks; Short Eared, Barn and Great Horned Owls. Larger mammals prowl through Ballona, including coyotes, fox and skunks. Insects on the wing over Ballona provide sustenance for bats, swallows and swifts. Wide areas of pickleweed exist both north and south of the Ballona Channel, necessary for Belding's to outcompete other sparrow species for nesting habitat. Willows spread across its breath that in certain areas-- the threatened Least Bell's Vireo is documented as nesting. Upland species of native coyote bush, saltbush, and a myriad of mallows, meadows of Yerba Mansa and Goldenrod, Buckwheat and Coastal Sages, special status - Lewis' Evening Primrose grow across Ballona. Rare salt pans that secure the existence of copapods during the dry season extend across Area B and are found in Area A. Ponding in the rainy season precipitates the emergence of the tiny copapods, to swim in the freshwater ponds that in turn entice wading bird species that migrate here for this special orgy bonus food supply. Similarly, the emergence of chorus frogs across Ballona swells with the winter rains that typically pond across the entire Reserve.

All of the above require the seasonal, rainwater ponding and a fresh, groundwater table to remain at or near surface for the habitat and the species that rely upon that habitat to remain and flourish.

GSP DRAFT discussion of phreatophytes-

Perhaps, the GSA construes and/or starts fundamentally from a point of view that considers native vegetation of an Ecological Reserve as a threat to water supply? A GDE may be considered in a far more universal, reasonable manner of investigation and protection to ensure that the ordinarily present freshwater is there to provide water to the root systems of plants of Ballona rather than allowing for, as is the case of Ballona, diversion and throw away of its water resources. Ballona's freshwater needs are not a waste to society, as society has paid millions of dollars to protect Ballona and its natural resources.

"Phreatophytes are plants that depend for their water supply upon ground water that lies within reach of their roots." T.W. Robinson Abstract; U.S. Dept. of the Interior-Geological Survey Water-Supply Paper 1423. https://pubs.usgs.gov/wsp/1423/report.pdf

The paper does acknowledge that definitions of phreatophytes and non- phreatophytes becomes really vague to indistinguishable per whether a plant obtains it water supply from soil moisture or from ground water (which also is acknowledged as difficult to determine). However, the paper continues, "The nonphreatophytic plants indirectly affect the water supply of a region by utilizing water in the soil column that might otherwise reach the water table as recharge. Phreatophytic plants, on the other hand, directly affect the available water supply by drawing from the ground-water reservoir as described earlier, thus reducing ground-water storage and related streamflow." p. 8 Paper 1423.

1. SGMA Planning | Groundwater Resource Hub
   groundwaterresourcehub.org/sgma-tools
   Plant rooting depth information can provide a useful insight on what groundwater levels may be needed to sustain GDEs. This species-specific rooting depth database of California groundwater-dependent plants provides a reference point for understanding whether GDEs are hydrologically connected to groundwater. Learn More

1. Plant Rooting Depth Database | Groundwater Resource Hub
   groundwaterresourcehub.org/sgma-tools/gde...
   The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NCCAG Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes [1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet.

This paper features plants that rely upon groundwater to survive as a negative in the role of water supply. It includes many vegetation types of Ballona that endangered species expressly rely upon as nesting habitat, ie. Belding Savannah Sparrow's need for large swaths of pickleweed for nesting habitat in order to out compete other sparrow types using the area. The Belding and its nesting habitat are expressly singled out for protection under the Purpose and Goals of the Ecological Reserve, Section 630 status to Ballona Wetlands. Use of this terminology by the GSA consultants Dudek, raises concern for its Draft GSP investigation to include only 40 acres of Ballona as a GDE. Rare grasses of Ballona and other vegetation that are considered to not have 'high economic value' does not preclude their critical value

to wildlife species that rely upon them. Critical vegetation for Ballona includes pickleweed, willows and other vegetation.

"In fact, it was pointed out by Douglas (1954, p. 8-12) that the word 'phreatophyte" is becoming a group of destructive enemies that formerly were regarded as nuisances." P. 8 of 92 Paper 1423.

SGMA does utilize the NCCAG Data Set as a starting point for review of a GDE but also provides numerous disclaimers as to not using it as a sole source in determining the management of water resources for any given GDE.

groundwaterresourcehub.org/sgma-tools/gde

DRAINAGE OF PUMPED GROUNDWATER & DRAINAGE OF PONDING SURFACE WATER

LA City Public Works provides the city permitting for the Main Drain of the Freshwater Marsh System which is comprised of the Riparian Corridor, a mostly HDPE lined, waterway that extends from the east end of Playa Vista near the 405 freeway to the west end of Playa Vista ending at Lincoln Blvd. as the waterway cuts through underground, below Lincoln Blvd. and exits into the catch basin on the west side of Lincoln Blvd., known as the Freshwater Marsh (FWM). The FWM waters then exit to the ocean via the Main Drain on the north side of the catch basin which, in turn exits into Ballona Channel via the mechanical structure within the south Ballona levee that is maintained by the LA County Flood Control District and also permitted by USACE 90-326-EV. The entirety of the Freshwater Marsh System is also under the jurisdiction of the California Coastal Commission via Permit 5-91-463.

UNPERMITTED DRAINS in Ballona Wetlands are under the jurisdiction of the California Coastal Commission (CCC). The CCC ordered the unpermitted drains sealed and ultimately their removal in order to protect Ballona's freshwater resources and its habitat.

Draft GSP Page 15 of 230; Table 2-5, Basin Plan Beneficial Uses, Select Water Quality Objectives, and Water Quality Impairments for Receiving Waters within the Santa Monica Subbasin

Ballona Wetlands has the designations as **EST, WILD, RARE, MIGR, SPWN, WET,** REC1, REC2, and none of lands and groundwater/ seasonal ponds within the boundaries of the Ecological Reserve or the greater Ballona Wetlands area of the State Lands Commission (SLC) property are currently known to be impaired (LARWQCB NFAs (No Further Actions designations for clean-up needs)).

(BIOL) is not attributed to Ballona Wetlands Ecological Reserve in the designations of the Basin Plan Beneficial Uses. Why is this? Considering Ballona's designation as a Title 14 Section 630- Ecological Reserve status should provide for the Basin Plan to include the BIOL designation to Ballona Wetlands and the Ballona Wetlands Ecological Reserve.

[28] *Preservation of Biological Habitats (BIOL): Uses of water that support designated areas or habitats, such as Areas of Special Biological Significance (ASBS), established refuges, parks, sanctuaries,* ***ecological reserves****, or other areas where the preservation or enhancement of natural resources requires special protection.* (pg. 17 of 230 GSP Draft, emphasis added)

The Water Quality Impairment (303(d)Listing) designation would and/or will likely be extended into Ballona Wetlands Ecological Reserve and the SLC property**, if** the 303 impaired waters of Ballona Channel, Ballona Lagoon/Venice Canals and toxics from the ocean are allowed to enter into the Ecological Reserve as planned by CDFW. The Draft GSP, in prudent review of potential future negative impacts upon the GDE, should include an evaluation and/or comment upon this matter of great public concern. Page 14 of 230 lists the designations cited above from Chapter Two of the Draft GSP.

Grassroots Coalition believes the text cited within the column Water Quality Impairments (303(d)Listed) to be off-point and/or inaccurate/unreasonable per this listing. "Exotic Vegetation, Habitat Alterations, Reduced Tidal Flushing, Trash" :

1. Ballona does have nonnative vegetation that has been acknowledged however, the nonnative vegetation does not pose a threat to water quality or quantity and serves, in many instances to act beneficially for species nesting, foraging, and provides cover for wildlife while any restoration process is sorted. Some of its non- native vegetation supports species awaiting 'endangered' status listing, such as Eucalyptus Trees that provide critical overwintering sites for Monarch Butterflys.
2. Habitat alterations do not create water impairment issues unless that alteration introduces contaminated water into the Ecological Reserve which will only occur if the CDFW Plan is allowed.

Currently, the approved FEIR Plan of CDFW is acknowledged by CDFW as inaccurate and must be redone for a third attempt per its Ballona Channel, flood control data. Additionally, due to numerous deficiencies under the California Environmental Quality Act, at least five CEQA lawsuits have been merged against CDFW. The State Coastal Conservancy has been recently sued for its approval of the CDFW Plan via its grant award to CDFW for another attempt to perform adequate Ballona Channel flood control studies.

3. *"Reduced Tidal Flushing*." The Draft GSP states, <u>without data support</u>, that reduced tidal flushing is the impairment to Ballona's existence.
   Tidal flushing of Ballona Wetlands Ecological Reserve as cited in <u>Historical Ecology of Ballona Creek Watershed</u>, Dark et al.2011, and by Dave Jacobs, UCLA URSUS Symposium 2021), demonstrates that Ballona did not have regular tidal flushing, hence this text is misleading and without merit. Tidal flushing provides for contaminated saltwater intrusion into Ballona. The Ballona Channel waters are also impaired/toxic. Intrusion into Ballona of the contaminated Channel water is a concern and not discussed by the Draft GSP. The current tide gates (1135 USACE Project) did not fulfill legal requirements for the insertion of the gates as cited by USFWS Field Supervisor, Ken S. Berg and John Hanlon, Chief, Branch of Federal Projects in a 1998 letter to Col. Robert L. Davis (Conclusion portion of letter seen below). The improper insertion of the tide gates is still being contested for the unfulfilled legal and environmental evaluation needs. (Documents by John Tommy Rosas of Tongva Ancestral Territorial Tribal Nation (TATTN). GC is not aware of any 408 studies done since the 1998 timeframe on the tide gates installed in the western end of the Ecological Reserve that would evaluate the potential negative impacts of contaminated saltwater intrusion upon the underlying freshwater aquifers and/or other potential negative impacts as cited in the USFWS August 4, 1998 letter to USACE.

Col. Robert L. Davis -2- AUG 4 1998

In conclusion, based on the information provided in the draft report, and clarifying conversations with your staff, the Service generally supports this proposed 1135 project. We note that because section 1135 funds are scarce, we assume the Corps has determined that other restoration opportunities do not exist that could provide greater benefits for fish and wildlife resources.

We hope that the Corps will improve upon future efforts to coordinate with the Service on section 1135 projects. The Corps indicated in the draft project report that they would only fund the Service to prepare a Fish and Wildlife Coordination Act (Coordination Act) report addressing existing conditions, alternatives analyses, and final recommendations. This report would be prepared after the project alternative is selected. The existing conditions and alternatives analyses are typically presented in planning aid reports during the development of the project alternative. According to the Coordination Act, the Corps should coordinate with the Service early on and during the entire planning process of a water resources development project. Pursuant to the National Transfer Funding Agreement, which implements the requirements of the Coordination Act, we believe this process has been severely truncated for this 1135 project. We believe any water resource development project, including a comprehensive plan for Ballona wetlands, warrants early Service involvement as set forth in the Transfer Funding Agreement, including preparation of the appropriate planning documents, alternatives analysis, and finally a Coordination Act Report for a comprehensive plan.

If you have any questions, please feel free to contact John Hanlon, Chief, Branch of Federal Projects, at (760) 431-9440.

Sincerely,

Ken S. Berg
Field Supervisor

cc: COE, Los Angeles, CA (Attn: Mssrs. Copeland, Kaiser, and Young)

G-26

Ballona is a predominantly freshwater, upland, wetland complex of ecosystems that include riparian and brackish/salt marsh habitat, all uniquely situated over freshwater aquifers classified by LARWQCB as Potential Drinking Water. The seasonal rains and the underground fresh watershed have been at or near the surface (Playa Vista EIR). Ongoing dewatering of the freshwater via pumping, draining and otherwise compromising these waters has not been addressed by the Draft GSP.
Proper process and data gathering needs to be accomplished.

4. Trash. Trash exists wherever humans travel. It is interesting that Ballona Wetlands has been singled out as having trash as a 303 impairment, while Santa Monica Canyon, Rustic Canyon, Sullivan Canyon and our Santa Monica Mountain trail and fire roads---all have trash, and homeless/transients living, passing through at any given moment and area, and trash is not mentioned from these areas in the Draft GSP. The Ecological Reserve has no water runoff into

Ballona Channel that would avail itself to carrying trash. The exit areas of Ballona's drainage areas are confined to outlets that, as far as GC is aware, do not allow for trash to exit. The Ballona Channel however, is heavily impacted with trash that becomes apparent during storm events that flush many storm drains areas from inland, into Ballona Channel and out to sea. Hence, not just toxins but also trash make their way down the Ballona Channel to the Santa Monica Bay. It is also due to this problem, that opening up Ballona Wetlands Ecological Reserve via the CDFW Plan to remove the current levees, dig out Ballona and reestablish new, larger levees on the perimeter of a new, tidal bay would expose most of the Ecological Reserve to this toxic/ trash reality of Ballona Channel waters and Santa Monica Bay trashed/ contaminated saltwater. The Draft GSP has no address of these issues and the FEIR does not address these problematical issues. There is a need to address these issues for the GDE, Ballona Wetlands Ecological Reserve.

Table 2-6 SWRCB and Los Angeles RWQCB General Permits Applicable to the Plan Area (Draft pg. 17 of 230)

"Notes: There currently are no active individual SWRCB or RWQCB permits applicable to the Plan Area BMP –Best management practice" pg. 18 of 230 Chapter 2 Draft GSP.

The Draft note above is extremely confusing. Playa Vista does have LARWQCB wastewater discharge under CAO No. 98-125 which includes NPDES permits for treated/cleansed groundwater to surface waters of Ballona Channel and the catch basin known as the Freshwater Marsh which is Public Trust property stewarded by the State Lands Commission and CDFW in its participation as a board member of the Ballona Conservancy (a Playa Vista private development group).

There are also NPDES permits for the building sites and other areas of Playa Vista that discharge pumped, clean groundwater to the LA Sanitary Sewer under industrial wastewater discharge permits.

The GSP appears to have excluded these dewatering permits, both of which do not adhere to Best Management Practices and instead waste clean and/or cleansed groundwater from the Playa Vista development project by sending the freshwater to either the sanitary sewer or out to sea. Playa Vista is now under additional ownership by Brookfield Residential.

Best Management Practices that would allow for all of this clean groundwater to be utilized by the GDE-Ballona Wetlands have not been addressed in this Draft GSP. The data gaps pertaining to this wasting of clean freshwater appear to include lack of input from multiple agencies and city/county entities that have allowed the pumping and diversion of clean groundwater away from the GDE without consideration of the GDE and/or each other.

Please note page 6, paragraph 2 pertaining to LARWQCB, NPDES permit denial to Playa Vista after Grassroots Coalition requested, on behalf of the GDE, Ballona Wetlands, for the NPDES permit to allow for discharge to Ballona Wetlands and NOT to allow the Playa Vista request for discharge of the clean groundwater to Sanitation.

***"City of Los Angeles General Plan Open Space Element Policy** 1. Ecologically important areas are generally considered as open space and shall be so designated. The following shall apply: a. To the extent feasible, ecologically important areas*

should be kept in a natural state. Policy 2. Flood endangered areas should be set aside for appropriate open space" Pg. 32 of 230 GSP Draft

The General Plan above would appear to disallow the CDFW Plan and support restoration. While the Draft GSP includes this information, the Open Space Policy is not discussed in the Draft GSP in pertinent relationship to the GDE, Ballona Wetlands/ Ballona Wetlands Ecological Reserve.

The protection of the underlying freshwater aquifers of the Ballona region, classified by LARWQCB as Potential Drinking Water, should be evaluated for how to best protect this source of freshwater as Drinking Water as well as its role in sustaining Ballona Wetlands Ecological Reserve.

And, the ***Open Space Element's Goal 0S4: Recharge Groundwater Resources*** (Draft pg. 33 of 230) would also appear to support the cessation of diversion of groundwater and ponding rainwater away from Ballona to instead allow for Ballona to act as a wetland, allowing the freshwater to recharge its underlying aquifers.

The General Plan per OS 4.2 and OS 4.3

This section of the General Plan also lend itself to protection from wasting Ballona's freshwater from being thrown away into either the sanitary sewer or the ocean. However, the Draft GSP does not provide discussion of this in context with the GDE, Ballona Wetlands and Ballona Wetlands Ecological Reserve.

"OS 4.2 Shallow Groundwater -Further enhance the City's efforts to minimize shallow groundwater being discharged into the storm water system and encourage alternative means such as groundwater recharging when dewatering subterranean structures

.OS 4.3 Recycled Stormwater -Explore methods of retaining and using storm water that would otherwise go into storm drains as runoff. "

Efforts to utilize parks for stormwater capture and recharge such as is being done by many cities (ie. Beverly Hills General Plan/ Open Space Element) which today for Ballona Wetlands, would encompass sealing the drainage channels that exit to the Ballona Channel but for during very large storm events where the Channel could still act as a backup plan for discharge to prevent any potential street flooding. Such closure has already been supported by scientists knowledgeable about Ballona.(UCLA URSUS Environmental Symposium 4/13/21 Dave Jacobs 23:16-37:46 youtube Presentation discussing negative impacts of full tidal saltwater intrusion and discussing the freshwater nature of Ballona Wetlands)

"Table 2-11. Stakeholder Categories in the Plan Area" pg. 46 of 230 Draft GSP

Category of Interest	*Examples of Stakeholder Groups*	*Engagement Purpose*
Environment and Ecosystem	*Ballona Creek Renaissance* *Friends of Ballona Wetlands* *Heal the Bay*	*Inform and involve to sustain vital ecosystems*

Grassroots Coalition, Sierra Club- Airport Marina Group, and Ballona Ecosystem Education Project are not included in the stakeholder groups cited above in the Draft GSP. We have attended at least 3 of the 6 public meetings. Despite our requests provided to the leadership of the Santa Monica GSA over the past year, for inclusion of the Department of Sanitation and LARWQCB to participate in public meetings, as both are key to protection of the freshwater resources of Ballona, we have not had the opportunity to speak directly with their

representatives at any public GSA meeting. We do appreciate the availability of Santa Monica's Lisette Gold who has made herself readily available. However, it is clear from the extensive data gaps in the Draft GSP pertaining to the Ballona Wetlands GDE, that such interface is needed between GSA members and stakeholders. Such interface, which the City of Santa Monica is authorized to request, would, no doubt, help bring GSA parties to the table, to discuss the harmful, wasteful diversion of groundwater away from Ballona Wetlands. Especially since certain GSA members are party to the dewatering permits to Playa Vista.

"*2.2.2 Surface Water and Drainage Features*" (GSP Draft p 48 of 230)

Faults pg. 57 of 230—The GSP contains no discussion of Lincoln Blvd. as an area of 'disrupted strata' and potential fault as discussed by the City of Los Angeles' oil and gas expert Exploration Technologies Inc, in the Chief Legislative Analyst's Report on Ballona Wetlands/ Playa Vista and ETI Regional Geochemical Assessment of BTEX and H2S Gas Occurrences. (prepared for LADBS)

"The only known wells that produce groundwater from the Ballona aquifer are associated with ***groundwater quality remediation and dewatering activities at the Playa Vista*** *development in the southern part of the Subbasin adjacent to the Ballona Escarpment (Playa Capital Company 2020).In the third quarter of 2020 these wells produced approximately 174-acrefeet of groundwater from the Ballona aquifer (Playa Capital Company 2020). Analysis of hydrographic for this GSP (Section 2.4.1.3) indicate that the Ballona aquifer is hydraulically connected to the underlying Silverado aquifer in the Playa Vista area. Pgs. 59-60 of 230 Chapter 2 Draft GSP*." Emphasis added.

The information above from the GSP Draft, appears to agree with the DWR/Playa Vista EIR mapping which also points out the hydraulic connections between the aquifers however, there is no additional mention of the area west of Playa Vista and inclusion of the Poland et al and House Document 389's comments per hydrologic connections that exist west of Lincoln Blvd. for these same aquifers/aquitards. This issue needs address in the Draft GSP.

The Draft GSP section above also only vaguely mentions, 'dewatering activities at the Playa Vista development …" There is a need for full engagement and investigation and evaluation of the cumulative ongoing dewatering activities of Playa Vista and CDFW.

It is clear from Interra's (GSA's consultant firm performing water modeling) comment below that there are serious data gaps which need to be filled.

INTERRA

"6.2 Data Gaps The LACPGM regional-scale model was built using a new sequence stratigraphy geologic model of the Los Angeles Coastal Plain, and incorporates all available pumping, injection and recharge datasets. Nevertheless, data gaps exist in certain areas of the LACPGM, including the Santa Monica Basin. Currently there are no multi-level monitoring wells between the Marina del Rey area and the inland areas of the Basin, where most pumping occurs. As a result there are no water level and water quality data to comprehensively evaluate the potential for groundwater flow from the Marina del Rey area. This represents a significant data gap in conceptualizing groundwater flow beneath the Marina del Rey area and the potential for salt water intrusion due to inland groundwater gradients. 7.0 REFERENCES"

2.2.2 continued- Draft discussion per Ballona Channel and Storm Drain System

While much of the precipitation does flow into concrete lined creekways throughout the Plan area, no studies have been performed to gather information on leakage of these systems and/or the seamed concrete bottoms that are free to leach into the soils below just as the underlying gases that accumulate under the concrete sections, are free to escape upwards (Centinela Creek). This holds true for the length of the Ballona Channel with its numerous seamed areas. West of Centinela Blvd. the Ballona Channel is not lined but has a soft bottom with the Channel sides having not cement but a slurry through which cracks have not had consequential negative impacts (LA Flood Control study, Playa Vista area) but do allow for vegetation growth and permeability to an unstudied amount in the BWER area.

The storm drain system is old and likely does not provide 100% containment as cited in the Draft GSP.

The groundwater in the Playa Vista/ Ballona Wetlands area is at or near the surface. (PV EIR)

2.4.7 Groundwater Dependent Ecosystems

The NCCAG information provided by DWR is intended, as stated in the Draft GSP, as a 'starting point' only**. All of Ballona Wetlands/ Ballona Wetlands Ecological Reserve is a GDE within the context of the full parameters of a GSP within SGMA**. Natural Communities Commonly Associated with Groundwater ...map.dfg.ca.gov/metadata/ds2788.html

Additionally, the biodiversity that relies upon the many habitats of Ballona Wetlands Ecological Reserve are as interrelated as the surface water and groundwater. The interconnectedness is part of a GDE evaluation for ensuring best management practices are performed under SGMA to protect the ecosystems and the underlying freshwater aquifers.

It would appear that the preparer of this Draft GSP has focused upon drinking water needs of humans, as is common in many GSPs rather than delving into the needs of the largest and most critical remaining habitat area remaining along the Los Angeles coastline- Ballona Wetlands Ecological Reserve.

https://www.flickr.com/photos/stonebird/ - Jonathan Coffin photography of Ballona Wetlands.

Interrelationships during drought and/or little rainfall are especially important to understand as the plants/wildlife are ever more dependent.

2.4.7.3 Ballona Wetlands Ecological Reserve

Pg. 80 Draft Chapter 2

"*In the vicinity of the BWER, a 40 feet thick clay layer separates the Bellflower aquifer from the underlying Ballona aquifer*. (see Section 2.3.1 Geology/ Appendix E USACE 2017)

The comment above appears to skew its citation's intent. Nevertheless, the DWR Map and studies done for the Playa Vista EIR demonstrate that the 'clay layer' discussed above varies in thickness and its existence is not uniformly distributed across Ballona. (Poland et al, HD 389, Exploration Technologies Inc.) This is ostensibly why the DWR Map and Playa Vista consultants determined the aquifers act as one. Additional studies across the Ballona Wetlands, via geotechnical borings, soundings and gas investigations and the development of the Playa Vista site itself, have revealed the groundwater as interfacing between the aquifers. (Exploration Technologies Inc; DWR Map; PV EIR geology, drilling logs SoCalGas)

Tables 2-19. NCCAG Vegetation Communities in BWER (pg. 80-81) are, in the Dudek Draft GSP, inexplicably lacking in native plant communities that reside in the Ballona Wetlands.

Grassroots Coalition acknowledges the Natural Communities Commonly Associated with Groundwater- Vegetation (NCCAG) that Dudek has utilized for its response to GDE engagement. However, what appears from the listing itself, as cited in the link below, is that **NCCAG is a starting point and contains numerous disclaimers pertaining to its pertinence and quality for any given GDE.** This disclaimer is not found in the Santa Monica Draft GSP for the average reader to understand the significance of the NCCAG only being a starting point as an aide to addressing a GDE study and not being a definitive regulation of study fulfilled in and of itself as it appears that Dudek has done and as cited by Ms. Weinberger in the August GSA Meeting. After Grassroots Coalition's request again for the GSA, Santa Monica leadership/ Dudek to ask for the LA Department of Sanitation and LARWQCB to come to the table and participate in providing the dewatering data and information for evaluation within the Draft GSP, Ms. Weinberger's reply at 1:31:21 (August 2021 GSA Meeting)

…" I appreciate that and I think you know we have done the groundwater dependent ecosystem work under SGMA to the requirements of SGMA, but we're happy to go over that in more detail with you." August 2021 GSP Meeting transcript.

Our take-away from this response is that our efforts at seeking assistance in the retrieval and evaluation of cumulative dewatering data and information has been dismissed as this issue was already completed in the Draft GSP by Dudek. And, while it was also expressed by Dudek's, Ms. Weinberger, that the Draft is a beginning process, the past year's lack of information gathering pertaining to Ballona Wetlands and its aquifers does not provide an indication that the data gaps will be pursued in a timely, meaningful, prudent fashion.

https://map.dfg.ca.gov/metadata/ds2788.html

The Draft provides no meaningful explanation of its 40 acres of groundwater dependent vegetation conclusion. The NCCAG is characterized by agencies as a starting point for investigation. And, the varying types of GDEs and their interconnectedness to seasonal surface water that promotes the dry season water table availability to vegetation is not discussed or reflected in the Draft's conclusory statements.

Various rare grassland areas in Area A and elsewhere in Ballona, along with extensive areas of rare species including but not limited to Lewis' Evening Primrose in Area A and Area C of BWER are excluded in the Draft GSP's discussion of GDE needs. The following link includes but is not complete of Ballona's vegetation:

1. Ballona Native Plants Compendium
   ballonaplants.blogspot.com
   Published by the Ballona Ecosystem Education Project PLANT LISTS AND MAPS: MASTER LIST OF Plants of the Ballona Wetlands, Baldwin Hills, El Segundo Dunes and smaller Open Spaces

For example, Area A, B, C have pickleweed growth that is critical as Belding's Savannah Sparrow habitat.

The seasonal rainwater ponding across Ballona is also dependent upon the underlying groundwater level for ponding to occur. If the normal water table level is not present, the seasonal rains can percolate downward more rapidly and ponding can be reduced and/or not timely occur to aid in seed dispersal, or allow for frog eggs and tadpoles to fulfill their cycle of life and so on. Removal of the surface ponding has occurred at Ballona due to Playa Vista's

and CDFW's illegal drains. These activities have harmed the hydrology of Ballona as cited by the California Coastal Commission. (CCC 2014 Letter to Playa Vista /CDFW) Negative impacts can occur when surface water percolation downward is removed or reduced which further reduces recharge to the freshwater aquifers. At Ballona, the time it takes for rainwater to pond has appeared to increase through the years as Playa Vista dewaters the upper water-table and aquifers. There has been no exploration or gathering of information to determine what is occurring overall and cumulatively between Playa Vista and CDFW's dewatering activities for the past 20 years.

Without data and information support, the private business used by CDFW, the Bay Foundation, has promoted claims of Ballona Channel as the sole source of freshwater to Ballona and that its channelization is the reason for Ballona drying out, thereby promoting CDFW's plan to dig out 3 million plus cubic yards of soil to convert Ballona into a full tidal, saltwater bay. This is a false premise being delivered to the public using public dollars.

The GSP Draft, without data support, also cites the lack of tidal flux into Ballona as its main reason for degradation. Such echoing of misinformation is contrary to legitimate SGMA and GDE study.

What we do see as actual cause and effect-

The sealing of the unpermitted drainage in Area B, in just a couple years has given rise to ponding and the widespread regrowth of pickleweed throughout this area. Belding's need wide areas of pickleweed growth to out compete other sparrows for nesting habitat. Grassroots Coalition's prevailing litigation and the California Coastal Commission's subsequent orders to seal the illegal drains, has resulted in the restoration of widespread pickleweed regrowth throughout this area. (Griswold PhD, photos, August 2021 GSP presentation).

"" 2 –Plan Area and Basin Setting Groundwater Sustainability Plan for the Santa Monica Groundwater Subbasin12169July 20212-82a natural meander-shaped pattern, and removing historical dredge materials north of Ballona creek to create a floodplain (USACE 2017). These alterations are expected to establish 81 acres of new wetlands and 39 acres of new non-wetland waters of the U.S., as well as enhance 106 acres of native wetland and 58 acres of existing non-wetland waters of the U.S" Draft GSP

The CDFW Plan noted above is set forth in a FEIR, and is currently under CEQA litigation by five environmental organizations due to numerous deficiencies and inaccuracies. Ballona Wetlands has been closed to daily tidal flow for hundreds of years. Only during irregular, severe rainfall events did enough freshwater flow to break through the coastal dune system to the ocean. This is why Ballona is a rare coastal, predominantly seasonal freshwater wetland (Historical Ecology of Ballona Creek Watershed, Dark et al 2011) The CDFW Plan to convert Ballona into a full tidal saltwater bay is not restoration as defined by the California Coastal Commission's definition of restoration. The USFWS in their response to the Draft EIR, comments that CDFW's thinly disguised cover story of 'creating upland' with over 3 million cubic yards of soils dug out from Ballona is simply filling of wetlands which is not permitted under the California Coastal Act. (USFWS Ballona Draft EIR response)

And, while the Ballona Channel's creation has impacted the wetland, the flow of fresh groundwater has continued throughout Ballona as is easily evidenced in: the construction records of the buildout of Playa Vista; boring log records; vegetation existence, including trees that would not continue to exist in saltwater; and the continued existence of the near surface aquifers. Seasonal ponding continues across Ballona, but for the illegal drainage of the ponding

water, violating the Coastal Act by CDFW and Playa Vista. (GC v Playa Vista/CDFW; CCC 2014 letter to Playa Capital LLC/ CDFW) The illegal drainage of rainwater ponding in Area B has since been halted via litigation by Grassroots Coalition against both CDFW and Playa Vista. The California Coastal Commission then required the sealing of the unpermitted drains.)

FILL PLACEMENT FROM CONSTRUCTION OF MARINA DEL REY

Another one of the inaccuracies to which CDFW and the FEIR do not provide data support, is the unsupported claim by CDFW that Area A of Ballona Wetlands has been filled with Marina del Rey dredged soils. The Draft GSP, without data support makes the same claim as it simply cites to the unsupported claim by CDFW in their FEIR. The FEIR's challenge via CEQA litigation includes this unsupported claim by CDFW.

Data demonstrating the Marina del Rey dredged soils were used to create miles of extended/enhanced beaches to the north and south of the Ballona Channel as well as for the creation of the marina's landscape infrastructure is readily available within the congressional document known as House Document 389. The Draft GSP fails to include or discuss this data and information which needs to be included. Instead, the Draft GSP simply echoes unsubstantiated claims without checking for their accuracy via readily available data.

The USACE reference as a 2017 reference appears to be a general statement simply echoing CDFW but having no actual data support. USACE permits are being sought by CDFW hence USACE has been engaged in reviewing materials provided by CDFW ie. the Flood Control study which has been twice rejected by the Corps as inaccurate and cost taxpayers $4 million. No new Flood Control study has been produced via CDFW. However, another $2 million has been approved by the State Coastal Conservancy for CDFW to have another attempt. The State Coastal Conservancy has since been sued by Grassroots Coalition and Ballona Ecosystem Education Project (BEEP)for their approval of the FEIR. The California Coastal Commission is facing another legal challenge should it disburse the approved funds to CDFW.

The land to the north of the Ballona Channel is known as Area A. Area A historical documentation also demonstrates that the central and largest area of Area A is undisturbed habitat (Huffman, USEPA '86 map; Playa Vista EIR Archaeology Map) This area is also noted via various drillings to have freshwater available to the root systems of vegetation as the water table is noted as at or near surface (Playa Vista EIR).

Area A, during a normal rainy season has ponding across much of the site which can remain for months (Huffman 1986) GC has experienced first- hand the ponding and has long documented the various areas inundated which also gives rise to prolific use of the area for feeding great blue herons and other predators as small mammals relocate from the inundation and become more vulnerable to predation out in the open. Area A also has rare salt pannes that act as reservoirs for copapods to emerge with winter rainwater ponding and attract Pacific Flyway migratory birds as well as Ballona homesteader birds that feed upon the copapods. The copapods are a **'forage species' as are discussed in the 2011 AB 1299, Forage Species Conservation and Management Bill**. Area B supports large salt pannes. Salt pannes have become critically rare along southern California and need to be considered as part of the GDE evaluation. (@ 15:30 Graph, Margo Griswold Phd presentation link below)

1. 4.20.21 Dr Margot Griswold Presents Ballona Wetlands FEIR ...
   www.youtube.com/watch?v=avpCqRoEbdc
   This video on 4.20.21 Dr Margot Griswold Presentation on Ballona Wetlands Final Environmental Impact Report - Inconsistencies and Overlooked Opportunities: C...

Area A is a critical portion of the GDE that provides habitat to multiple endangered species including the Belding Savannah Sparrow and multiple listed species such as the White-tailed Kite, dependent upon the wide areas of grasslands and pickleweed. The water table in Area A, out of the rainy season is deep enough to allow moles, voles and rabbit dens within the very near surface and their use of root systems as nourishment. During the rainy season the ponding gives literal rise to soil burrowing creatures to surface which in turn brings in foraging herons, hawks and other predators. (Griswold Phd LINK to presentation Ballona FEIR- Inconsistencies.)

The proposed new levees are also planned to be around the entire perimeter of the proposed industrial scale dig out that will remove over 3 million cubic yards of wetland, salt pan, upland soils in order to create the new full tidal bay. The levees per USACE regulations will not be **allowed to have small burrowing wildlife existing in/on the levees as the levees will be regulated by Vector Control to exterminate such wildlife. Vegetation, ie. grasses having very small root systems are allowed with the need for keeping such vegetation mowed in order to visibly inspect the levees for rodent abatement.**

The LARWQCB, has undertaken numerous soils and groundwater investigations on Parcels A, B, C, D formerly owned and operated by the Howard Hughes Company and included the MacDonnell Douglas industrial complex of both aircraft industries located in Area D. All of the parcels comprised the Playa Vista development site**. A,B,C are now Public Trust property areas of Ballona Wetlands that have been given No Further Action (NFA) designations to signify the property as clean and in need of no further actions of remediation. The Ballona Channel is not part of the Ballona Wetlands Ecological Reserve but is owned and operated by the federal government via USACE and by the County Flood Control District of Los Angeles. The Ballona Channel is an impaired waterway in need of remediation and TMDL discussions are directed to the Channel water, not the clean groundwater that is in the Ballona Ecological Reserve.**

Should the CDFW Plan for digging out Ballona occur, with the removal and perimeter replacement of the levees, the toxic Channel water flows would enter into and comingle with the NFA AREAS of Ballona Wetlands Ecological Reserve. Not only would the clean groundwater of Ballona, inclusive of its freshwater aquifers, be exposed to toxic Ballona Channel water flows but these currently clean areas would be exposed to contamination by saltwater intrusion and the Santa Monica Bay's own toxic effluent.

"There is no direct link between the shallow surface water in the Bellflower aquitard at BWER and the Silverado aquifer in the vicinity of the primary production wellfields. Therefore, groundwater production from existing wells will not impact groundwater elevations or the identified GDEs within the BWER". Draft GSP

The production wells of the City of Santa Monica are important to not impede or lower the water table to the GDE, Ballona Wetlands. Monitoring for such potential effects is important.

However, GC's concern has been the 20 years of dewatering effects due to illegal drains on Area B of the wetlands that are now temporarily capped and the dewatering effects of 20 years plus of pumping and dewatering the groundwater under Playa Vista from both the Clean Up and Abatement Order as well as dewatering for the gas mitigation systems under Playa Vista

buildings. Playa Vista also captures its rainfall into building systems for what is called, "nuisance dewatering". The normal watershed flow from east to west has been systematically pumped and removed from reaching Ballona Wetlands which historically underlies Playa Vista and is the Public Trust lands and freshwater stewarded by the State Lands Commission and the Ballona Ecological Reserve which extends to the west of Playa Vista to the dunes on the west end in Playa del Rey. The dewatering has been ignored as permits have been given for this dewatering simply due to requests by Playa Vista for sending the clean freshwater to Sanitation.

EPA has also ignored such dewatering while citing only to the acknowledgement that the freshwater is clean thereby allowing for its throw away into the sanitary sewer system under industrial wastewater permits. EPA and LARWQCB have not considered the environmental impacts of VOLUME needs of Ballona Wetlands and have predominantly only considered Water Quality. This lack of attention to the biological, hydrological needs of the GDE are now front and center and need to be prudently addressed to protect the Ballona Wetlands. Interagency discussions need to occur to offset past damage to Ballona's hydrology via wasteful pumping and discharge of this clean freshwater to the sanitary sewer system of Los Angeles. Interagency discussions necessitate inclusion of ie. EPA Erica Strauss, whose email comments of agreement that clean fresh, Playa Vista groundwater is ok for discharge into the sanitary sewer system have laid the groundwork for waste of Ballona's precious freshwater resources.

The DWR Map from the studies also performed by Playa Vista consultants and mapping done by Exploration Technologies Inc; reveal the non-uniform nature of the underlying clay and other soils which provide for the multiple underlying aquifers to act as one unit.

The maintenance of the freshwater table for sustainability of the GDE is paramount for this unique coastal wetland.

"*2.4.7.4 Ballona Freshwater Marsh Adjacent to the northeastern boundary of Area B, the California State Lands Commission owns 26 acres of freshwater marsh that was constructed between 2001 and 2003 as a mitigation site for the Playa Vista development (USEPA 2012). Groundwater that is pumped from the Ballona aquifer and Bellflower aquitard in Playa Vista is treated to remove VOCs and other contaminants of concern at the site and discharged to Centinela Creek. This treated discharge is a primary component of flow in the freshwater marsh. Because the freshwater marsh is a managed ecosystem that would not exist without the surface water flows in Centinela Creek, no natural communities commonly associated with groundwater were identified in the NCCAG database within the boundaries of the freshwater marsh*." Draft GSP

Grassroots Coalition has been unaware of groundwater being pumped into Centinela Creek. The comment regarding nonexistence of the FWM without the surface water flows of Centinela Creek, makes no sense and needs explanation. Centinela Creek does not exist as it did historically, any longer at the surface. Perhaps, the GSA is referencing the Riparian Corridor? However, such reference would be inaccurate as well since the Riparian Corridor does receive seasonal runoff from the adjacent bluff area and a portion of that bluff area does have spring water flow year- round, the bulk of the freshwater into the Riparian Corridor year- round comes from the pumped and cleansed water of the CAO 95-125. If disposal occurs into the concreted Centinela Creek portion of the local flood control system, then that would be an additional NPDES permitted throw away of clean freshwater that would ordinarily nurture the GDE needs.

The Freshwater Marsh System and its Riparian Corridor has a designed overflow that allows for freshwater to flow into the Ballona Wetlands Ecological Reserve. This is what Grassroots Coalition and USFWS (USFWS- EIR comments) wish to see utilized instead of allowing Playa Vista to control the overflow's direction out to sea via the Main Drain and/or send to Sanitation.

The Draft GSP response appears to misunderstand the basic functions within this area and numerous other dewatering activities as it renders conclusory statements without data support.

This Draft GSP is critical to gathering all the dewatering data and disposal information in order to stop such waste of freshwater that is critical to sustaining the GDE. Furthermore, as discussed in GC's response in Chapter One, sending freshwater into the Riparian Corridor to ultimately outlet into the ocean via the Main Drain of the Freshwater Marsh System, is also unacceptable for maintaining the nurturing freshwater that needs to remain on Ballona and allowed to percolate down into the underlying aquifers for recharge.

Appendix D

Public Outreach and Engagement Plan

Santa Monica Groundwater Basin
Public Outreach and Engagement Plan

Prepared for

Santa Monica Basin
Groundwater Sustainability Agency

October 2019

1.0 Background on the Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), signed into law by Governor Jerry Brown on September 16, 2014, created a new framework for groundwater management in California. The framework includes a structure and schedule to achieve sustainable groundwater management within 20 years. The California Department of Water Resources (DWR) has historically managed the state's central repository for groundwater data. Under SGMA, DWR provides guidance, financial assistance, and technical support for compliance with state requirements. The State Water Resources Control Board provides the regulatory backstop under SGMA, taking over basin management and assessing fees if local groundwater management is not successful in complying with the requirements of SGMA.

SGMA established a new structure for local groundwater management through Groundwater Sustainability Agencies (GSAs). The formation of GSAs for all basins that DWR designated as high- and medium-priority groundwater basins was required by July 1, 2017. Each GSA for these high- and medium-priority basins must then develop a groundwater sustainability plan (GSP) that details how sustainable groundwater management will be achieved within 20 years of implementing the GSP. *Sustainable groundwater management* is defined by SGMA as "the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." This avoidance of undesirable results is measured through six sustainability indicators:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon,
2. Significant and unreasonable reduction of groundwater storage,
3. Significant and unreasonable seawater intrusion,
4. Significant and unreasonable degradation of water quality,
5. Significant and unreasonable land subsidence,
6. Depletion of interconnected surface water and groundwater that has significant and unreasonable adverse impacts on beneficial uses of the surface water.

The GSP is a tool used to help the GSA sustainably manage the basin. The criteria for sustainable management, including determining what is significant and unreasonable within the parameters of SGMA for the groundwater basin managed by that GSA, must be assessed, with input from stakeholders, before the GSP can be adopted.

2.0 SMGA Requirements for Public Outreach and Engagement

Interested party engagement is an important component of any successful long-term planning effort and is required by SGMA and GSP regulations. Each GSA shall encourage and support active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin. The GSA must also allow for voluntary participation by Native American Tribes and the federal government. The GSA must consider the interests of all beneficial uses and users of groundwater within the basin.

Engaging members of the public in groundwater sustainability planning can improve public understanding of the technical, financial and political considerations of the factors which go into a GSA's decision-making process. Participation by the public can also improve the GSA's understanding of the potential impacts of their decisions. SGMA recognized the importance of stakeholder engagement and laid out specific requirements for stakeholder engagement within each of the four phases of SGMA:

Phase 1: GSA Formation and Coordination

- Establish and maintain a list of interested parties.
- Provide public notice of the GSA formation.
- Conduct a GSA formation public hearing.
- Notify DWR of the GSA formation.
- Provide a written statement to DWR as well as cities and counties within the GSA boundary describing how interested parties may participate in GSP development.

Phase 2: GSP Preparation and Submission

- Submit initial notification to DWR.
- Prepare a GSP that considers beneficial uses and users of groundwater when describing undesirable results, minimum thresholds, projects, and actions.
- Ensure that the GSP includes a communication section that includes the following:
  - Explanation of the GSA's decision-making process.
  - List of public meetings at which the GSP was discussed.
  - Identification of opportunities for public engagement and a discussion of how public input and response will be used.
  - Description of how the GSA encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.
  - Description of how the GSA will inform the public about progress implementing the GSP, including the status of projects and actions.
- Public noticing and public meeting procedures prior to adopting, submitting, or amending a GSP.

Phase 3: GSP Review and Evaluation

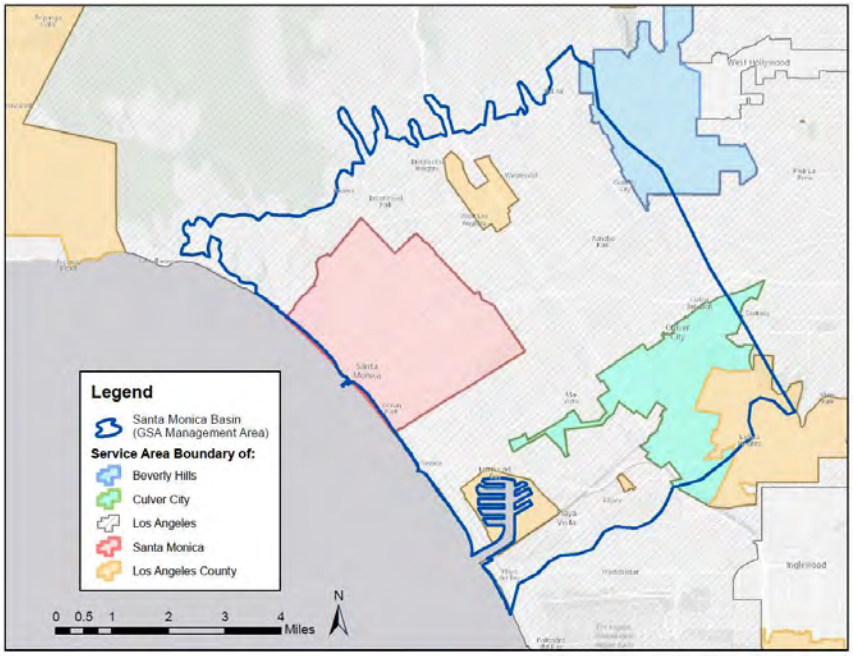
- Upon GSA approval of the GSP and submittal to DWR, the GSP will be available on the DWR website for a 60-day comment period. Any person may provide comments to the DWR on the GSP. DWR will consider the comments received prior to completing their evaluation and assessment of the GSP.

Phase 4: Implementation and Reporting

- Ensure that the SGMA-required assessments and reevaluation of the GSP occur at least every five years, making sure to provide public notice and hold public meetings prior to amending the GSP.
- Provide the required public notice before imposing or increasing fees.

3.0 Santa Monica Groundwater Basin

The Santa Monica Basin, as described in DWR Bulletin 118, lies under 50.2 square miles of land in the northwestern part of the Coastal Plain of Los Angeles Groundwater Basin. It is located in western Los Angeles County. It is bounded by impermeable rocks of the Santa Monica Mountains on the north and by the Ballona escarpment on the south. The Basin extends from the Pacific Ocean on the west to the Inglewood fault on the east. Ballona Creek is the dominant hydrologic feature and drains surface waters to the Pacific Ocean. The main water-bearing formations of the Santa Monica Basin include the Ballona and Silverado aquifers underneath the clay-rich Bellflower aquiclude. The Lakewood Formation, which includes the Ballona Aquifer, is a significant aquifer formation within some areas of Los Angeles County and is present in the Arcadia and Olympic Subbasins in the northern half of the Santa Monica Basin. The Silverado Aquifer within the San Pedro Formation is the main potable production aquifer in the Santa Monica Basin.



4.0 Santa Monica Basin Groundwater Sustainability Agency

The Santa Monica Basin Groundwater Sustainability Agency (SMBGSA) was formed in 2017 in accordance with the California Sustainable Groundwater Management Act (SGMA) of 2014. The five member agencies of the SMBGSA include the City of Santa Monica (City), the City of Beverly Hills, the City of Los Angeles, by and through its Department of Water and Power, the City of Culver City, and the County of Los Angeles. The five member agencies signed a Memorandum of Understanding (MOU) for the formation of the SMBGSA in May 2017. The First Amendment to this MOU was prepared in 2019 to document the selection of a GSP consultant, Dudek, and the revised cost-sharing agreement with the member agencies. The City and LADWP will share the costs for the GSP 50:50.

The SMBGSA is responsible for developing a groundwater sustainability plan (GSP) pursuant to SGMA, and the regulations issued in accordance therewith. This GSP will be the first comprehensive groundwater assessment and management plan specific to the Santa Monica Basin. As part of GSP development, SGMA requires the SMBGSA to understand the basin context, basin conditions, hydrogeological conceptual model, and the basin water budget, as well as provide a description of the sustainable management criteria for the basin, conduct stakeholder engagement, monitor network planning, and identify project and management plans.

The member agencies of the SMBGSA have designated the City as the coordinating entity for the SMBGSA due to the fact that the City is the sole extractor of groundwater in the basin for drinking water purposes and the City has prepared critical engineering documents for the management of the basin including a safe yield analysis. Staff recently updated the City's sustainable water master plan (SWMP) documenting the City's goal to achieve water self-sufficiency by 2023, which will lead to long-term cost benefits for ratepayers, establishment of a diverse and drought-resilient local water supply, and a reduction in the City's water supply energy footprint. Dudek will coordinate efforts with the SMBGSA to prepare and submit a final GSP by the regulatory deadline of January 31, 2022 for medium priority basins.

5.0 Public Outreach and Engagement Goals

Outreach and engagement for the SMBGSA began during the GSA formation process. Interested parties and groundwater pumpers within the Santa Monica Basin were contacted directly to attend an April 2017 public information session on the SMBGSA formation. The individual member agencies issued public notices on the intent to participate in the SMBGSA and held public meetings to receive comments in 2017. Further public notices were issued for the adoption of the First Amendment to the MOU in 2019 for the selection of the GSP contractor and cost allocation.

Quarterly GSP public workshops will be held starting on December 19, 2019 to engage the public and interact with the consultant and SMBGSA member agencies. The meeting locations, agenda, and minutes will be posted on the SMBGSP website:

https://www.santamonica.gov/gsp

The SMBGSA goal is to build and maintain a collaborative and inclusive process for interested party engagement and GSP development and to consider the interests of diverse social, cultural and economic elements of the population with the Santa Monica Basin during the development of the GSP. This includes the interests of all beneficial uses and users of groundwater. Collaborative and inclusive processes will assist in making the GSP more resilient by increasing public buy-in, promoting compliance, and enhancing the quality of information on the which the GSP is based. The SMBGSA has established an open and ongoing list of interested persons to whom notices will be sent regarding meetings of the GSP development. This approach will increase the success of the GSP by fostering early public participation, development of stakeholder supported management strategies, and enhancing the data quality and basis of GSP development.

Specifically, the SMBGSA will implement the following tiered outreach strategy to actively engage a diverse group of stakeholders in the development of the GSP:

1. Facilitate engagement of a diverse group of stakeholders in the development of the GSP through the SMBGSA,

2. Provide regular updates on GSP development progress via quarterly public workshops and website,
3. Build and maintain a website where stakeholders can obtain SMBGSA information, ask questions, and provide comments,
4. Hold quarterly public workshops where members of the public can ask questions and provide comments.

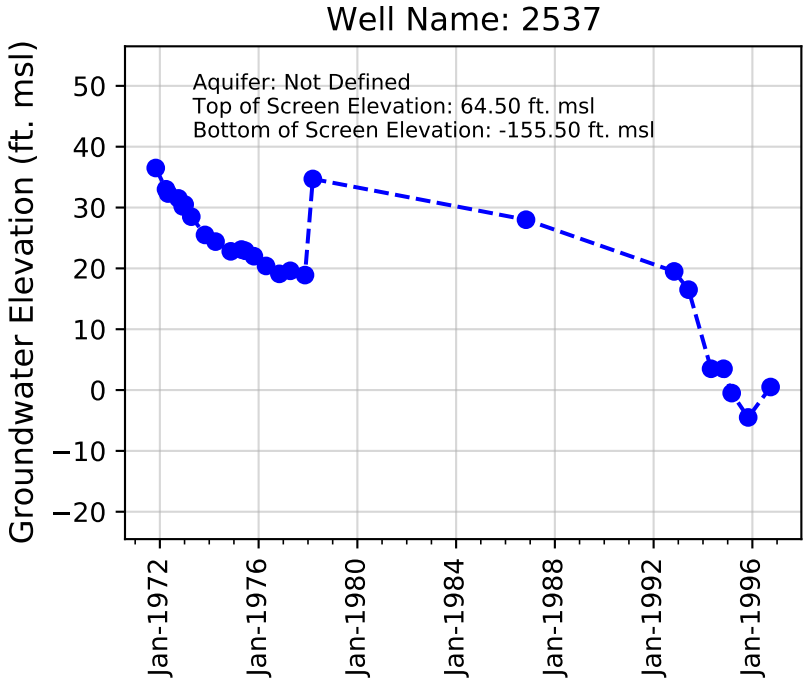
This four-tiered engagement strategy is designed to give a diverse group of stakeholders multiple forums in which to participate, as appropriate, based on their level of interest, availability, and communication style. The SMBGSA will continuously evaluate stakeholder outreach and engagement goals. They may be adjusted as needed throughout the GSP development and implementation process. The roles and responsibilities of SMBGSA interested parties include attend quarterly public workshops, read updates on website, review technical information, collaborate with other interested parties, provide feedback to the SMBGSA, and provide input on the draft and final GSP.

6.0 Contact Us

To receive and be informed on the most current information for the SMBGSA and GSP development, subscribe to the e-mail distribution list and review the SMBGSA website for new documents. Send an e-mail to Dr. Lisette Gold at lisette.gold@smgov.net. to subscribe.

Appendix E

Groundwater Elevation Hydrographs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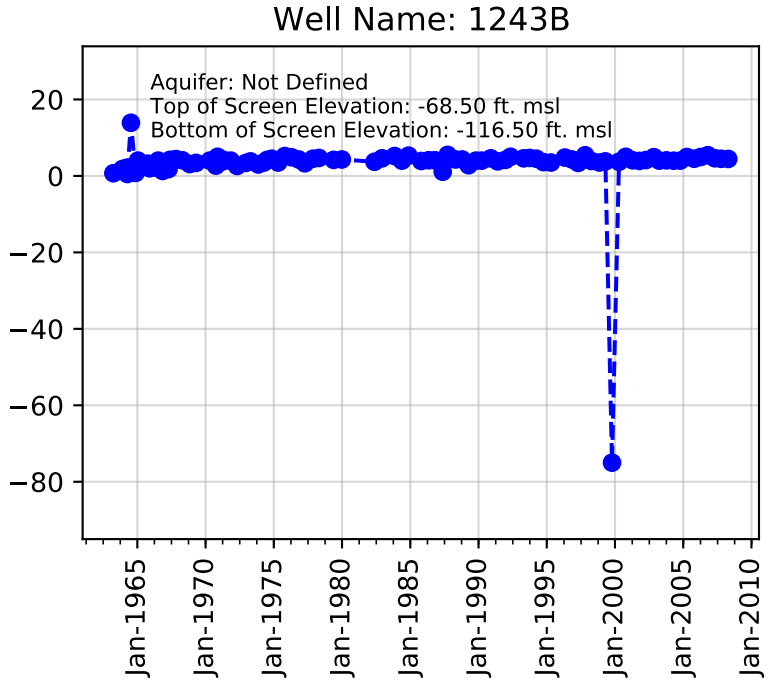
Jan-1976
Jan-1980
Jan-1984
Jan-1988
Jan-1992
Jan-1996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Jan-1995
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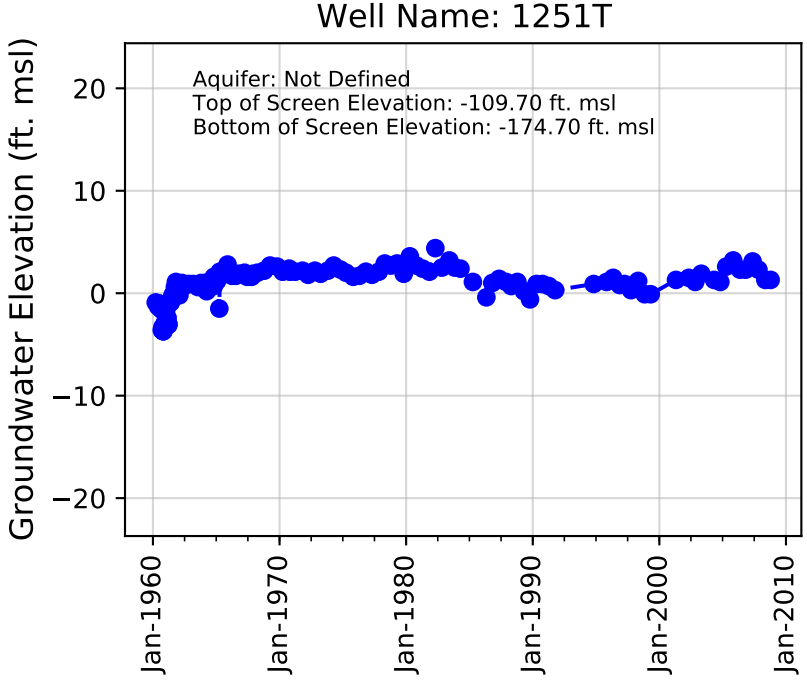
Jan-2005
Jan-2010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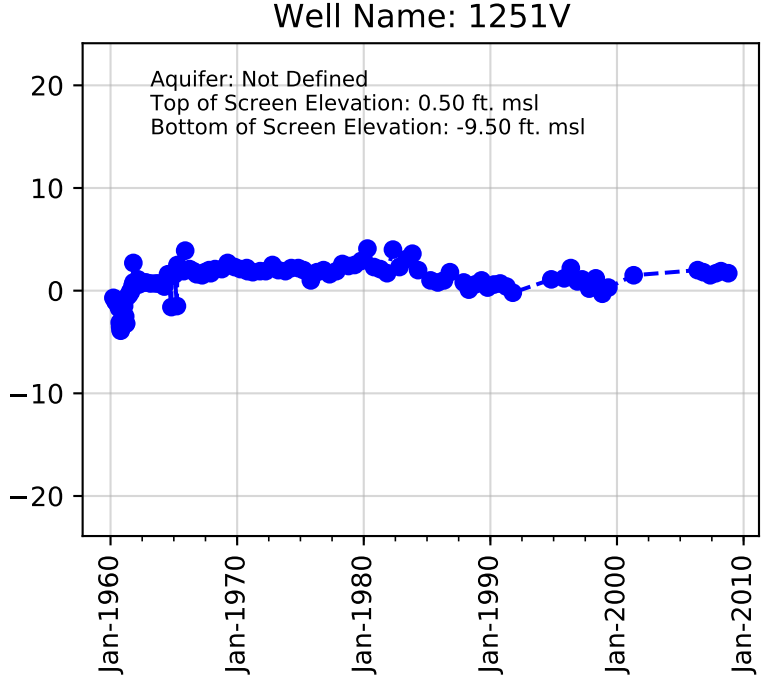
10
0
−10
−20
Jan-1960
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010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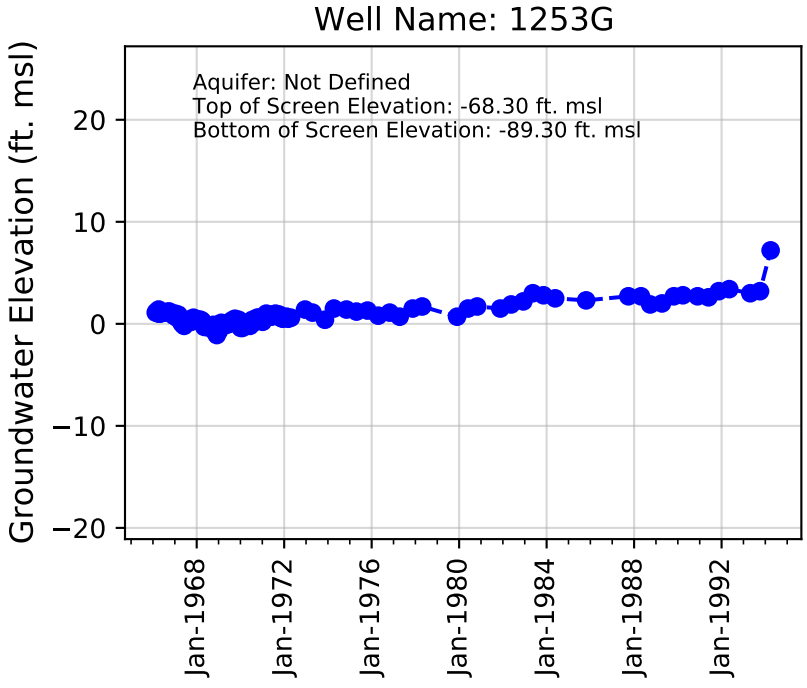
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010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Jan-1976
Jan-1980
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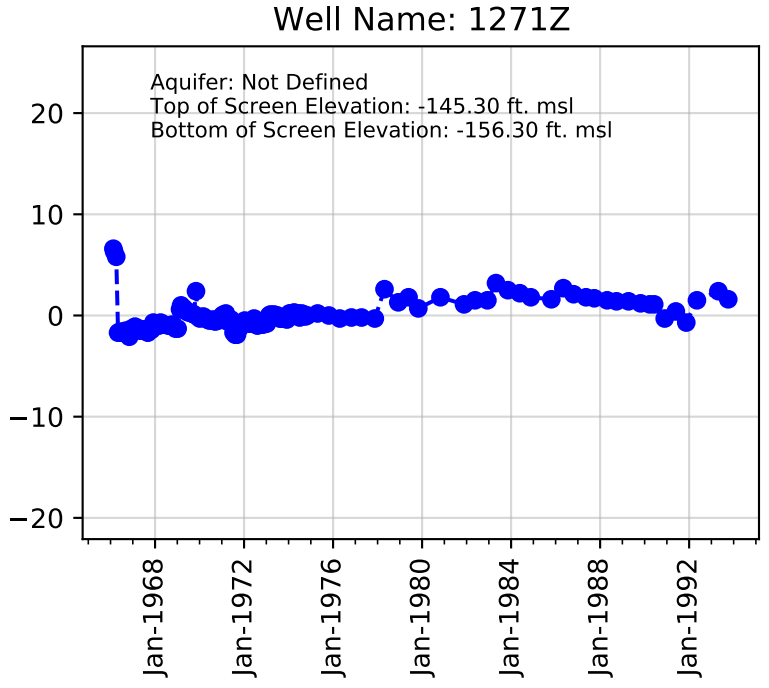
Jan-1988
Jan-1992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−10
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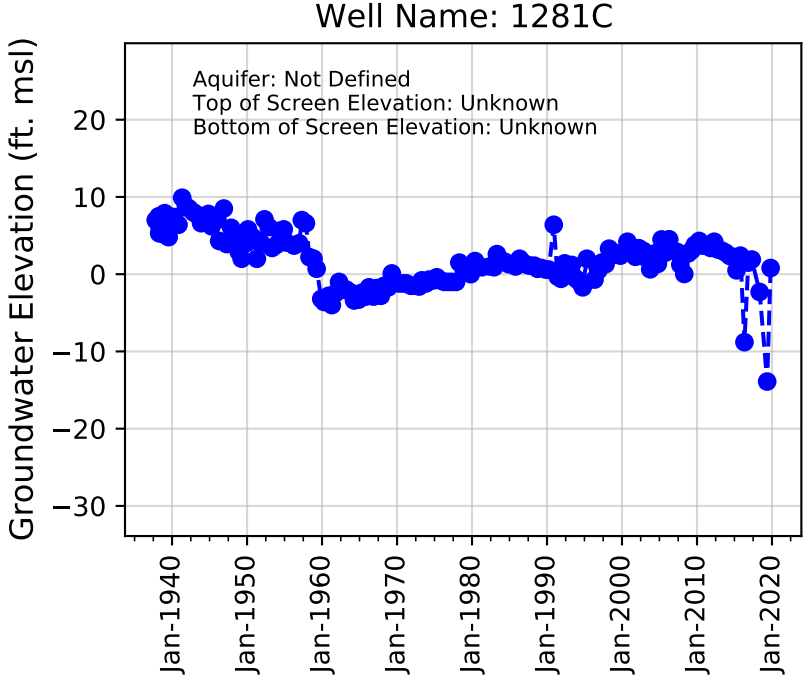
Jan-1972
Jan-1976
Jan-1980
Jan-1984
Jan-1988
Jan-1992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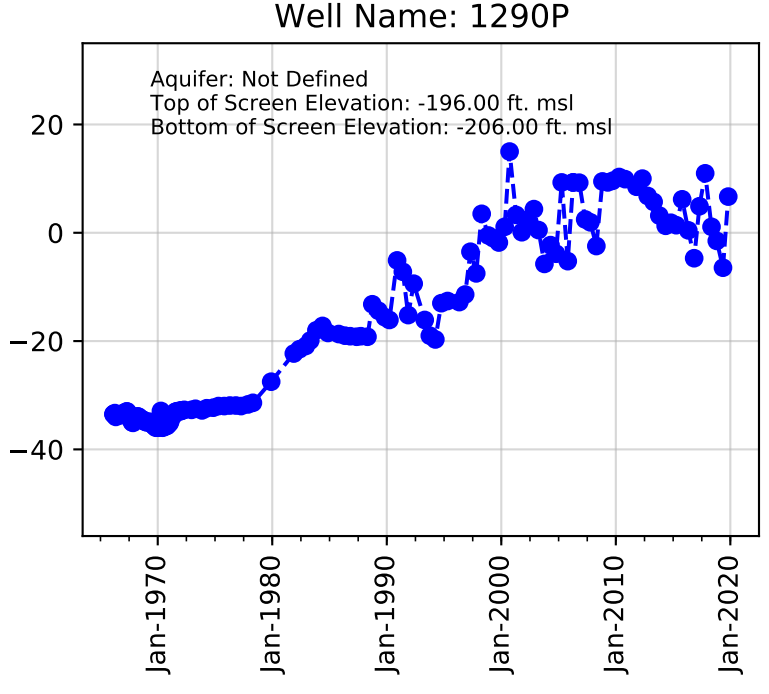
−30
Jan-1940
Jan-1950
Jan-1960
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010
Jan-2020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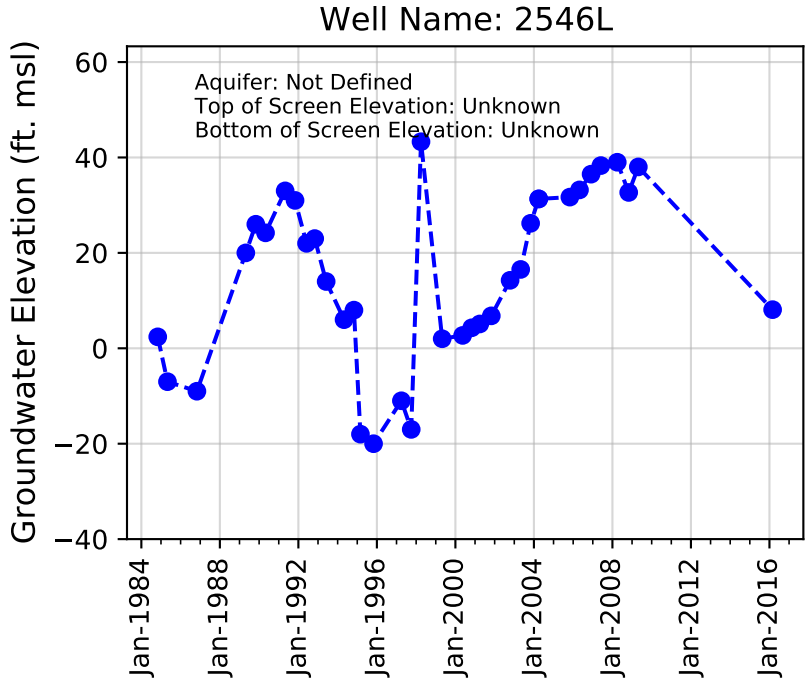
20
0
−20
−40
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010
Jan-2020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40
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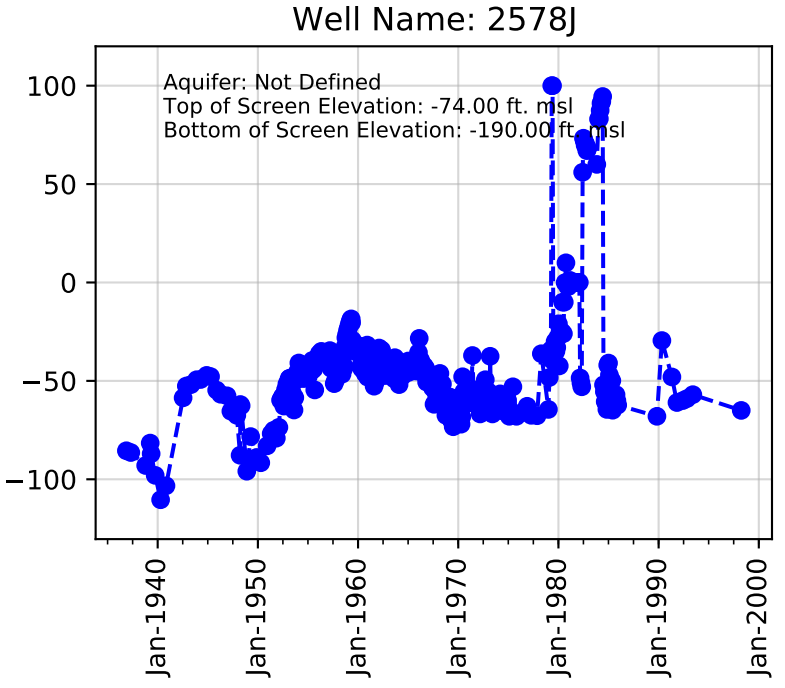
−20
−40
Jan-1984
Jan-1988
Jan-1992
Jan-1996
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016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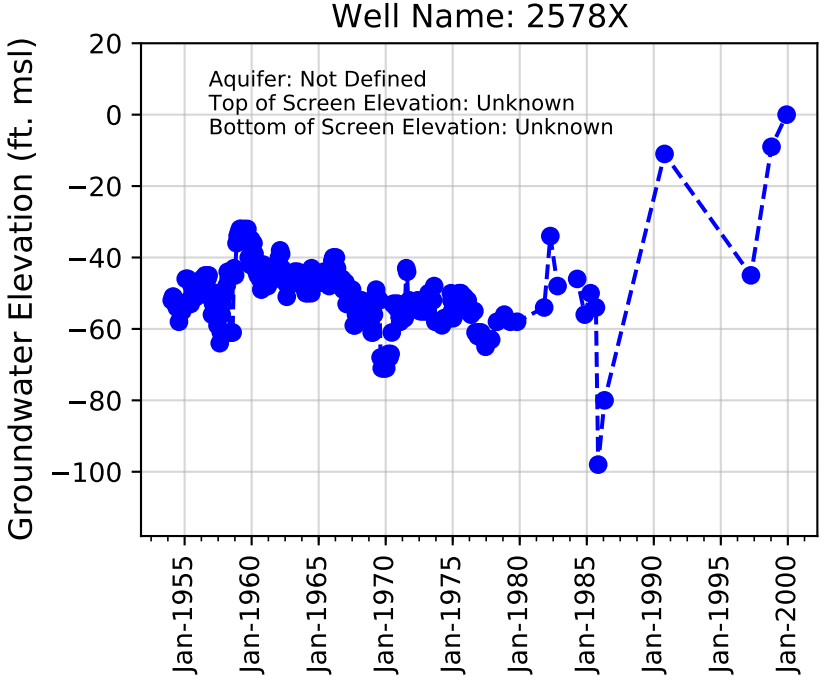
Jan-1940
Jan-1950
Jan-1960
Jan-1970
Jan-1980
Jan-1990
Jan-2000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Jan-1955
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Jan-1975
Jan-1980
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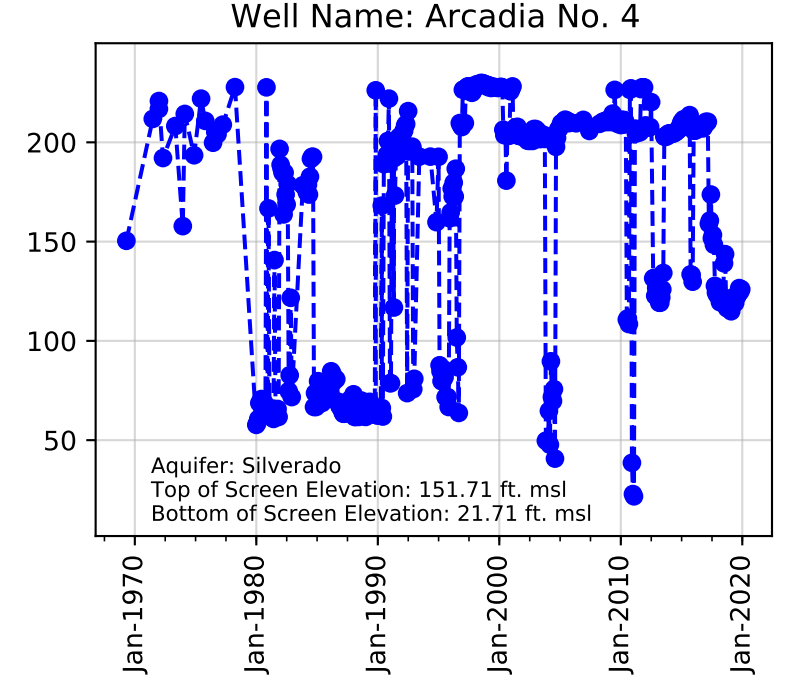
Jan-1995
Jan-2000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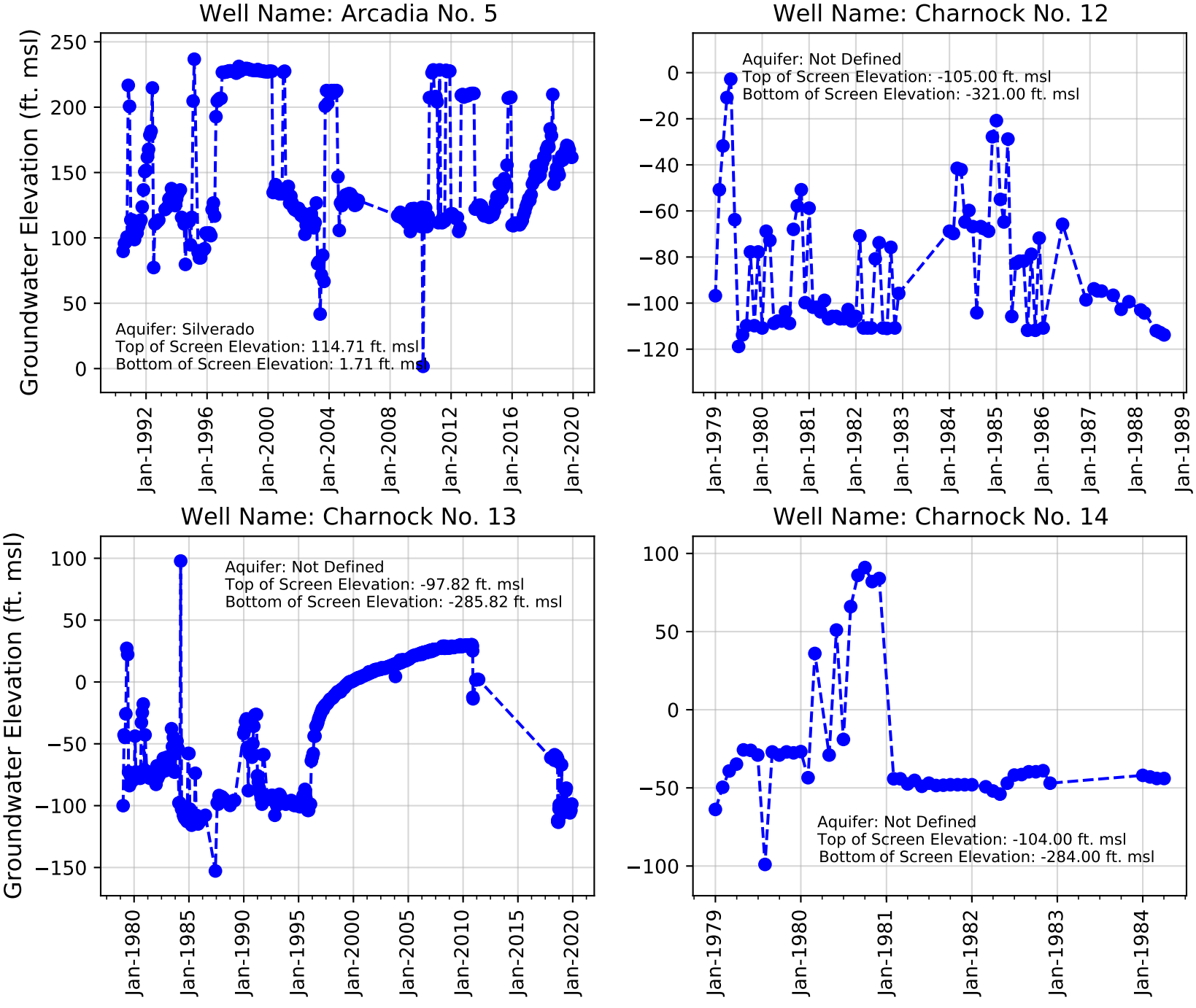
200
150
100
50
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010
Jan-2020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Aquifer: Not Defined
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Well Name: Charnock No. 13
Groundwater Elevation (ft. msl)
Aquifer: Not Defined
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Bottom of Screen Elevation: -285.82 ft. msl
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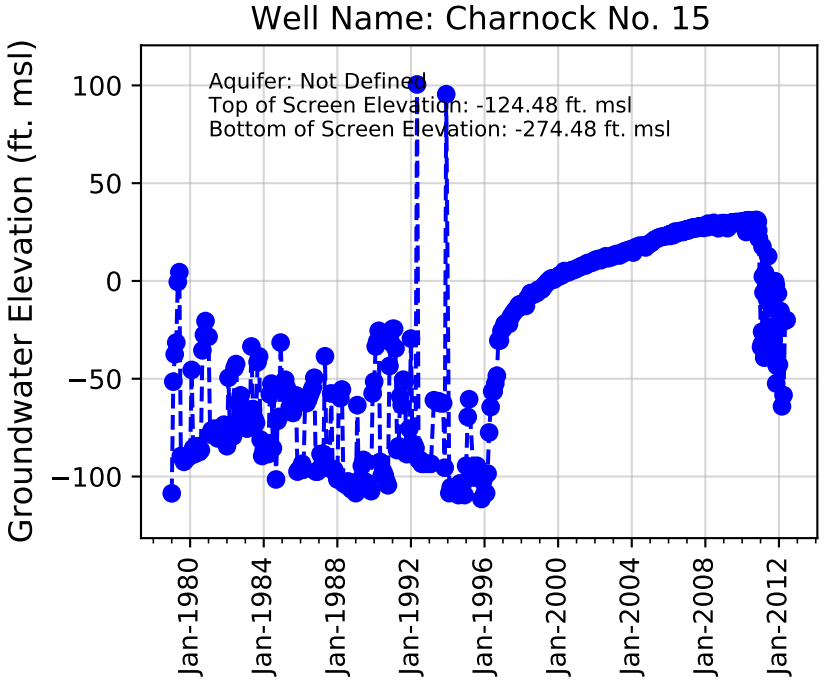
Bottom of Screen Elevation: -284.00 ft. msl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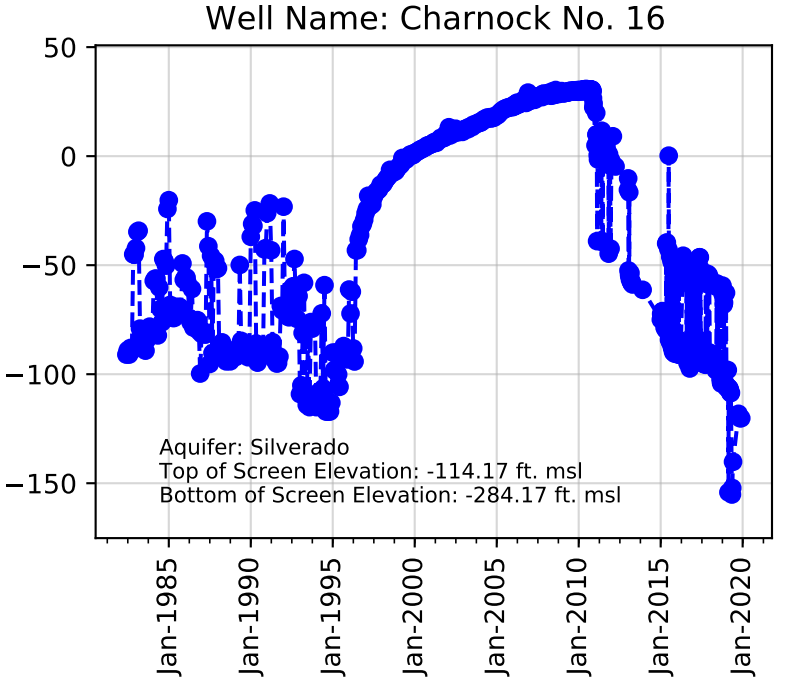
Jan-1992
Jan-1996
Jan-2000
Jan-2004
Jan-2008
Jan-2012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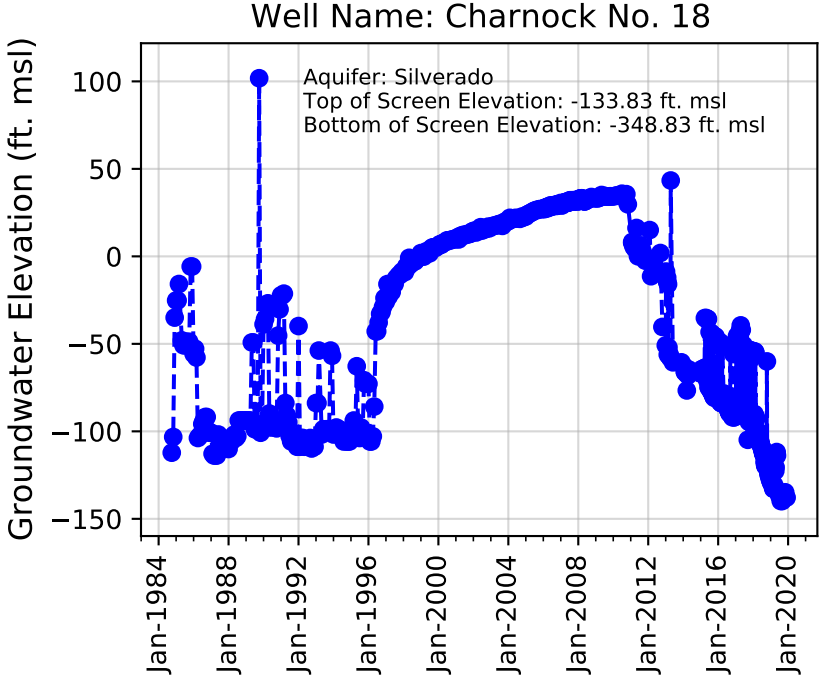
Jan-2020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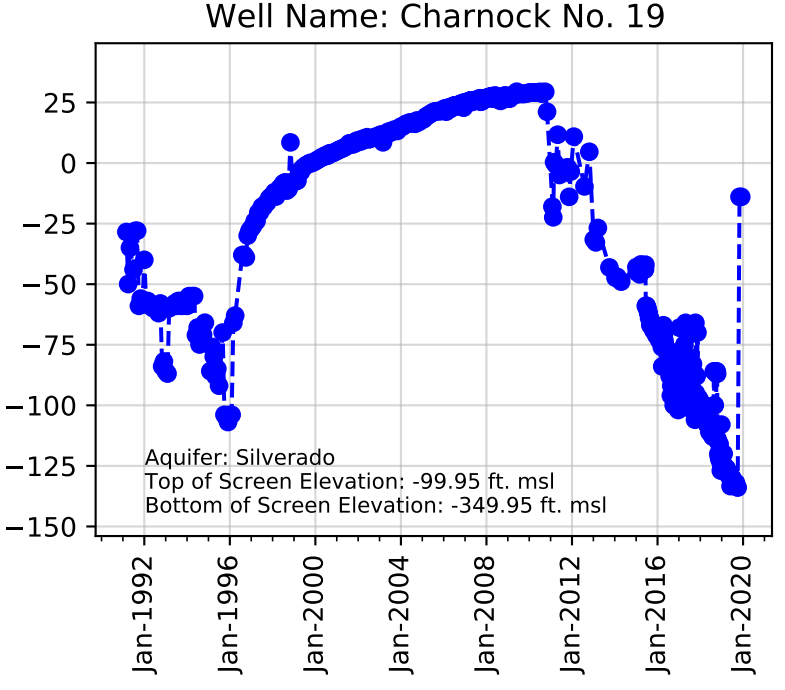
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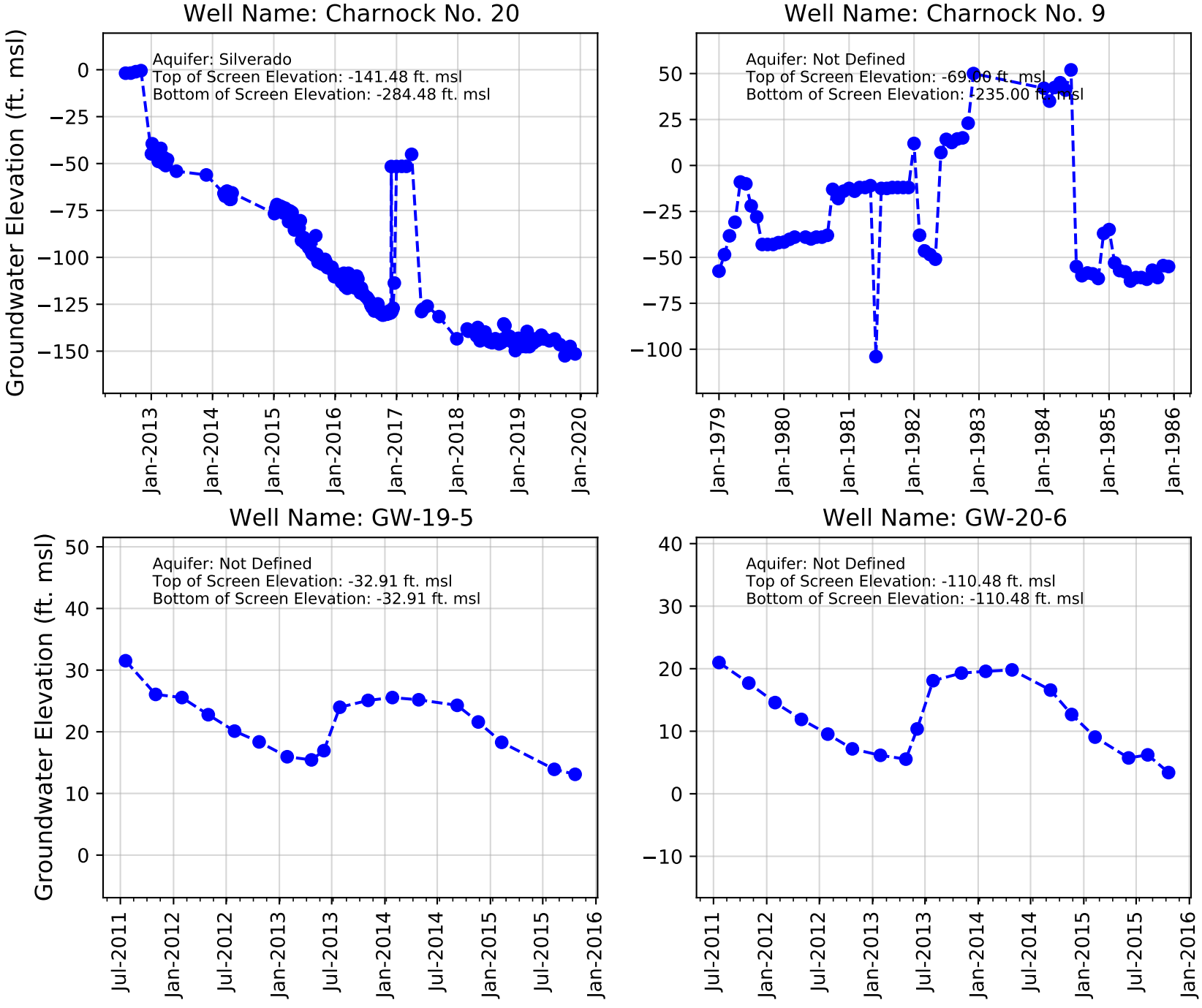
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020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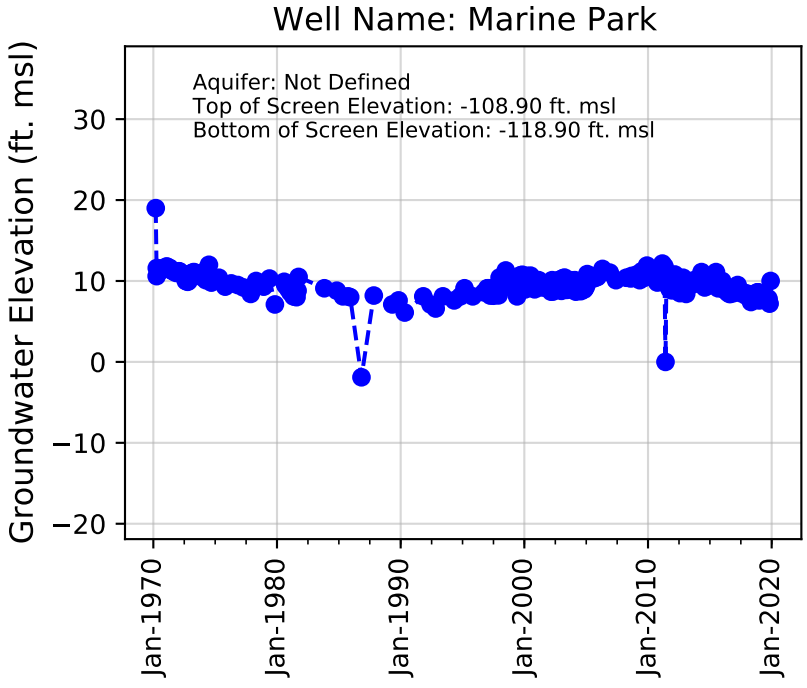
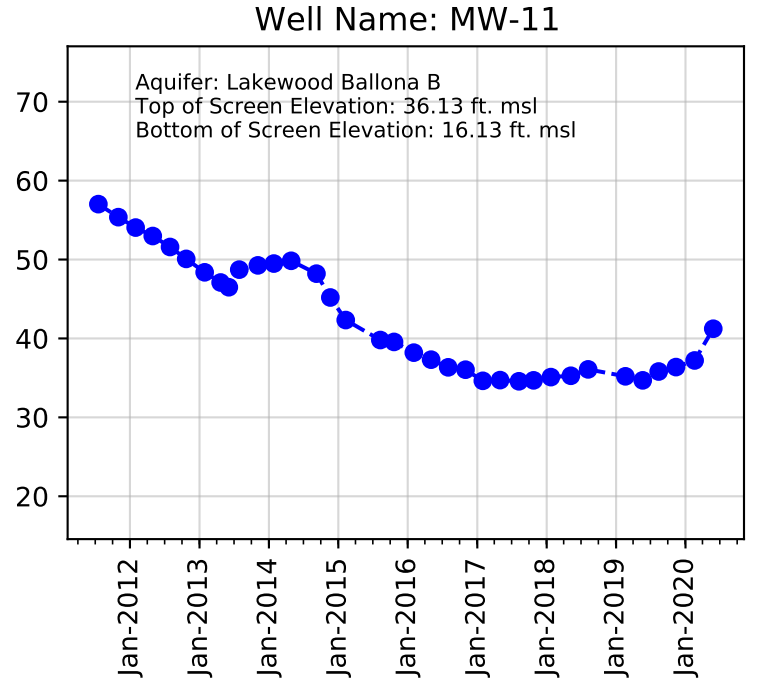
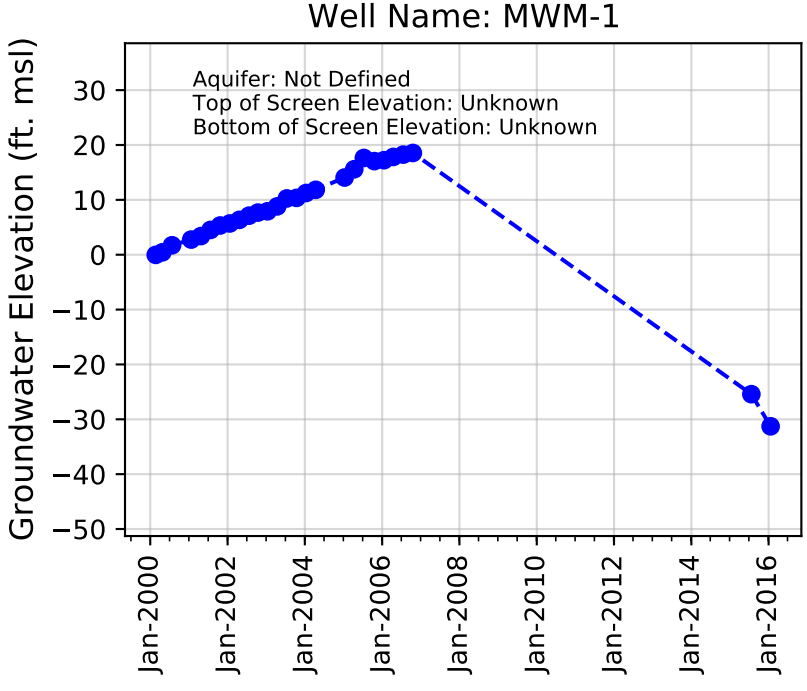
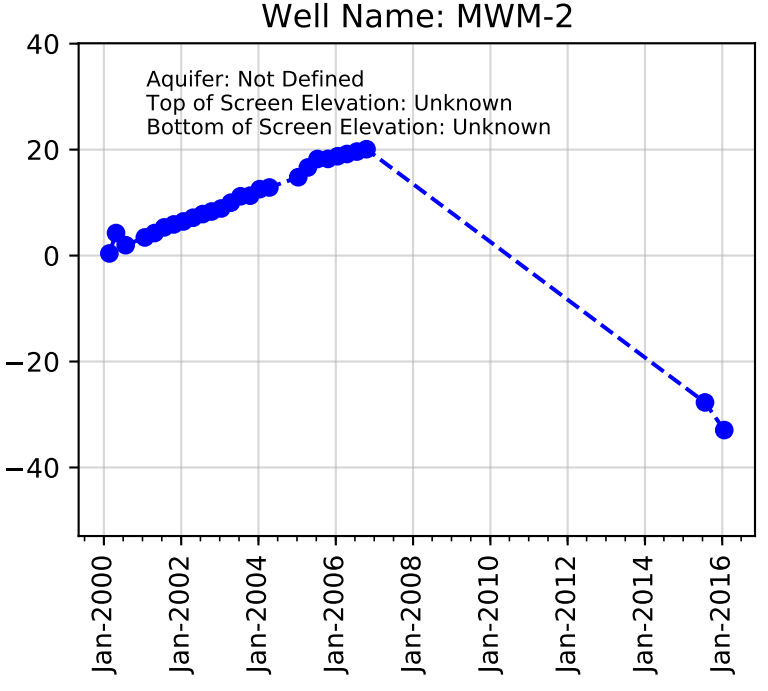
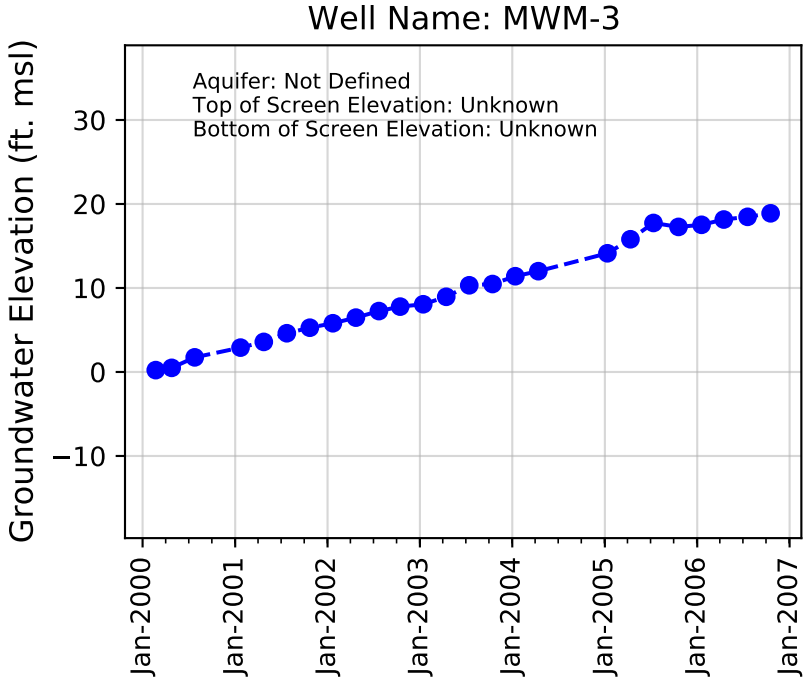
Top of Screen Elevation: -141.48 ft. msl
Bottom of Screen Elevation: -284.48 ft. msl
Groundwater Elevation (ft. msl)
0
−25
−50
−75
−100
−125
−150
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Well Name: Charnock No. 9
Aquifer: Not Defined
Top of Screen Elevation: -69.00 ft. msl
Bottom of Screen Elevation: -235.00 ft. msl
50
25
0
−25
−50
−75
−100
Jan-1979
Jan-1980
Jan-1981
Jan-1982
Jan-1983
Jan-1984
Jan-1985
Jan-1986
Well Name: GW-19-5
Aquifer: Not Defined
Top of Screen Elevation: -32.91 ft. msl
Bottom of Screen Elevation: -32.91 ft. msl
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
Jul-2011
Jan-2012
Jul-2012
Jan-2013
Jul-2013
Jan-2014
Jul-2014
Jan-2015
Jul-2015
Jan-2016
Well Name: GW-20-6
Aquifer: Not Defined
Top of Screen Elevation: -110.48 ft. msl
Bottom of Screen Elevation: -110.48 ft. msl
40
30
20
10
0
−10
Jul-2011
Jan-2012
Jul-2012
Jan-2013
Jul-2013
Jan-2014
Jul-2014
Jan-2015
Jul-2015
Jan-2016

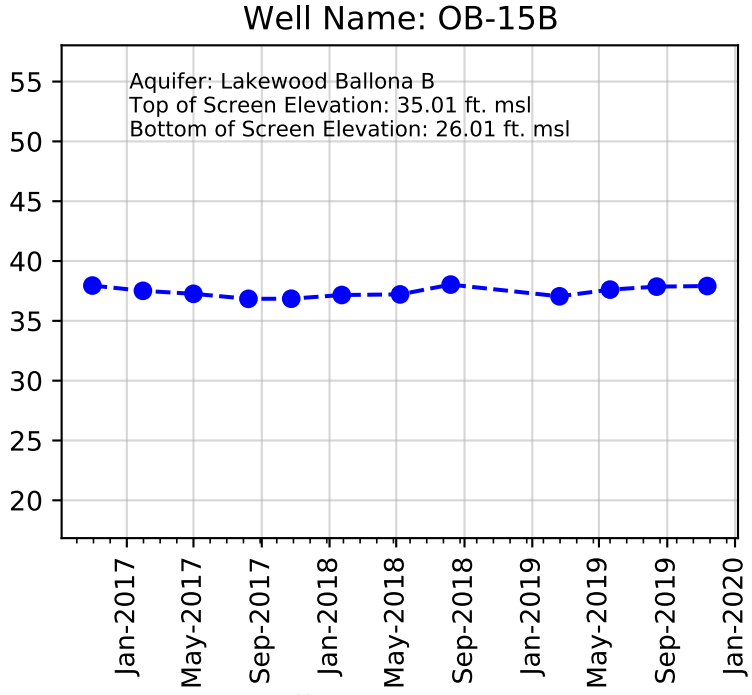

Well Name: Marine Park
Aquifer: Not Defined
Top of Screen Elevation: -108.90 ft. msl
Bottom of Screen Elevation: -118.90 ft. msl
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010
Jan-2020

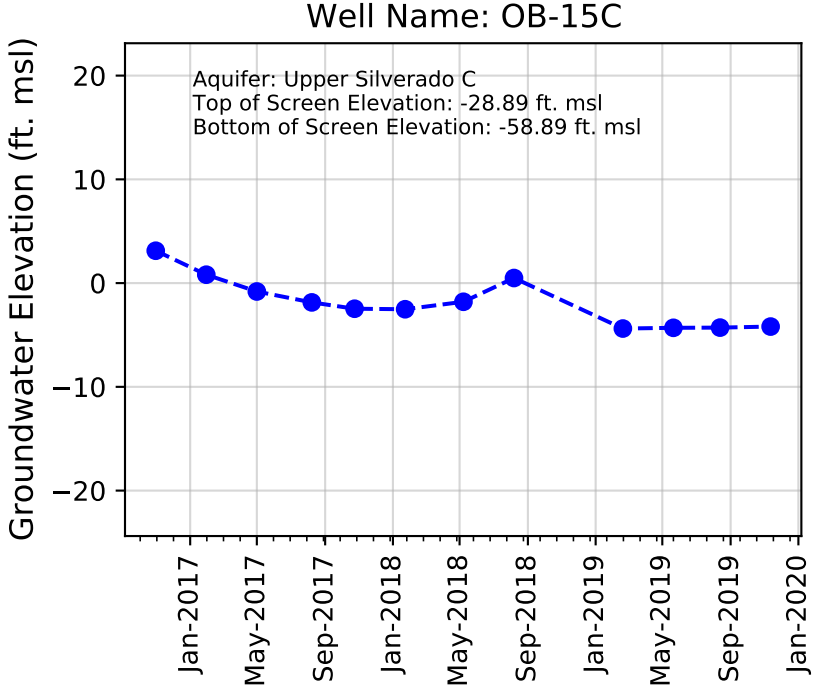

Well Name: MW-11
Aquifer: Lakewood Ballona B
Top of Screen Elevation: 36.13 ft. msl
Bottom of Screen Elevation: 16.13 ft. msl
70
60
50
40
30
20
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

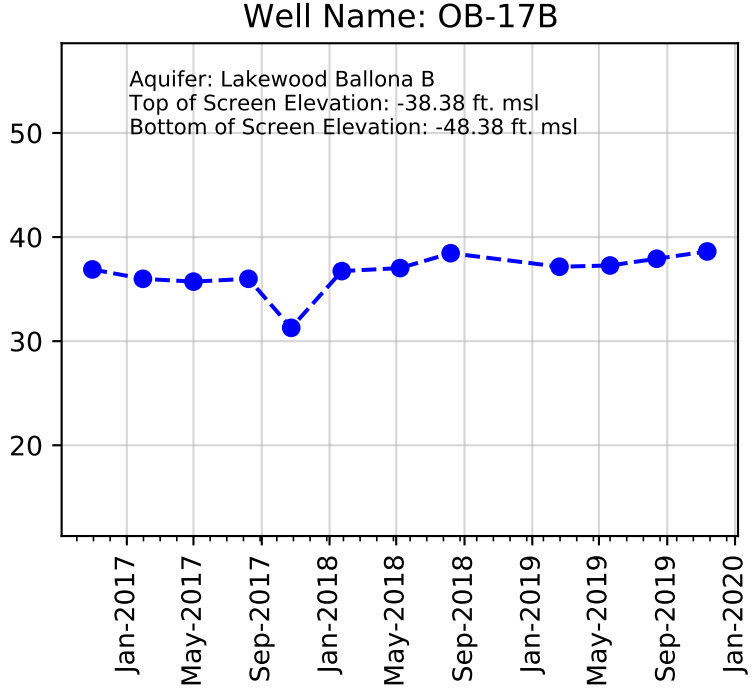

Well Name: MWM-1
Aquifer: Not Defined
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
−30
−40
−50
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016

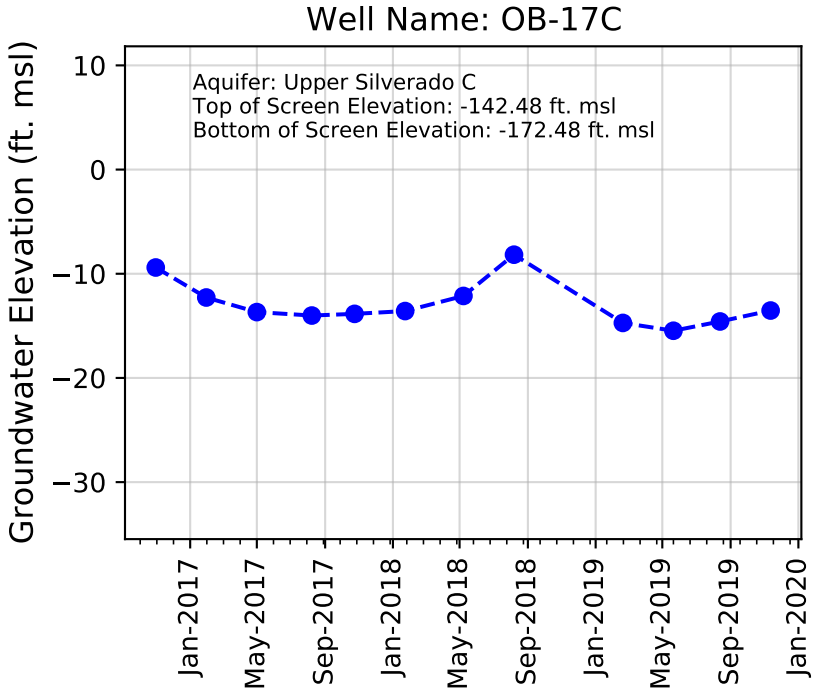

Well Name: MWM-2
Aquifer: Not Defined
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown
40
20
0
−20
−40
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016

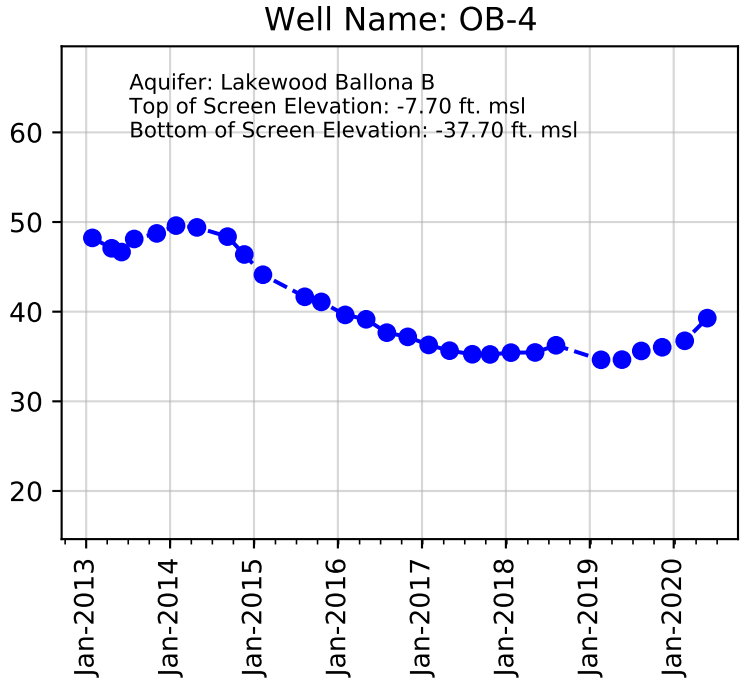

Well Name: MWM-3
Aquifer: Not Defined
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown
Groundwater Elevation (ft. msl)
30
20
10
0
−10
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007

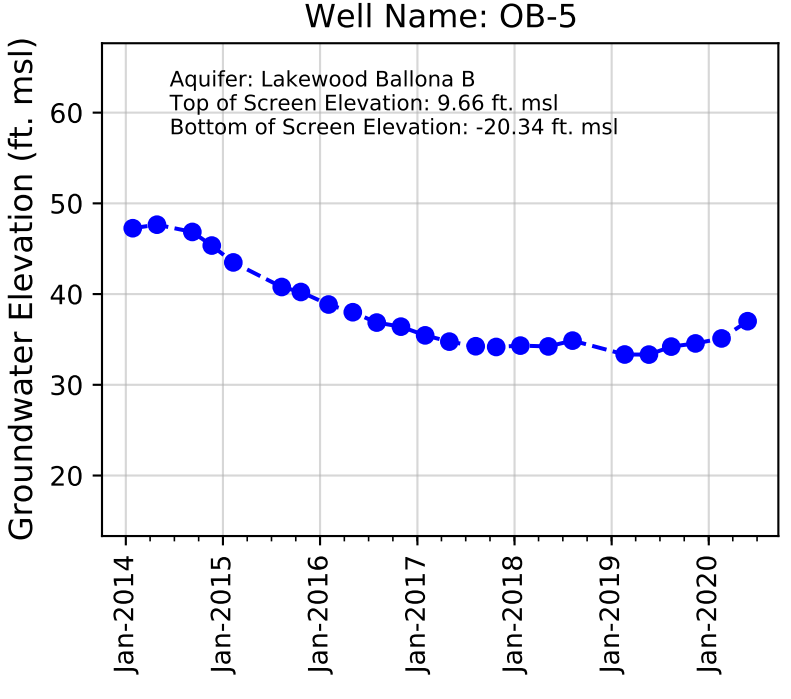

Well Name: OB-15B
Aquifer: Lakewood Ballona B
Top of Screen Elevation: 35.01 ft. msl
Bottom of Screen Elevation: 26.01 ft. msl
55
50
45
40
35
30
25
20
Jan-2017
May-2017
Sep-2017
Jan-2018
May-2018
Sep-2018
Jan-2019
May-2019
Sep-2019
Jan-2020

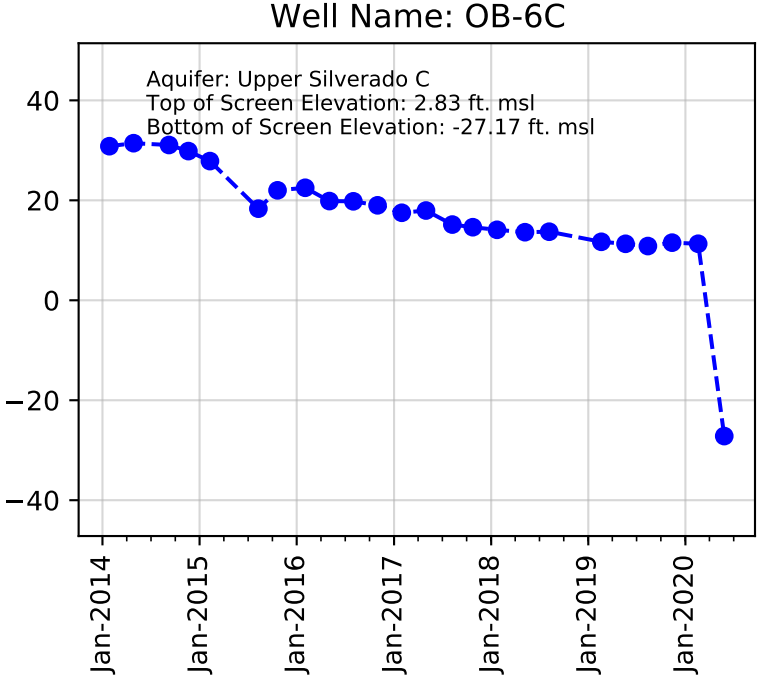

Well Name: OB-15C
Aquifer: Upper Silverado C
Top of Screen Elevation: -28.89 ft. msl
Bottom of Screen Elevation: -58.89 ft. msl
Groundwater Elevation (ft. msl)
20
10
0
−10
−20
Jan-2017
May-2017
Sep-2017
Jan-2018
May-2018
Sep-2018
Jan-2019
May-2019
Sep-2019
Jan-2020

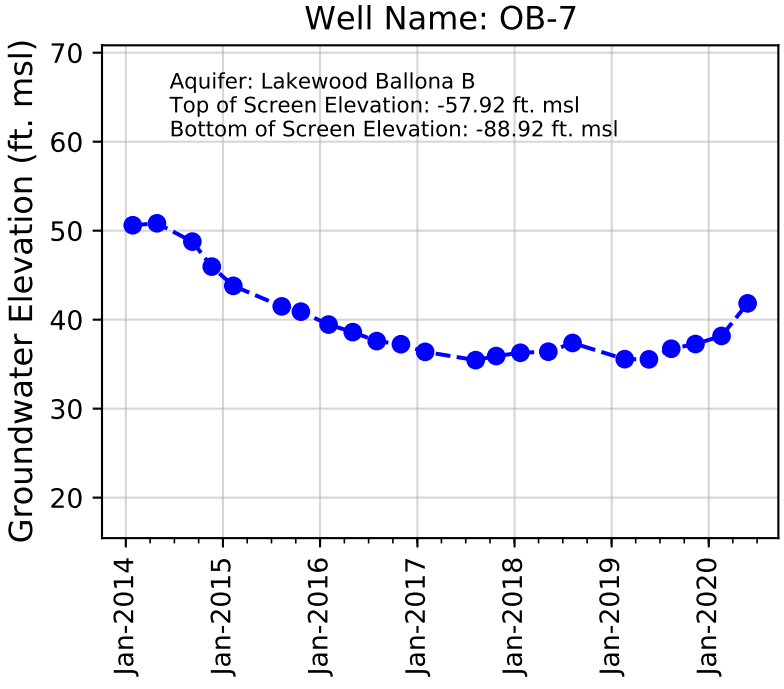

Well Name: OB-17B
Aquifer: Lakewood Ballona B
Top of Screen Elevation: -38.38 ft. msl
Bottom of Screen Elevation: -48.38 ft. msl
50
40
30
20
Jan-2017
May-2017
Sep-2017
Jan-2018
May-2018
Sep-2018
Jan-2019
May-2019
Sep-2019
Jan-2020

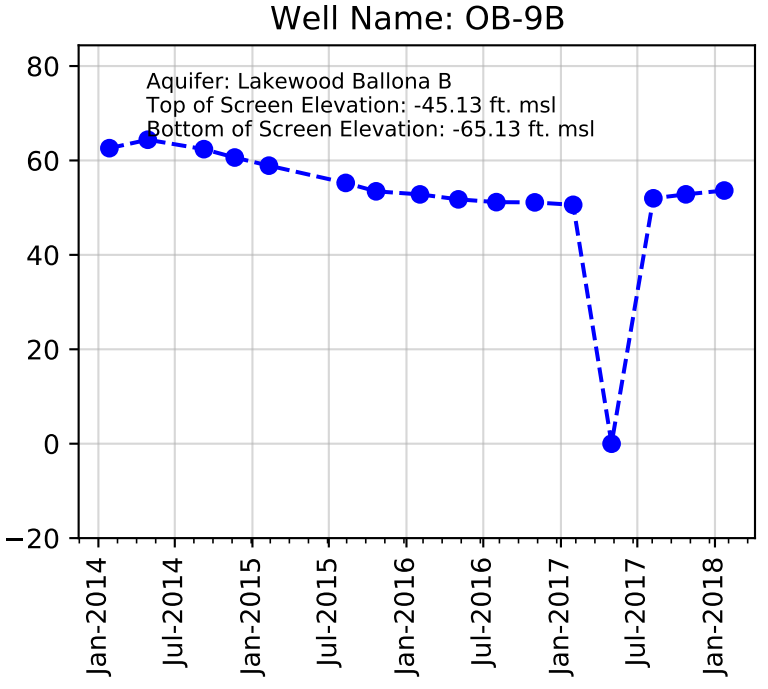

Well Name: OB-17C
Aquifer: Upper Silverado C
Top of Screen Elevation: -142.48 ft. msl
Bottom of Screen Elevation: -172.48 ft. msl
Groundwater Elevation (ft. msl)
10
0
−10
−20
−30
Jan-2017
May-2017
Sep-2017
Jan-2018
May-2018
Sep-2018
Jan-2019
May-2019
Sep-2019
Jan-2020

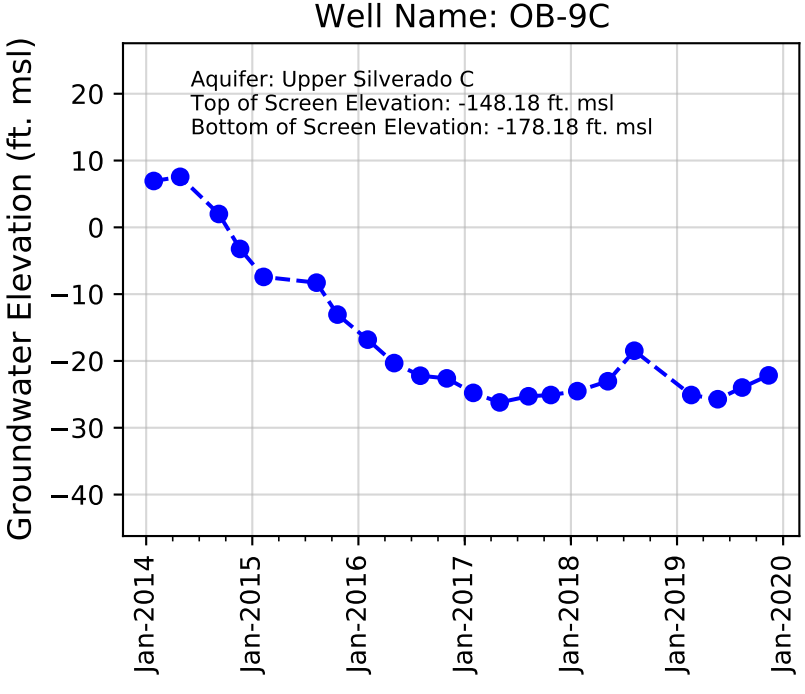

Well Name: OB-4
Aquifer: Lakewood Ballona B
Top of Screen Elevation: -7.70 ft. msl
Bottom of Screen Elevation: -37.70 ft. msl
60
50
40
30
20
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

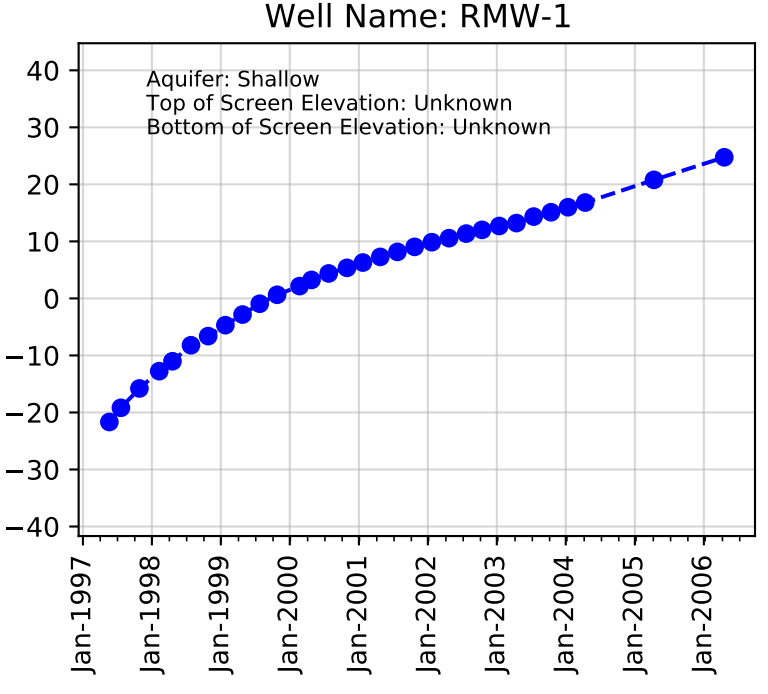

Well Name: OB-5
Aquifer: Lakewood Ballona B
Top of Screen Elevation: 9.66 ft. msl
Bottom of Screen Elevation: -20.34 ft. msl
Groundwater Elevation (ft. msl)
60
50
40
30
20
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

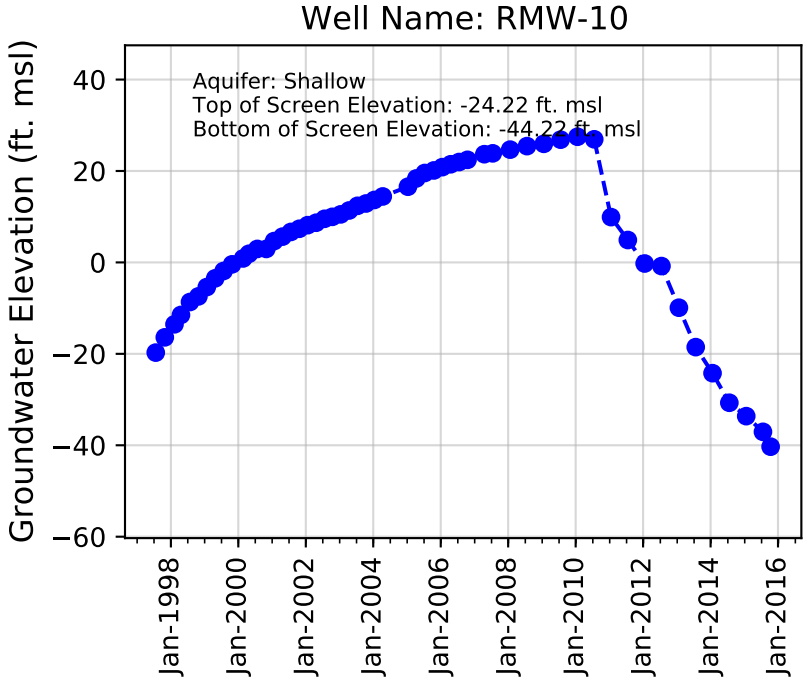

Well Name: OB-6C
Aquifer: Upper Silverado C
Top of Screen Elevation: 2.83 ft. msl
Bottom of Screen Elevation: -27.17 ft. msl
40
20
0
−20
−40
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

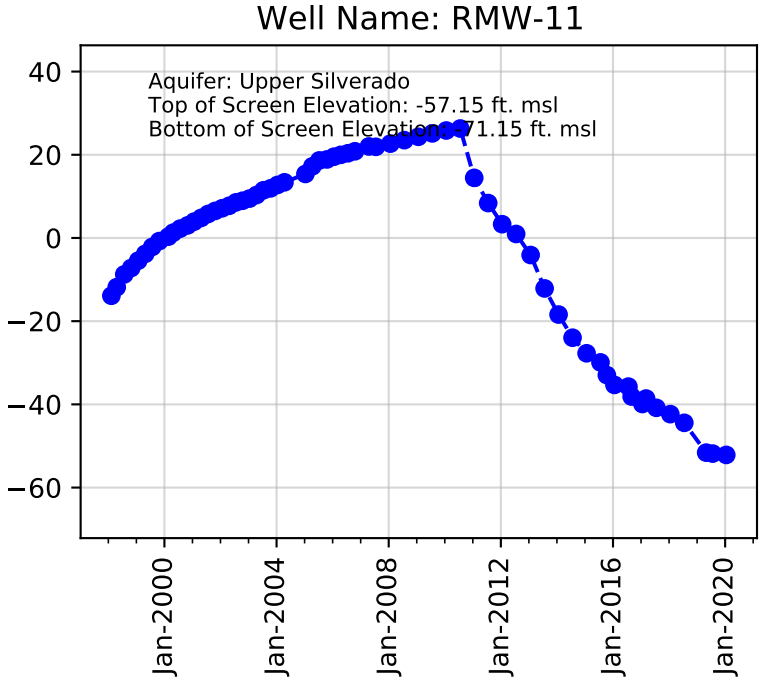

Well Name: OB-7
Aquifer: Lakewood Ballona B
Top of Screen Elevation: -57.92 ft. msl
Bottom of Screen Elevation: -88.92 ft. msl
Groundwater Elevation (ft. msl)
70
60
50
40
30
20
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

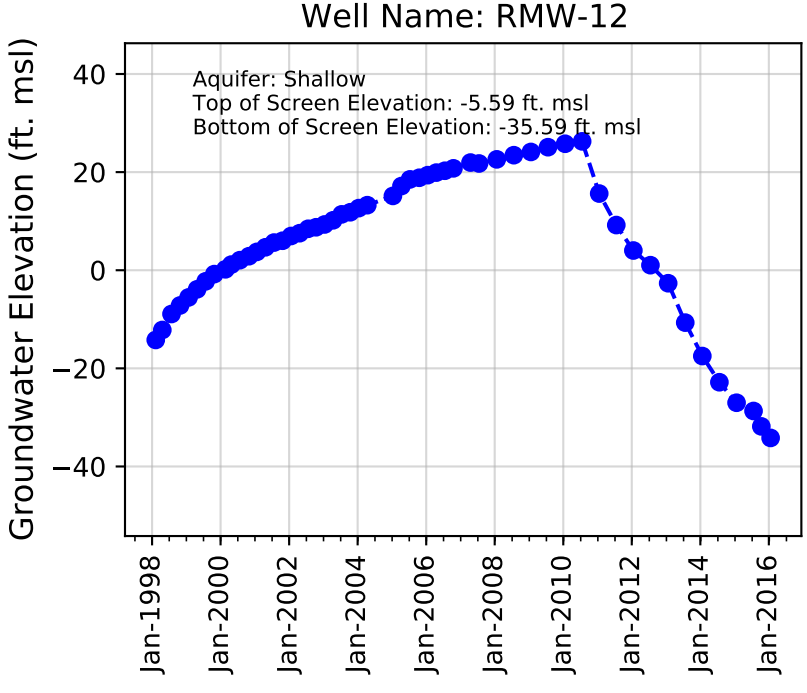

Well Name: OB-9B
Aquifer: Lakewood Ballona B
Top of Screen Elevation: -45.13 ft. msl
Bottom of Screen Elevation: -65.13 ft. msl
80
60
40
20
0
−20
Jan-2014
Jul-2014
Jan-2015
Jul-2015
Jan-2016
Jul-2016
Jan-2017
Jul-2017
Jan-2018

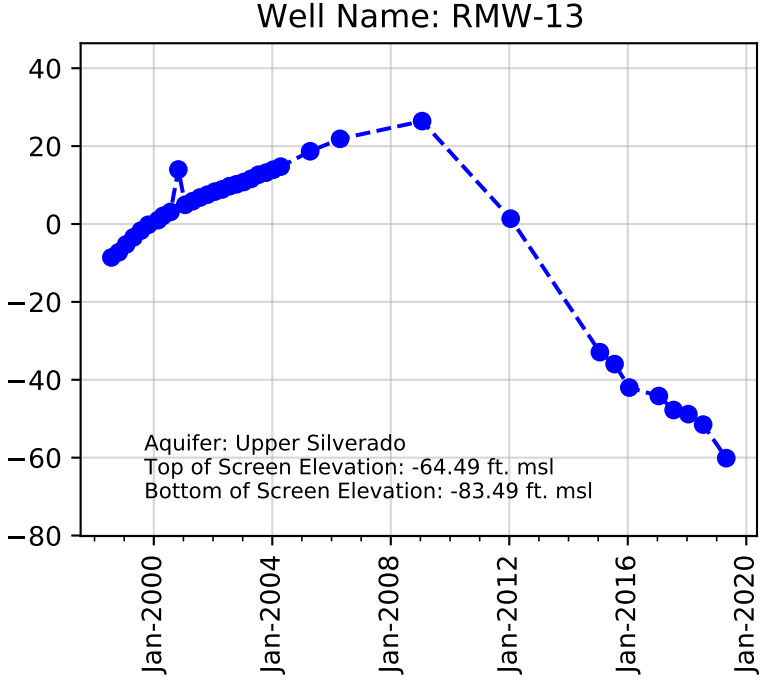

Well Name: OB-9C
Aquifer: Upper Silverado C
Top of Screen Elevation: -148.18 ft. msl
Bottom of Screen Elevation: -178.18 ft. msl
Groundwater Elevation (ft. msl)
20
10
0
−10
−20
−30
−40
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020

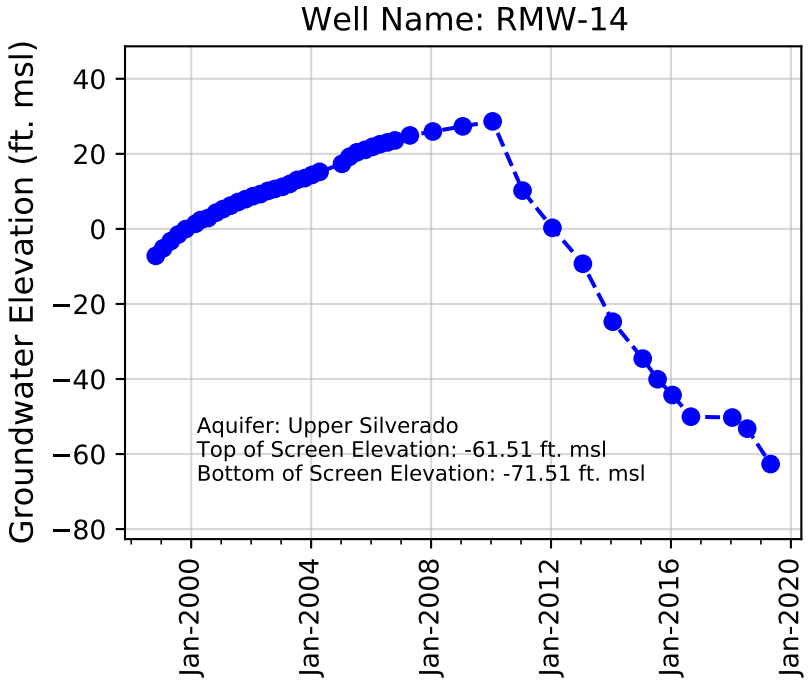

Well Name: RMW-1
Aquifer: Shallow
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown
40
30
20
10
0
−10
−20
−30
−40
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006

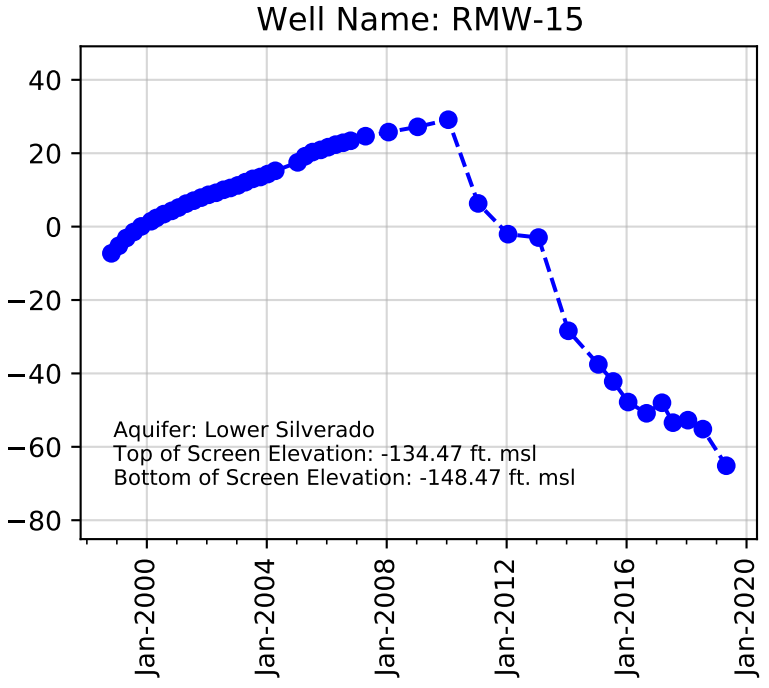

Well Name: RMW-10
Aquifer: Shallow
Top of Screen Elevation: -24.22 ft. msl
Bottom of Screen Elevation: -44.22 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
−60
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016

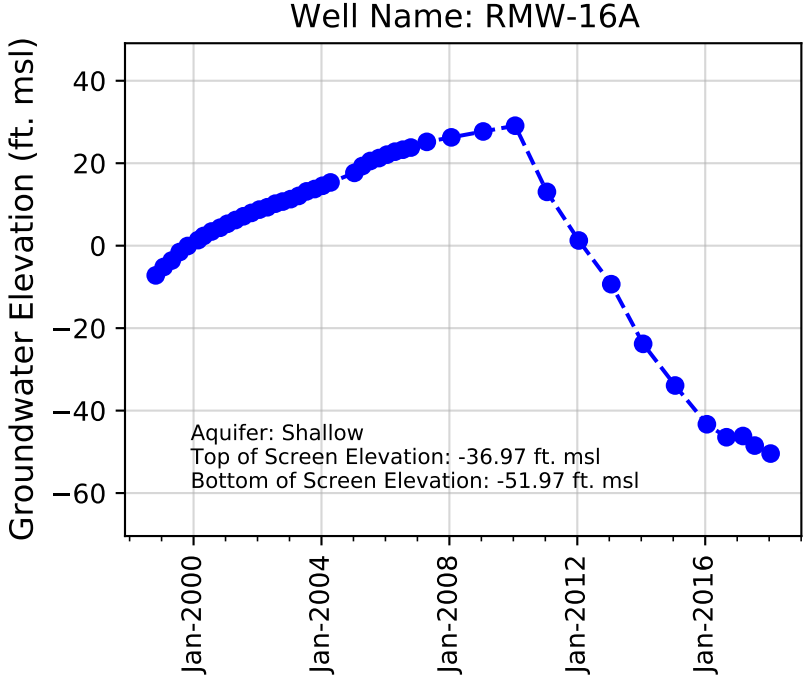

Well Name: RMW-11
Aquifer: Upper Silverado
Top of Screen Elevation: -57.15 ft. msl
Bottom of Screen Elevation: -71.15 ft. msl
40
20
0
−20
−40
−60
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

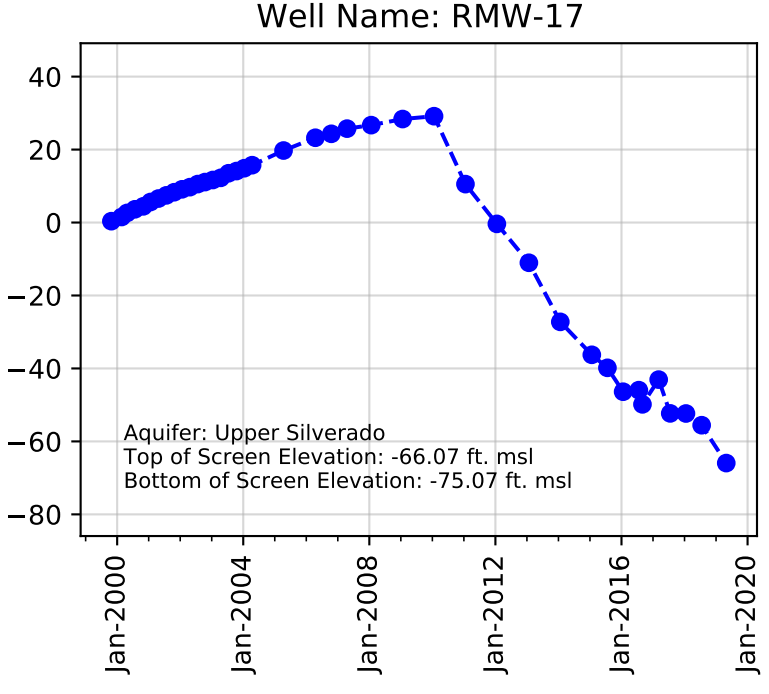

Well Name: RMW-12
Aquifer: Shallow
Top of Screen Elevation: -5.59 ft. msl
Bottom of Screen Elevation: -35.59 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016

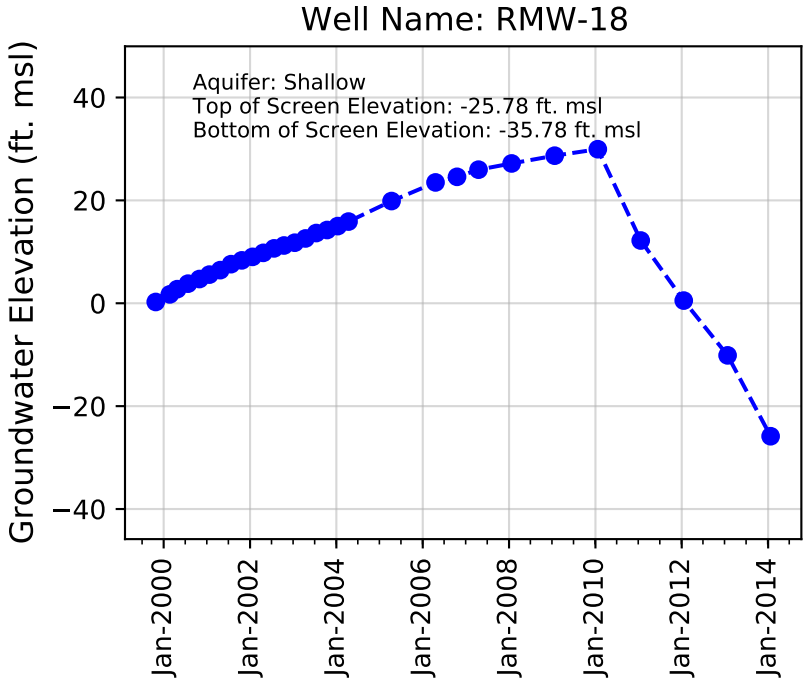

Well Name: RMW-13
Aquifer: Upper Silverado
Top of Screen Elevation: -64.49 ft. msl
Bottom of Screen Elevation: -83.49 ft. msl
40
20
0
−20
−40
−60
−80
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

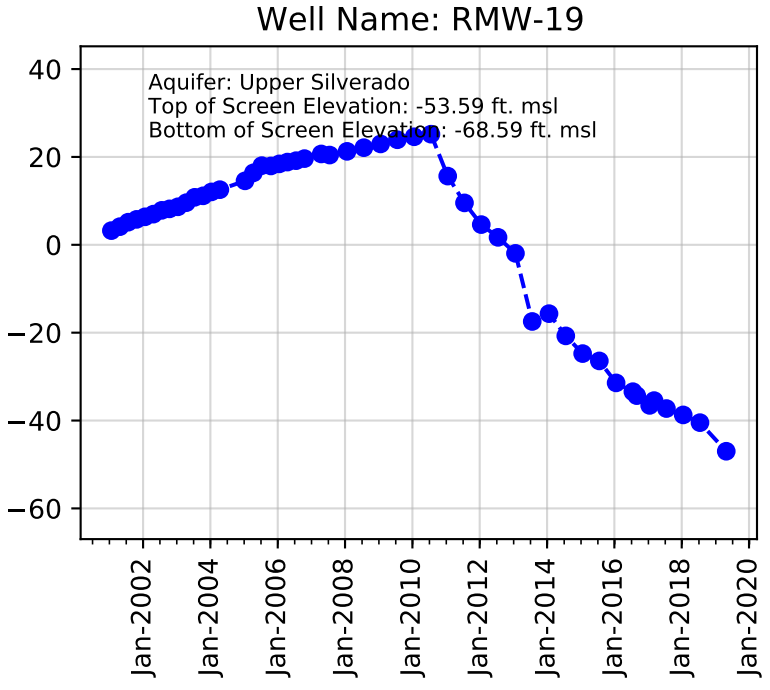

Well Name: RMW-14
Groundwater Elevation (ft. msl)
Aquifer: Upper Silverado
Top of Screen Elevation: -61.51 ft. msl
Bottom of Screen Elevation: -71.51 ft. msl

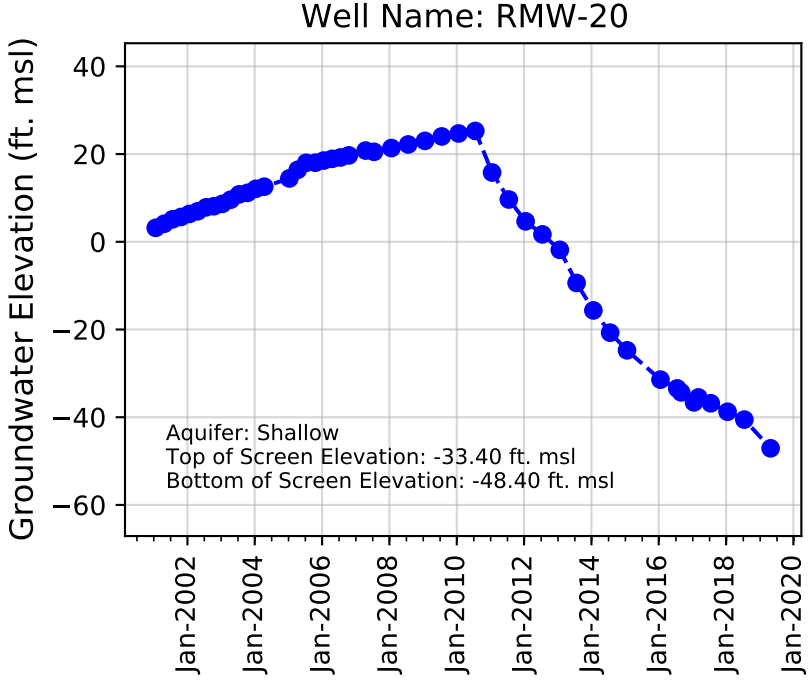

Well Name: RMW-15
Aquifer: Lower Silverado
Top of Screen Elevation: -134.47 ft. msl
Bottom of Screen Elevation: -148.47 ft. msl

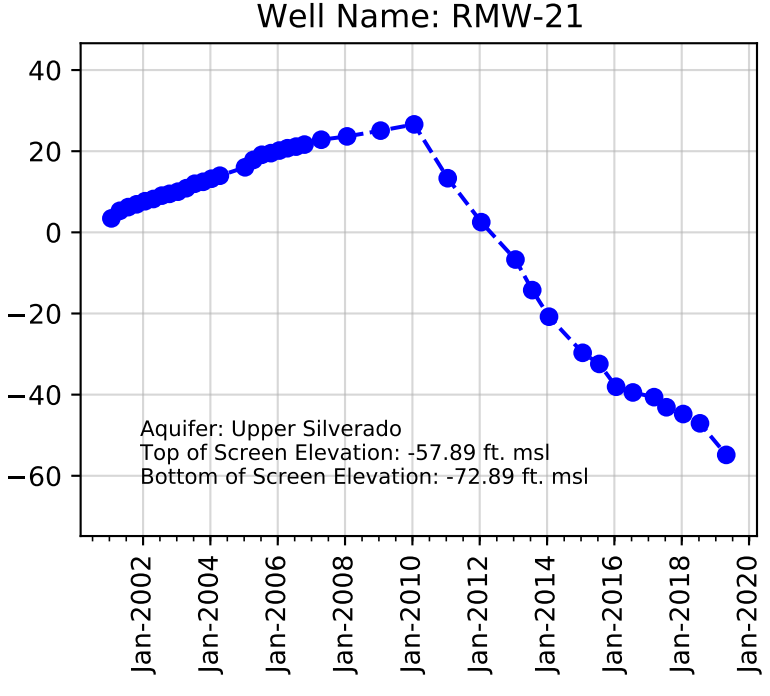

Well Name: RMW-16A
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -36.97 ft. msl
Bottom of Screen Elevation: -51.97 ft. msl

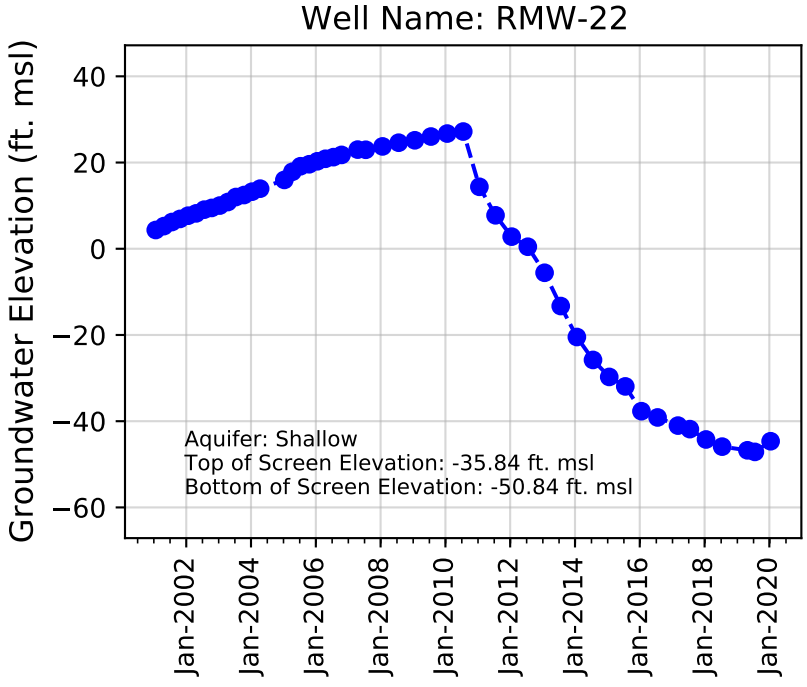

Well Name: RMW-17
Aquifer: Upper Silverado
Top of Screen Elevation: -66.07 ft. msl
Bottom of Screen Elevation: -75.07 ft. msl

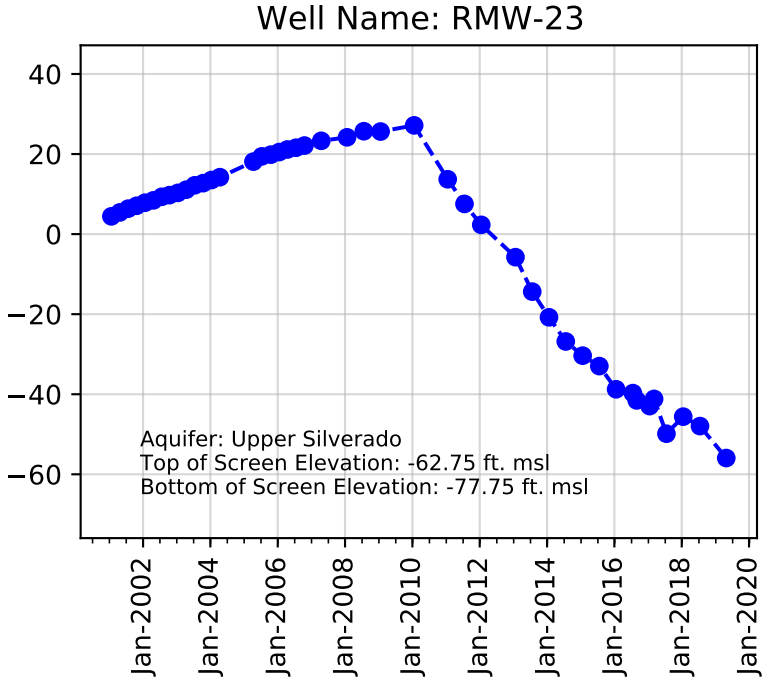

Well Name: RMW-18
Aquifer: Shallow
Top of Screen Elevation: -25.78 ft. msl
Bottom of Screen Elevation: -35.78 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014

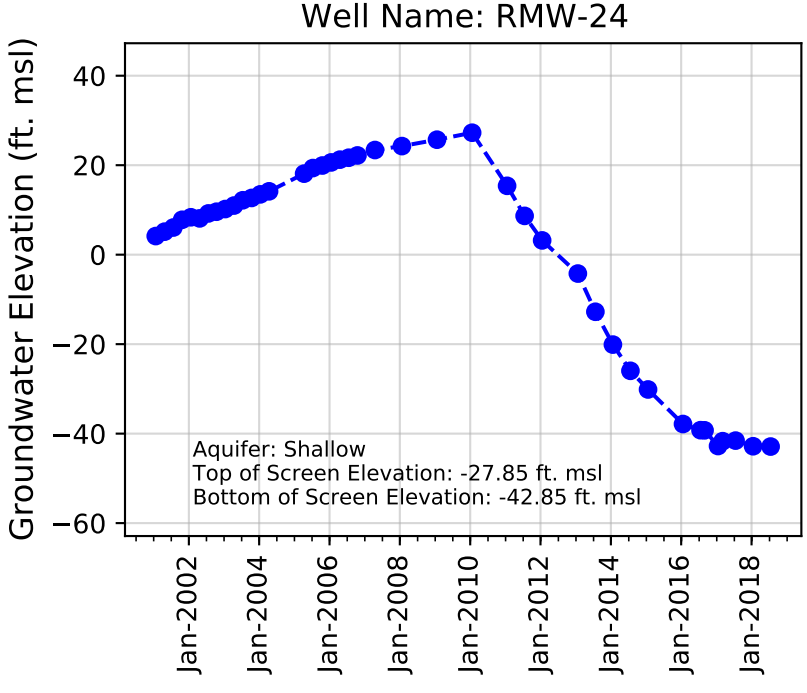

Well Name: RMW-19
Aquifer: Upper Silverado
Top of Screen Elevation: -53.59 ft. msl
Bottom of Screen Elevation: -68.59 ft. msl
40
20
0
−20
−40
−60
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

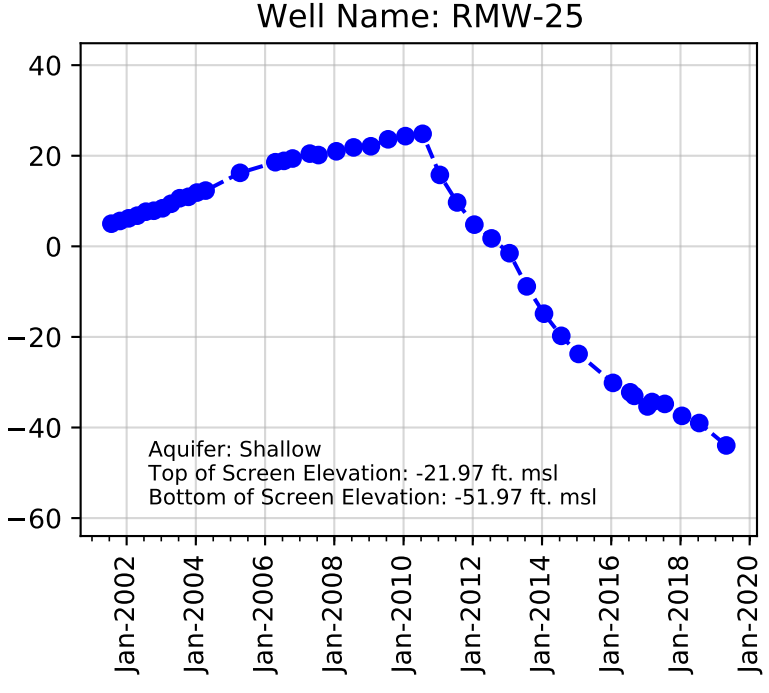

Well Name: RMW-20
Aquifer: Shallow
Top of Screen Elevation: -33.40 ft. msl
Bottom of Screen Elevation: -48.40 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
−60
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

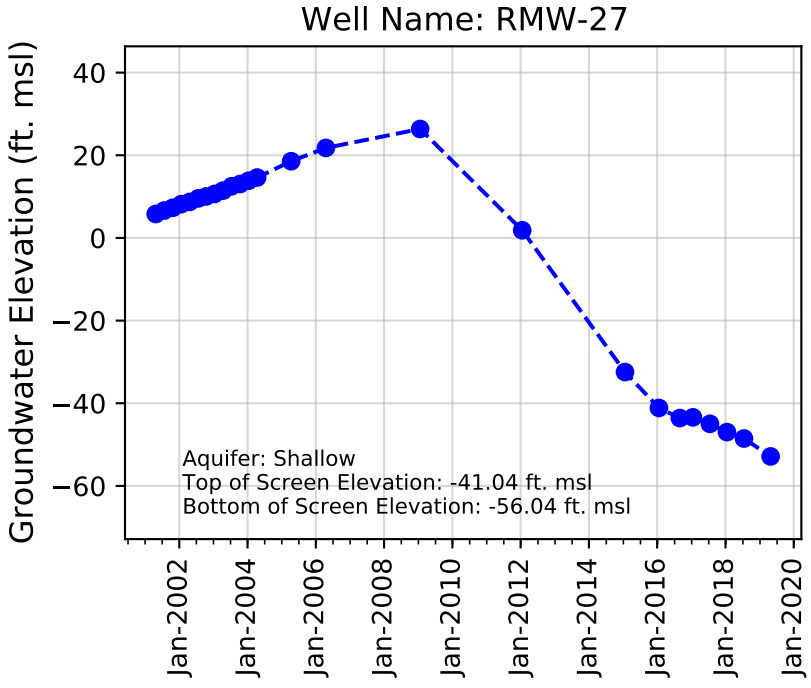

Well Name: RMW-21
Aquifer: Upper Silverado
Top of Screen Elevation: -57.89 ft. msl
Bottom of Screen Elevation: -72.89 ft. msl
40
20
0
−20
−40
−60
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

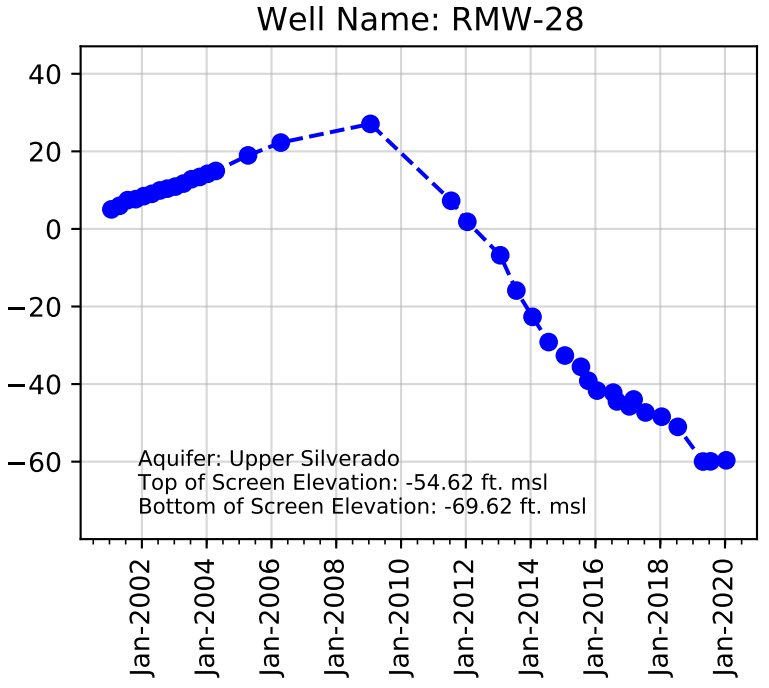

Well Name: RMW-22
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -35.84 ft. msl
Bottom of Screen Elevation: -50.84 ft. msl

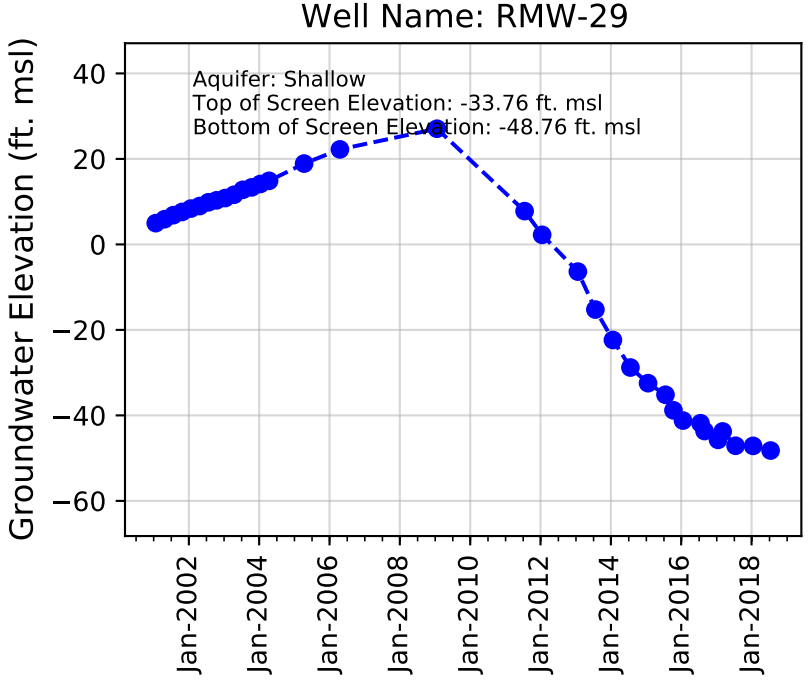

Well Name: RMW-23
Aquifer: Upper Silverado
Top of Screen Elevation: -62.75 ft. msl
Bottom of Screen Elevation: -77.75 ft. msl

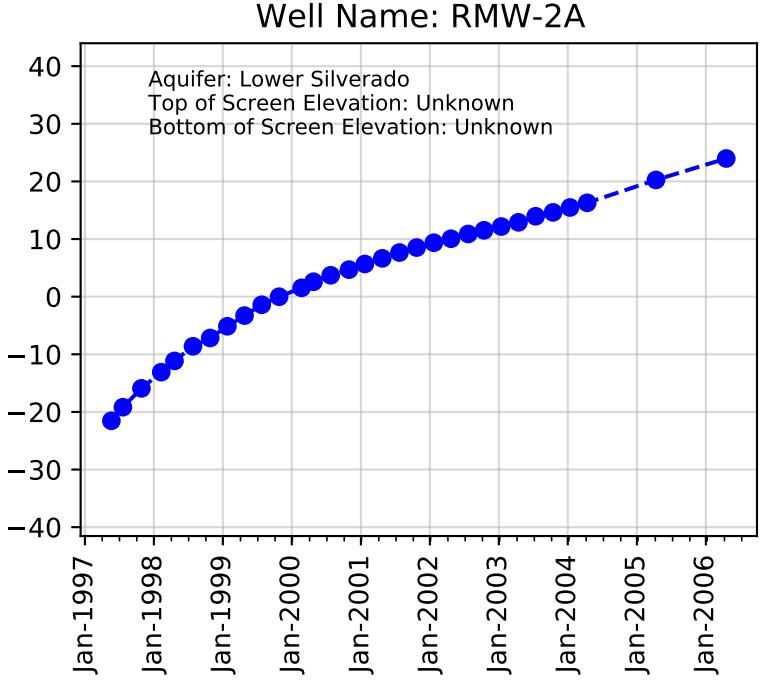

Well Name: RMW-24
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -27.85 ft. msl
Bottom of Screen Elevation: -42.85 ft. msl

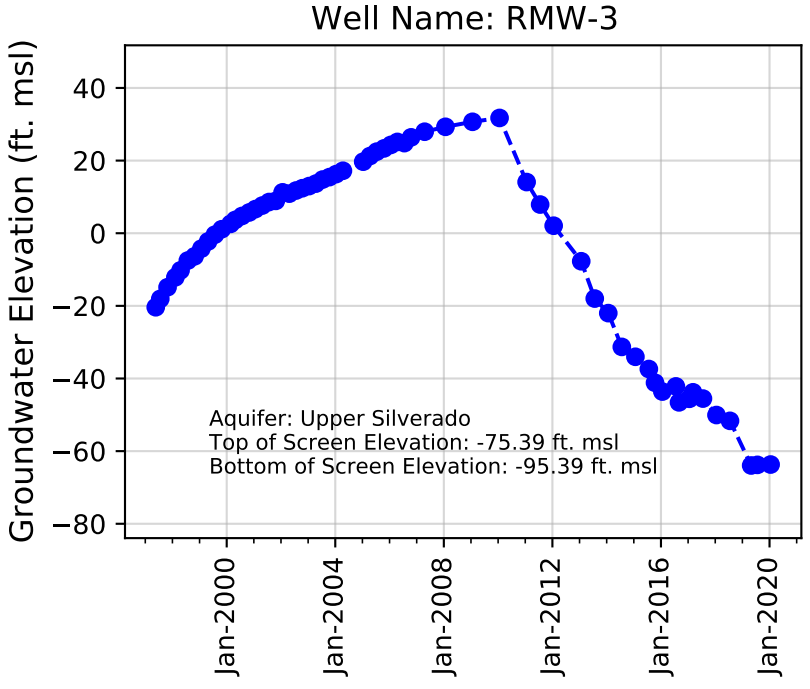

Well Name: RMW-25
Aquifer: Shallow
Top of Screen Elevation: -21.97 ft. msl
Bottom of Screen Elevation: -51.97 ft. msl

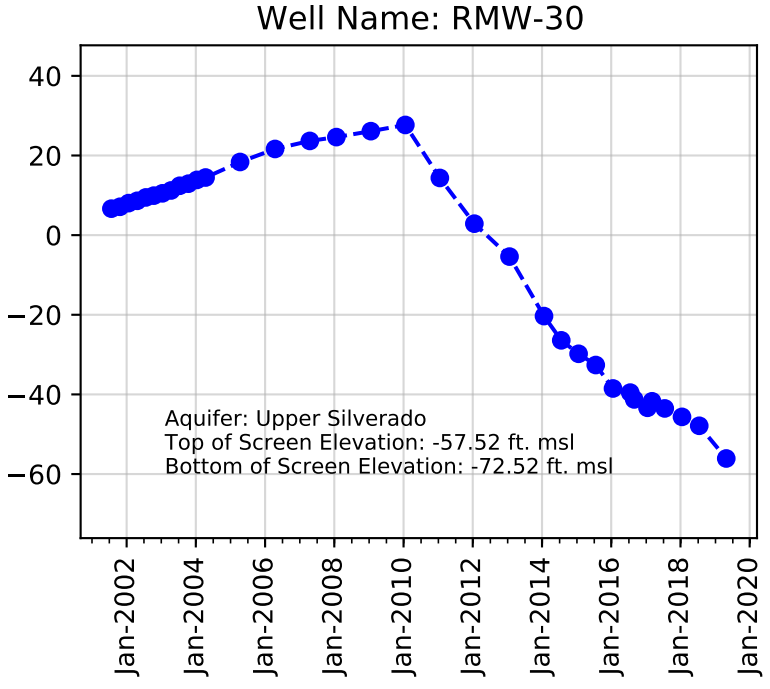

Well Name: RMW-27
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -41.04 ft. msl
Bottom of Screen Elevation: -56.04 ft. msl

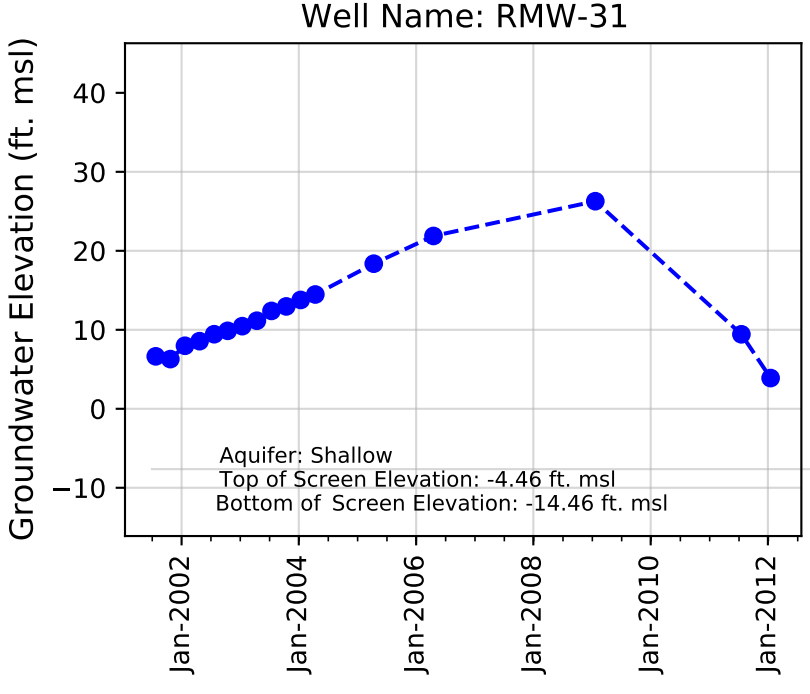

Well Name: RMW-28
Aquifer: Upper Silverado
Top of Screen Elevation: -54.62 ft. msl
Bottom of Screen Elevation: -69.62 ft. msl

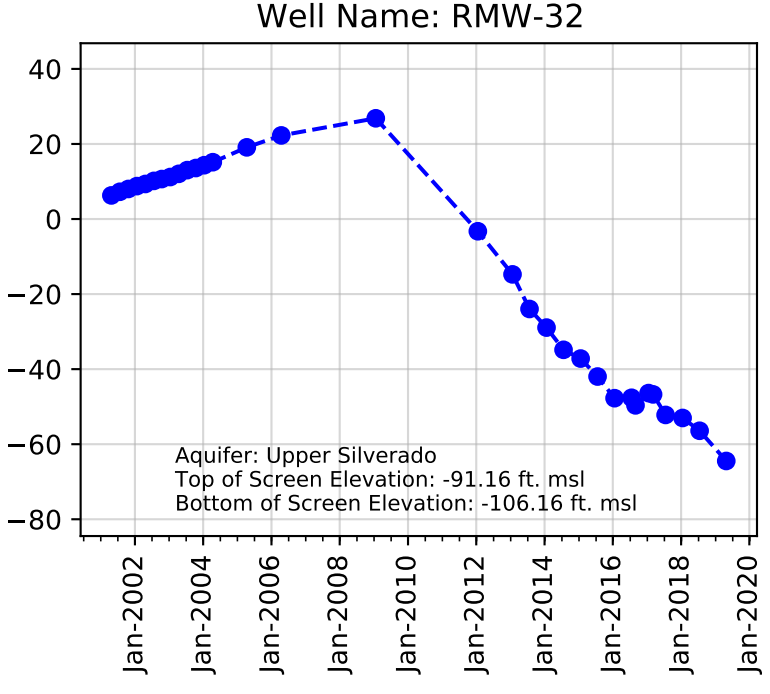

Well Name: RMW-29
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -33.76 ft. msl
Bottom of Screen Elevation: -48.76 ft. msl

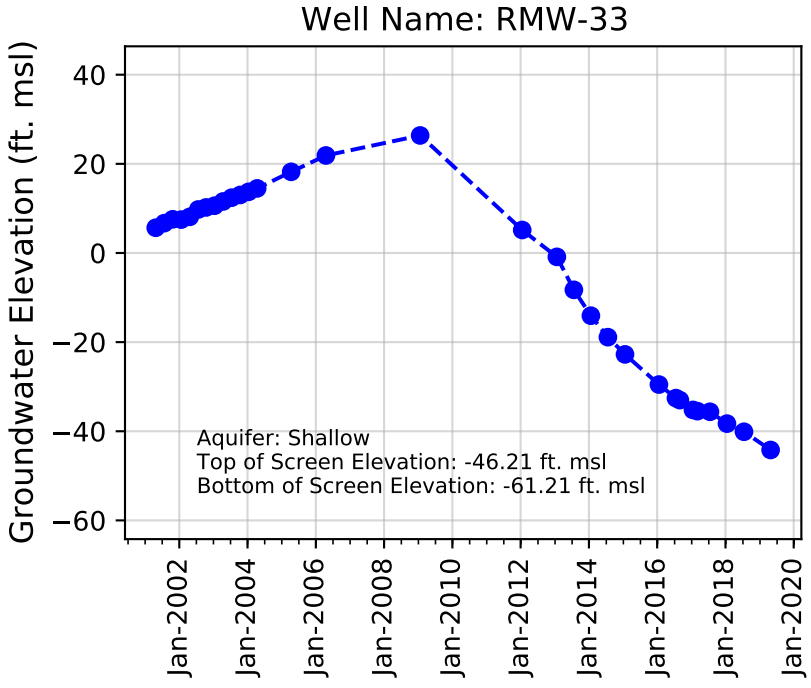

Well Name: RMW-2A
Aquifer: Lower Silverado
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown

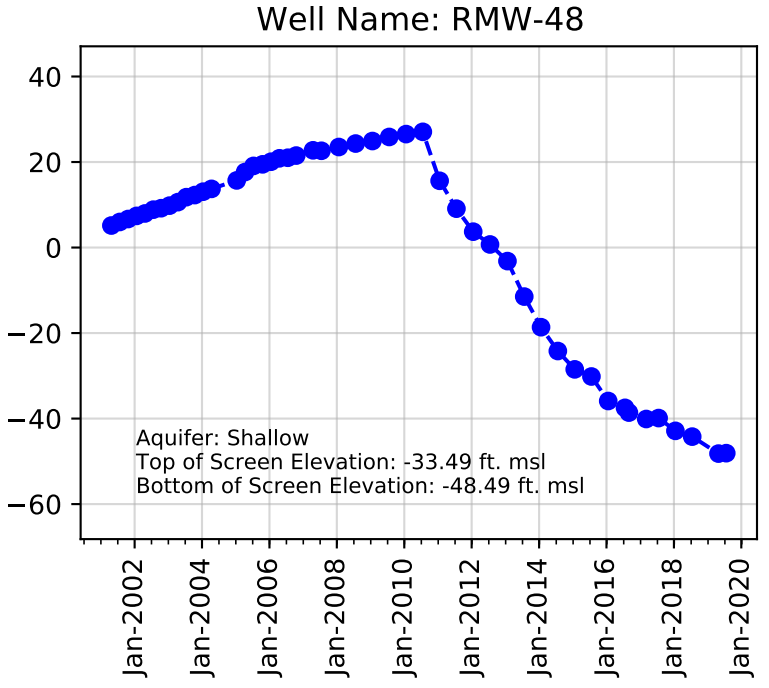

Well Name: RMW-3
Groundwater Elevation (ft. msl)
Aquifer: Upper Silverado
Top of Screen Elevation: -75.39 ft. msl
Bottom of Screen Elevation: -95.39 ft. msl

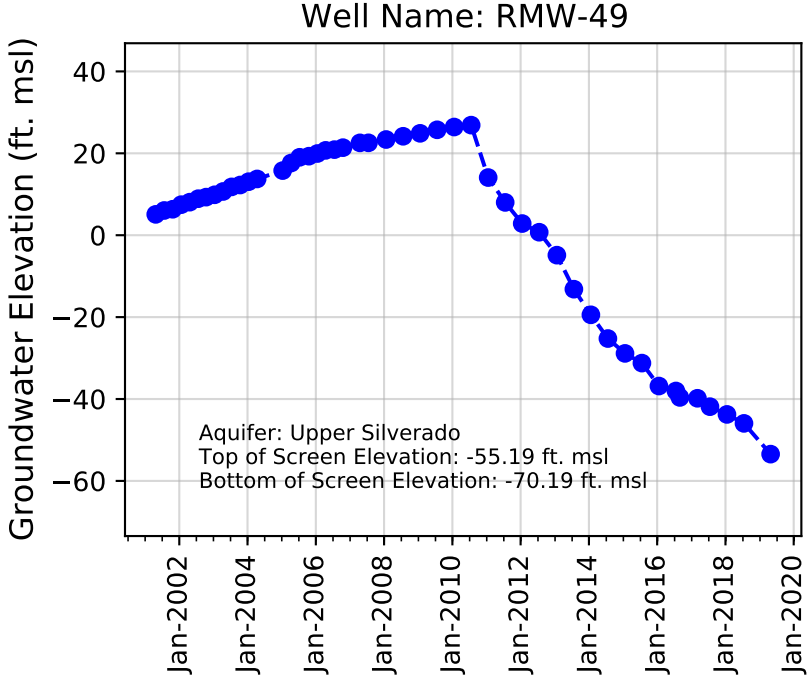

Well Name: RMW-30
Aquifer: Upper Silverado
Top of Screen Elevation: -57.52 ft. msl
Bottom of Screen Elevation: -72.52 ft. msl

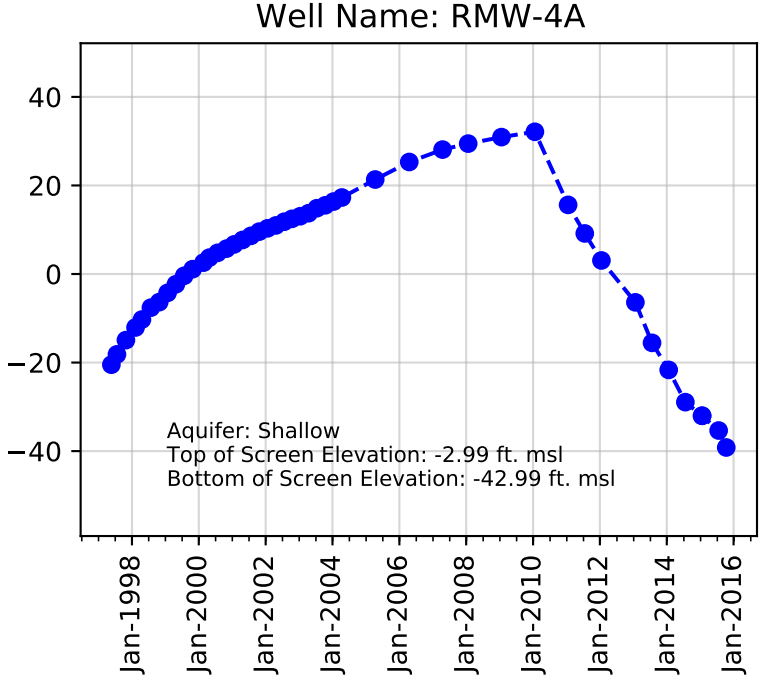

Well Name: RMW-31
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -4.46 ft. msl
Bottom of Screen Elevation: -14.46 ft. msl

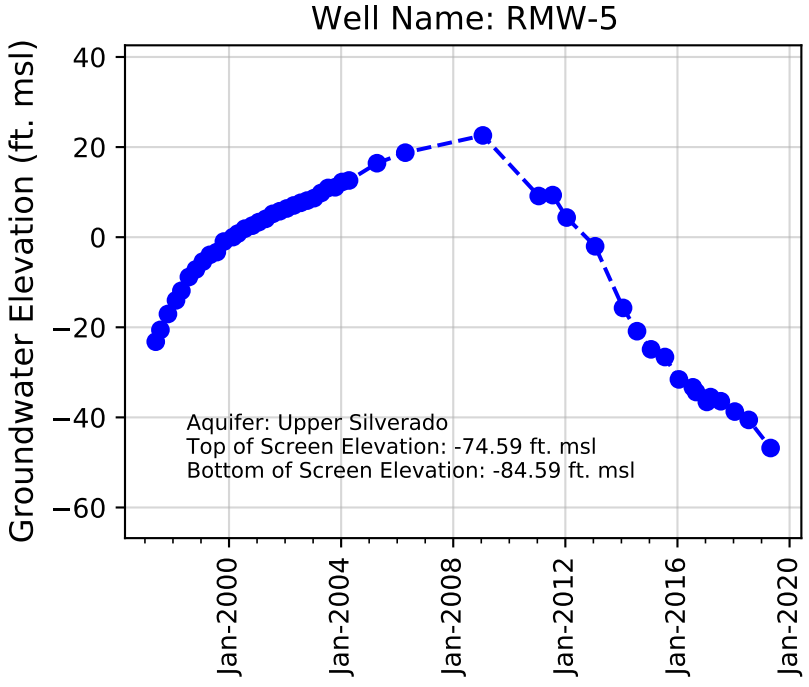

Well Name: RMW-32
Aquifer: Upper Silverado
Top of Screen Elevation: -91.16 ft. msl
Bottom of Screen Elevation: -106.16 ft. msl

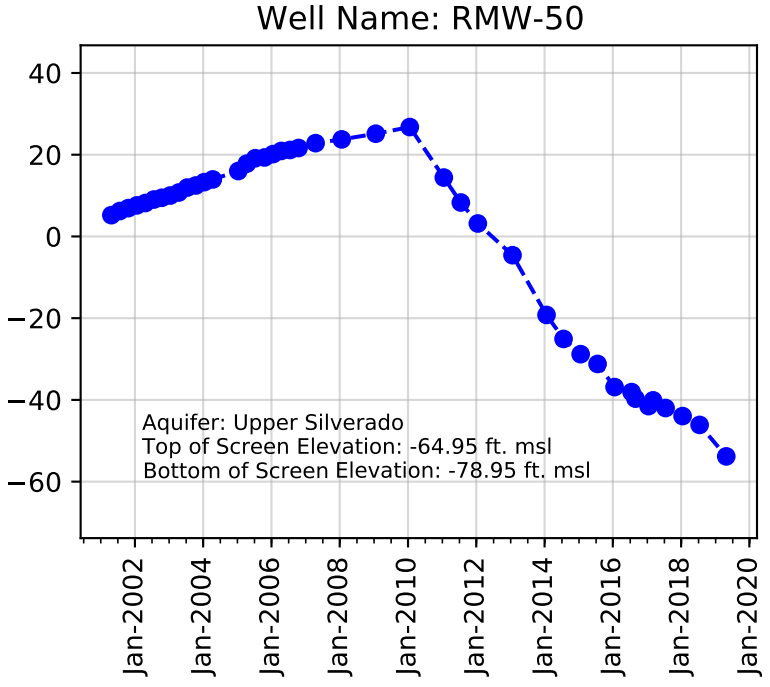

Well Name: RMW-33
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -46.21 ft. msl
Bottom of Screen Elevation: -61.21 ft. msl

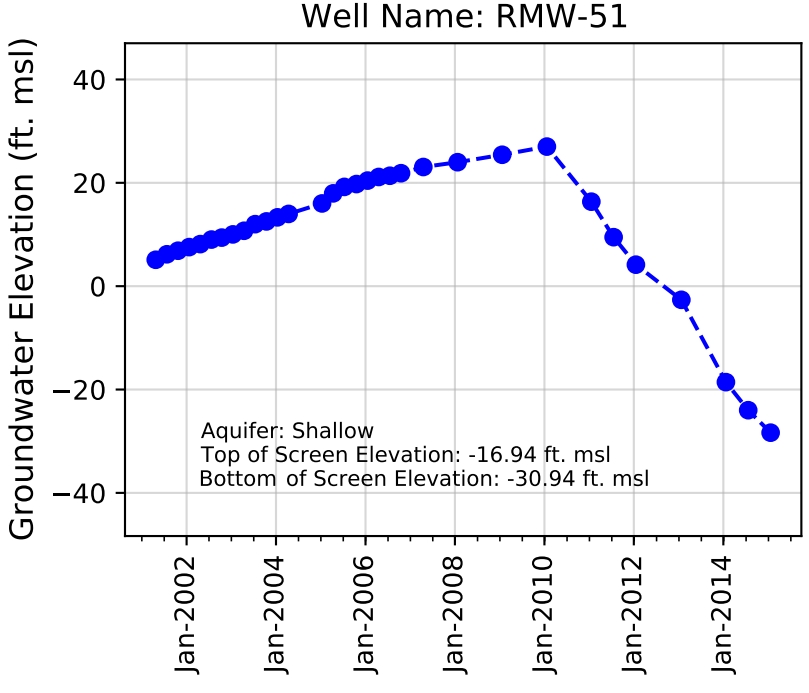

Well Name: RMW-48
Aquifer: Shallow
Top of Screen Elevation: -33.49 ft. msl
Bottom of Screen Elevation: -48.49 ft. msl

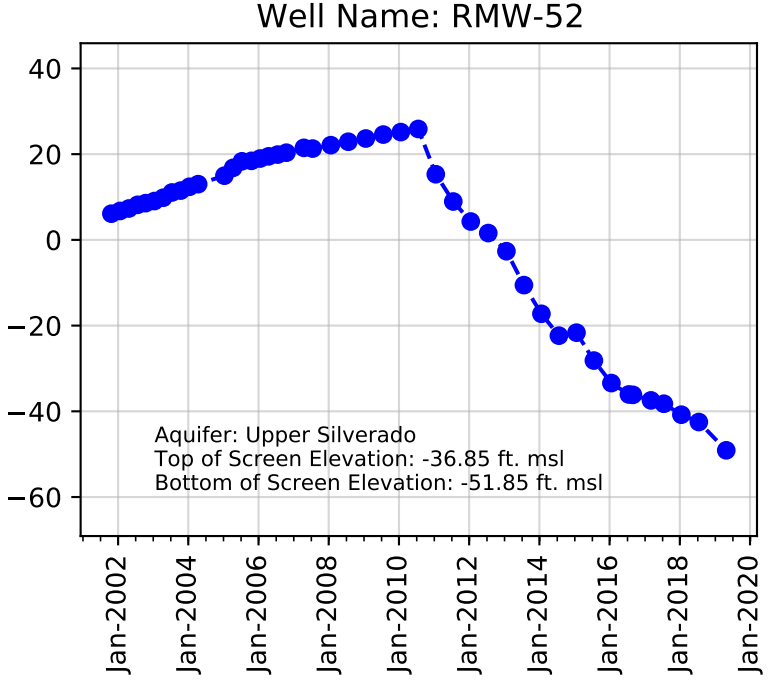

Well Name: RMW-49
Groundwater Elevation (ft. msl)
Aquifer: Upper Silverado
Top of Screen Elevation: -55.19 ft. msl
Bottom of Screen Elevation: -70.19 ft. msl

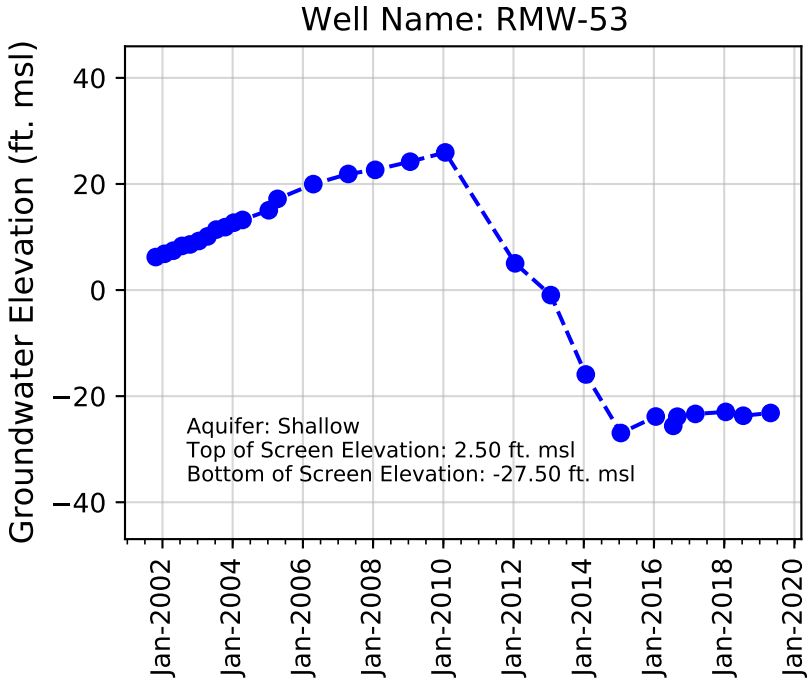

Well Name: RMW-4A
Aquifer: Shallow
Top of Screen Elevation: -2.99 ft. msl
Bottom of Screen Elevation: -42.99 ft. msl

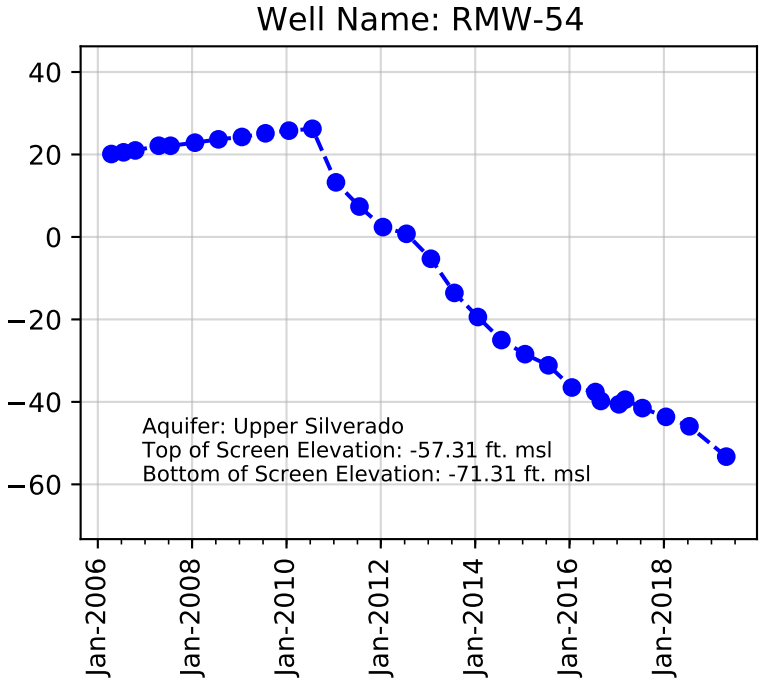

Well Name: RMW-5
Groundwater Elevation (ft. msl)
Aquifer: Upper Silverado
Top of Screen Elevation: -74.59 ft. msl
Bottom of Screen Elevation: -84.59 ft. msl

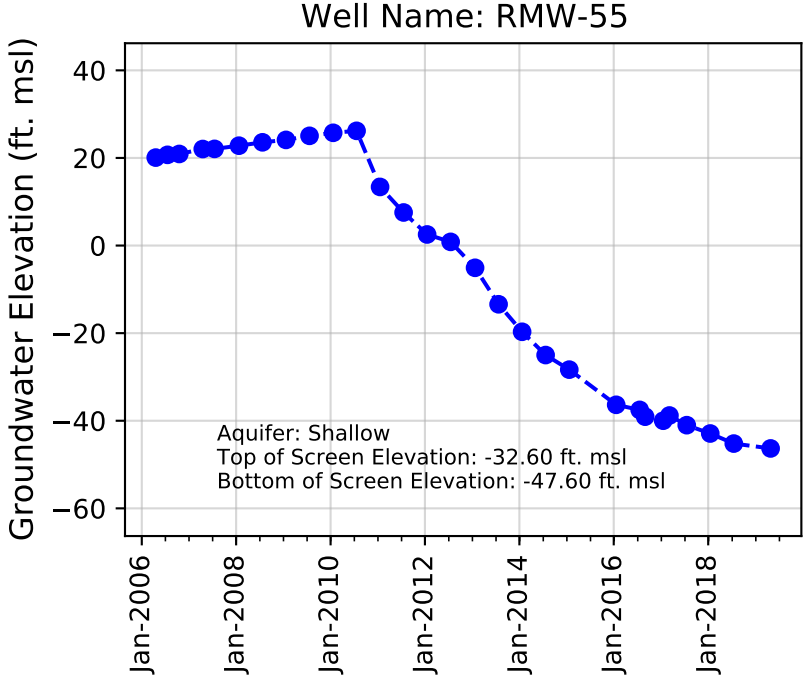

Well Name: RMW-50
Aquifer: Upper Silverado
Top of Screen Elevation: -64.95 ft. msl
Bottom of Screen Elevation: -78.95 ft. msl

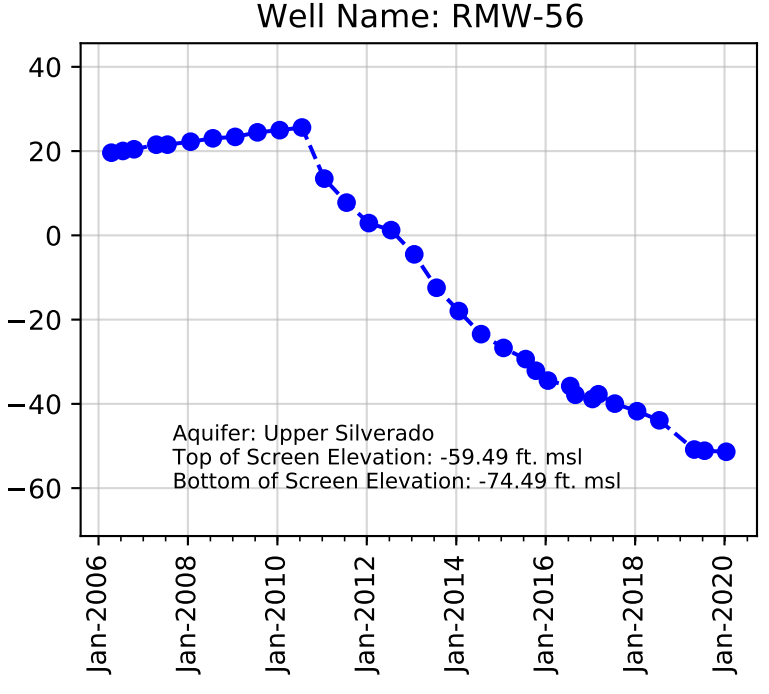

Well Name: RMW-51
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -16.94 ft. msl
Bottom of Screen Elevation: -30.94 ft. msl

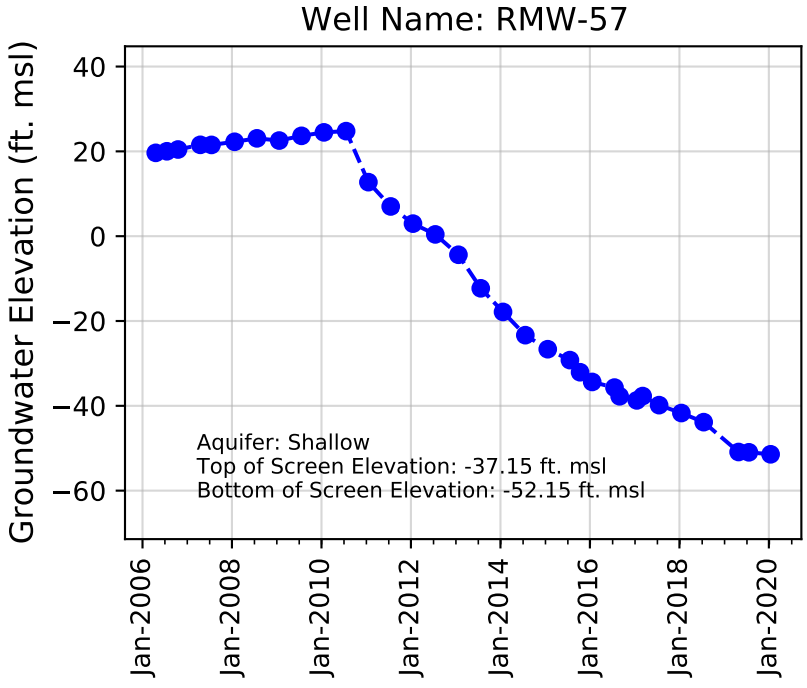

Well Name: RMW-52
Aquifer: Upper Silverado
Top of Screen Elevation: -36.85 ft. msl
Bottom of Screen Elevation: -51.85 ft. msl

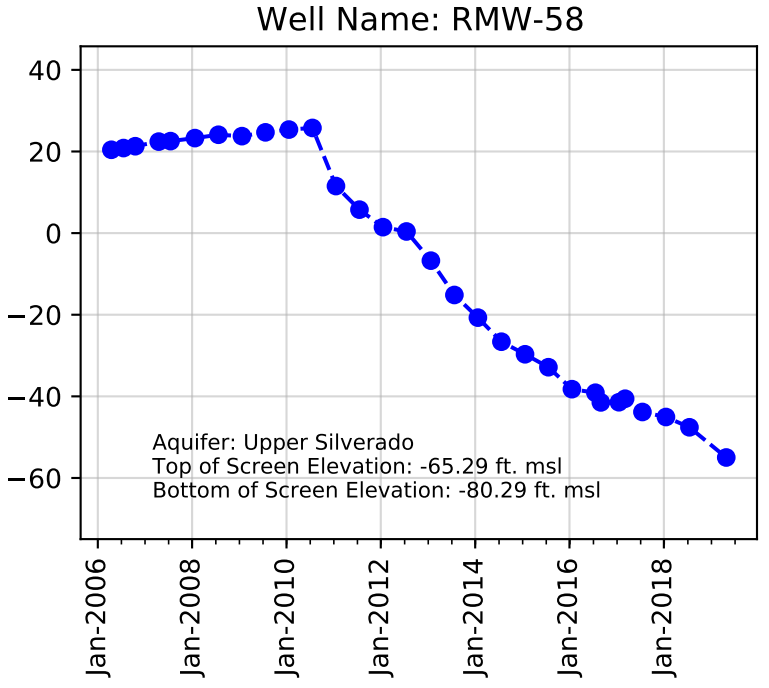

Well Name: RMW-53
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: 2.50 ft. msl
Bottom of Screen Elevation: -27.50 ft. msl

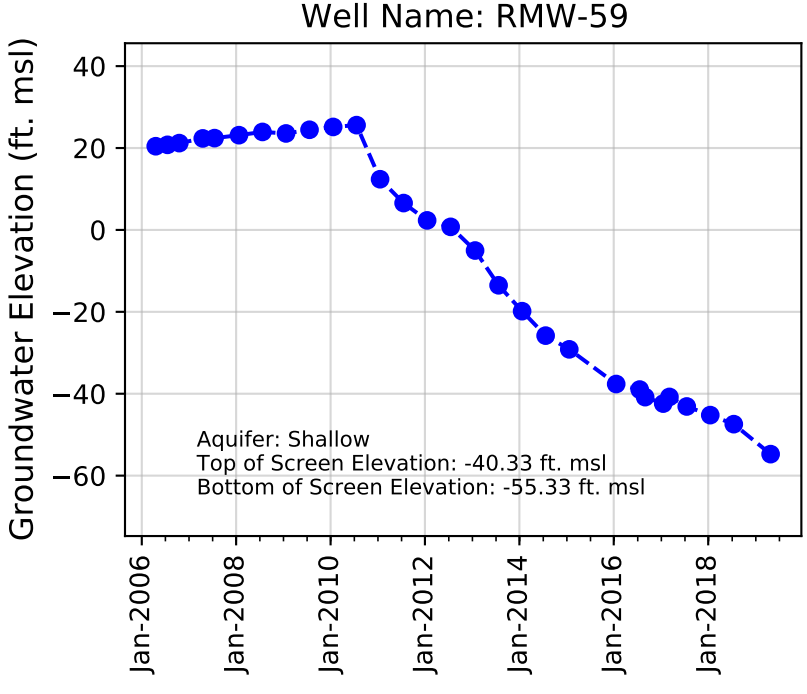

Well Name: RMW-54
Aquifer: Upper Silverado
Top of Screen Elevation: -57.31 ft. msl
Bottom of Screen Elevation: -71.31 ft. msl

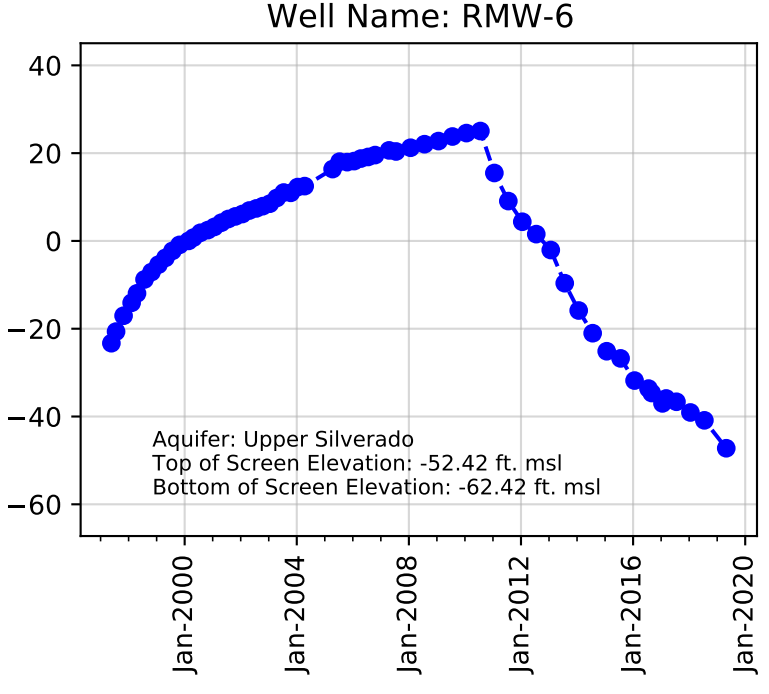

Well Name: RMW-55
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -32.60 ft. msl
Bottom of Screen Elevation: -47.60 ft. msl

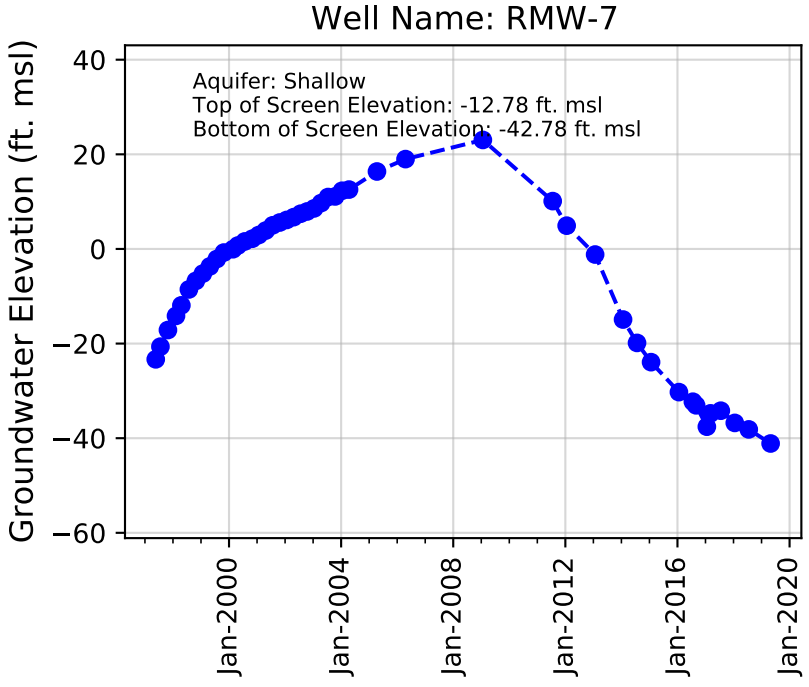

Well Name: RMW-56
Aquifer: Upper Silverado
Top of Screen Elevation: -59.49 ft. msl
Bottom of Screen Elevation: -74.49 ft. msl

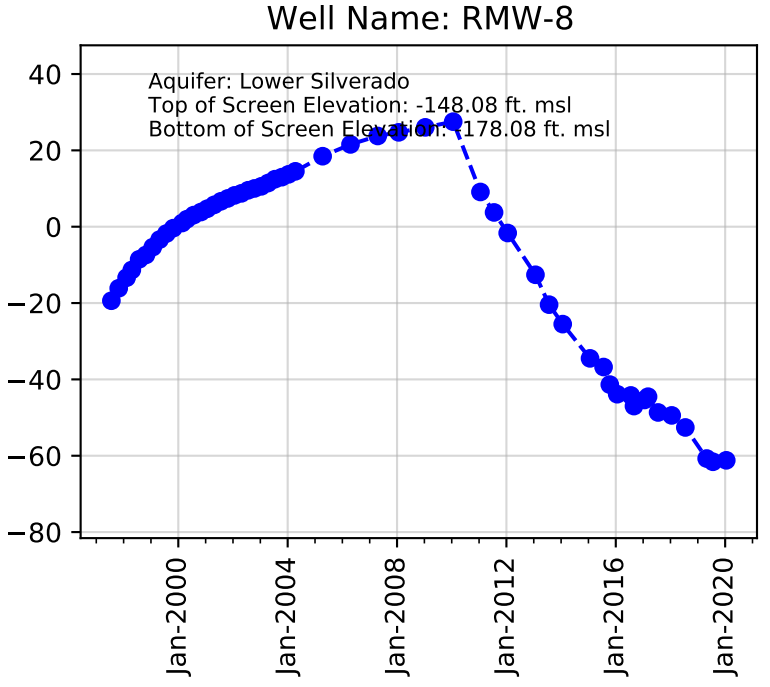

Well Name: RMW-57
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -37.15 ft. msl
Bottom of Screen Elevation: -52.15 ft. msl

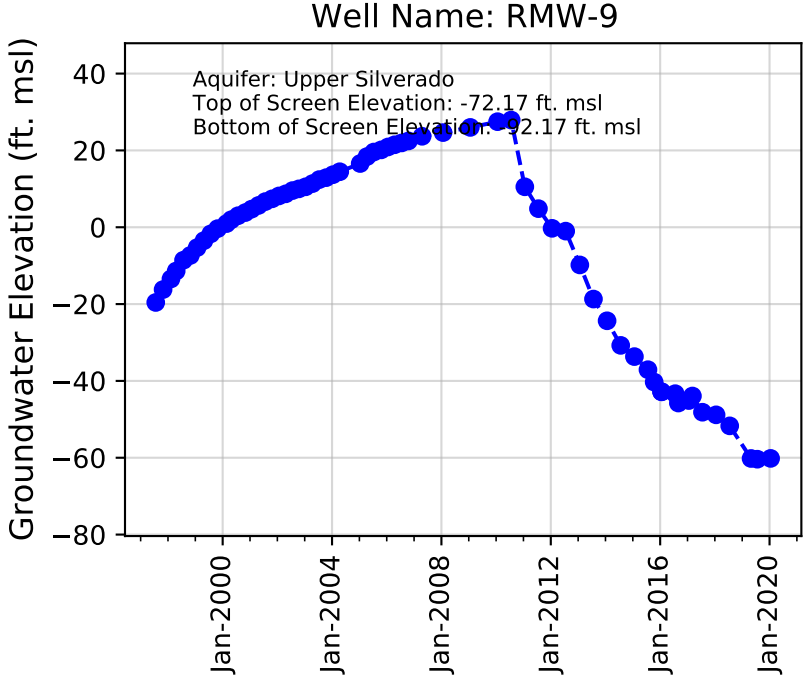

Well Name: RMW-58
Aquifer: Upper Silverado
Top of Screen Elevation: -65.29 ft. msl
Bottom of Screen Elevation: -80.29 ft. msl

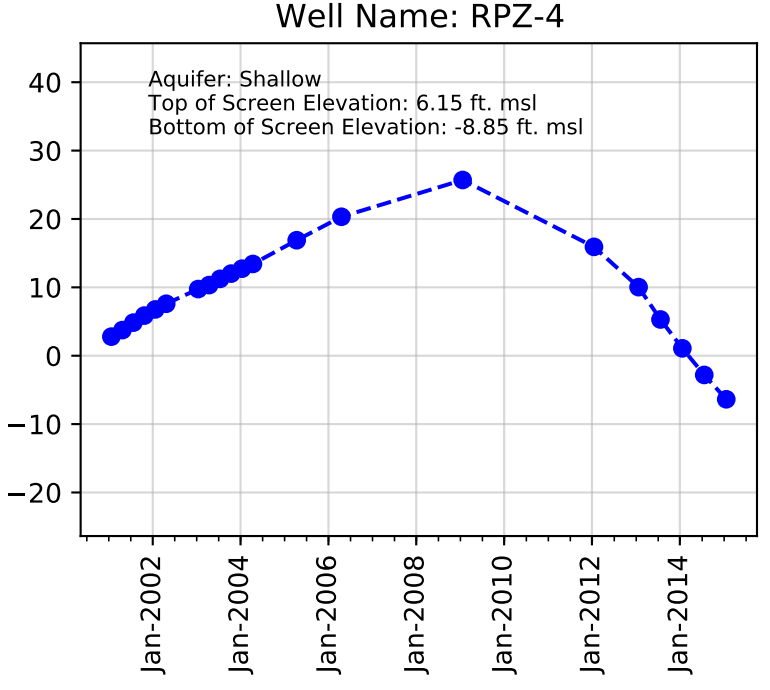

Well Name: RMW-59
Groundwater Elevation (ft. msl)
Aquifer: Shallow
Top of Screen Elevation: -40.33 ft. msl
Bottom of Screen Elevation: -55.33 ft. msl

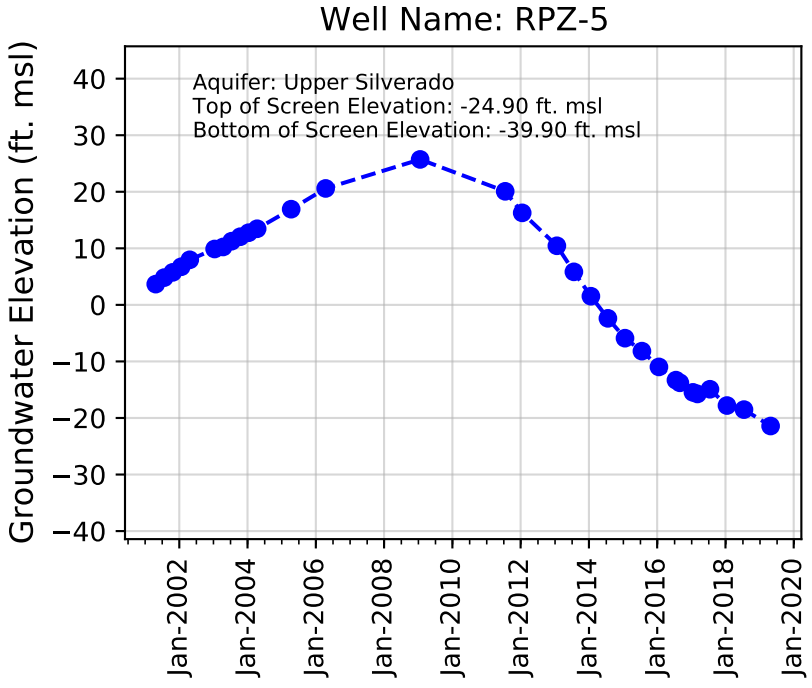

Well Name: RMW-6
Aquifer: Upper Silverado
Top of Screen Elevation: -52.42 ft. msl
Bottom of Screen Elevation: -62.42 ft. msl

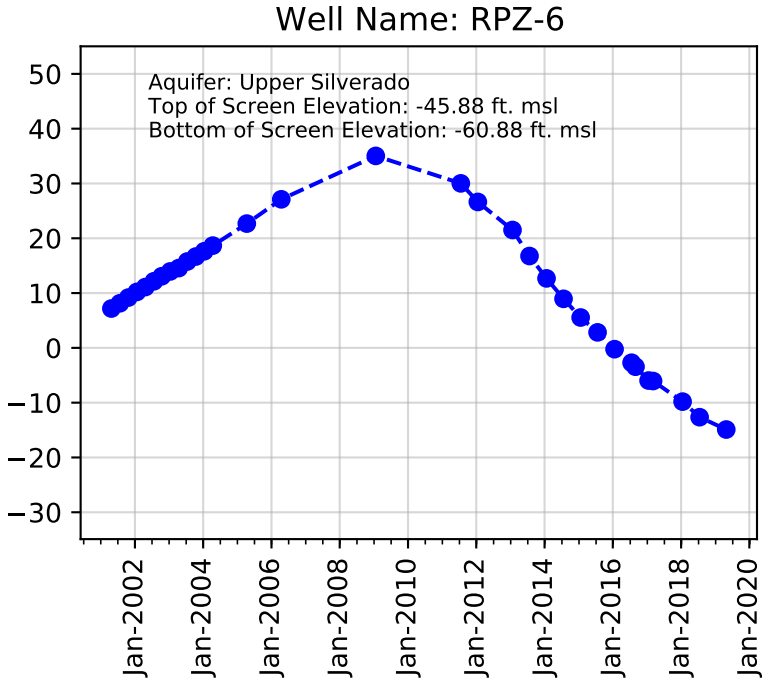

Well Name: RMW-7
Aquifer: Shallow
Top of Screen Elevation: -12.78 ft. msl
Bottom of Screen Elevation: -42.78 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
−60
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

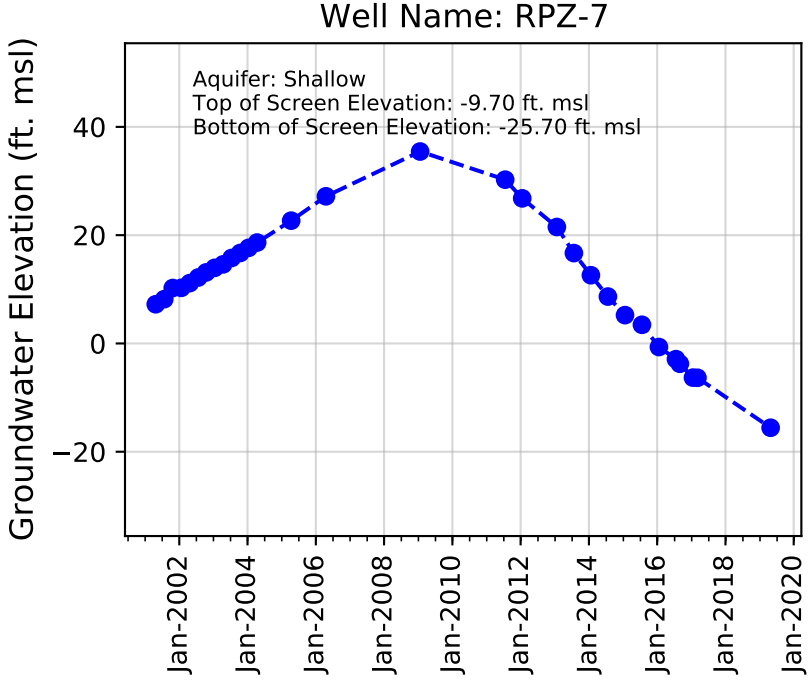

Well Name: RMW-8
Aquifer: Lower Silverado
Top of Screen Elevation: -148.08 ft. msl
Bottom of Screen Elevation: -178.08 ft. msl
40
20
0
−20
−40
−60
−80
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

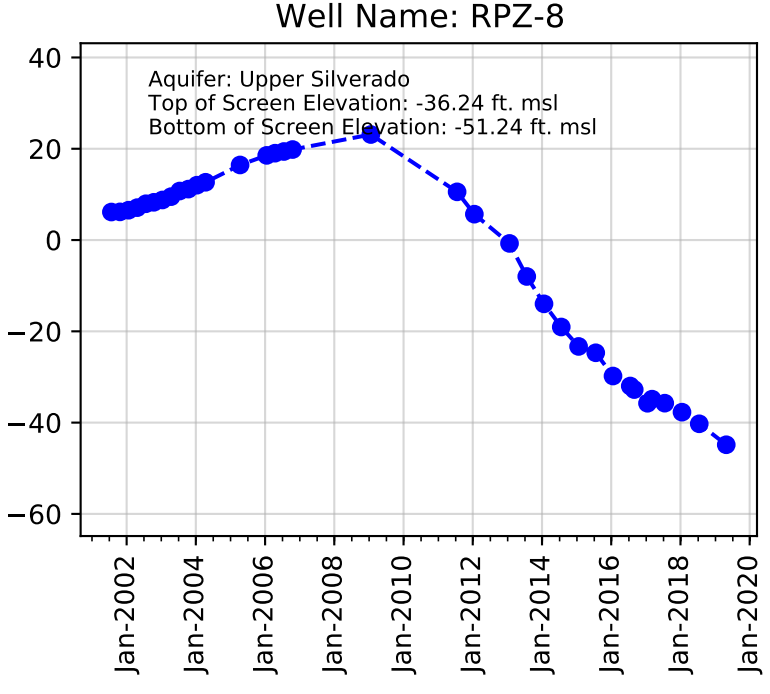

Well Name: RMW-9
Aquifer: Upper Silverado
Top of Screen Elevation: -72.17 ft. msl
Bottom of Screen Elevation: -92.17 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
−40
−60
−80
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

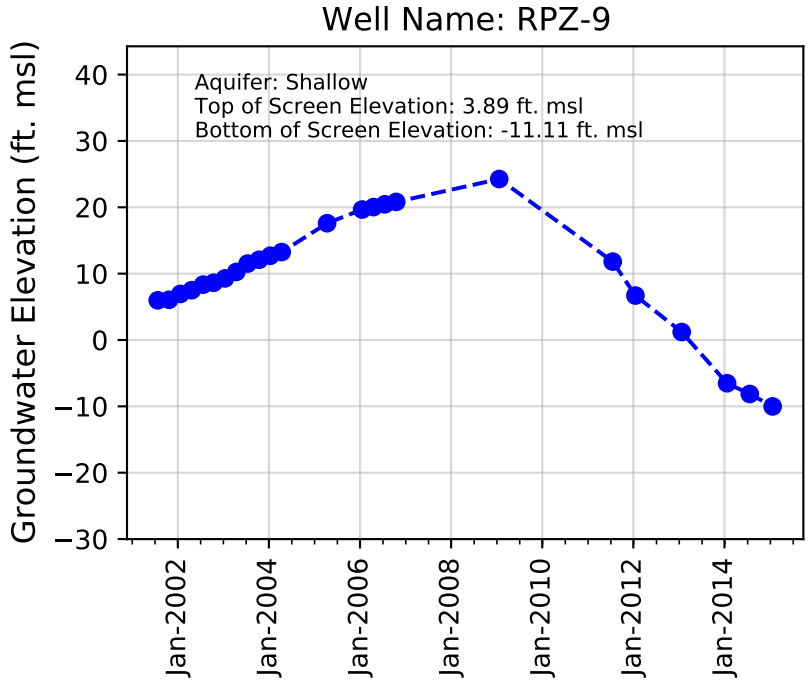

Well Name: RPZ-4
Aquifer: Shallow
Top of Screen Elevation: 6.15 ft. msl
Bottom of Screen Elevation: -8.85 ft. msl
40
30
20
10
0
−10
−20
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014

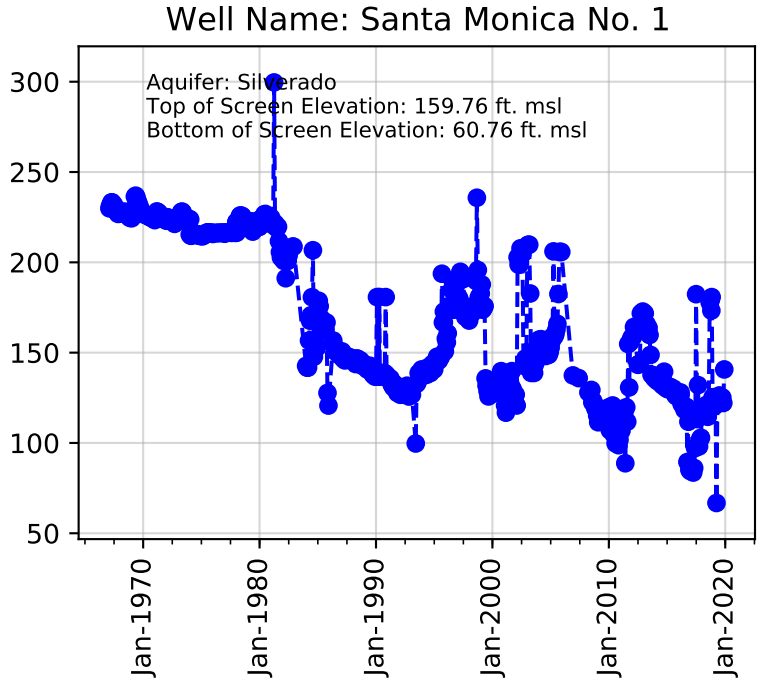

Well Name: RPZ-5
Aquifer: Upper Silverado
Top of Screen Elevation: -24.90 ft. msl
Bottom of Screen Elevation: -39.90 ft. msl
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
−30
−40
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

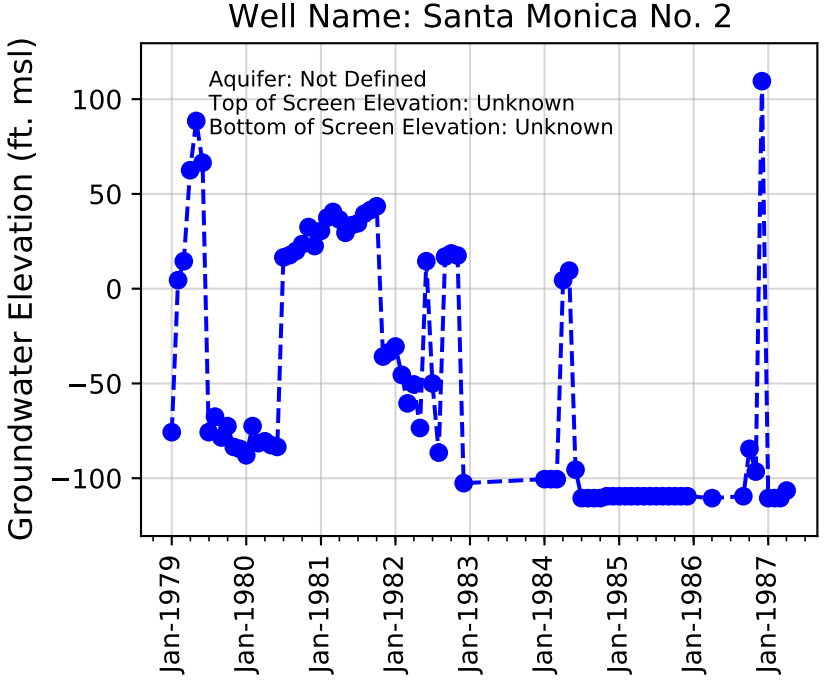

Well Name: RPZ-6
Aquifer: Upper Silverado
Top of Screen Elevation: -45.88 ft. msl
Bottom of Screen Elevation: -60.88 ft. msl
50
40
30
20
10
0
−10
−20
−30
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

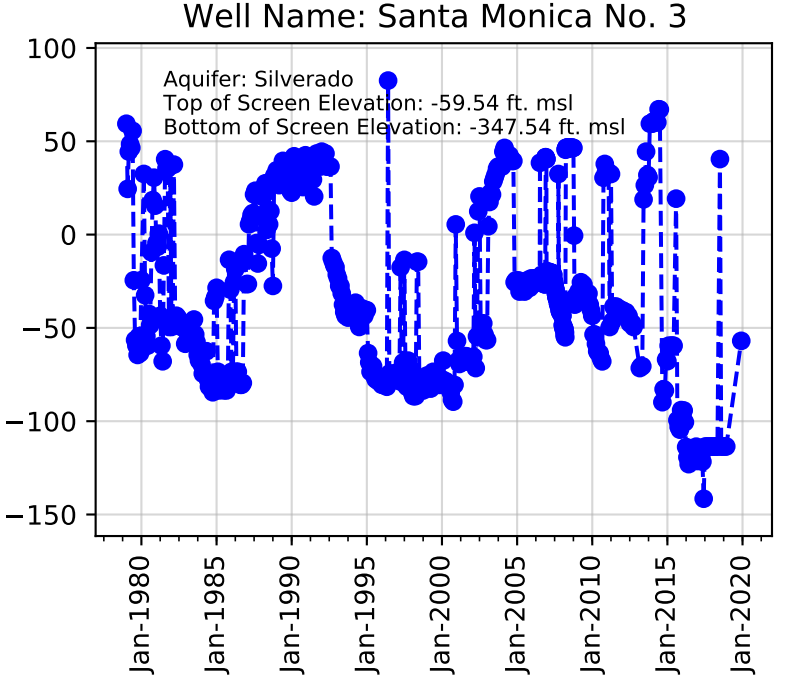

Well Name: RPZ-7
Aquifer: Shallow
Top of Screen Elevation: -9.70 ft. msl
Bottom of Screen Elevation: -25.70 ft. msl
Groundwater Elevation (ft. msl)
40
20
0
−20
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

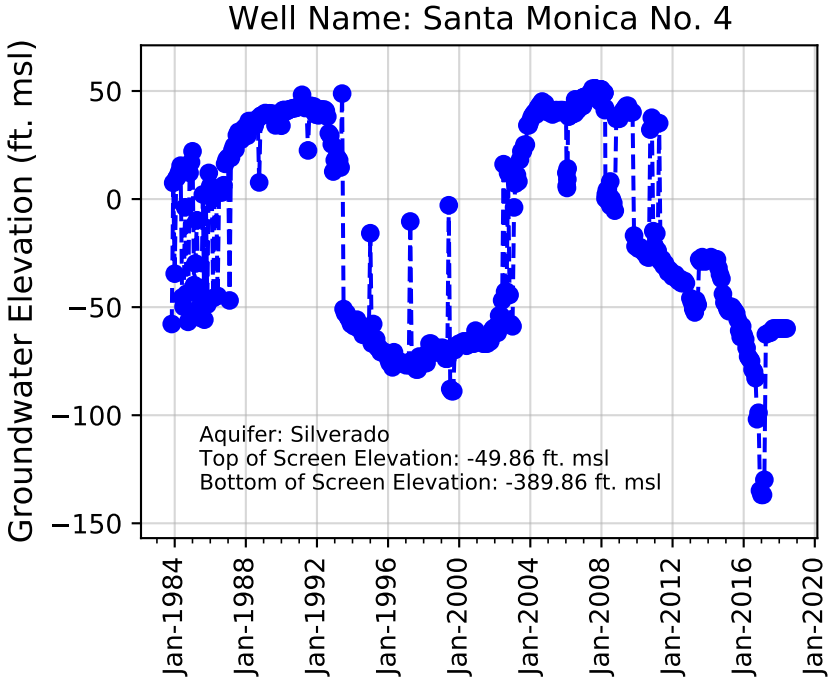

Well Name: RPZ-8
Aquifer: Upper Silverado
Top of Screen Elevation: -36.24 ft. msl
Bottom of Screen Elevation: -51.24 ft. msl
40
20
0
−20
−40
−60
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Jan-2020

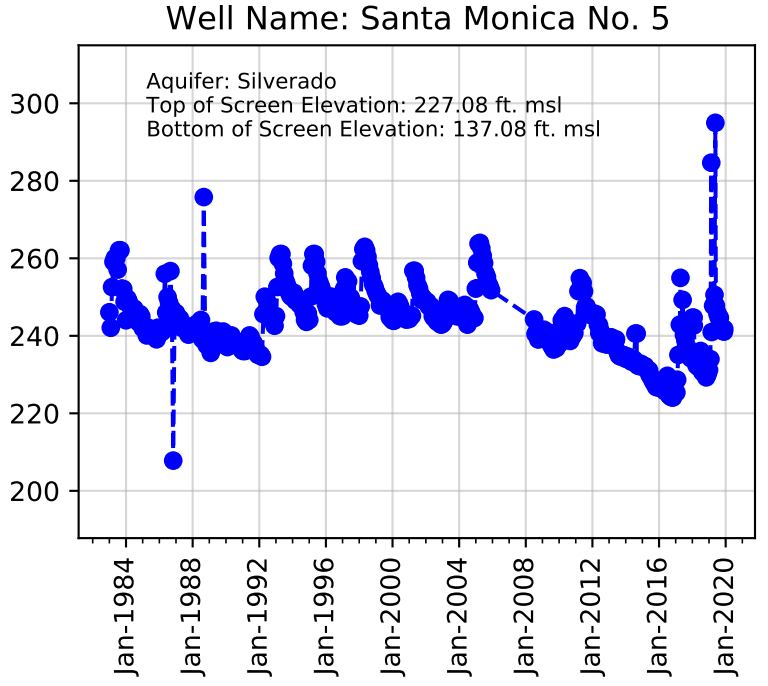

Well Name: RPZ-9
Aquifer: Shallow
Top of Screen Elevation: 3.89 ft. msl
Bottom of Screen Elevation: -11.11 ft. msl
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
−30
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014

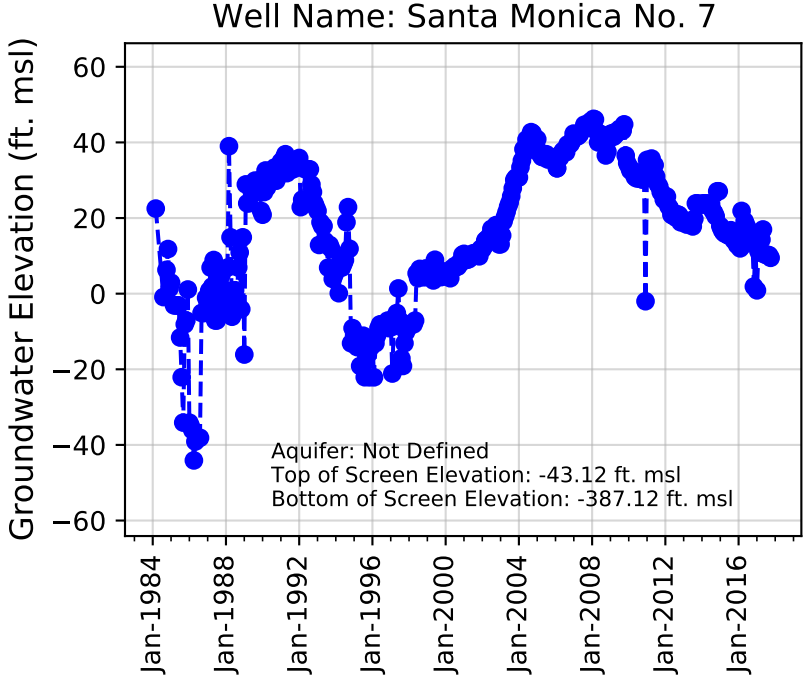

Well Name: Santa Monica No. 1
Aquifer: Silverado
Top of Screen Elevation: 159.76 ft. msl
Bottom of Screen Elevation: 60.76 ft. msl
300
250
200
150
100
50
Jan-1970
Jan-1980
Jan-1990
Jan-2000
Jan-2010
Jan-2020

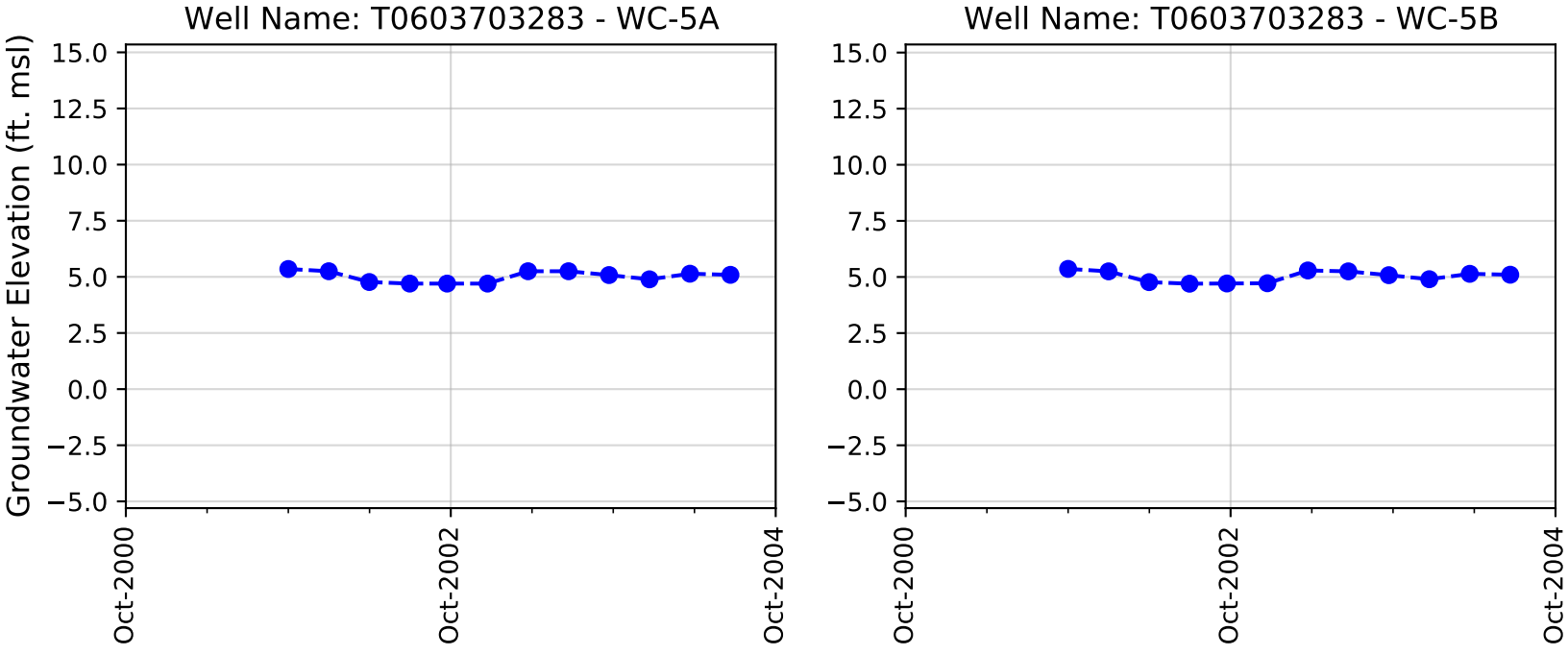

Well Name: Santa Monica No. 2
Aquifer: Not Defined
Top of Screen Elevation: Unknown
Bottom of Screen Elevation: Unknown
Groundwater Elevation (ft. msl)
100
50
0
−50
−100
Jan-1979
Jan-1980
Jan-1981
Jan-1982
Jan-1983
Jan-1984
Jan-1985
Jan-1986
Jan-1987


Well Name: Santa Monica No. 3
Aquifer: Silverado
Top of Screen Elevation: -59.54 ft. msl
Bottom of Screen Elevation: -347.54 ft. msl
100
50
0
−50
−100
−150
Jan-1980
Jan-1985
Jan-1990
Jan-1995
Jan-2000
Jan-2005
Jan-2010
Jan-2015
Jan-2020

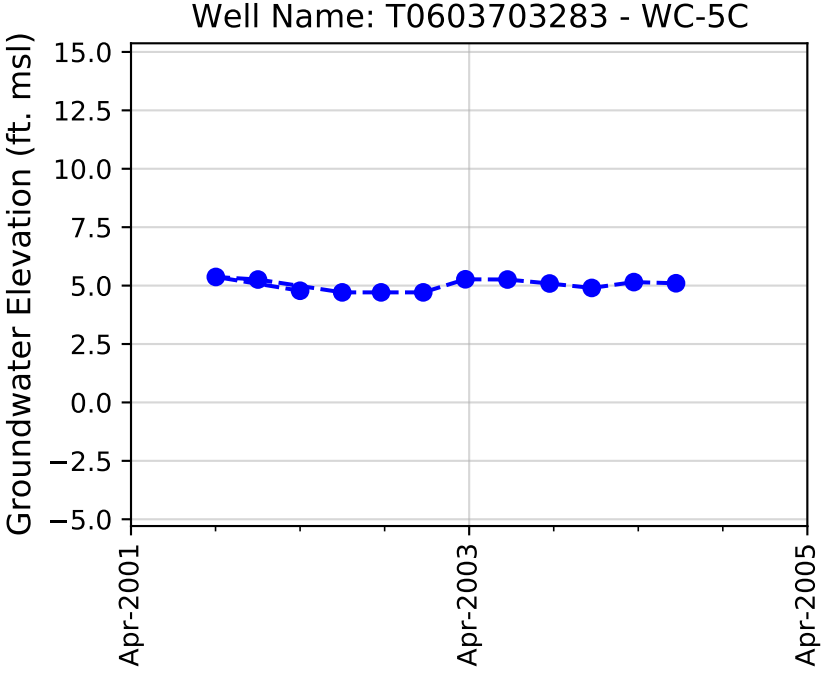

Well Name: Santa Monica No. 4
Groundwater Elevation (ft. msl)
50
0
−50
−100
−150
Aquifer: Silverado
Top of Screen Elevation: -49.86 ft. msl
Bottom of Screen Elevation: -389.86 ft. msl
Jan-1984
Jan-1988
Jan-1992
Jan-1996
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

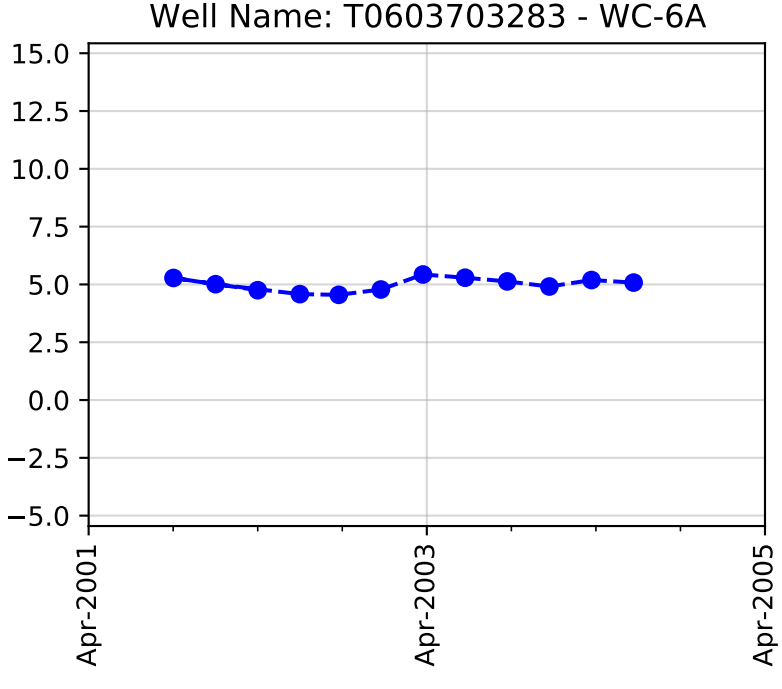

Well Name: Santa Monica No. 5
300
280
260
240
220
200
Aquifer: Silverado
Top of Screen Elevation: 227.08 ft. msl
Bottom of Screen Elevation: 137.08 ft. msl
Jan-1984
Jan-1988
Jan-1992
Jan-1996
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016
Jan-2020

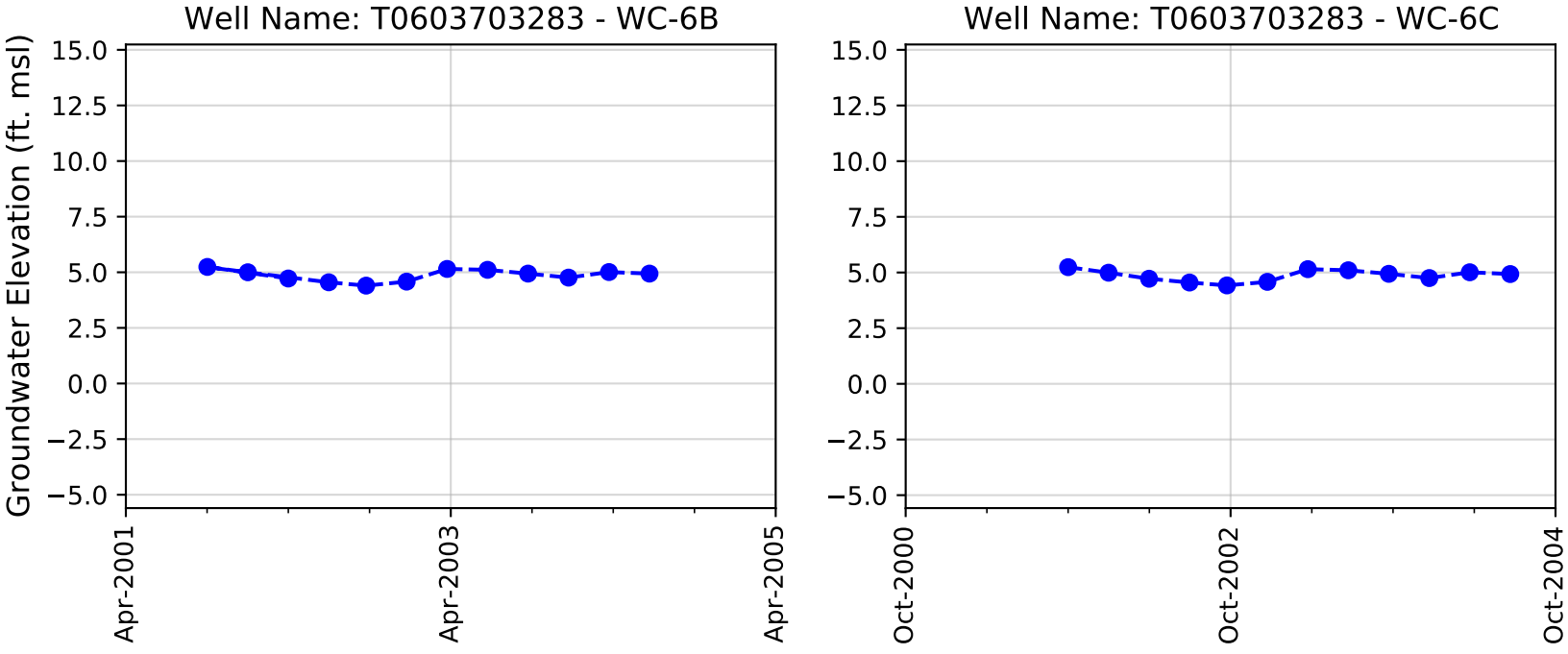

Well Name: Santa Monica No. 7
Groundwater Elevation (ft. msl)
60
40
20
0
−20
−40
−60
Aquifer: Not Defined
Top of Screen Elevation: -43.12 ft. msl
Bottom of Screen Elevation: -387.12 ft. msl
Jan-1984
Jan-1988
Jan-1992
Jan-1996
Jan-2000
Jan-2004
Jan-2008
Jan-2012
Jan-2016


Well Name: T0603703283 - WC-5A
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

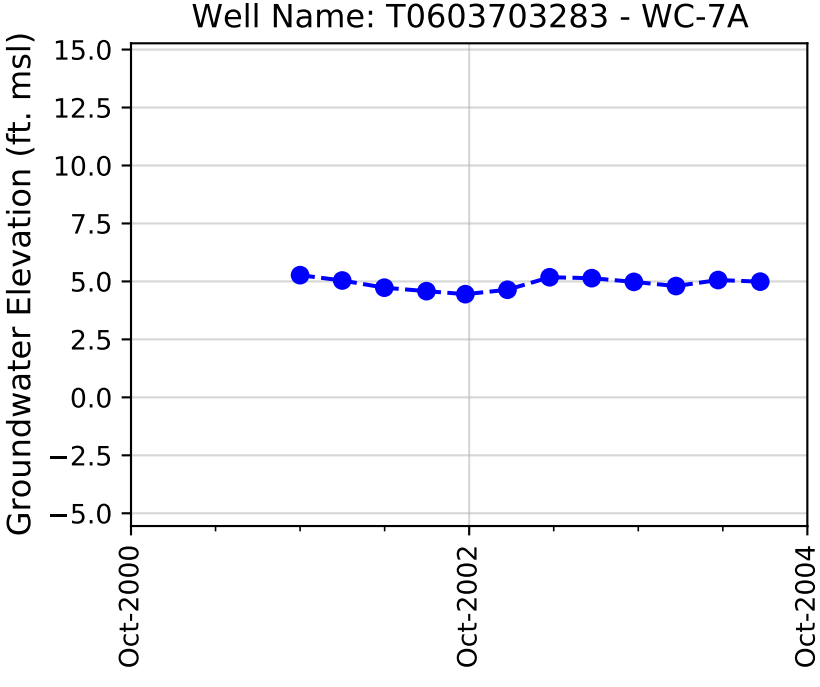
Well Name: T0603703283 - WC-5B
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

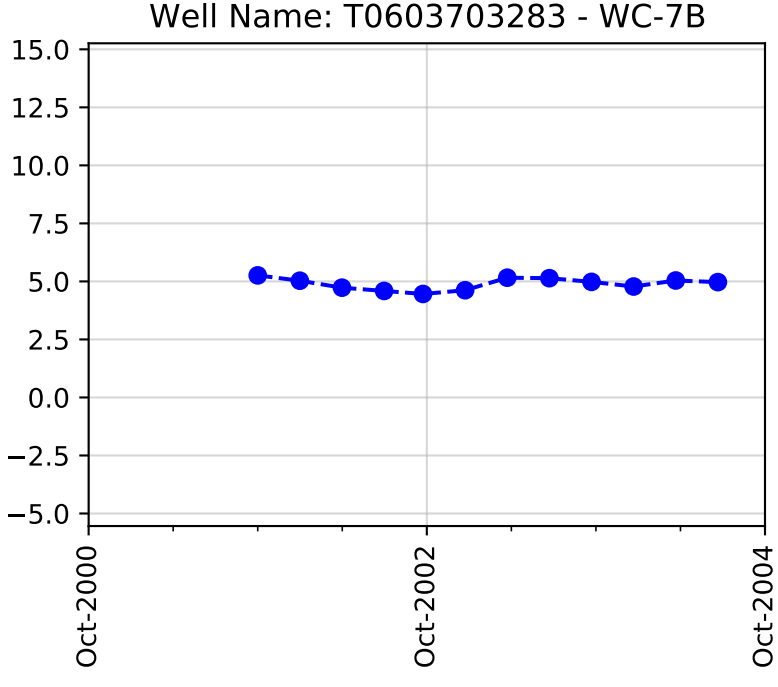

Well Name: T0603703283 - WC-5C
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005

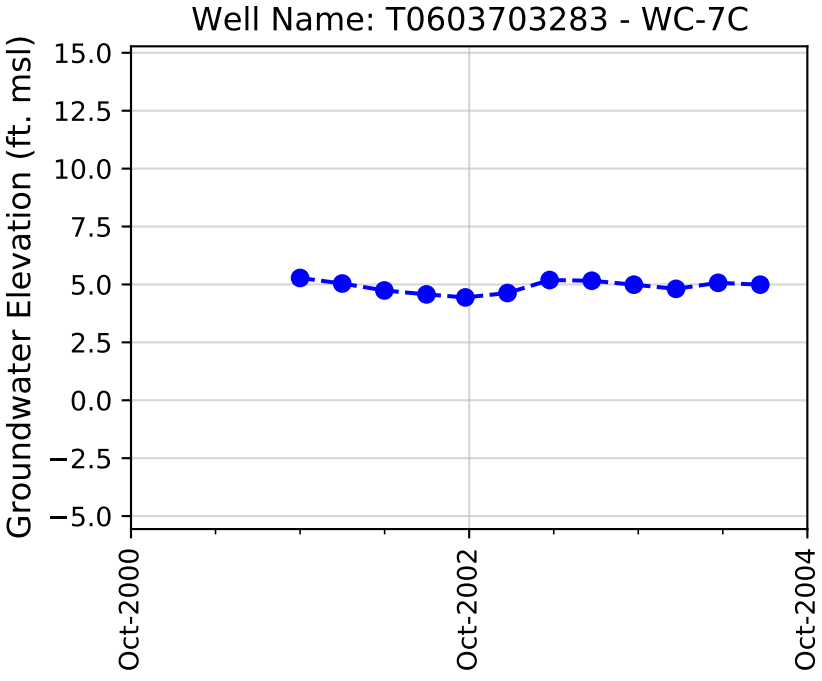

Well Name: T0603703283 - WC-6A
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005

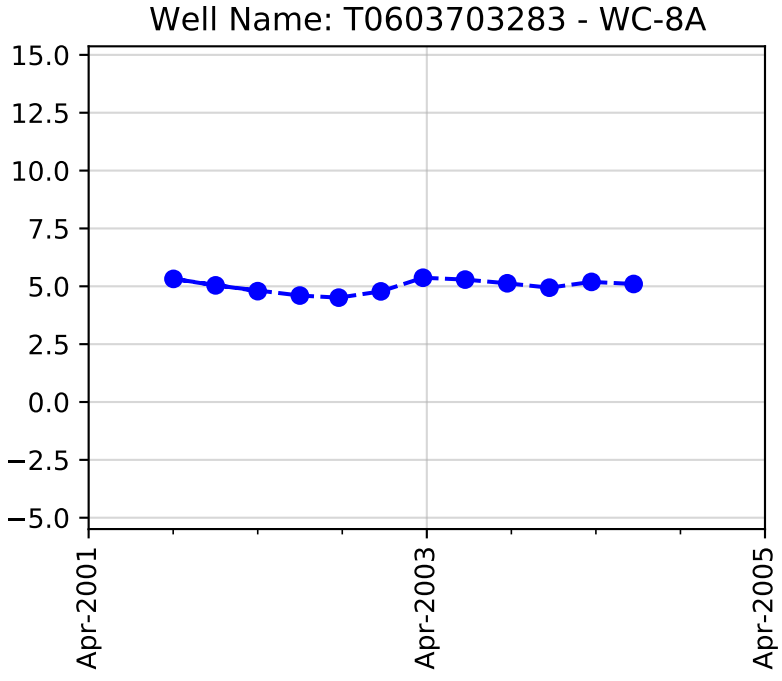

Well Name: T0603703283 - WC-6B
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005

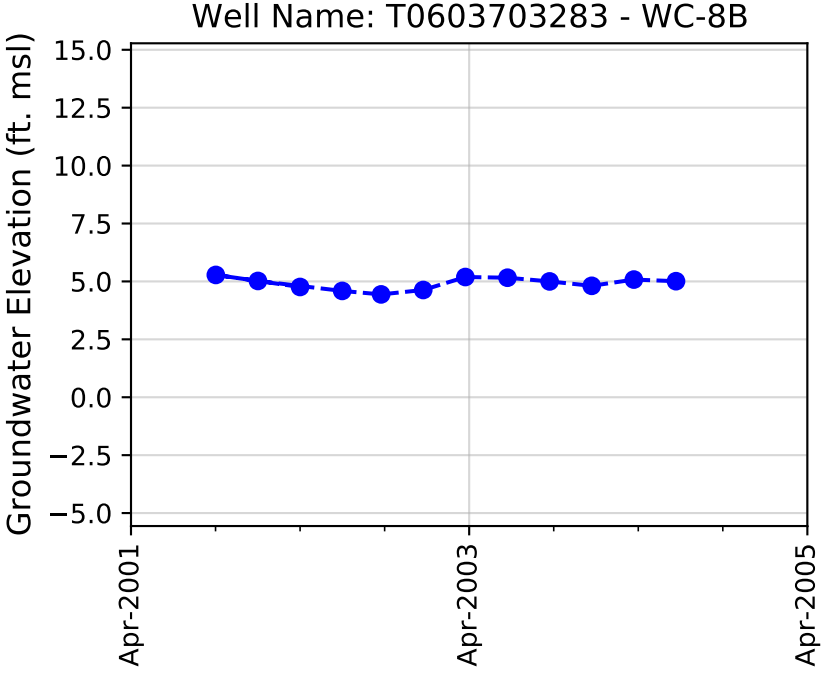
Well Name: T0603703283 - WC-6C
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

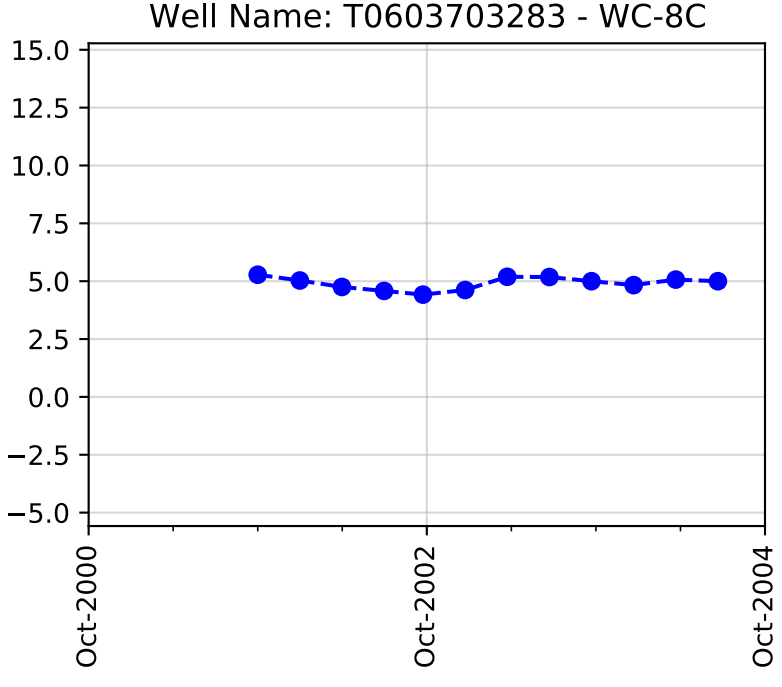

Well Name: T0603703283 - WC-7A
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

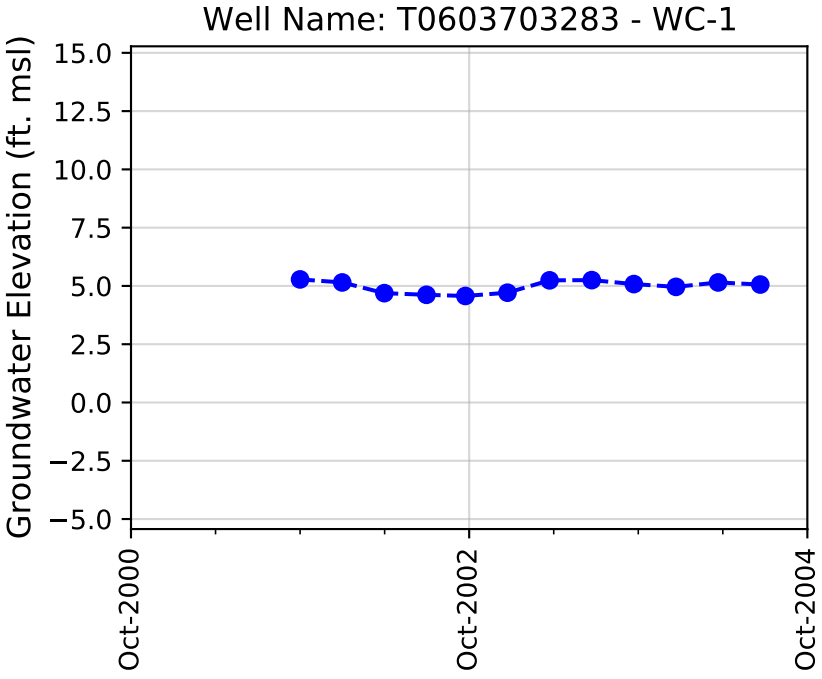

Well Name: T0603703283 - WC-7B
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

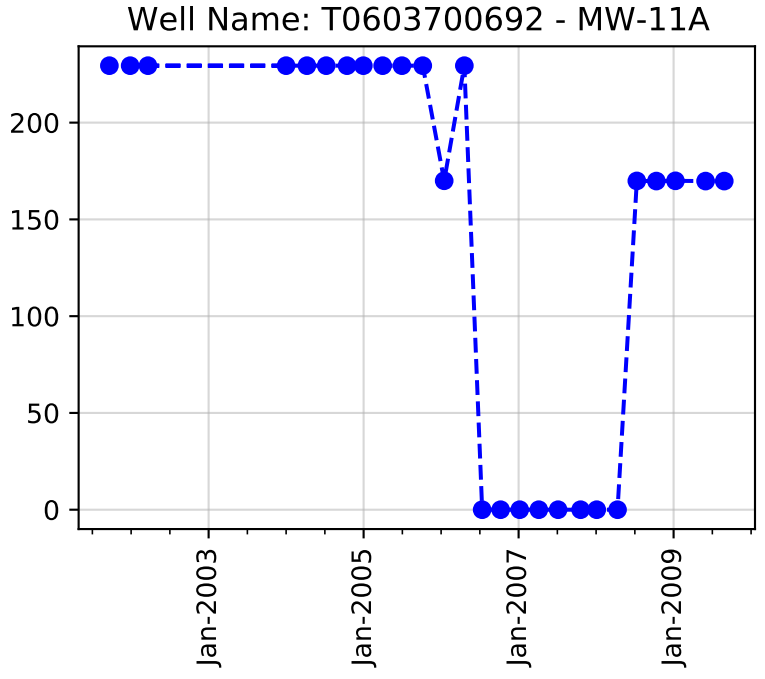

Well Name: T0603703283 - WC-7C
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

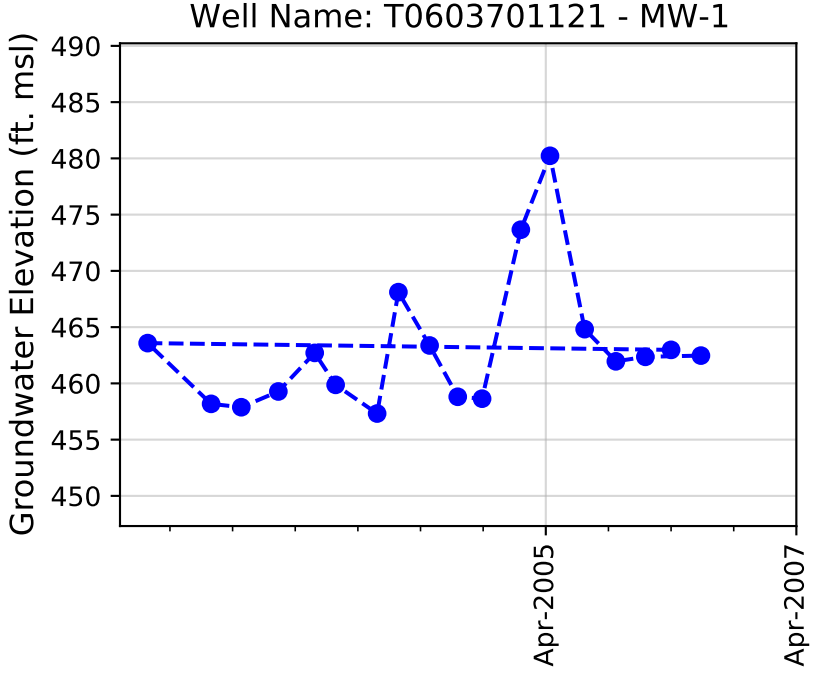

Well Name: T0603703283 - WC-8A
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005

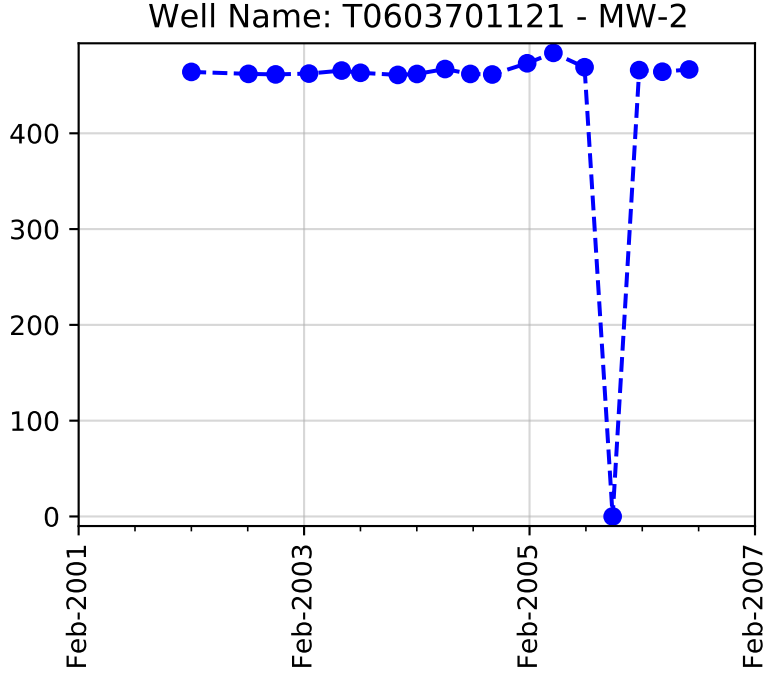

Well Name: T0603703283 - WC-8B
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005

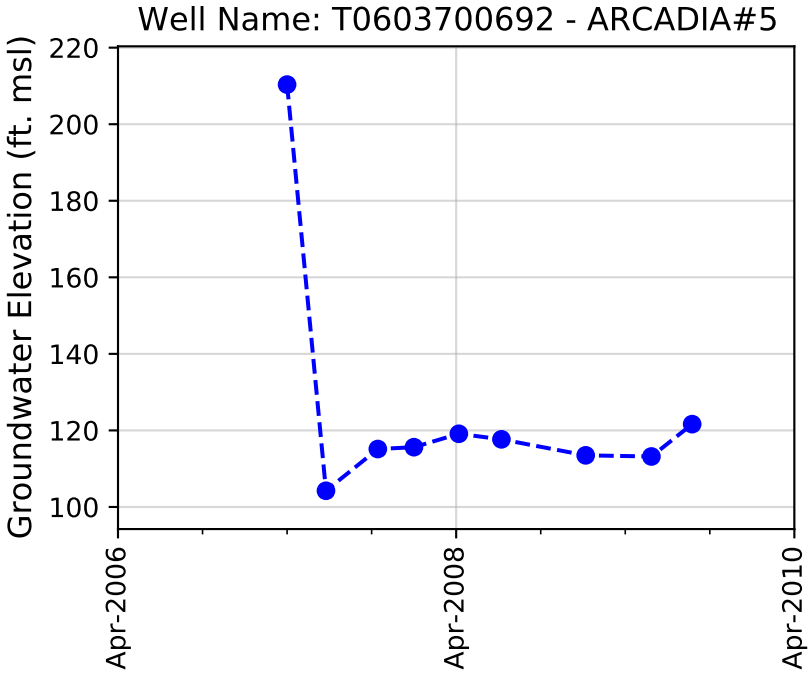

Well Name: T0603703283 - WC-8C
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

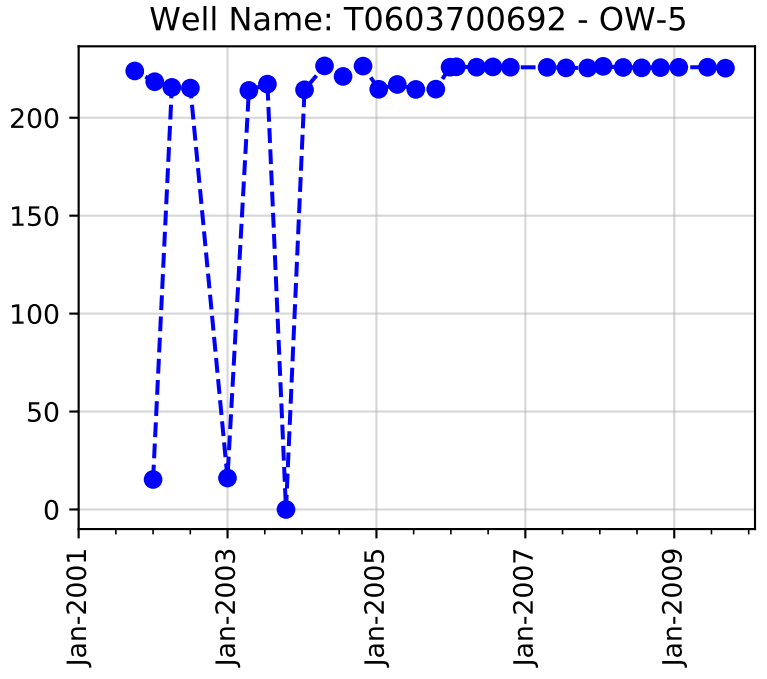

Well Name: T0603703283 - WC-1
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

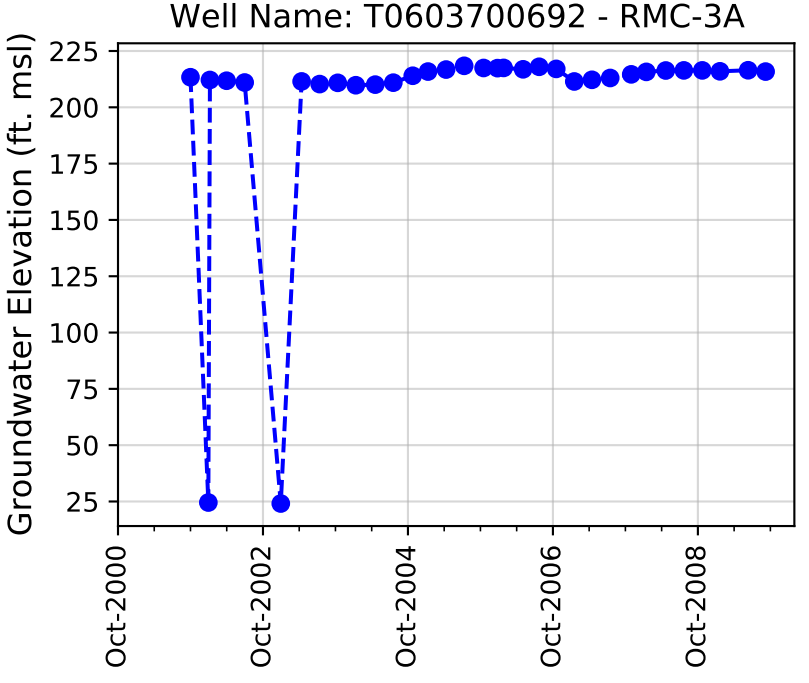

Well Name: T0603700692 - MW-11A
200
150
100
50
0
Jan-2003
Jan-2005
Jan-2007
Jan-2009

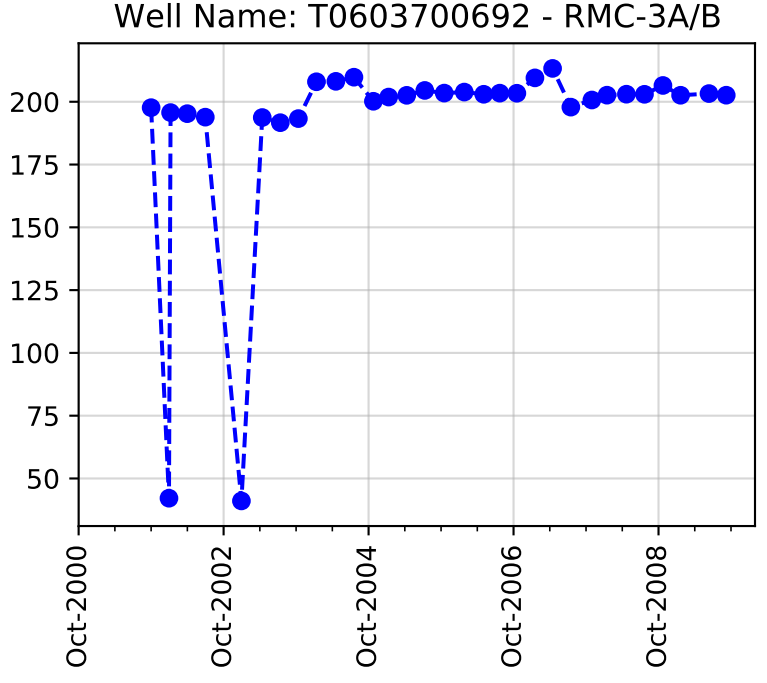

Well Name: T0603701121 - MW-1
Groundwater Elevation (ft. msl)
490
485
480
475
470
465
460
455
450
Apr-2005
Apr-2007

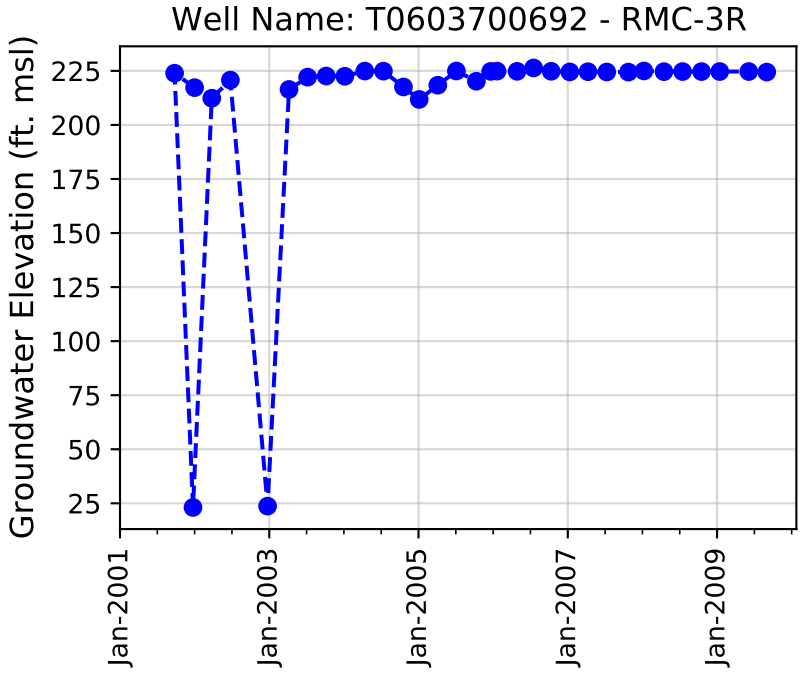

Well Name: T0603701121 - MW-2
400
300
200
100
0
Feb-2001
Feb-2003
Feb-2005
Feb-2007

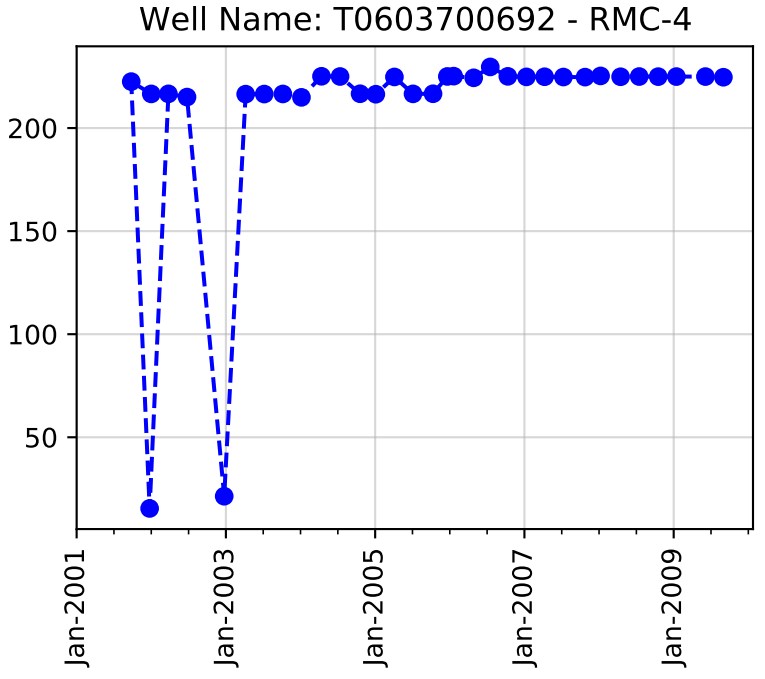

Well Name: T0603700692 - ARCADIA#5
Groundwater Elevation (ft. msl)
220
200
180
160
140
120
100
Apr-2006
Apr-2008
Apr-2010

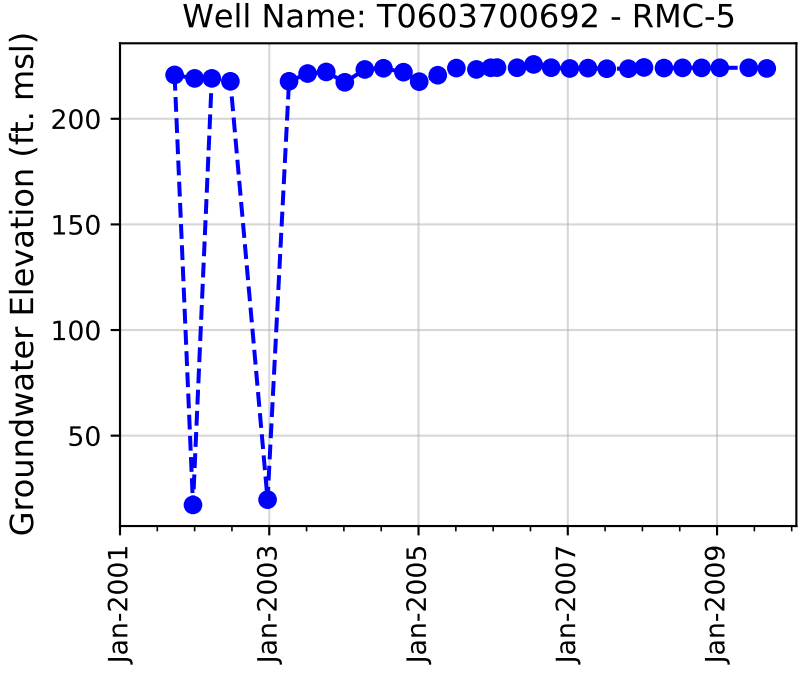

Well Name: T0603700692 - OW-5
200
150
100
50
0
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

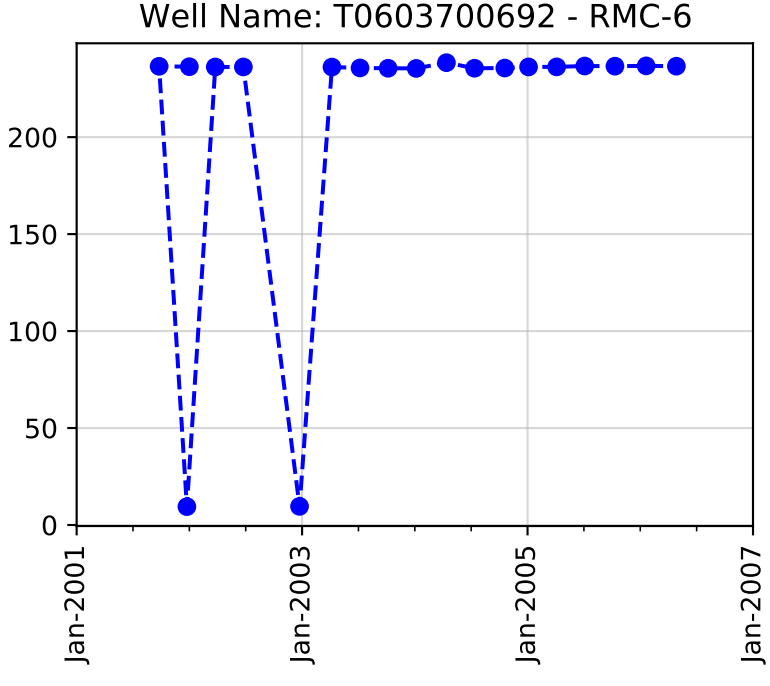

Well Name: T0603700692 - RMC-3A
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

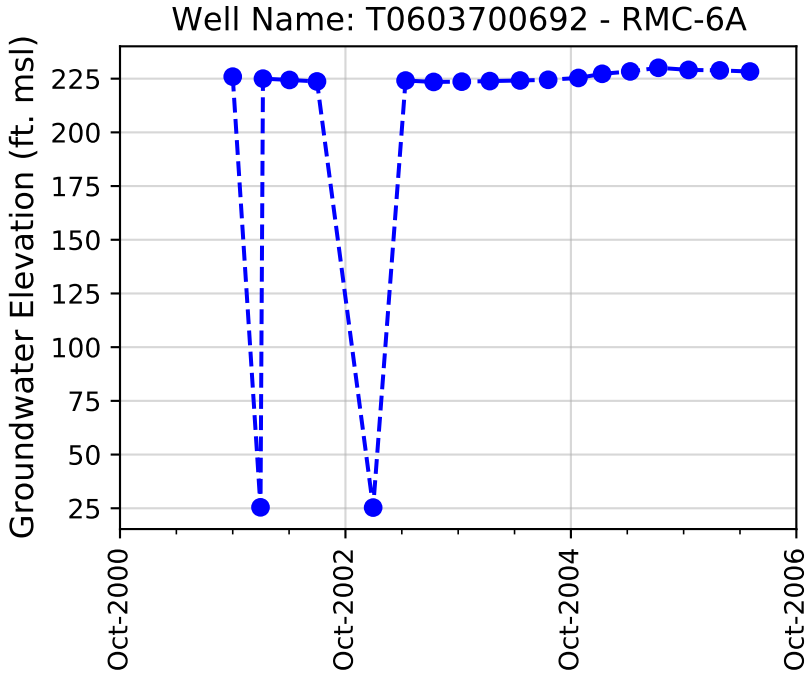

Well Name: T0603700692 - RMC-3A/B
200
175
150
125
100
75
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

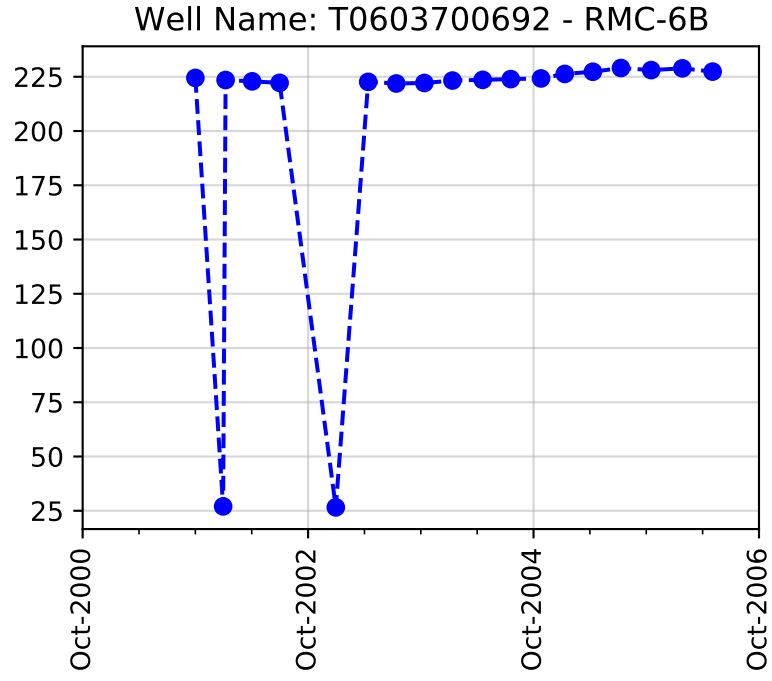

Well Name: T0603700692 - RMC-3R
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

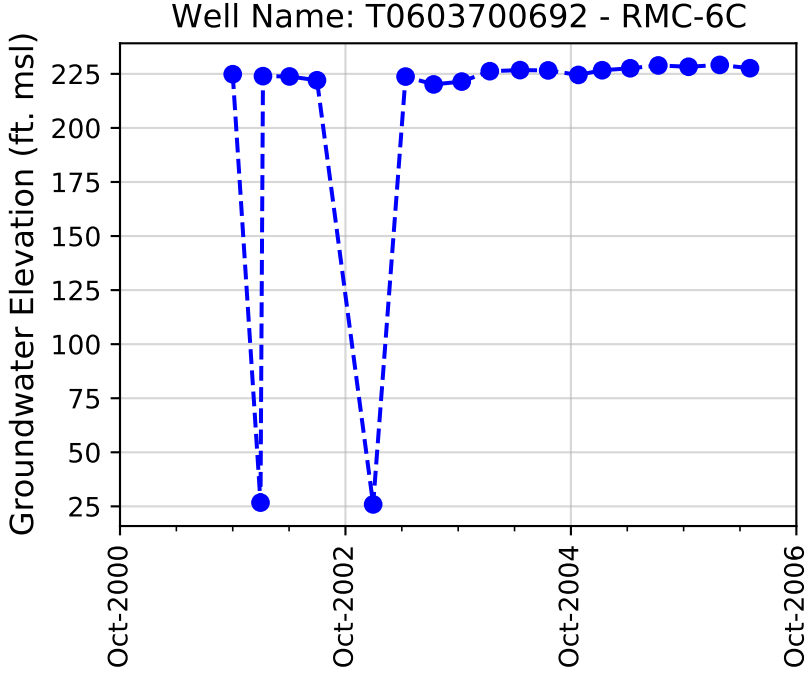

Well Name: T0603700692 - RMC-4
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

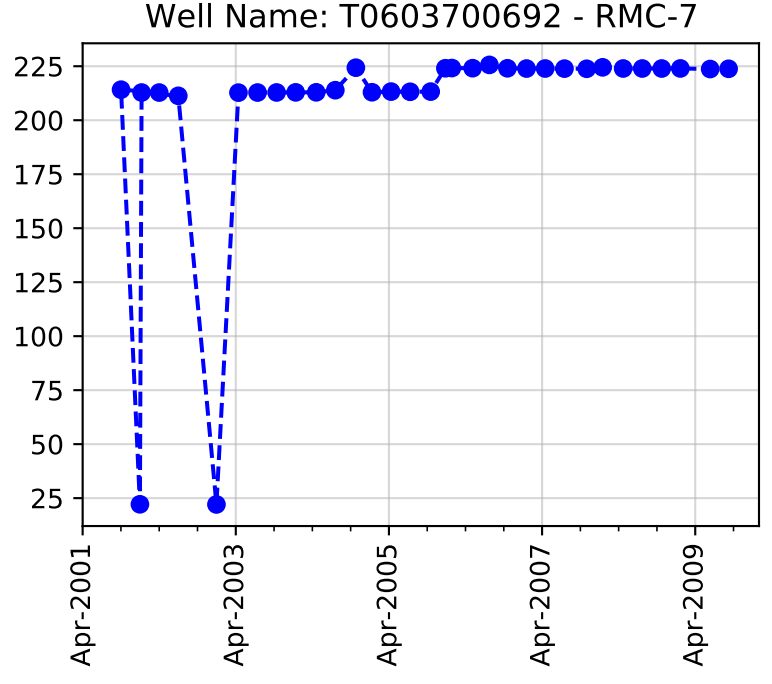

Well Name: T0603700692 - RMC-5
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

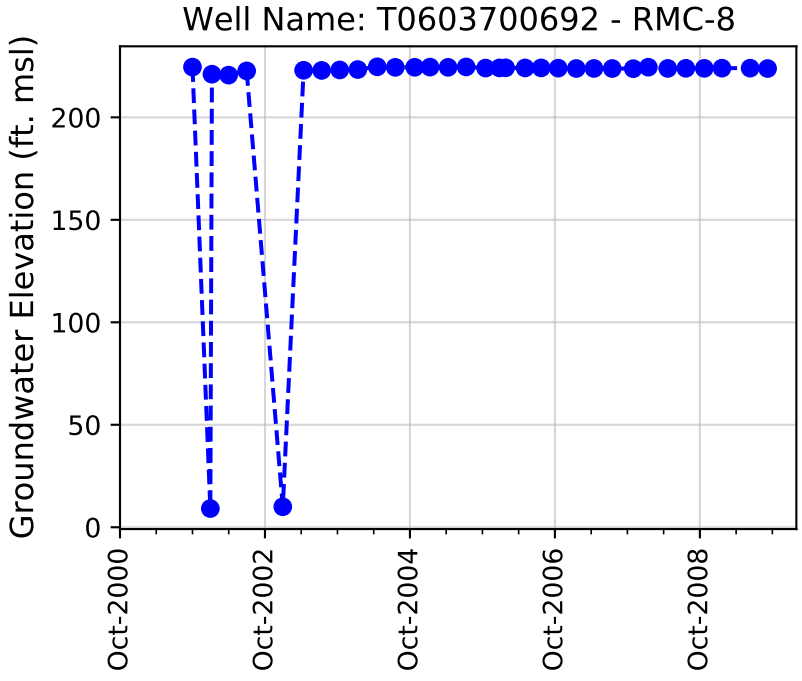

Well Name: T0603700692 - RMC-6
200
150
100
50
0
Jan-2001
Jan-2003
Jan-2005
Jan-2007

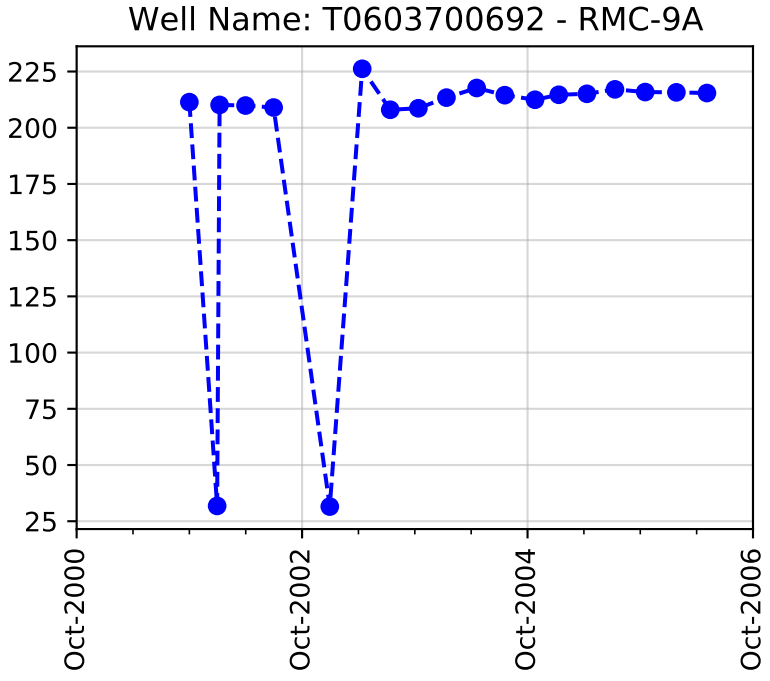

Well Name: T0603700692 - RMC-6A
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

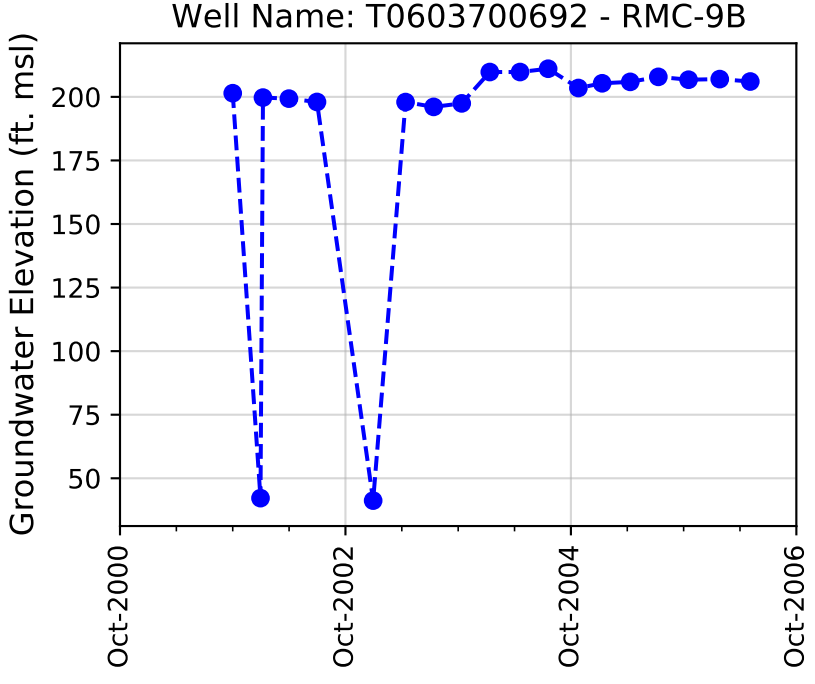

Well Name: T0603700692 - RMC-6B
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

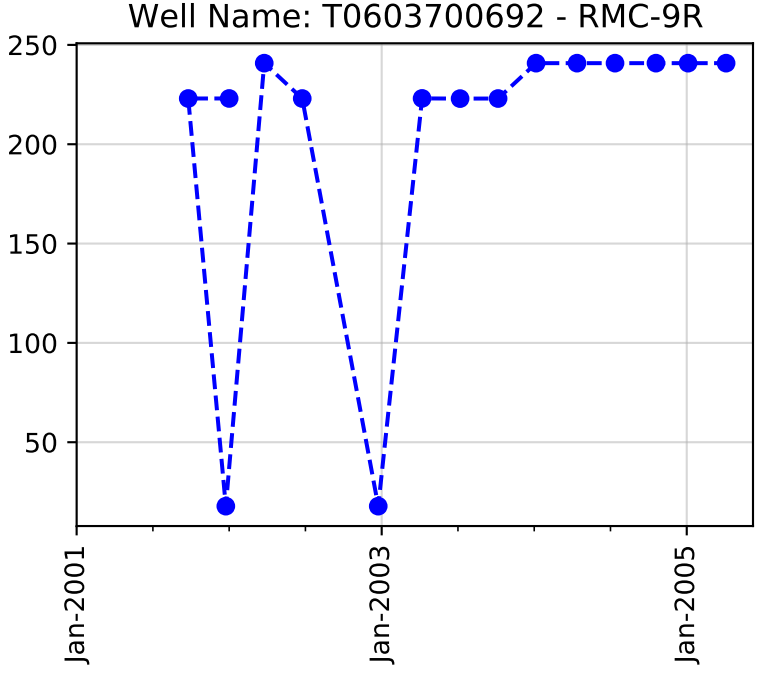

Well Name: T0603700692 - RMC-6C
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

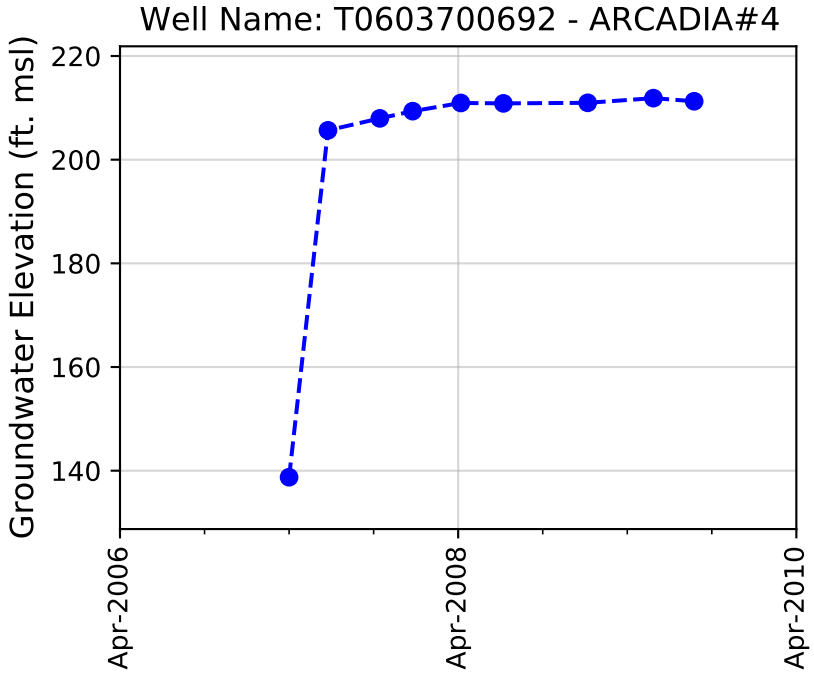

Well Name: T0603700692 - RMC-7
225
200
175
150
125
100
75
50
25
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009

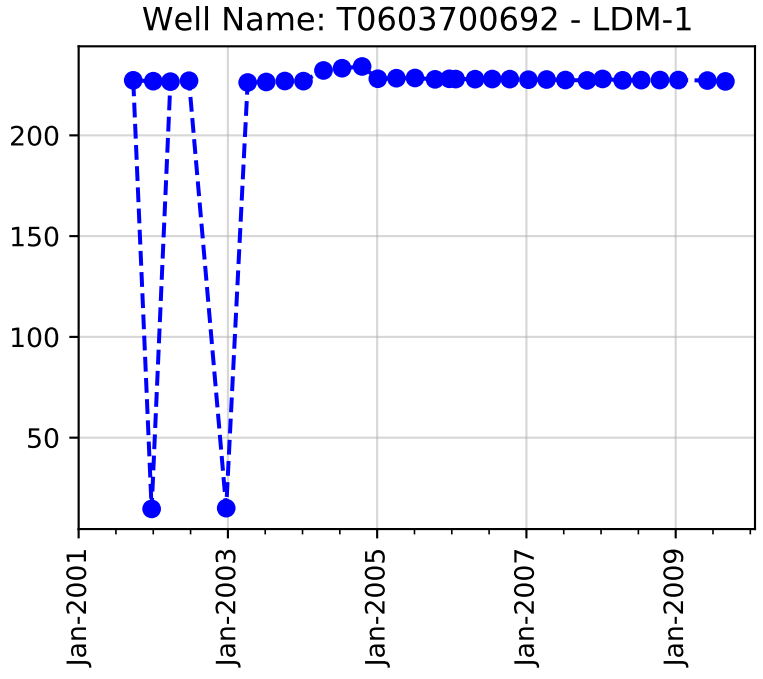

Well Name: T0603700692 - RMC-8
Groundwater Elevation (ft. msl)
0
50
100
150
200
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

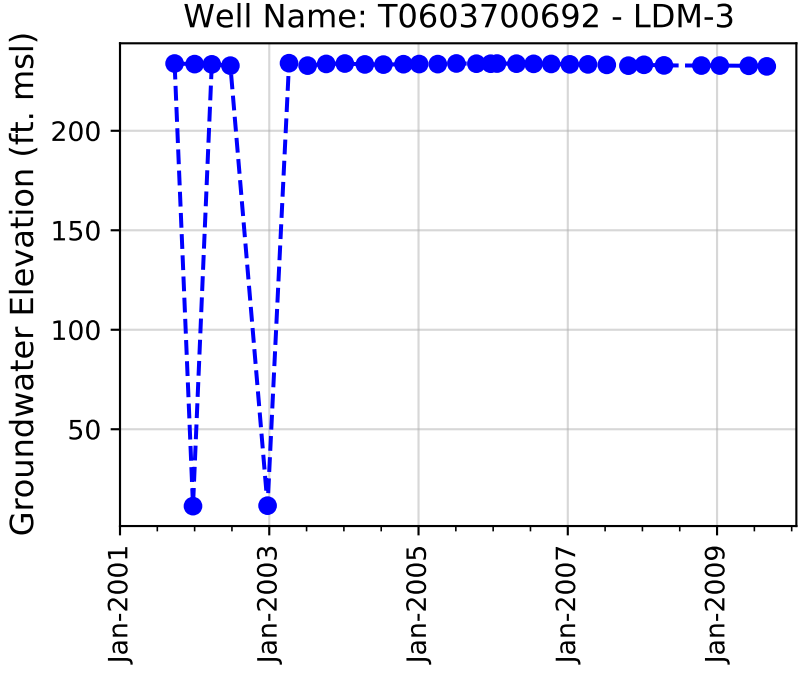

Well Name: T0603700692 - RMC-9A
25
50
75
100
125
150
175
200
225
Oct-2000
Oct-2002
Oct-2004
Oct-2006

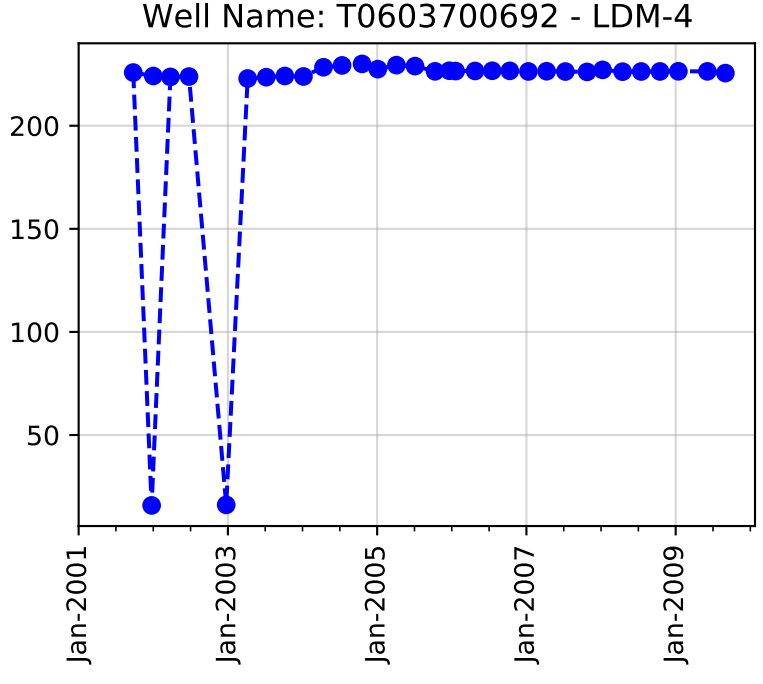

Well Name: T0603700692 - RMC-9B
Groundwater Elevation (ft. msl)
50
75
100
125
150
175
200
Oct-2000
Oct-2002
Oct-2004
Oct-2006

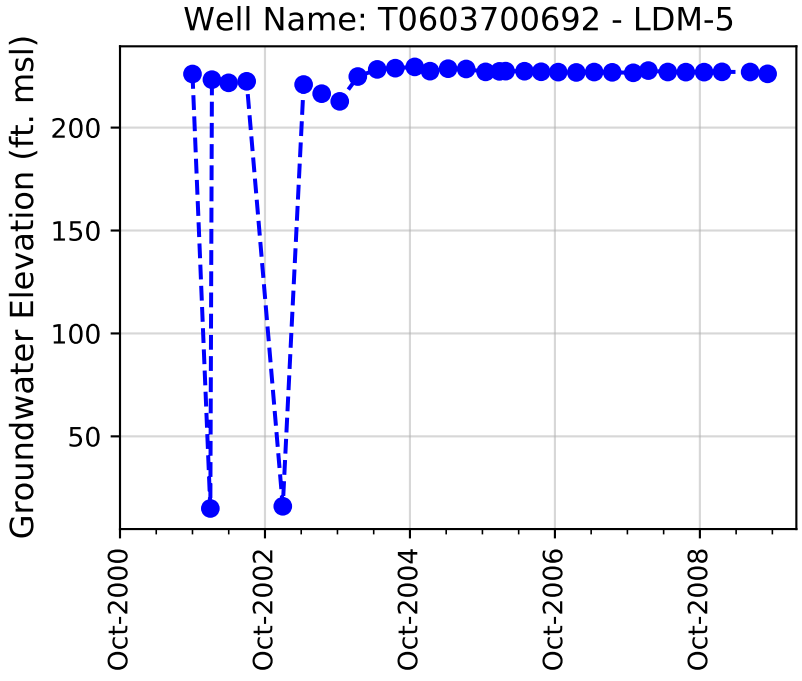

Well Name: T0603700692 - RMC-9R
50
100
150
200
250
Jan-2001
Jan-2003
Jan-2005

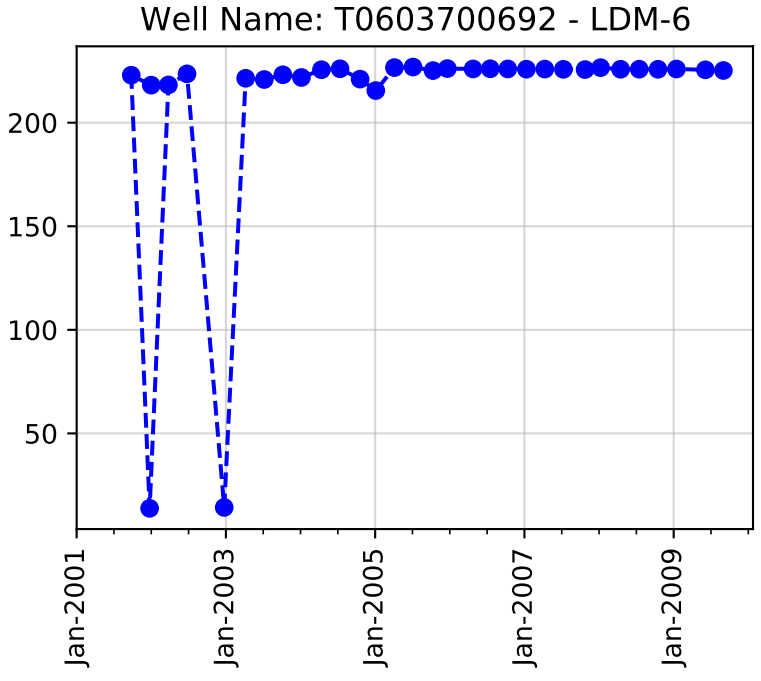

Well Name: T0603700692 - ARCADIA#4
Groundwater Elevation (ft. msl)
220
200
180
160
140
Apr-2006
Apr-2008
Apr-2010

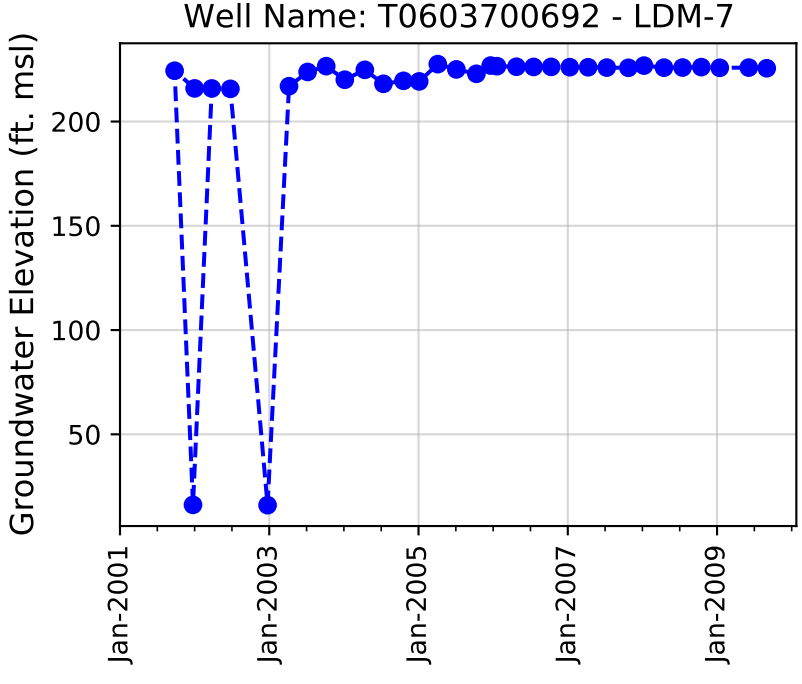

Well Name: T0603700692 - LDM-1
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

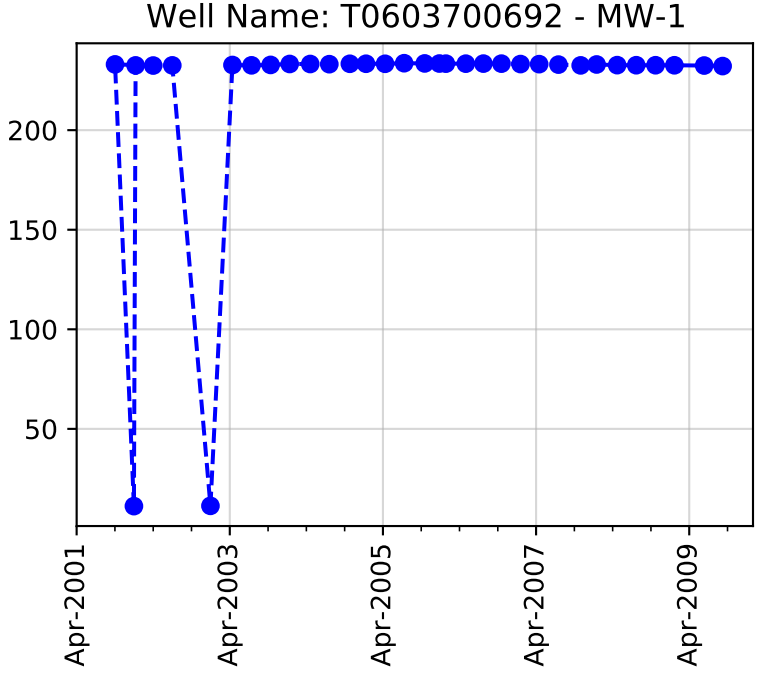

Well Name: T0603700692 - LDM-3
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

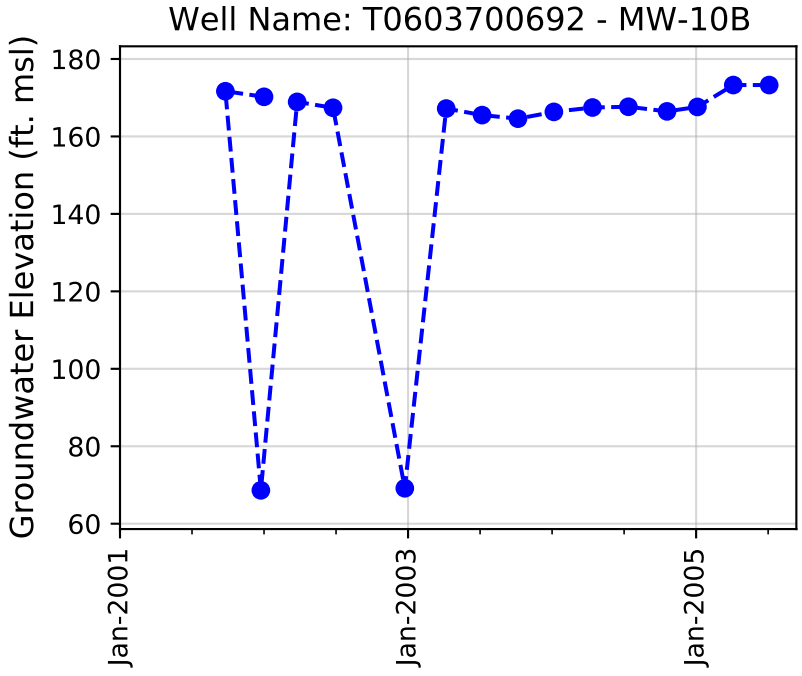

Well Name: T0603700692 - LDM-4
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

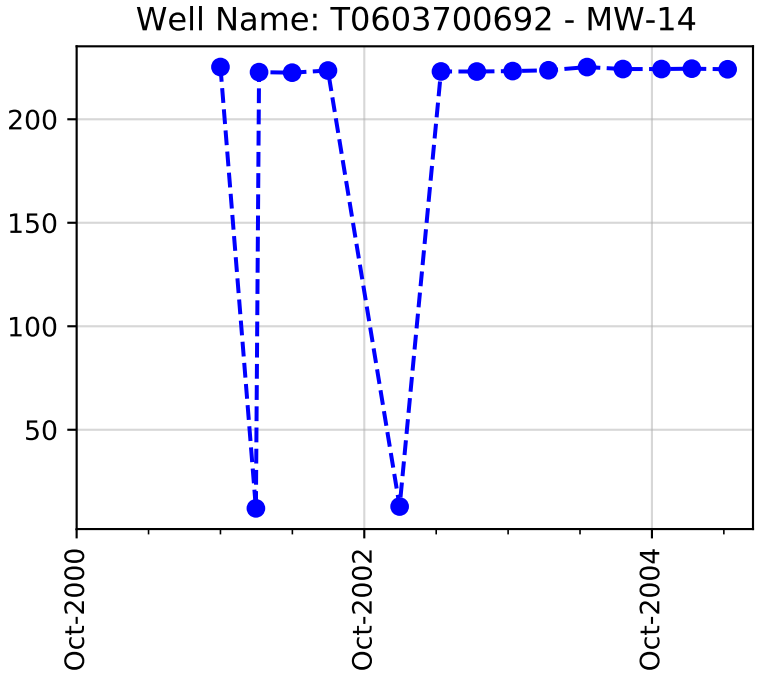

Well Name: T0603700692 - LDM-5
Groundwater Elevation (ft. msl)
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

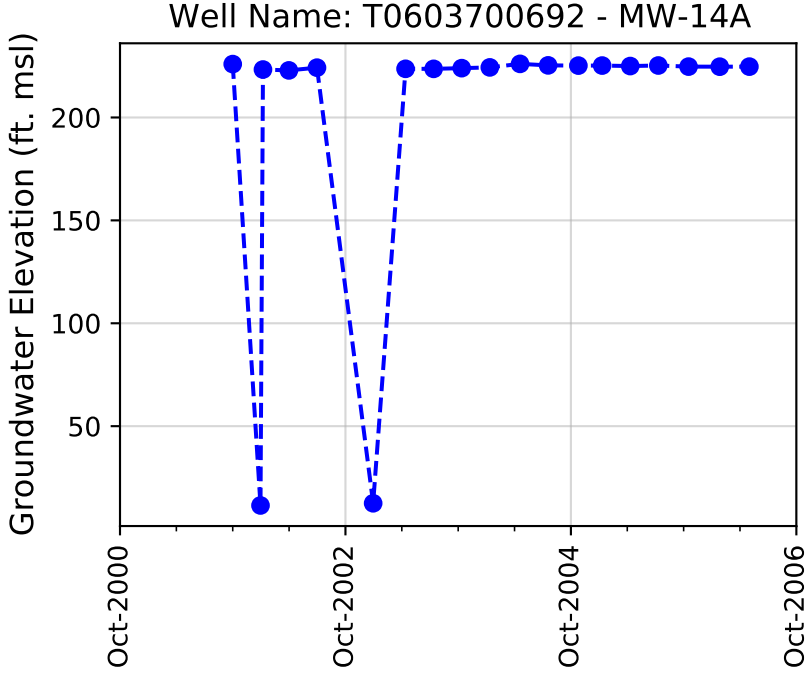

Well Name: T0603700692 - LDM-6
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

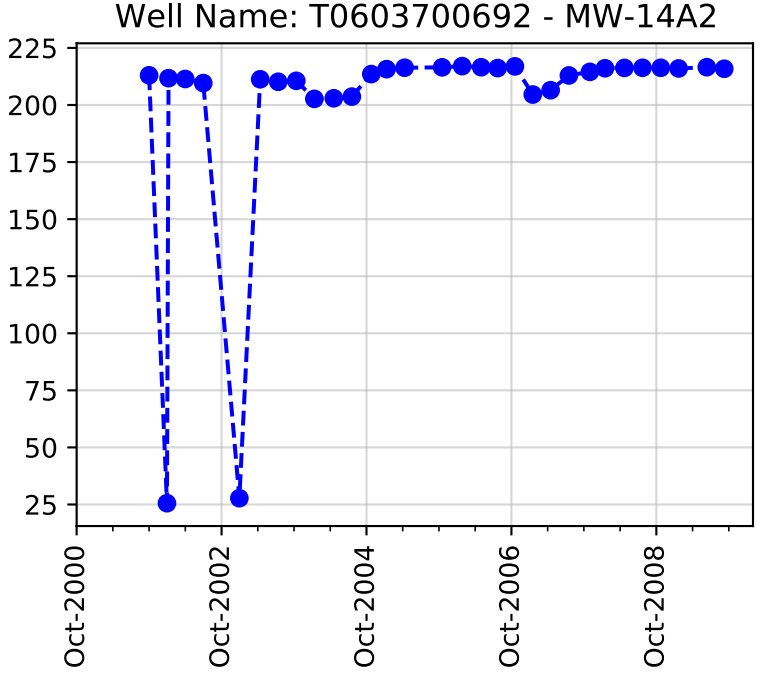

Well Name: T0603700692 - LDM-7
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

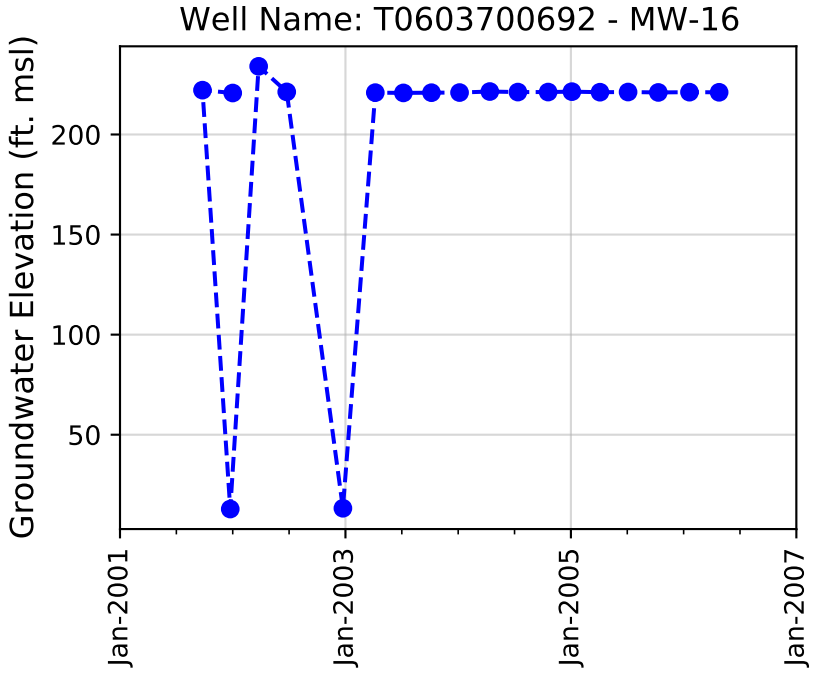

Well Name: T0603700692 - MW-1
200
150
100
50
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009

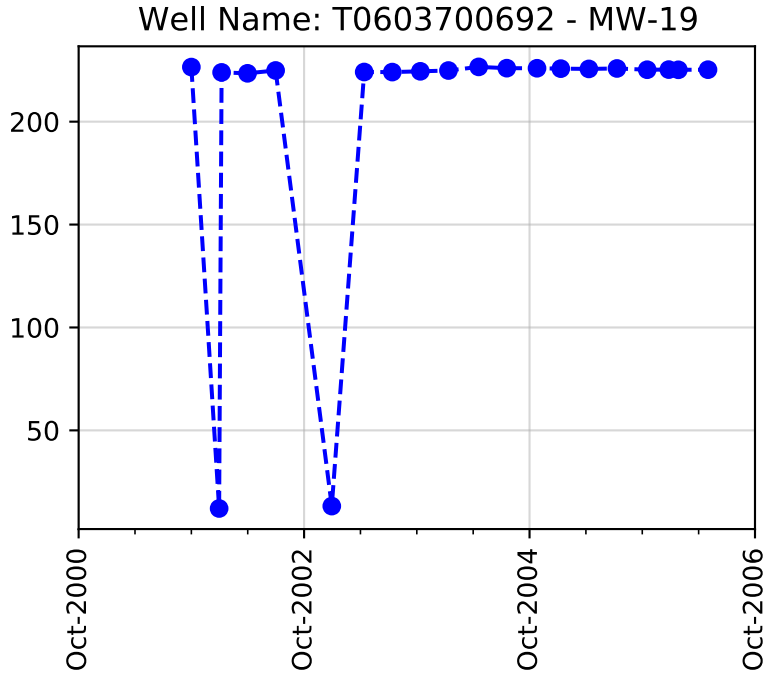

Well Name: T0603700692 - MW-10B
Groundwater Elevation (ft. msl)
180
160
140
120
100
80
60
Jan-2001
Jan-2003
Jan-2005

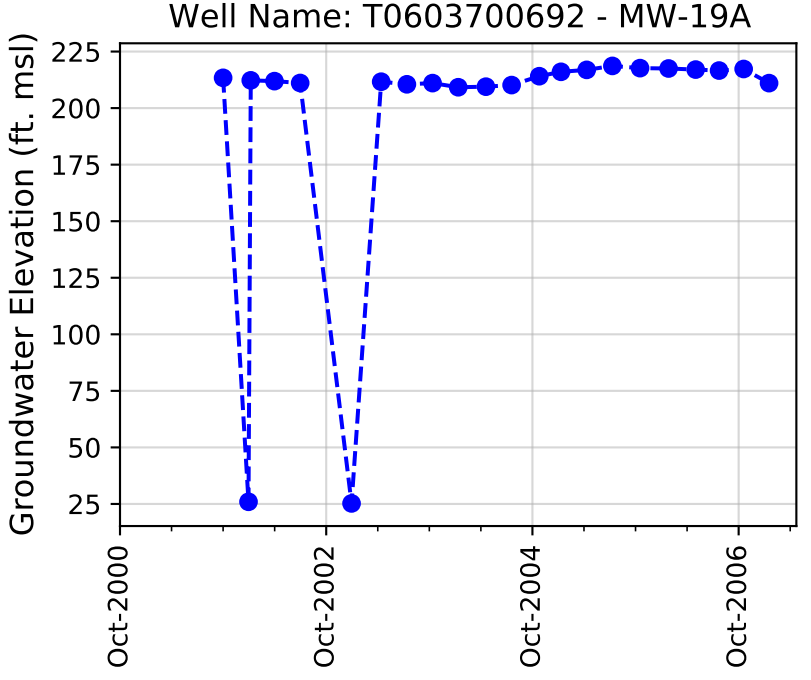

Well Name: T0603700692 - MW-14
200
150
100
50
Oct-2000
Oct-2002
Oct-2004

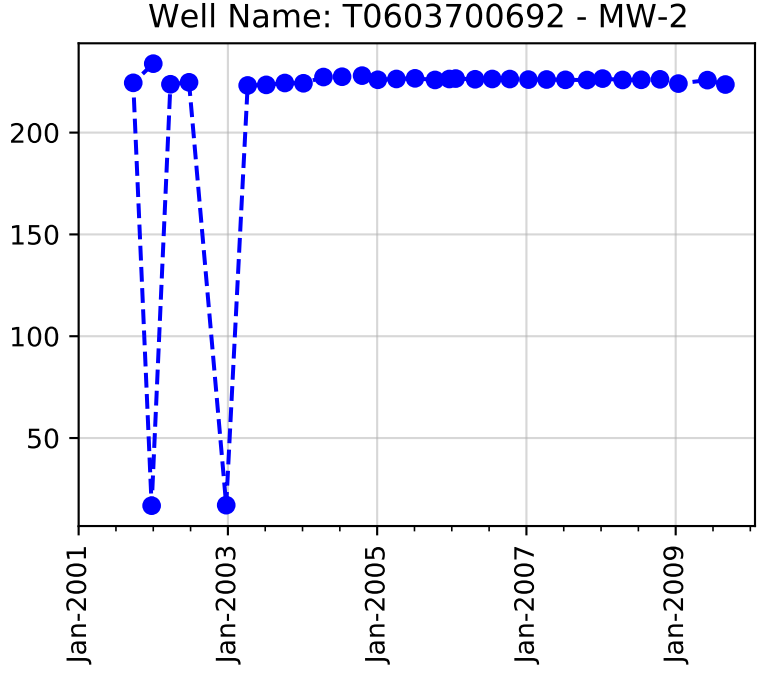

Well Name: T0603700692 - MW-14A
Groundwater Elevation (ft. msl)
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006

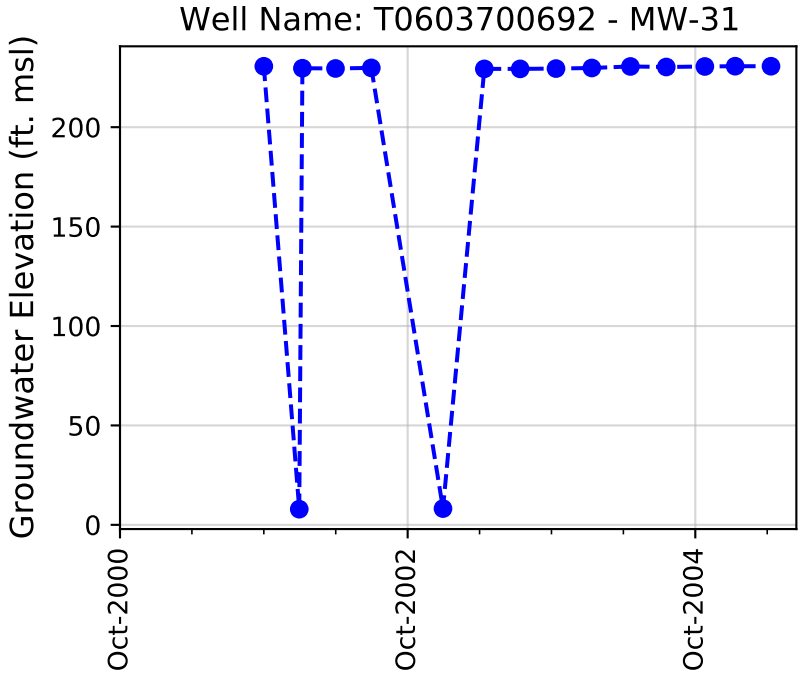

Well Name: T0603700692 - MW-14A2
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

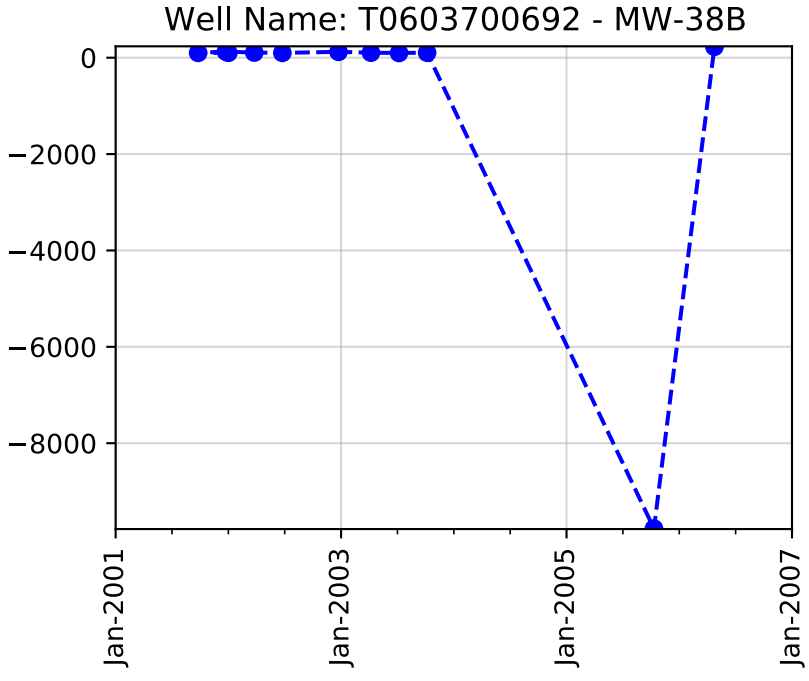

Well Name: T0603700692 - MW-16
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007

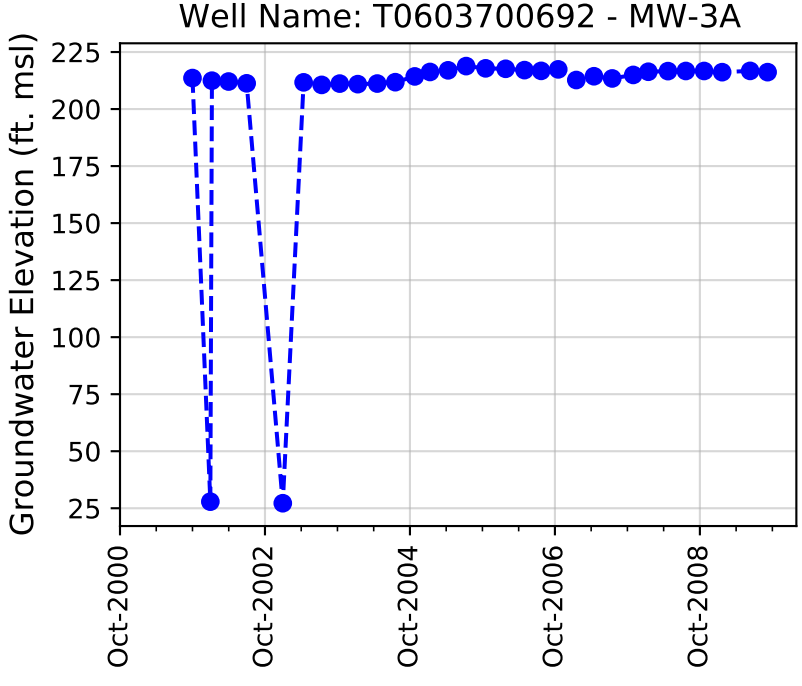

Well Name: T0603700692 - MW-19
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006

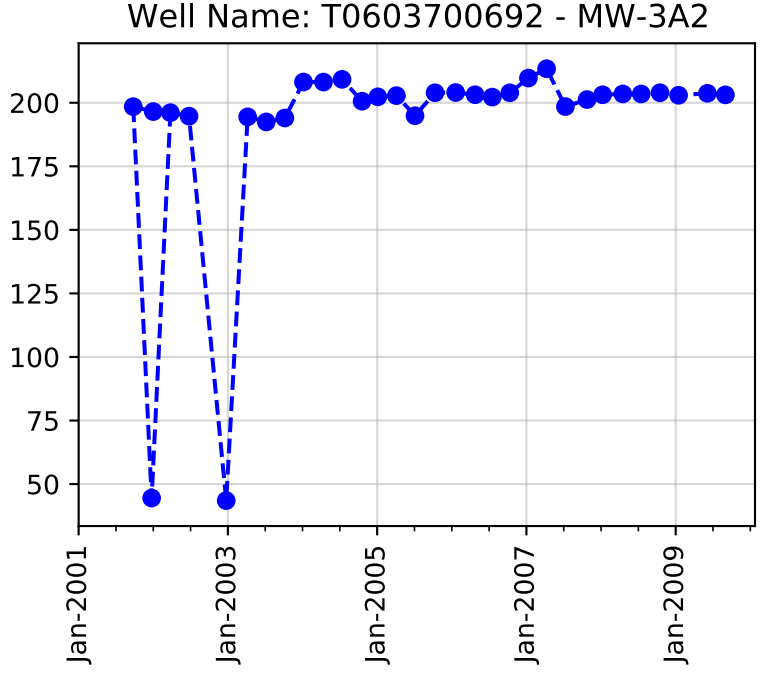

Well Name: T0603700692 - MW-19A
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

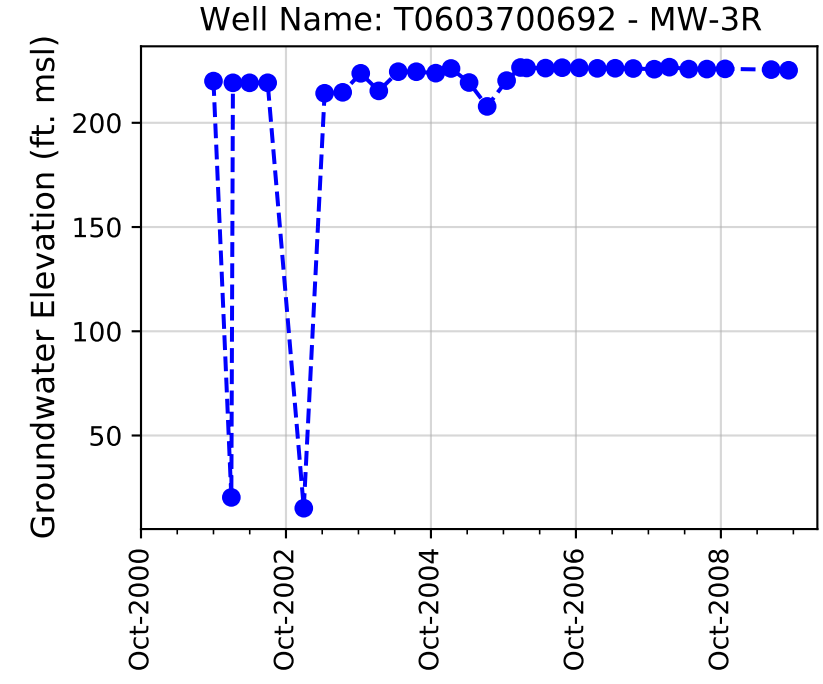

Well Name: T0603700692 - MW-2
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

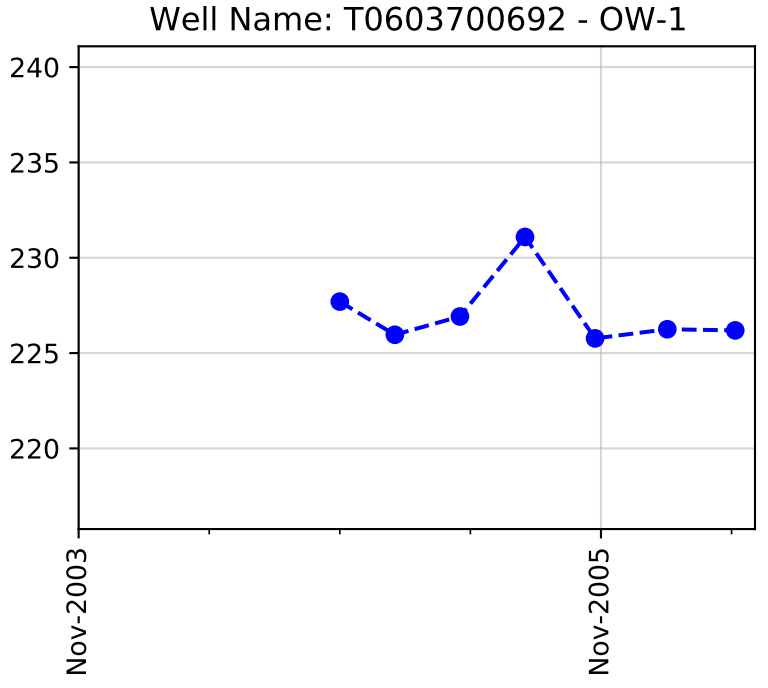

Well Name: T0603700692 - MW-31
Groundwater Elevation (ft. msl)
0
50
100
150
200
Oct-2000
Oct-2002
Oct-2004

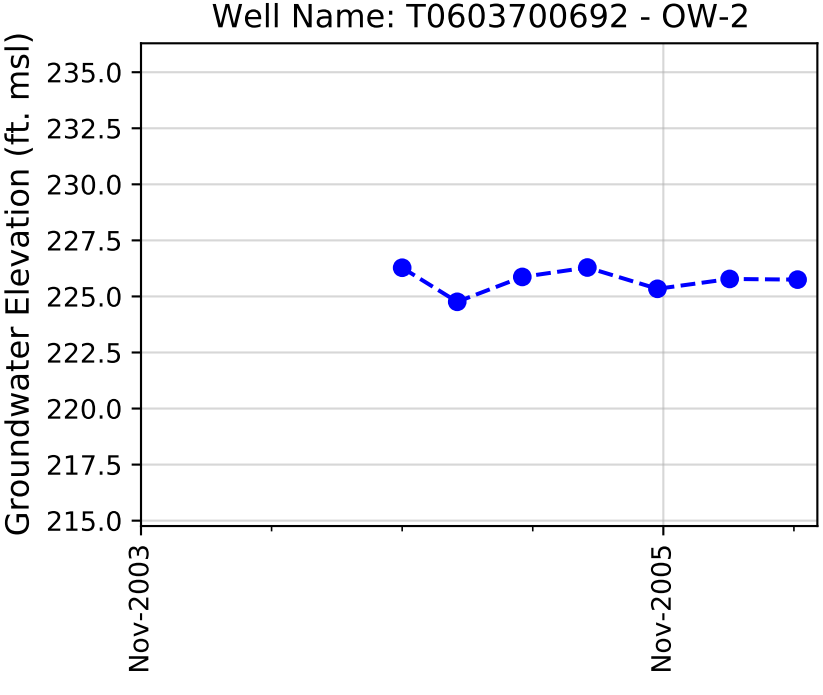

Well Name: T0603700692 - MW-38B
0
−2000
−4000
−6000
−8000
Jan-2001
Jan-2003
Jan-2005
Jan-2007

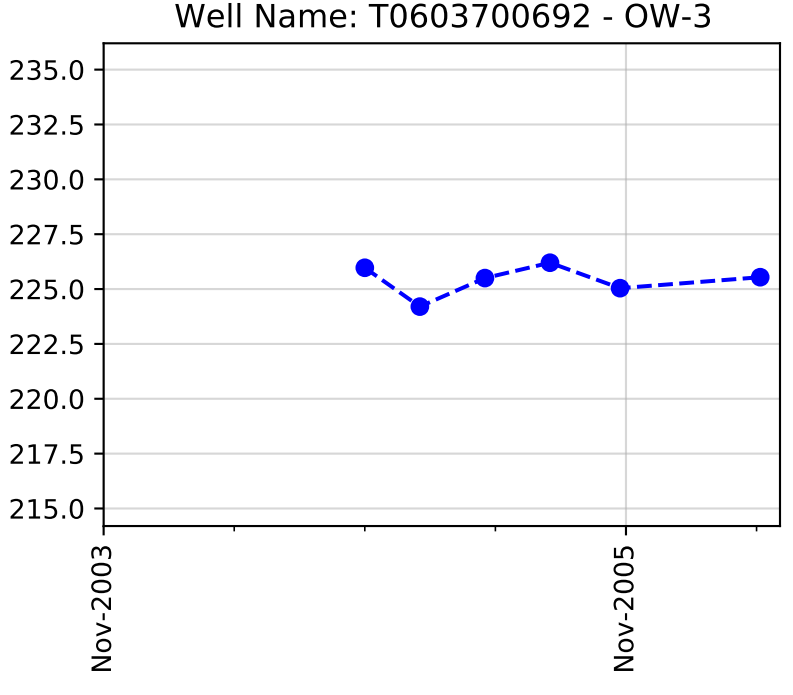

Well Name: T0603700692 - MW-3A
Groundwater Elevation (ft. msl)
25
50
75
100
125
150
175
200
225
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

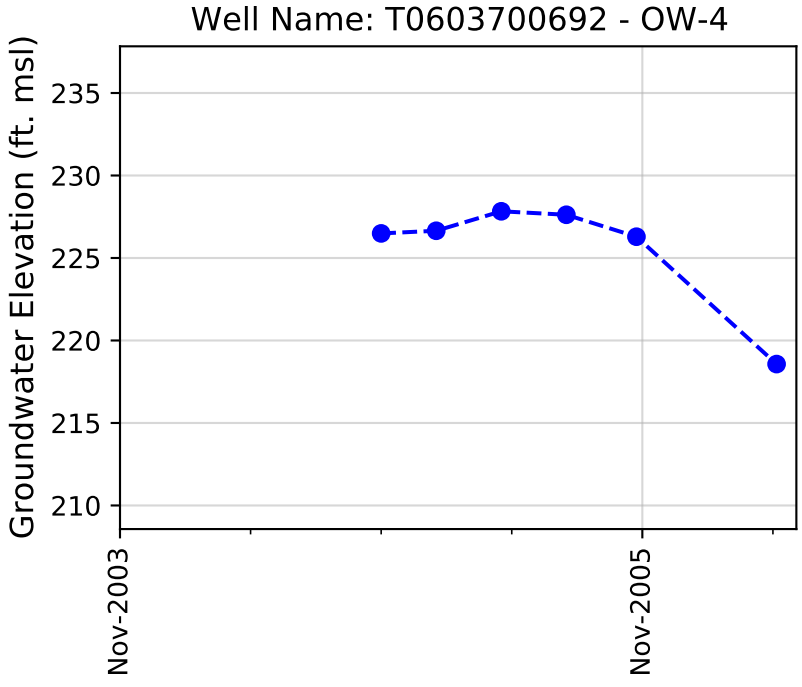

Well Name: T0603700692 - MW-3A2
50
75
100
125
150
175
200
Jan-2001
Jan-2003
Jan-2005
Jan-2007
Jan-2009

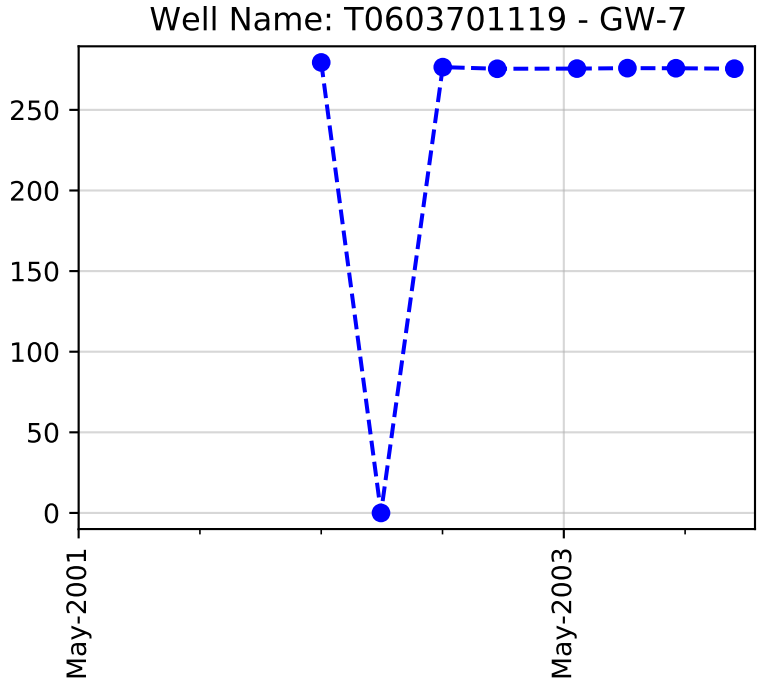

Well Name: T0603700692 - MW-3R
Groundwater Elevation (ft. msl)
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

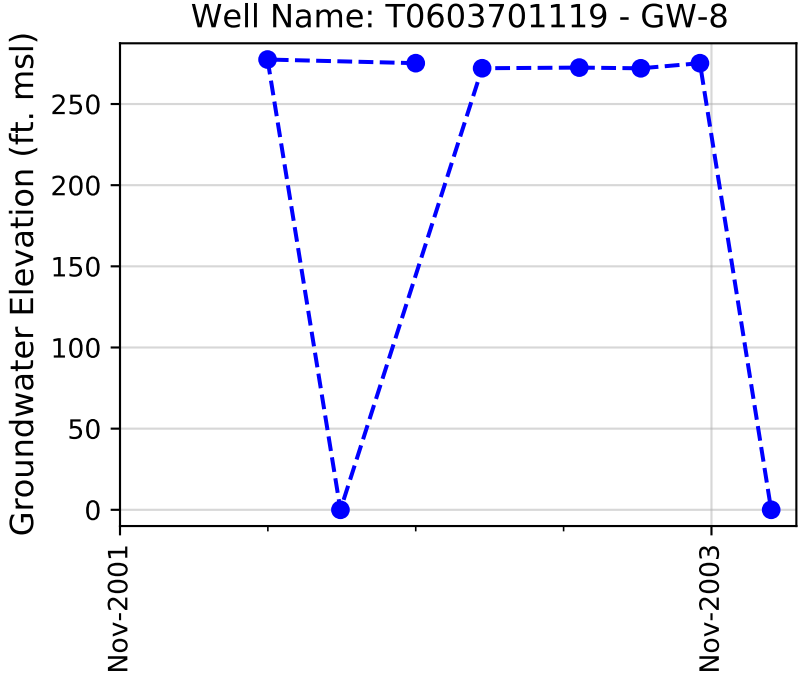

Well Name: T0603700692 - OW-1
240
235
230
225
220
Nov-2003
Nov-2005

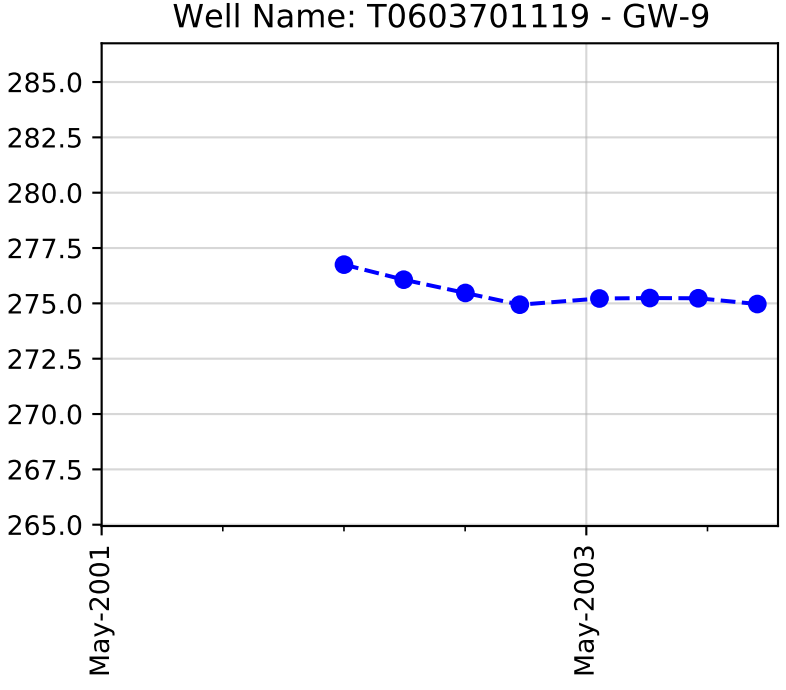

Well Name: T0603700692 - OW-2
Groundwater Elevation (ft. msl)
235.0
232.5
230.0
227.5
225.0
222.5
220.0
217.5
215.0
Nov-2003
Nov-2005

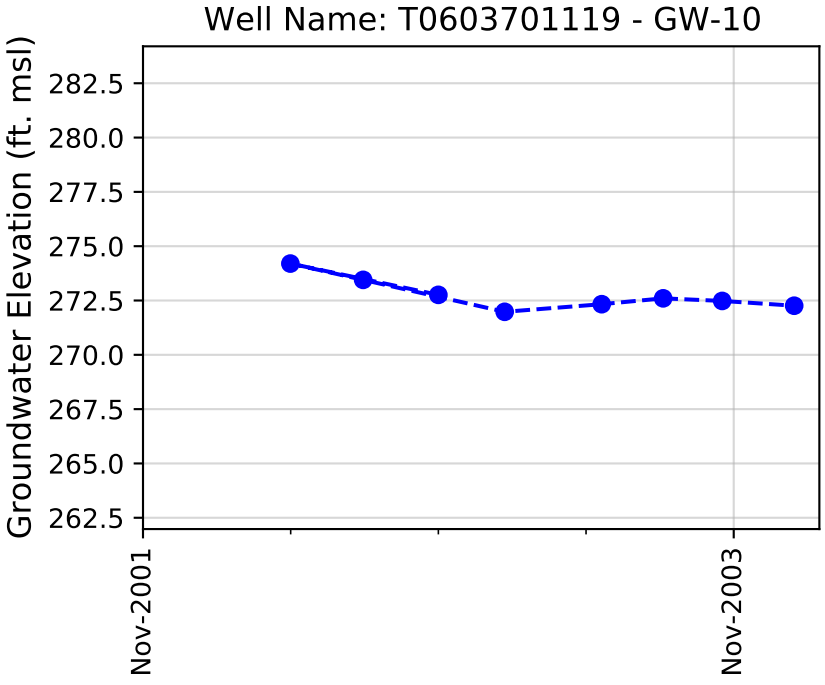

Well Name: T0603700692 - OW-3
235.0
232.5
230.0
227.5
225.0
222.5
220.0
217.5
215.0
Nov-2003
Nov-2005

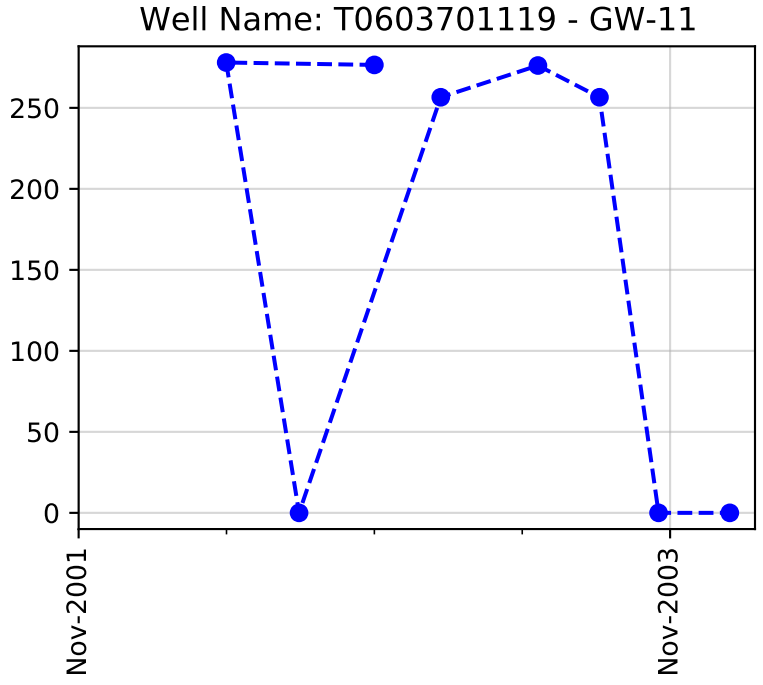

Well Name: T0603700692 - OW-4
Groundwater Elevation (ft. msl)
235
230
225
220
215
210
Nov-2003
Nov-2005

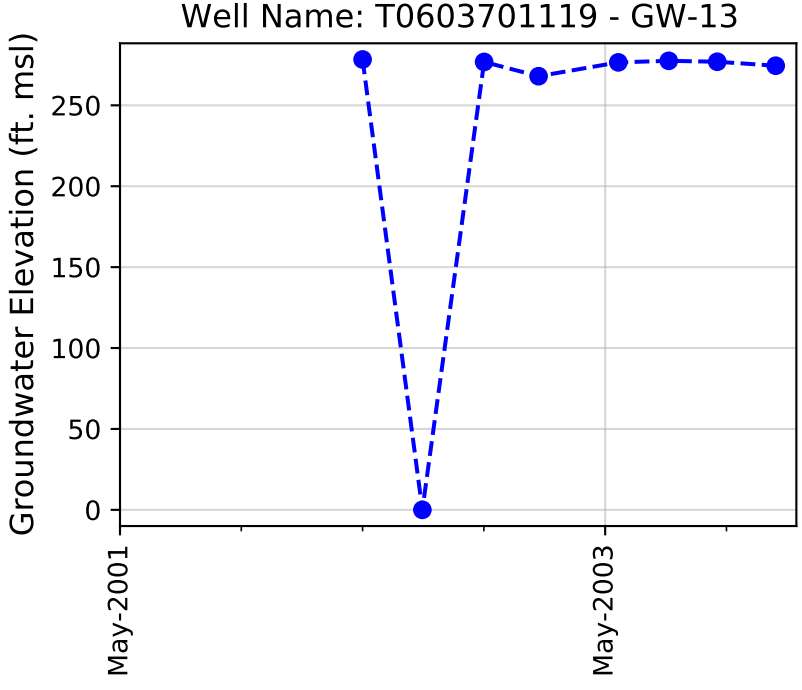

Well Name: T0603701119 - GW-7
250
200
150
100
50
0
May-2001
May-2003

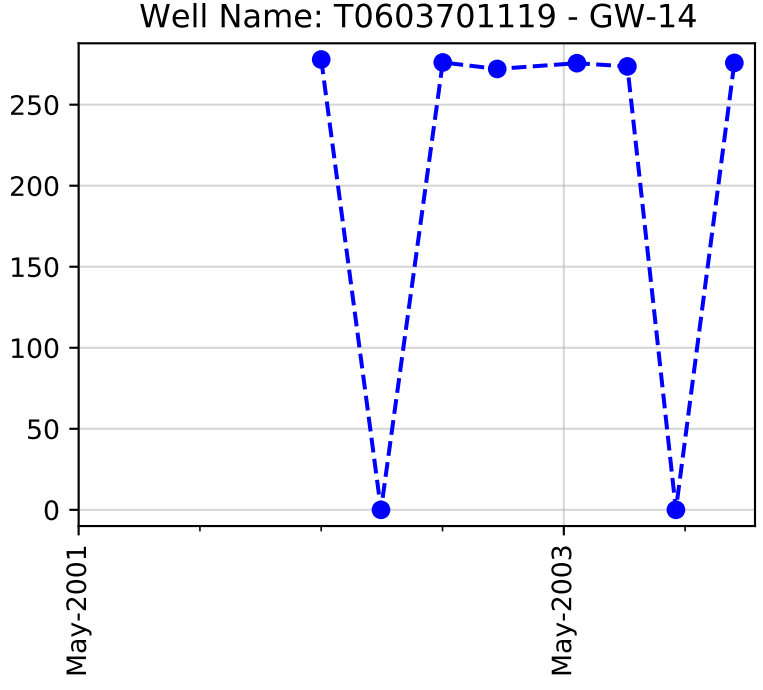

Well Name: T0603701119 - GW-8
Groundwater Elevation (ft. msl)
250
200
150
100
50
0
Nov-2001
Nov-2003

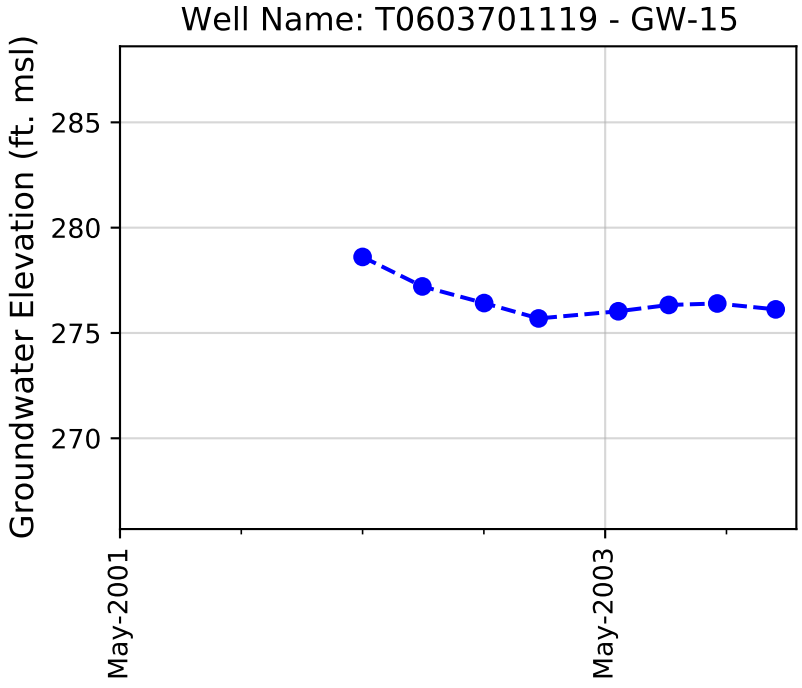

Well Name: T0603701119 - GW-9
285.0
282.5
280.0
277.5
275.0
272.5
270.0
267.5
265.0
May-2001
May-2003

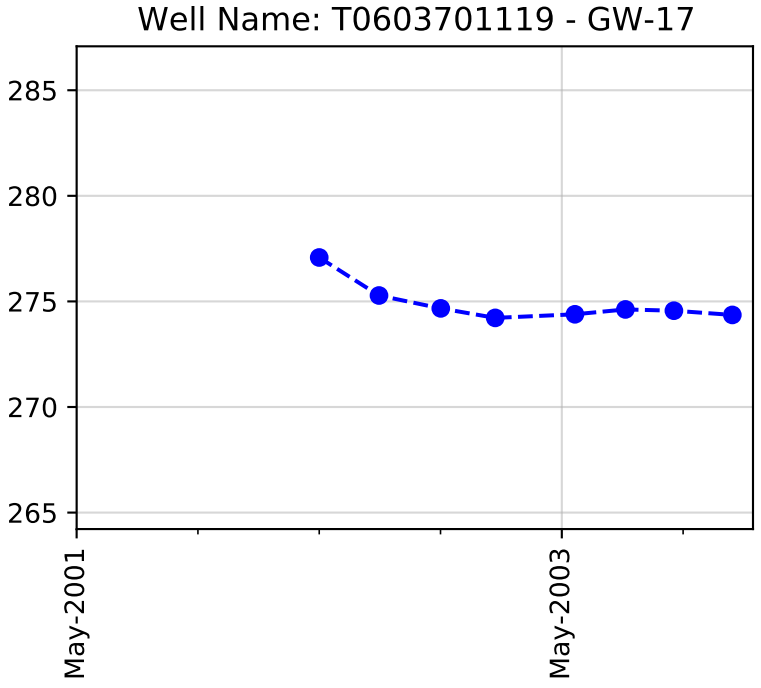

Well Name: T0603701119 - GW-10
Groundwater Elevation (ft. msl)
282.5
280.0
277.5
275.0
272.5
270.0
267.5
265.0
262.5
Nov-2001
Nov-2003

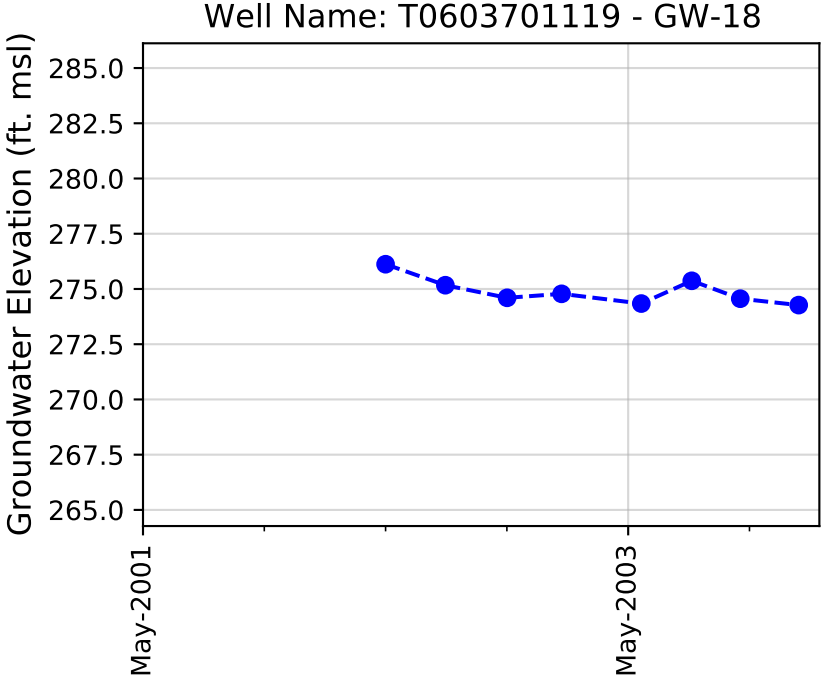

Well Name: T0603701119 - GW-11
250
200
150
100
50
0
Nov-2001
Nov-2003

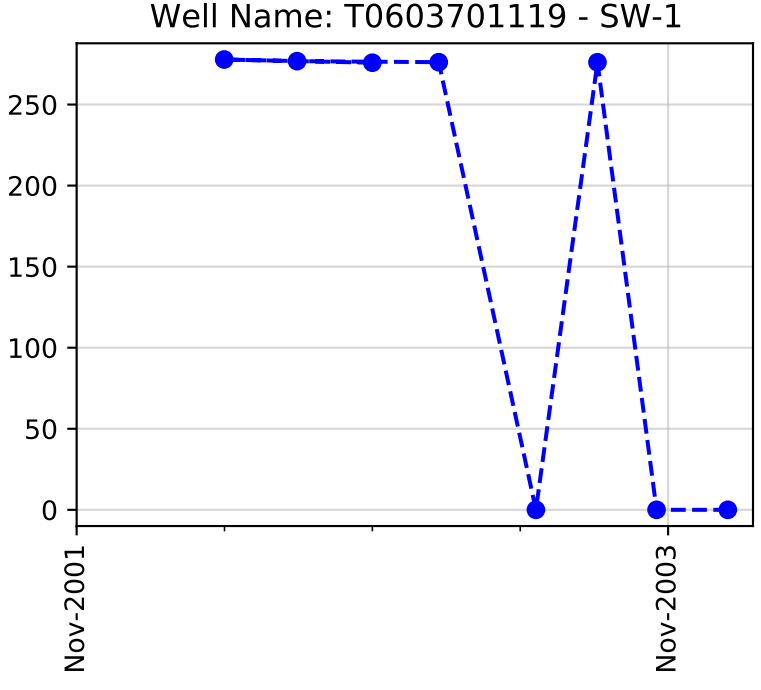

Well Name: T0603701119 - GW-13
Groundwater Elevation (ft. msl)
250
200
150
100
50
0
May-2001
May-2003

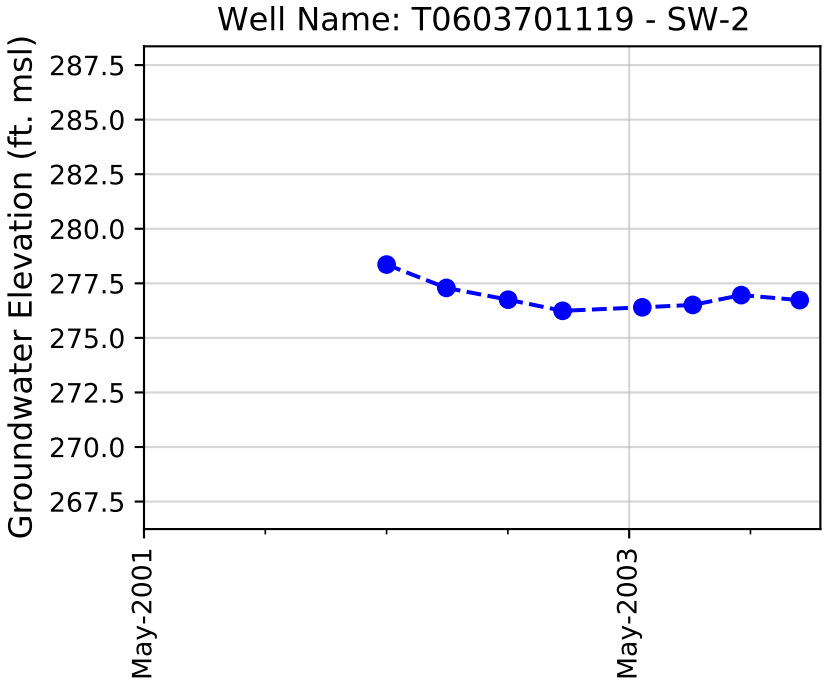

Well Name: T0603701119 - GW-14
250
200
150
100
50
0
May-2001
May-2003

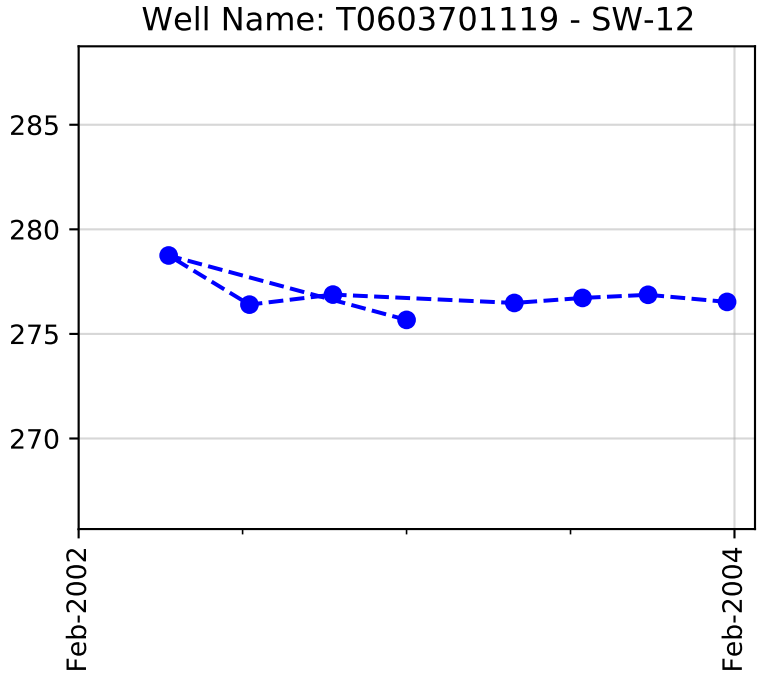

Well Name: T0603701119 - GW-15
Groundwater Elevation (ft. msl)
285
280
275
270
May-2001
May-2003

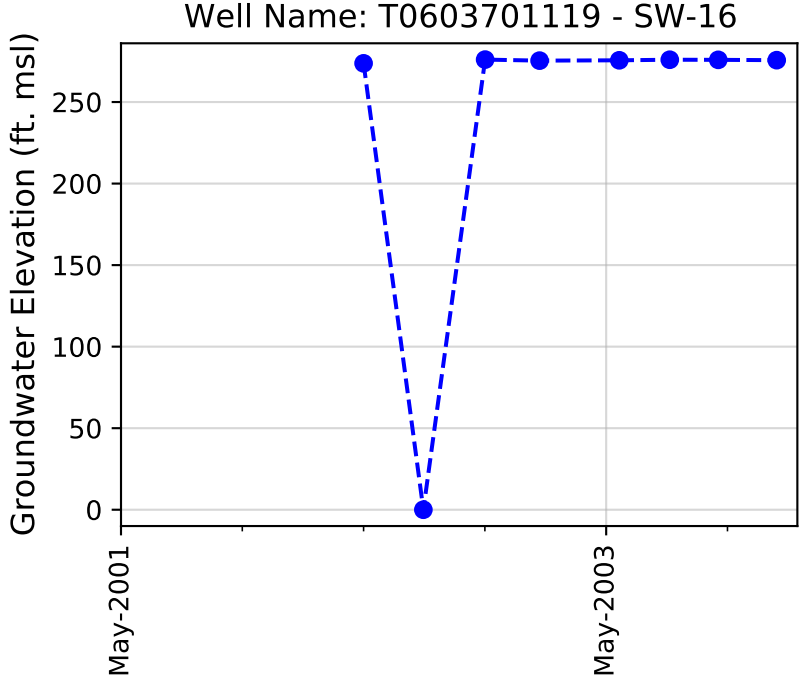

Well Name: T0603701119 - GW-17
285
280
275
270
265
May-2001
May-2003

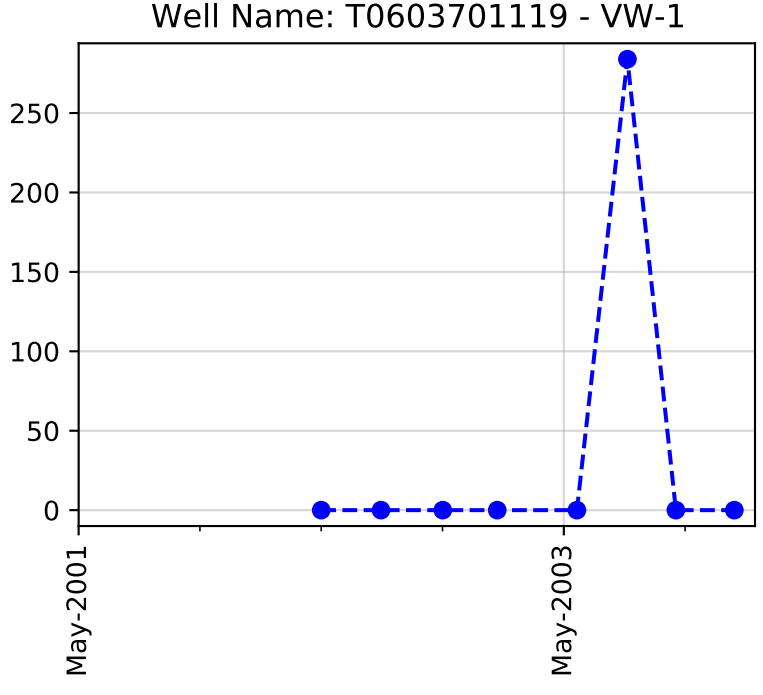

Well Name: T0603701119 - GW-18
Groundwater Elevation (ft. msl)
285.0
282.5
280.0
277.5
275.0
272.5
270.0
267.5
265.0
May-2001
May-2003

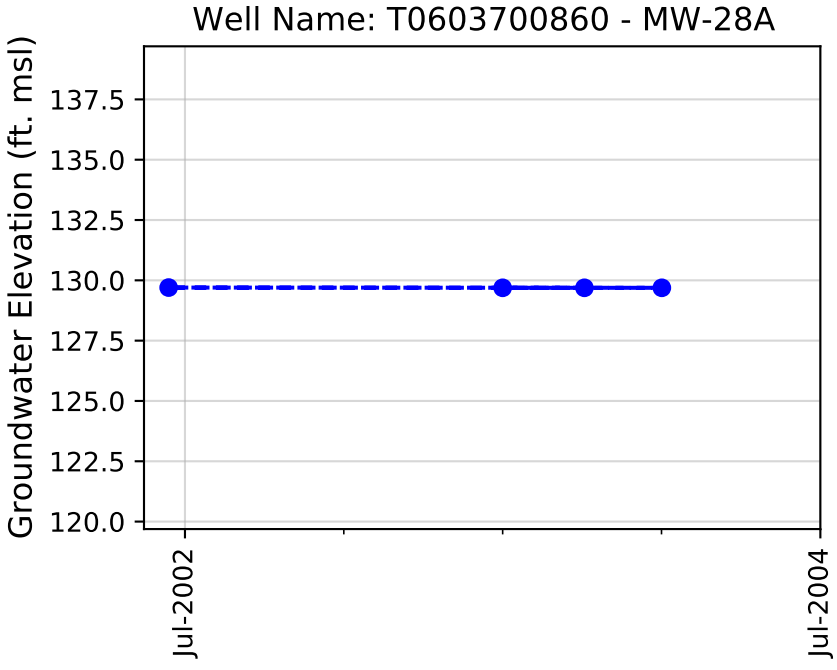

Well Name: T0603701119 - SW-1
250
200
150
100
50
0
Nov-2001
Nov-2003

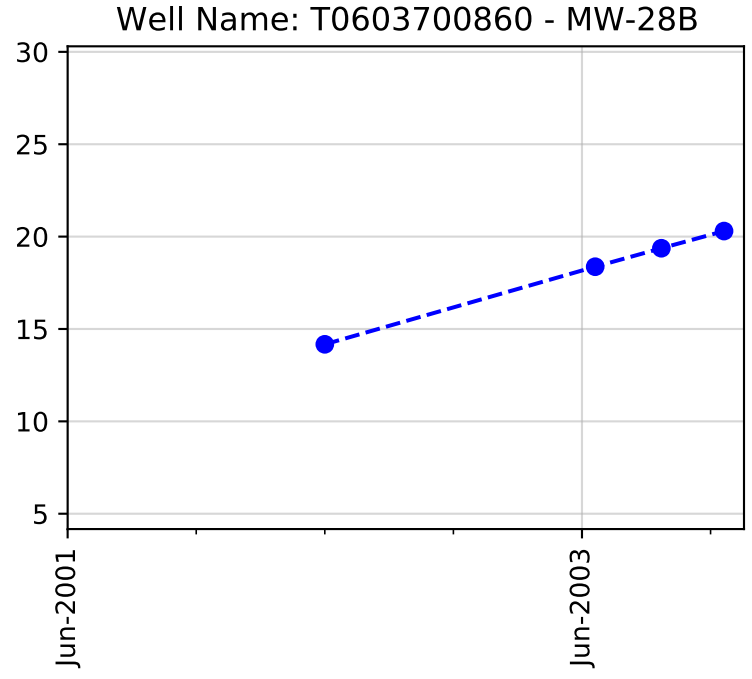

Well Name: T0603701119 - SW-2
Groundwater Elevation (ft. msl)
287.5
285.0
282.5
280.0
277.5
275.0
272.5
270.0
267.5
May-2001
May-2003

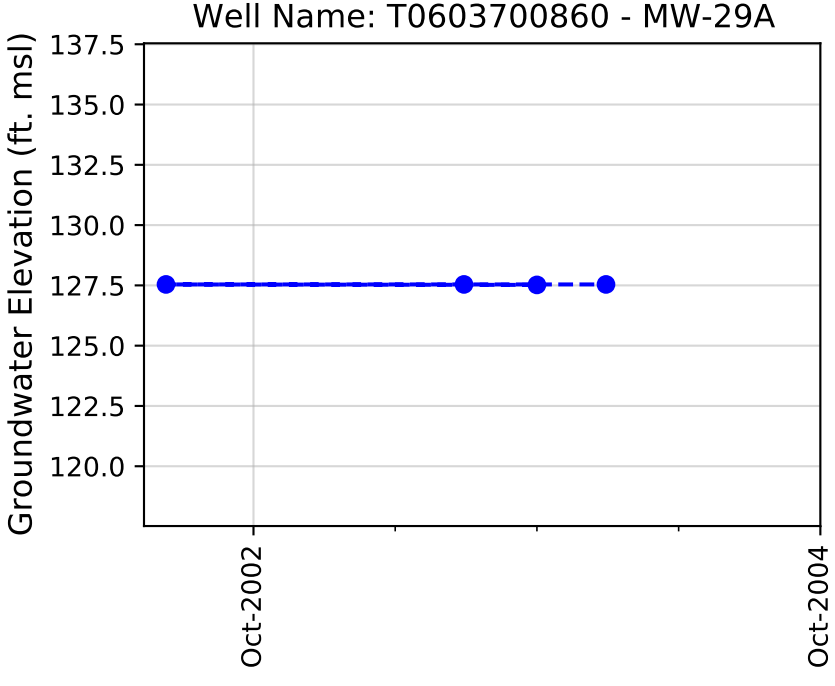

Well Name: T0603701119 - SW-12
285
280
275
270
Feb-2002
Feb-2004

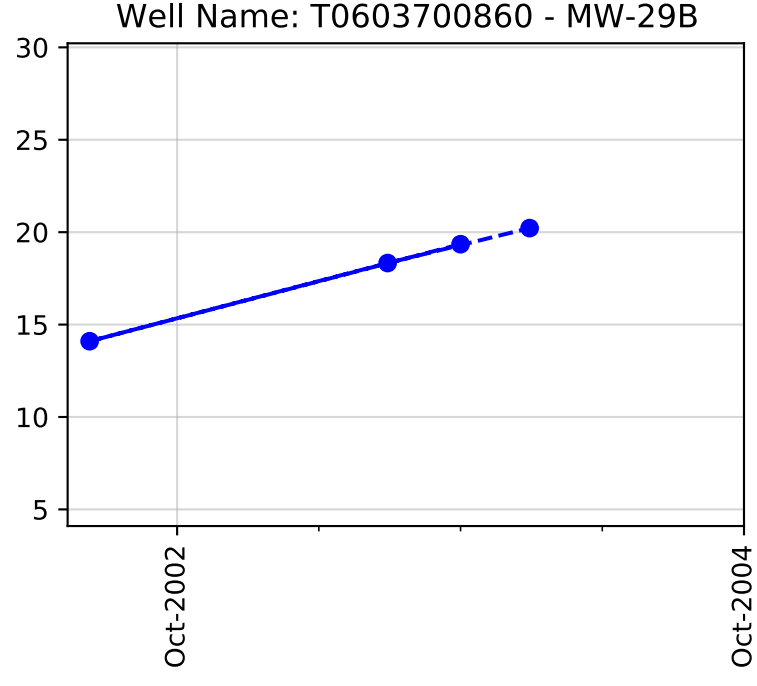

Well Name: T0603701119 - SW-16
Groundwater Elevation (ft. msl)
250
200
150
100
50
0
May-2001
May-2003

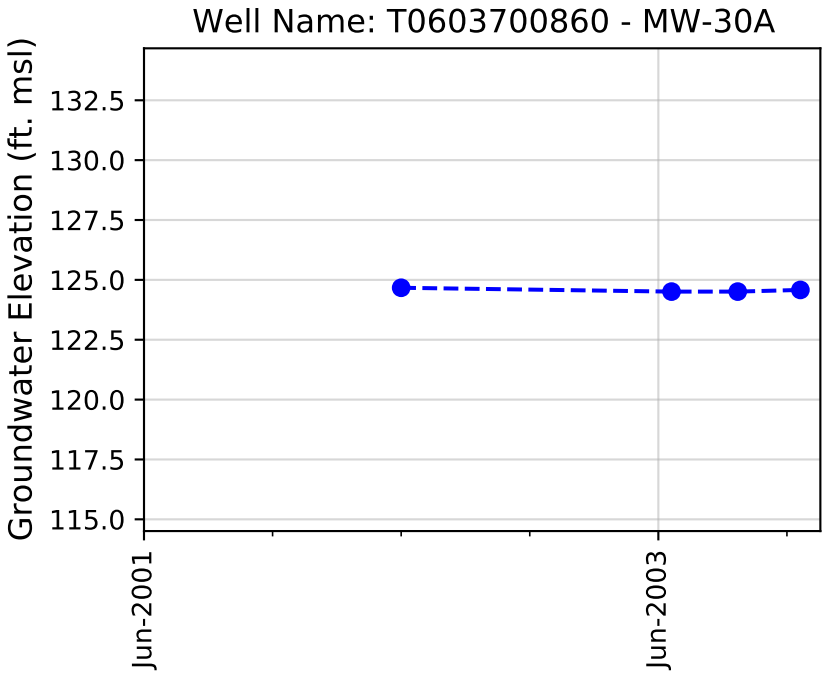

Well Name: T0603701119 - VW-1
250
200
150
100
50
0
May-2001
May-2003

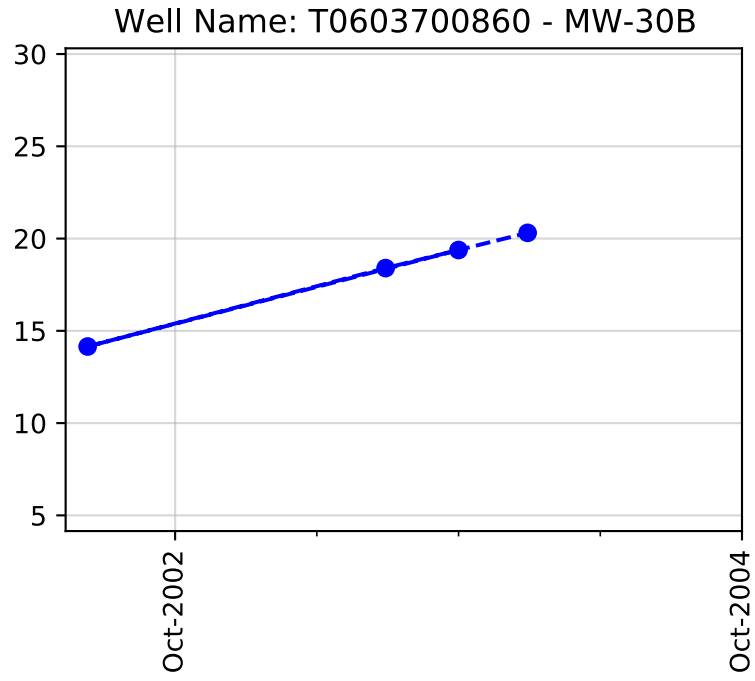

Well Name: T0603700860 - MW-28A
Groundwater Elevation (ft. msl)
137.5
135.0
132.5
130.0
127.5
125.0
122.5
120.0
Jul-2002
Jul-2004

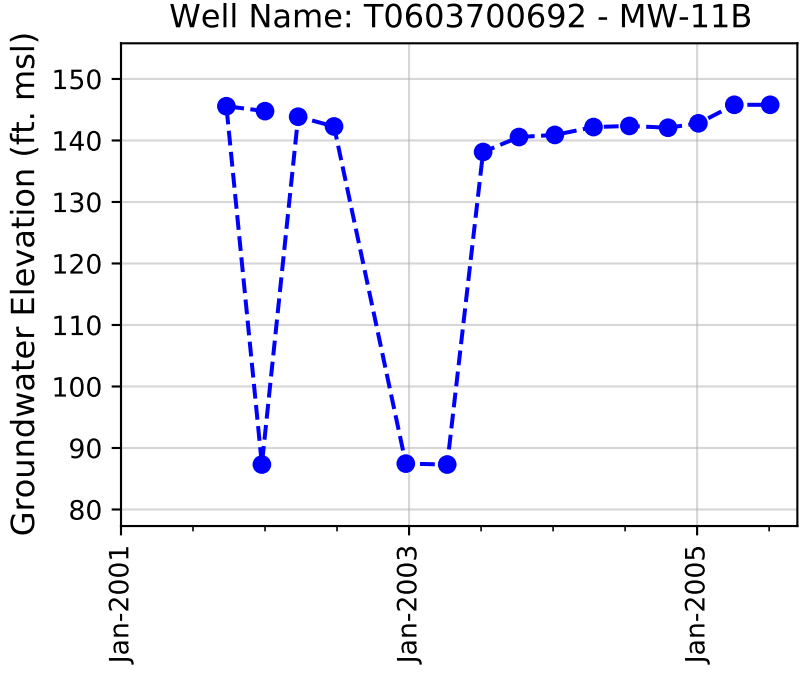

Well Name: T0603700860 - MW-28B
30
25
20
15
10
5
Jun-2001
Jun-2003

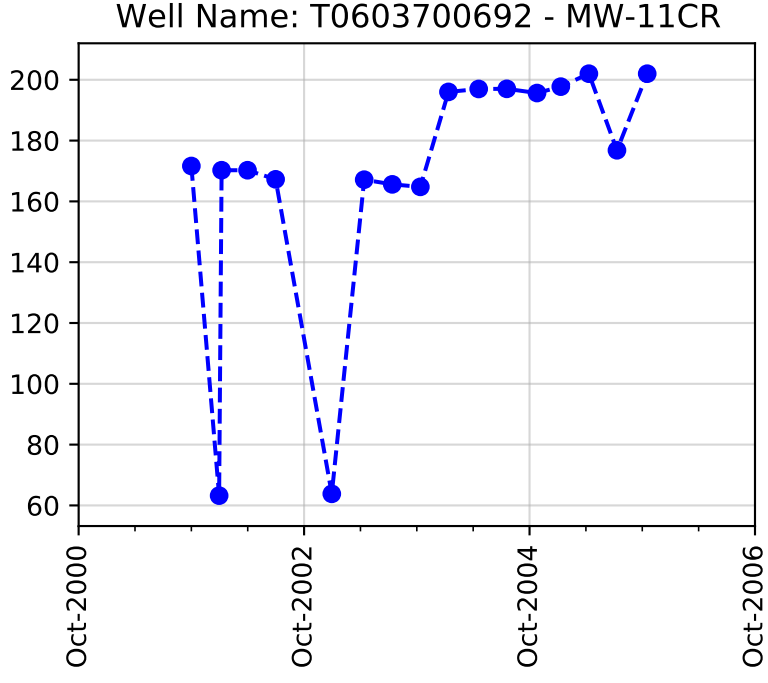

Well Name: T0603700860 - MW-29A
Groundwater Elevation (ft. msl)
137.5
135.0
132.5
130.0
127.5
125.0
122.5
120.0
Oct-2002
Oct-2004

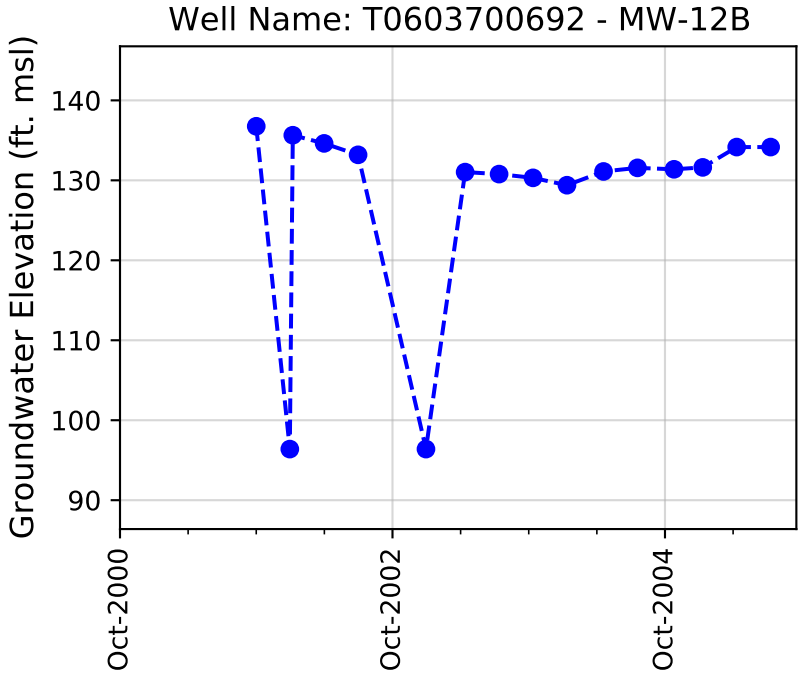

Well Name: T0603700860 - MW-29B
30
25
20
15
10
5
Oct-2002
Oct-2004

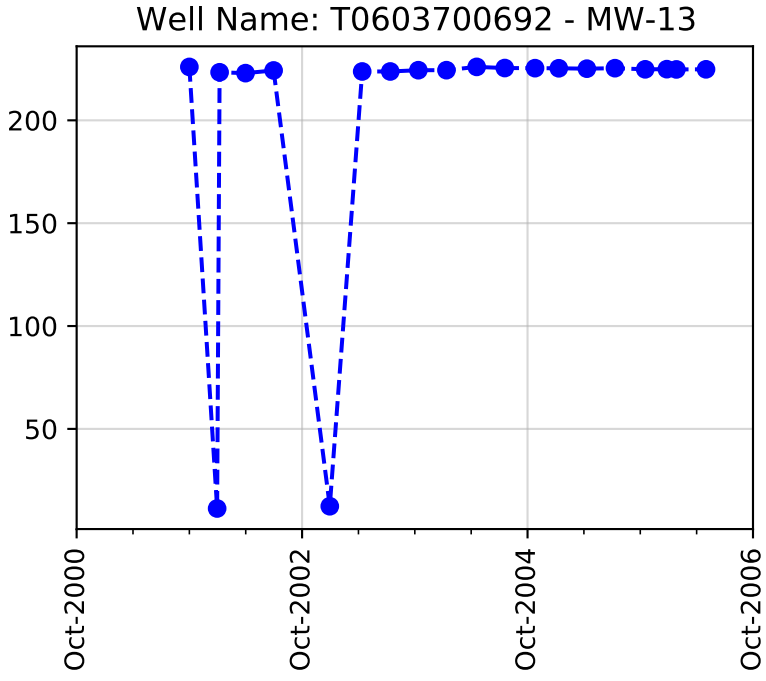

Well Name: T0603700860 - MW-30A
Groundwater Elevation (ft. msl)
132.5
130.0
127.5
125.0
122.5
120.0
117.5
115.0
Jun-2001
Jun-2003

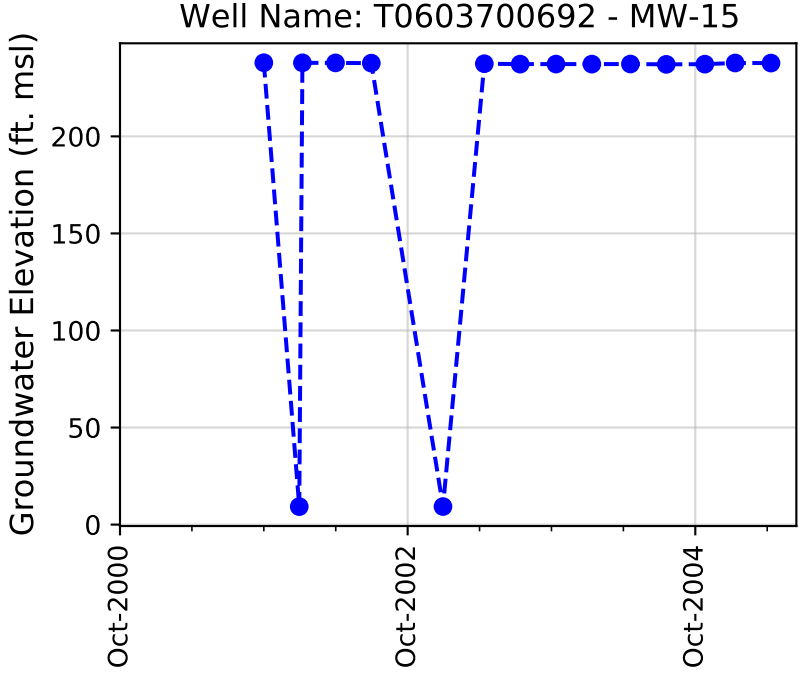

Well Name: T0603700860 - MW-30B
30
25
20
15
10
5
Oct-2002
Oct-2004

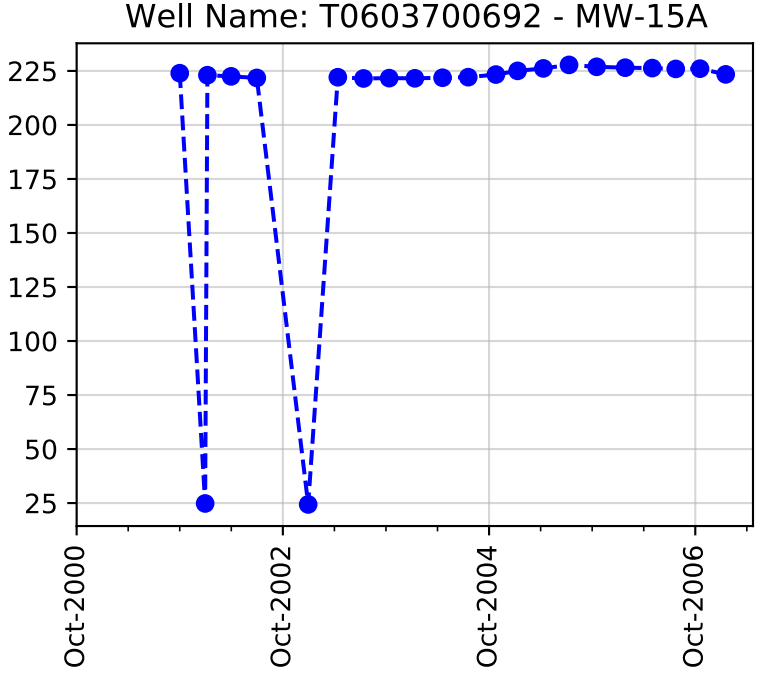

Well Name: T0603700692 - MW-11B
Groundwater Elevation (ft. msl)
150
140
130
120
110
100
90
80
Jan-2001
Jan-2003
Jan-2005

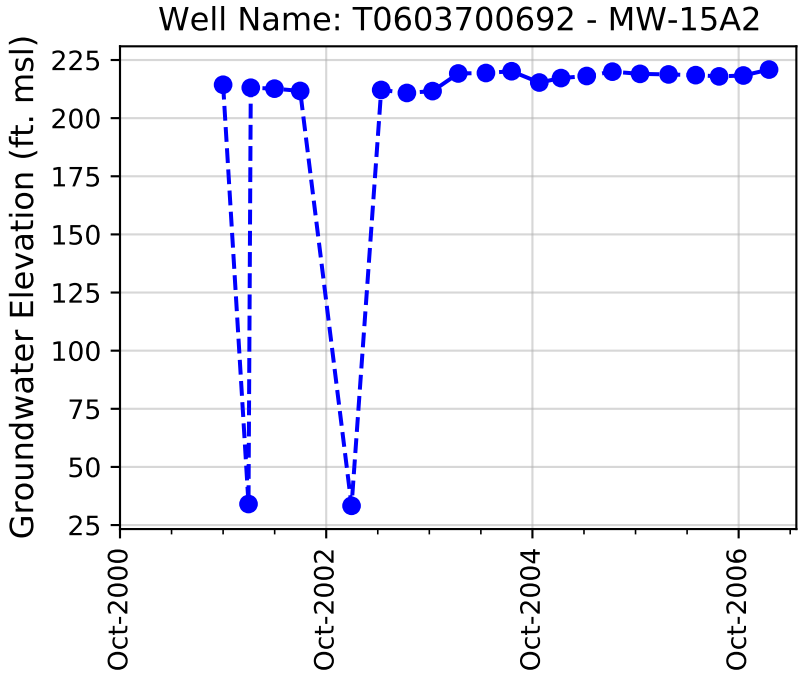

Well Name: T0603700692 - MW-11CR
200
180
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004
Oct-2006

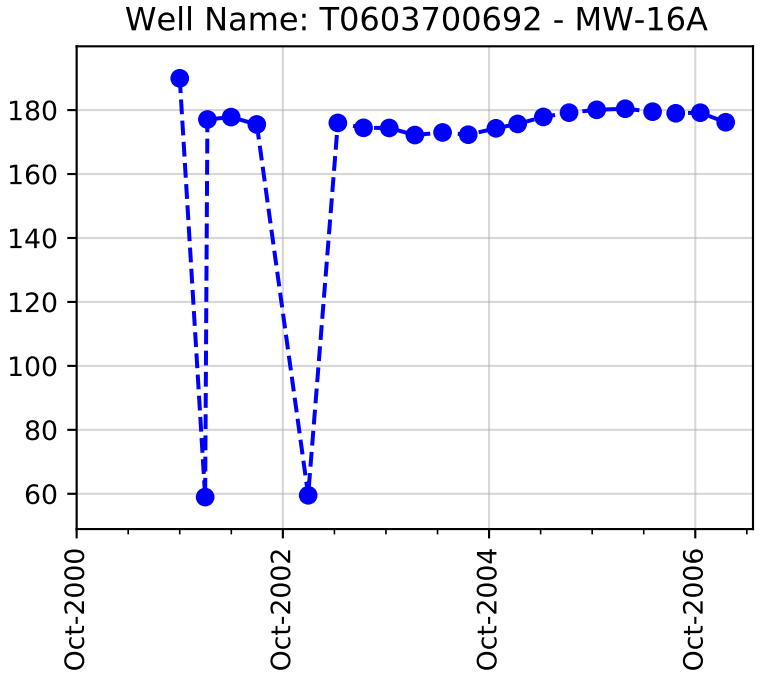

Well Name: T0603700692 - MW-12B
Groundwater Elevation (ft. msl)
140
130
120
110
100
90
Oct-2000
Oct-2002
Oct-2004

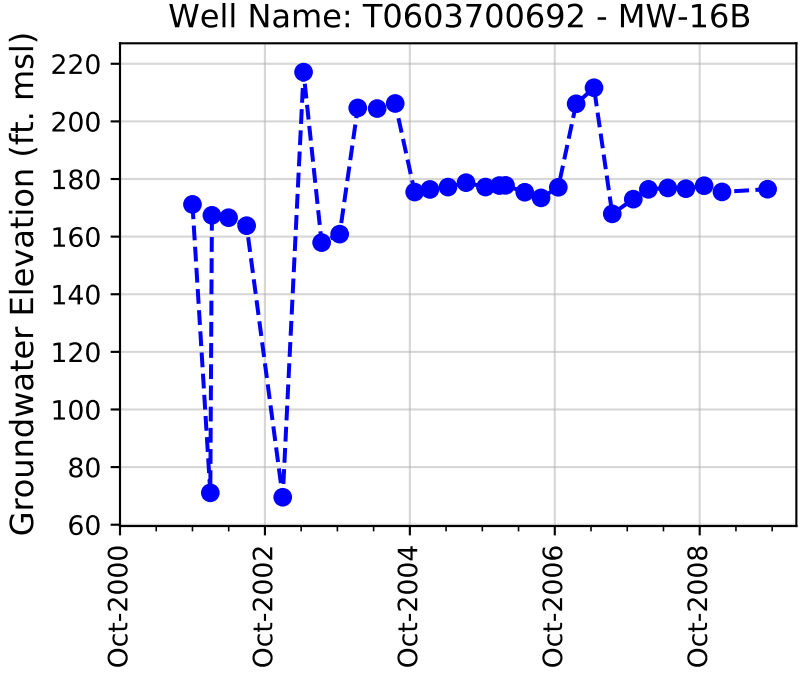

Well Name: T0603700692 - MW-13
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006

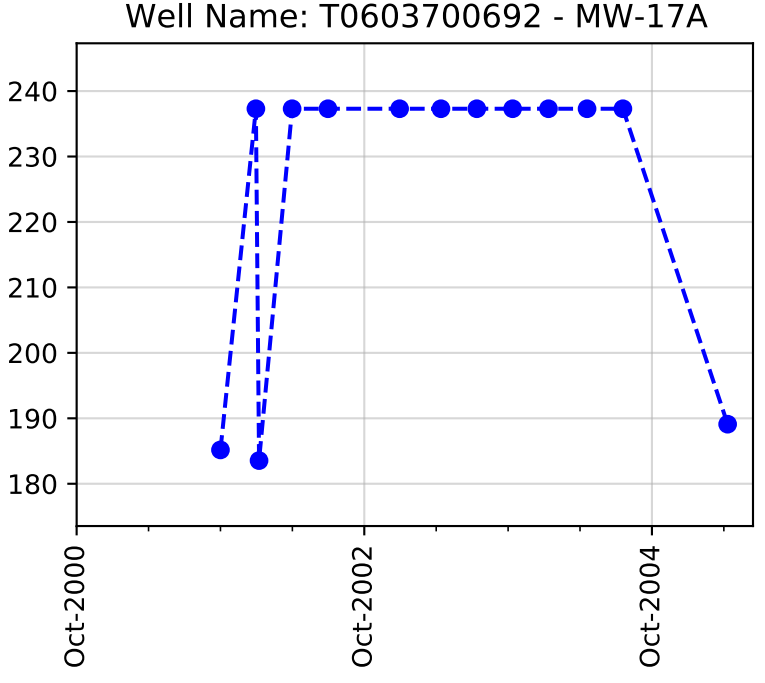

Well Name: T0603700692 - MW-15
Groundwater Elevation (ft. msl)
200
150
100
50
0
Oct-2000
Oct-2002
Oct-2004

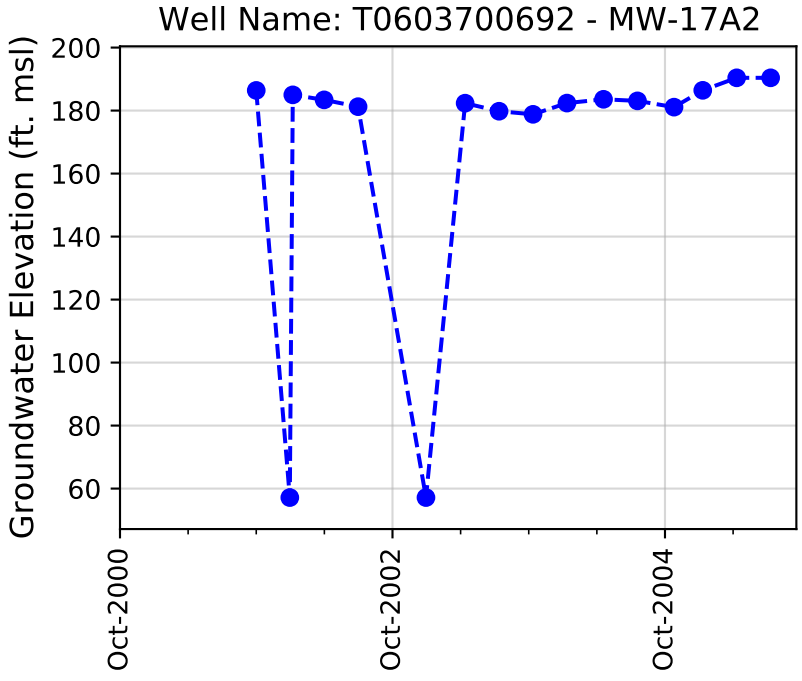

Well Name: T0603700692 - MW-15A
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

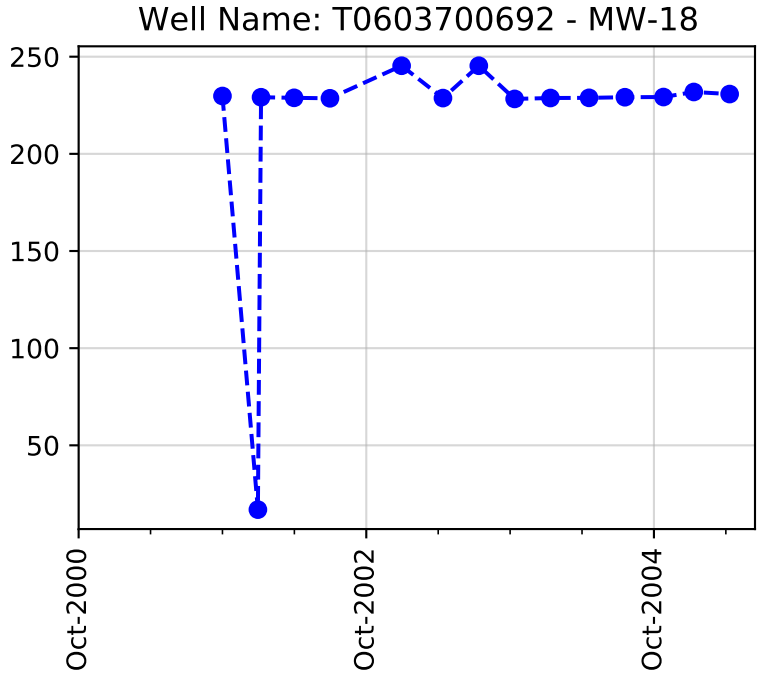

Well Name: T0603700692 - MW-15A2
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

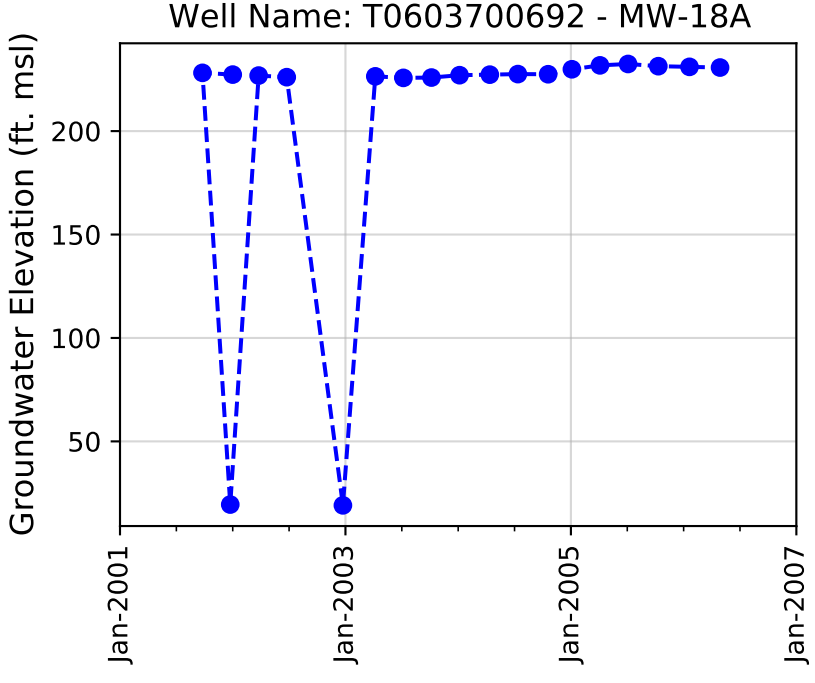

Well Name: T0603700692 - MW-16A
180
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004
Oct-2006

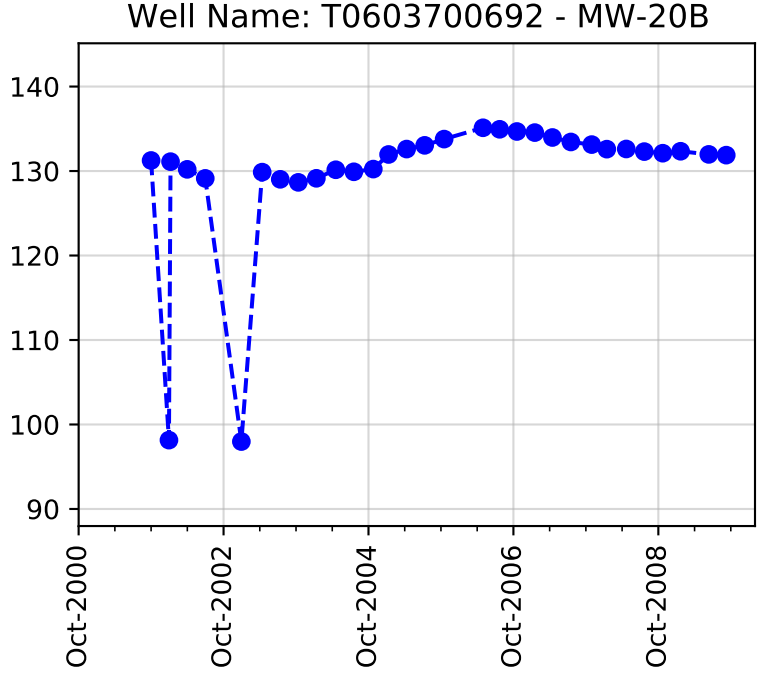

Well Name: T0603700692 - MW-16B
Groundwater Elevation (ft. msl)
220
200
180
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

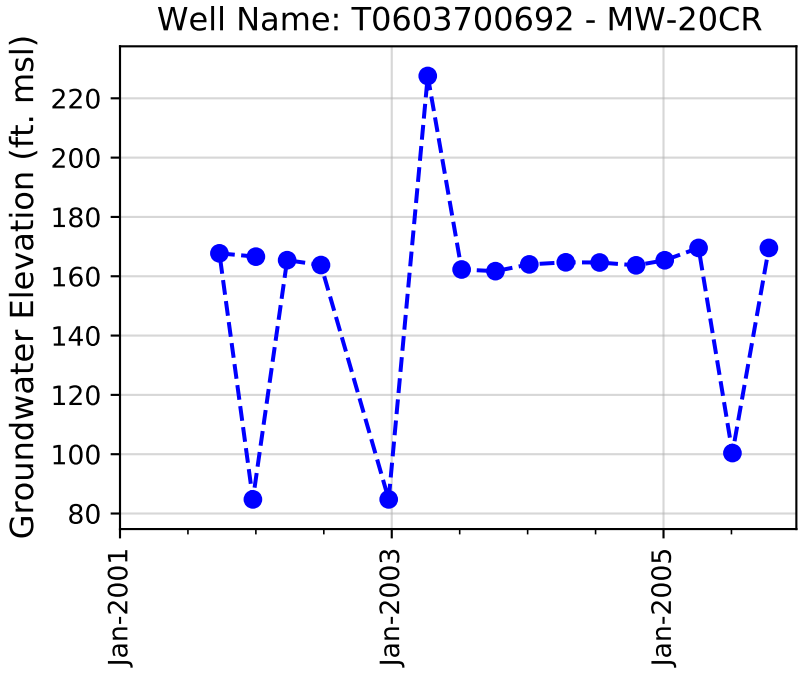

Well Name: T0603700692 - MW-17A
240
230
220
210
200
190
180
Oct-2000
Oct-2002
Oct-2004

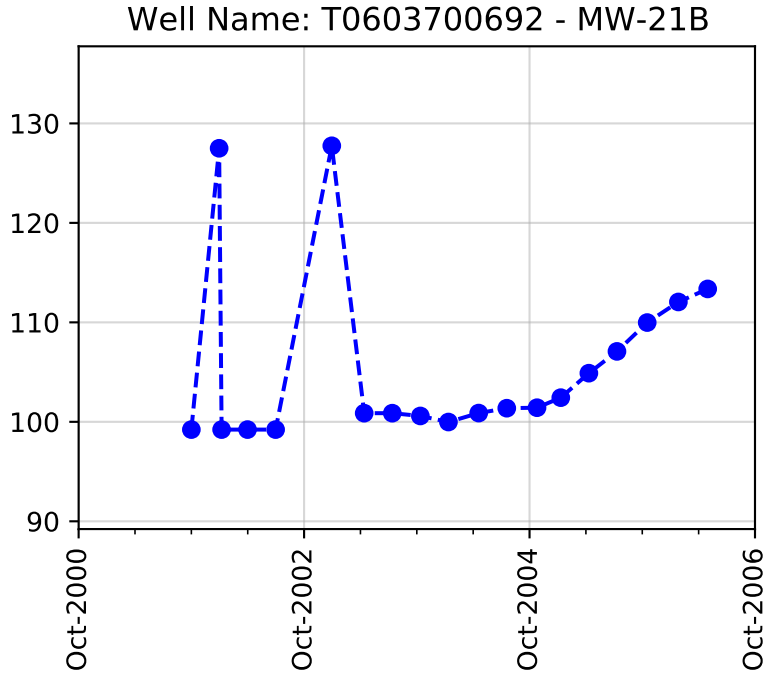

Well Name: T0603700692 - MW-17A2
Groundwater Elevation (ft. msl)
200
180
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004

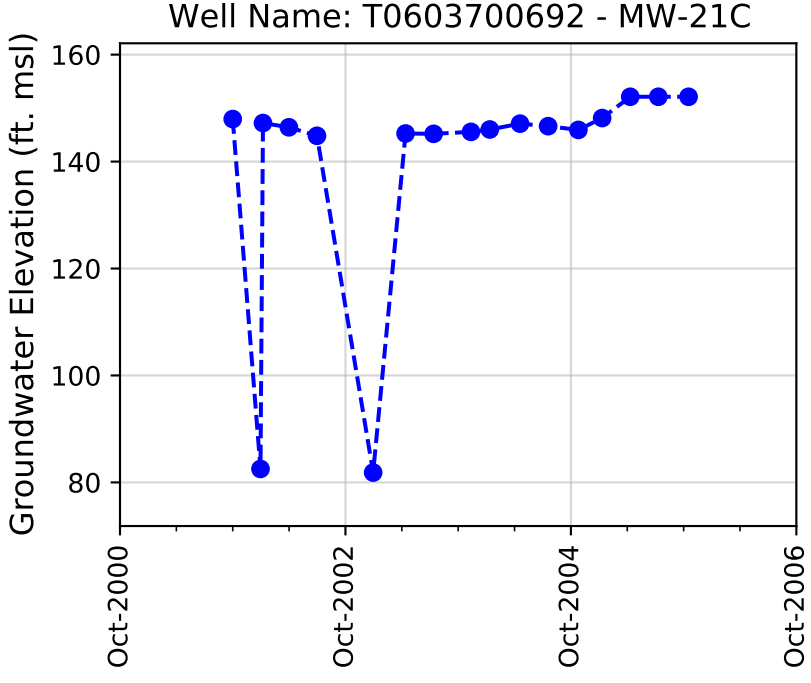

Well Name: T0603700692 - MW-18
250
200
150
100
50
Oct-2000
Oct-2002
Oct-2004

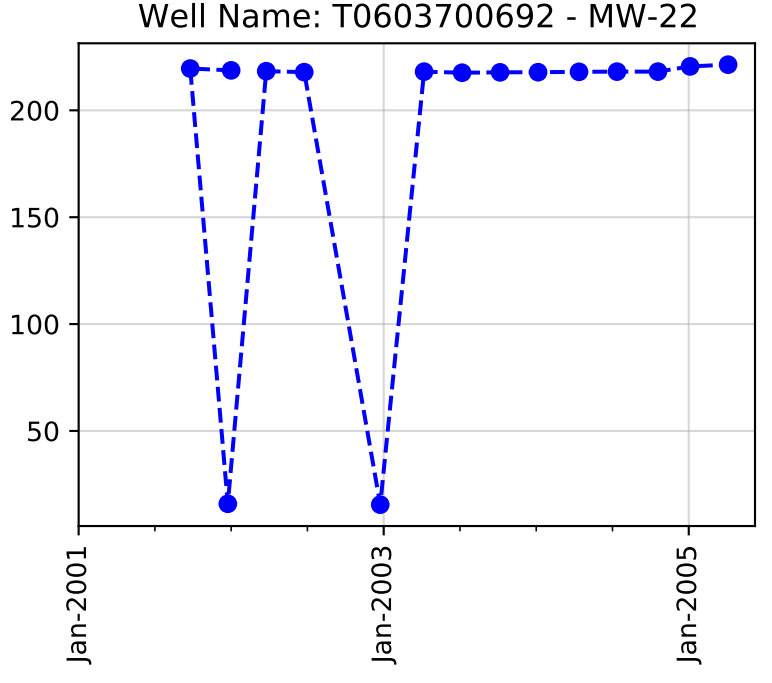

Well Name: T0603700692 - MW-18A
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007

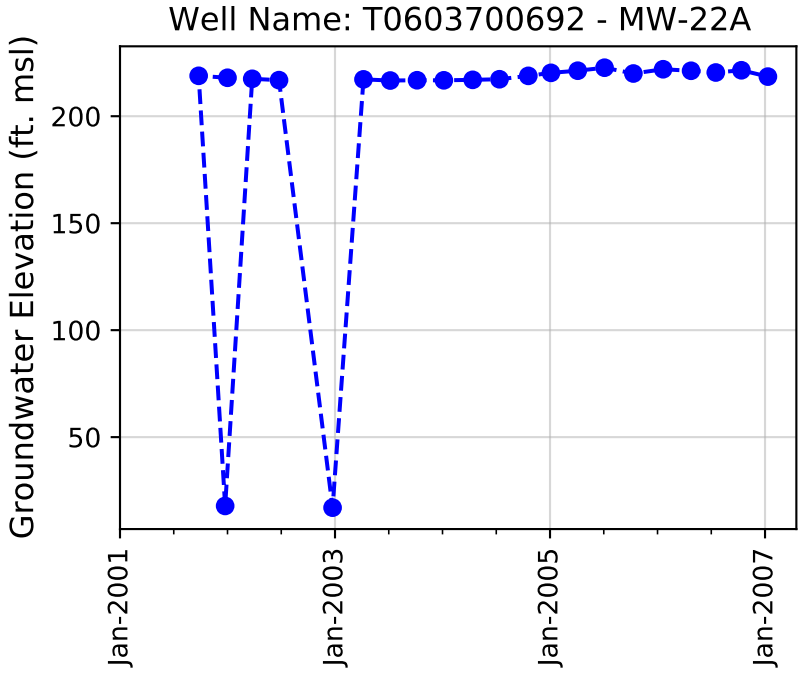

Well Name: T0603700692 - MW-20B
140
130
120
110
100
90
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

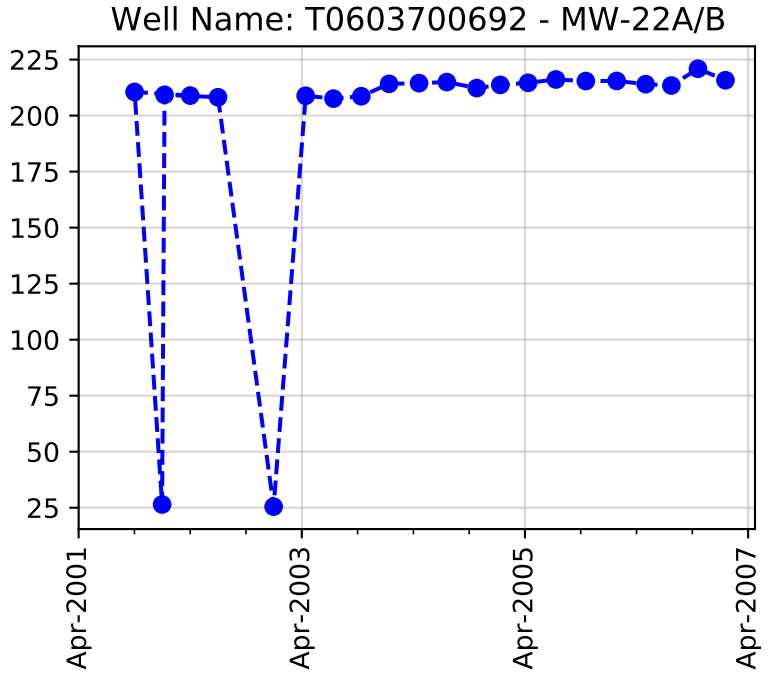

Well Name: T0603700692 - MW-20CR
Groundwater Elevation (ft. msl)
220
200
180
160
140
120
100
80
Jan-2001
Jan-2003
Jan-2005

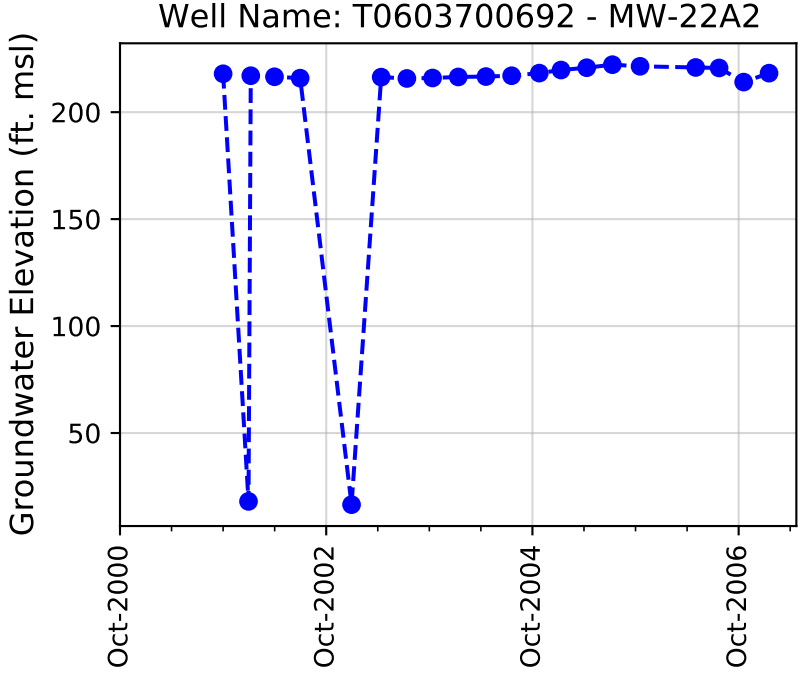

Well Name: T0603700692 - MW-21B
130
120
110
100
90
Oct-2000
Oct-2002
Oct-2004
Oct-2006

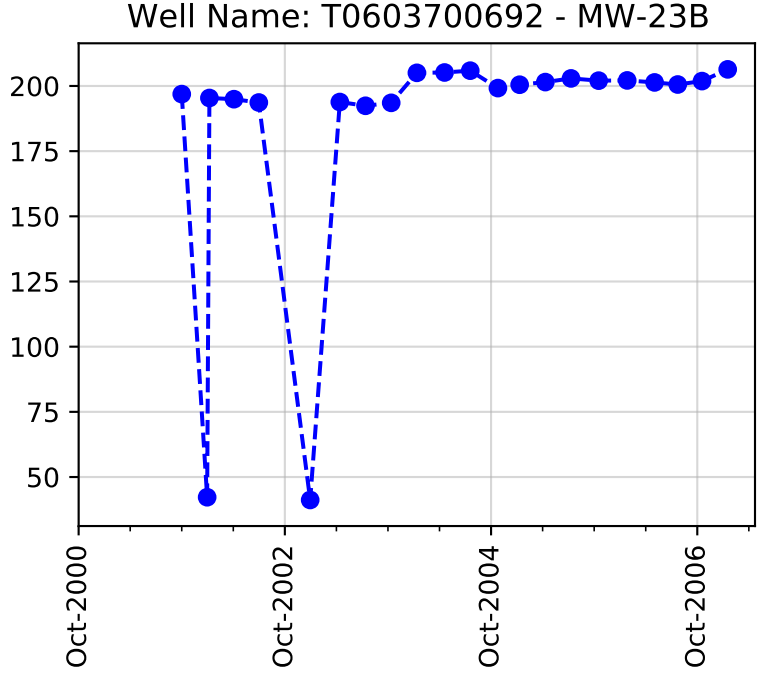

Well Name: T0603700692 - MW-21C
Groundwater Elevation (ft. msl)
160
140
120
100
80
Oct-2000
Oct-2002
Oct-2004
Oct-2006

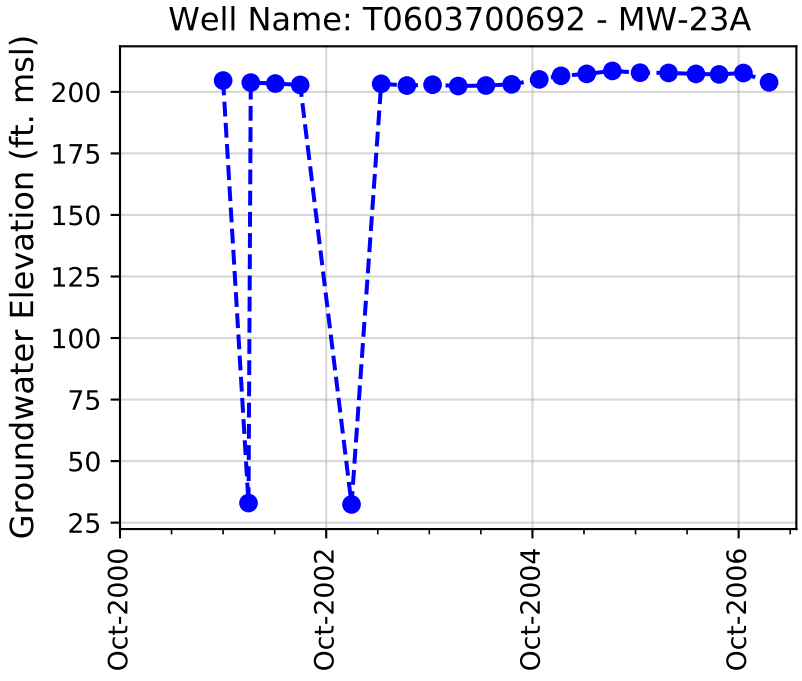

Well Name: T0603700692 - MW-22
200
150
100
50
Jan-2001
Jan-2003
Jan-2005

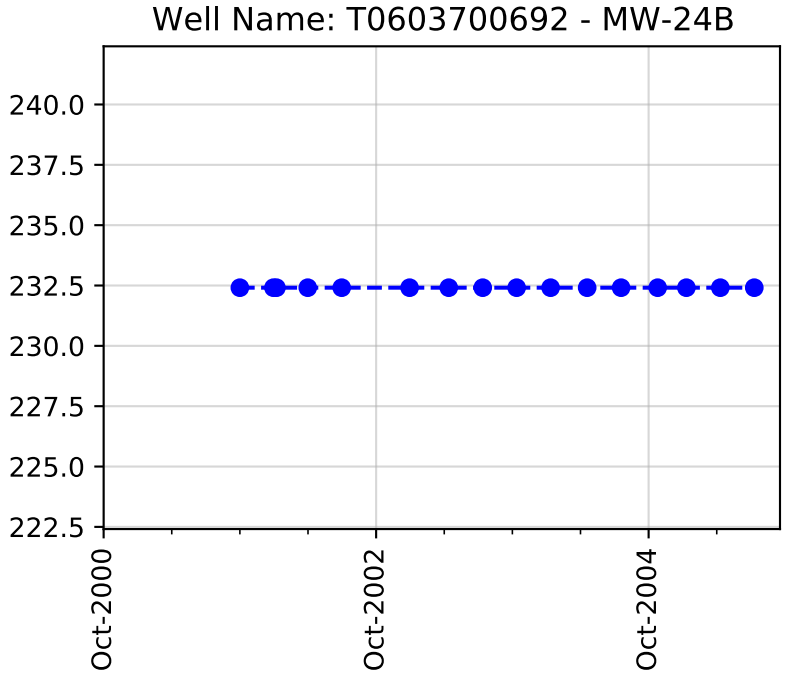

Well Name: T0603700692 - MW-22A
Groundwater Elevation (ft. msl)
200
150
100
50
Jan-2001
Jan-2003
Jan-2005
Jan-2007

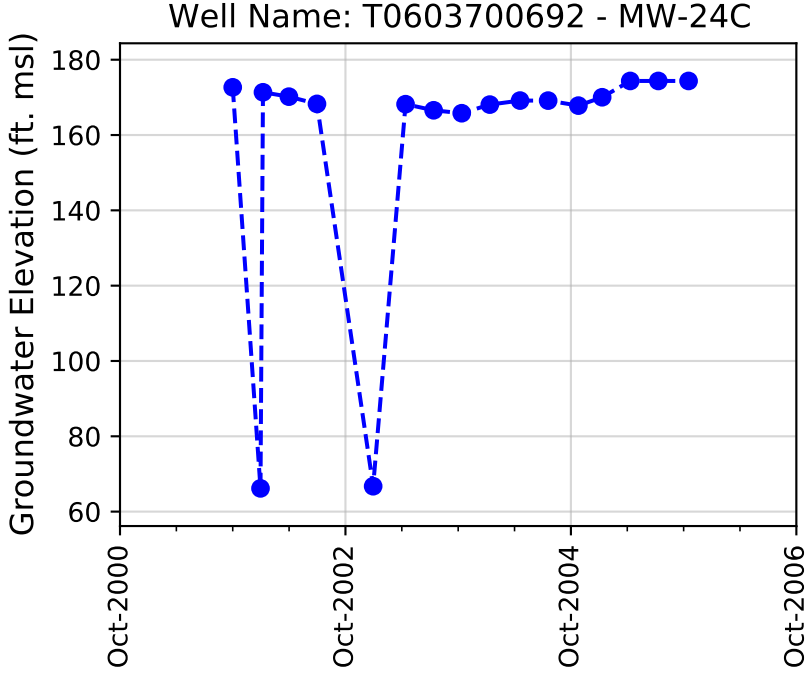

Well Name: T0603700692 - MW-22A/B
225
200
175
150
125
100
75
50
25
Apr-2001
Apr-2003
Apr-2005
Apr-2007

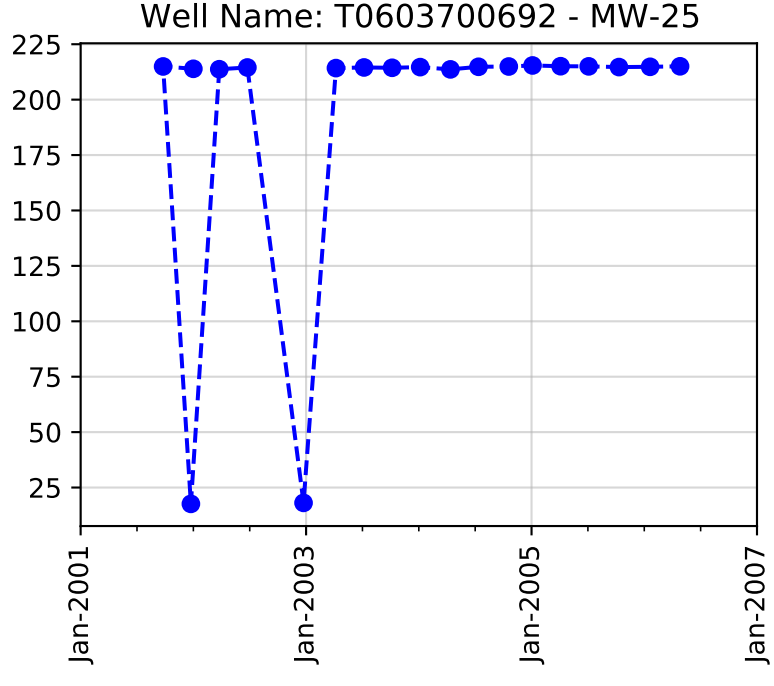

Well Name: T0603700692 - MW-22A2
Groundwater Elevation (ft. msl)
200
150
100
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006

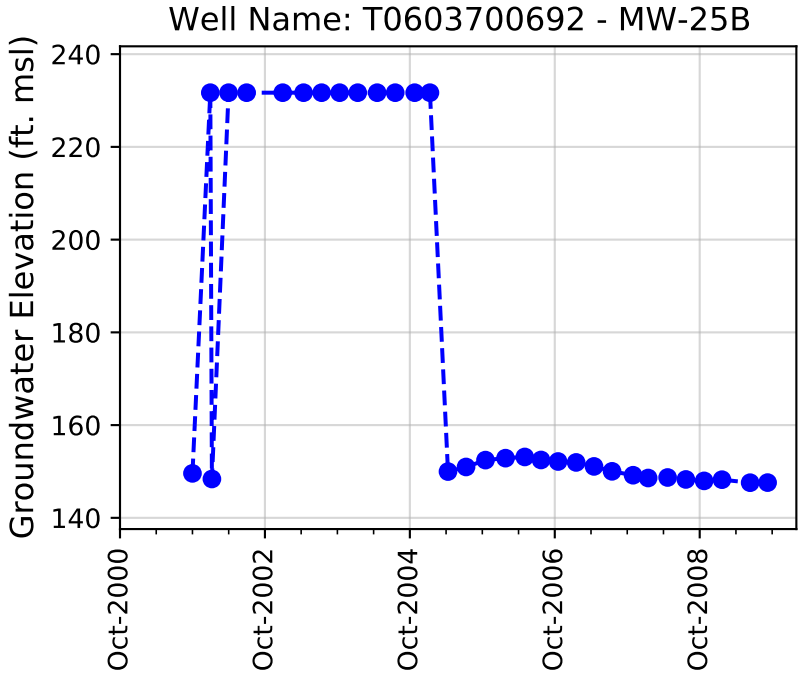

Well Name: T0603700692 - MW-23B
200
175
150
125
100
75
50
Oct-2000
Oct-2002
Oct-2004
Oct-2006

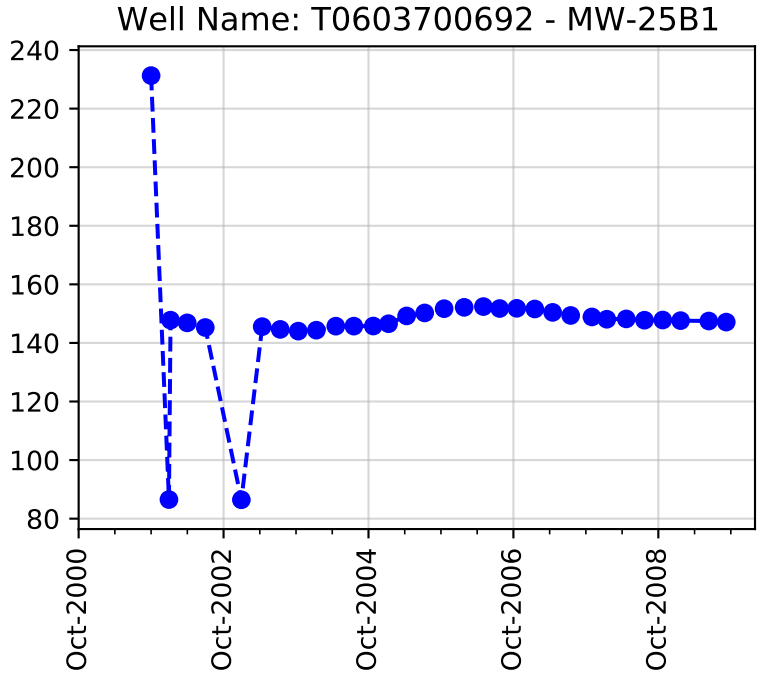

Well Name: T0603700692 - MW-23A
Groundwater Elevation (ft. msl)
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006

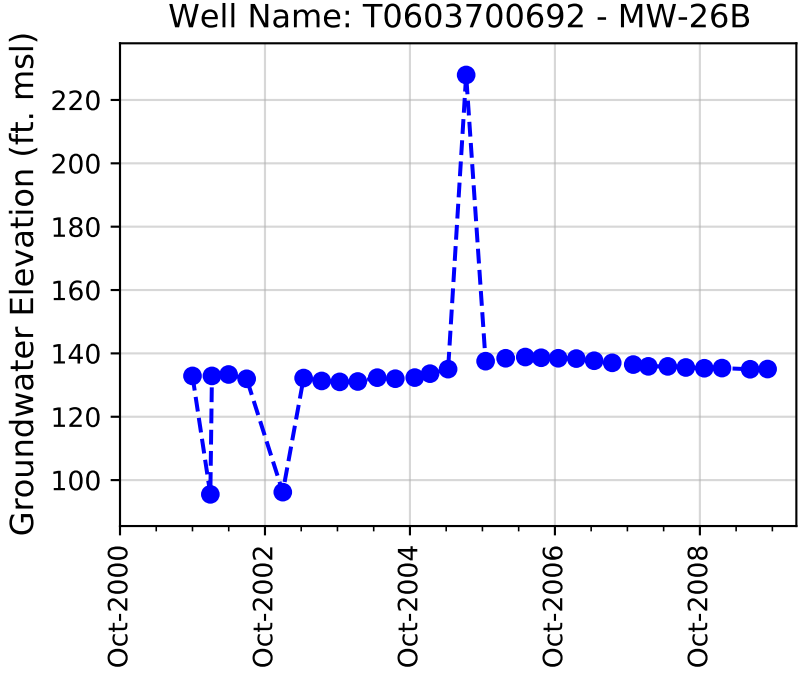

Well Name: T0603700692 - MW-24B
240.0
237.5
235.0
232.5
230.0
227.5
225.0
222.5
Oct-2000
Oct-2002
Oct-2004

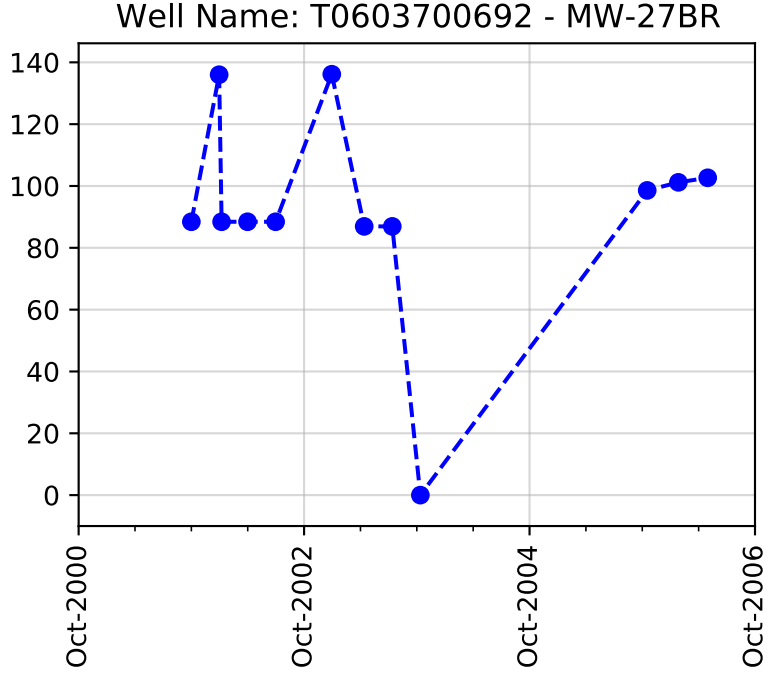

Well Name: T0603700692 - MW-24C
Groundwater Elevation (ft. msl)
180
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004
Oct-2006

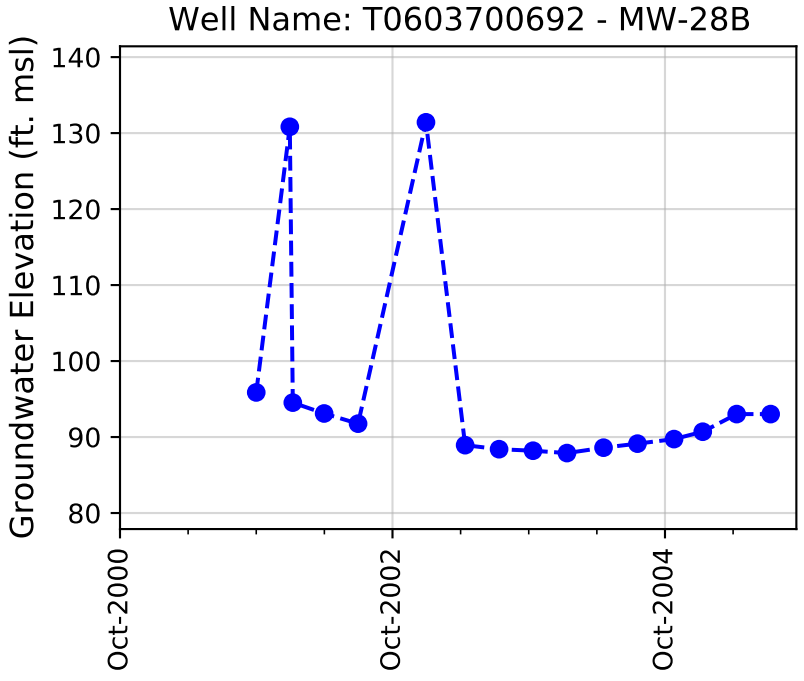

Well Name: T0603700692 - MW-25
225
200
175
150
125
100
75
50
25
Jan-2001
Jan-2003
Jan-2005
Jan-2007

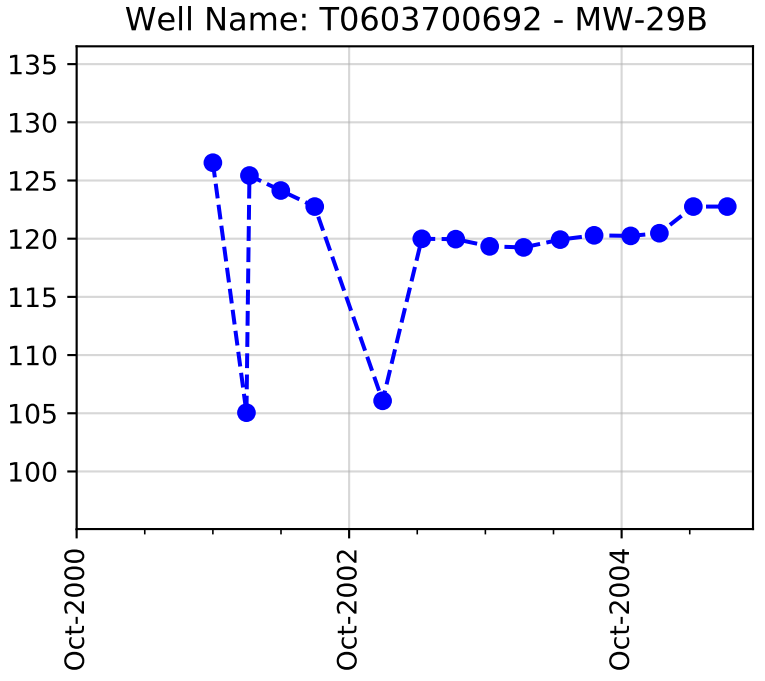

Well Name: T0603700692 - MW-25B
Groundwater Elevation (ft. msl)
240
220
200
180
160
140
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

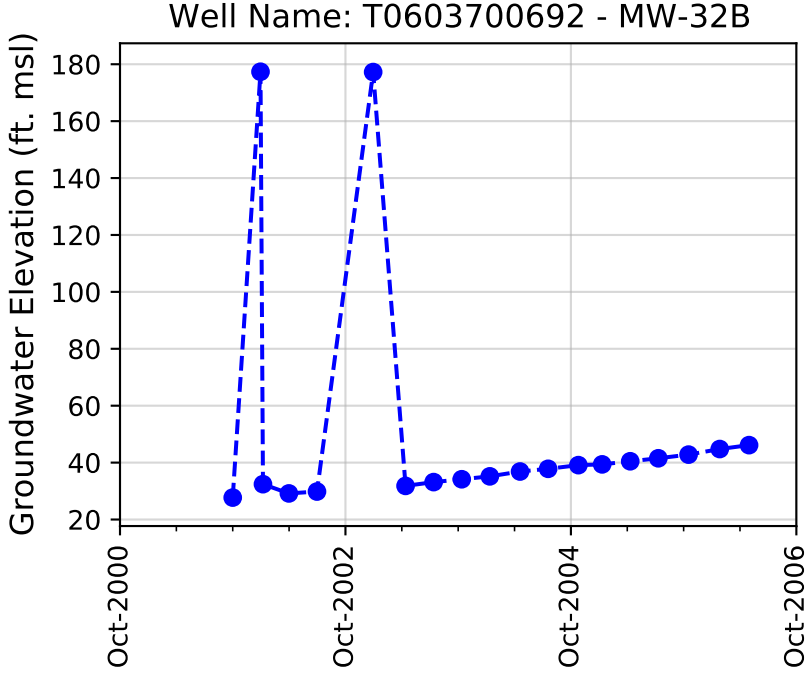

Well Name: T0603700692 - MW-25B1
240
220
200
180
160
140
120
100
80
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

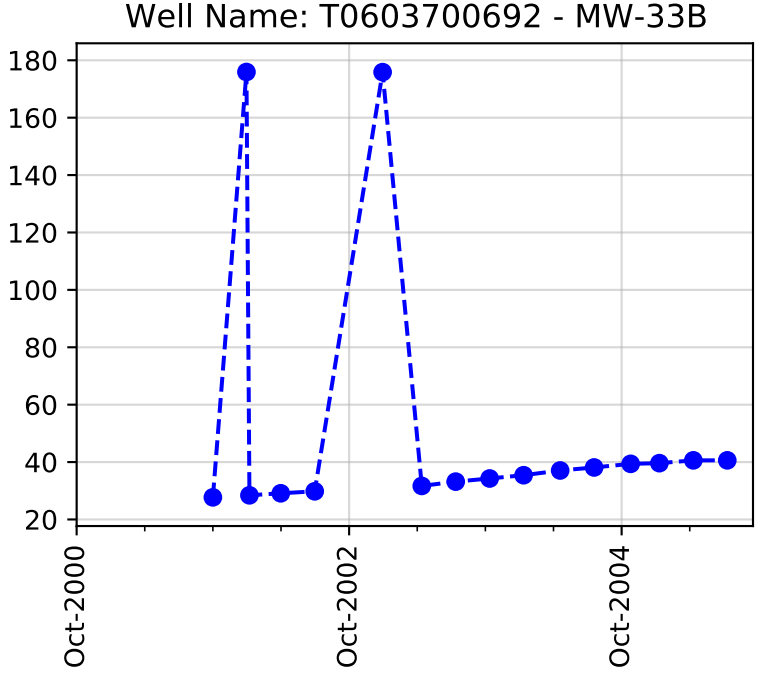

Well Name: T0603700692 - MW-26B
Groundwater Elevation (ft. msl)
220
200
180
160
140
120
100
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

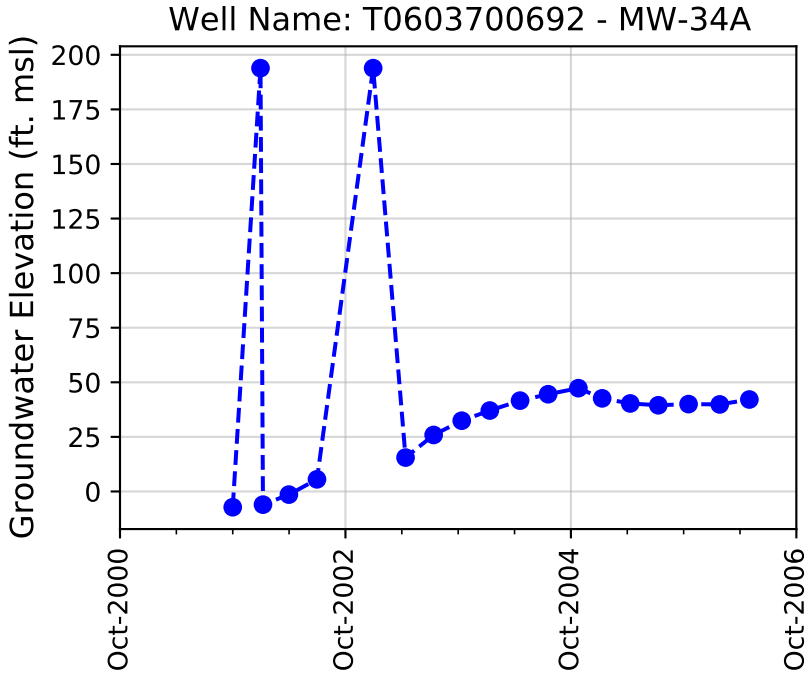

Well Name: T0603700692 - MW-27BR
140
120
100
80
60
40
20
0
Oct-2000
Oct-2002
Oct-2004
Oct-2006

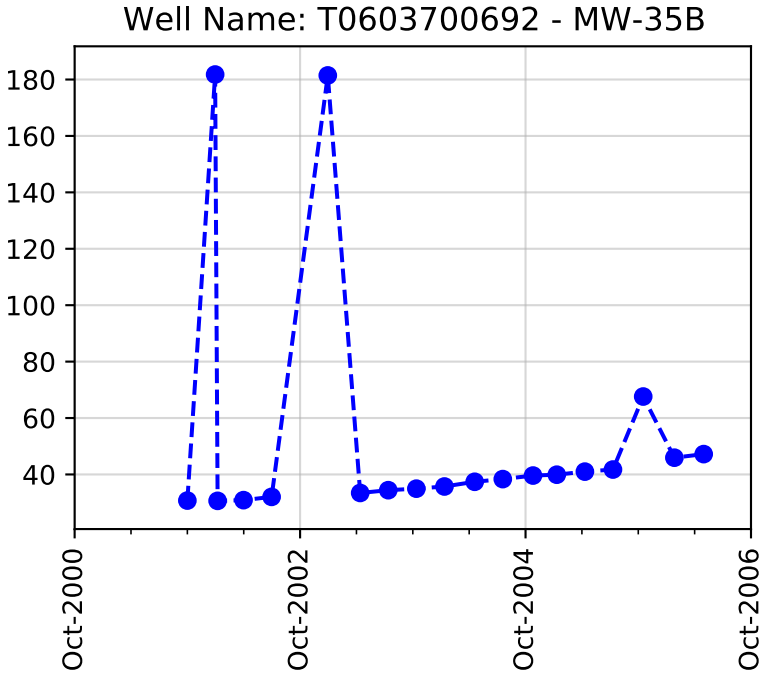

Well Name: T0603700692 - MW-28B
Groundwater Elevation (ft. msl)
140
130
120
110
100
90
80
Oct-2000
Oct-2002
Oct-2004

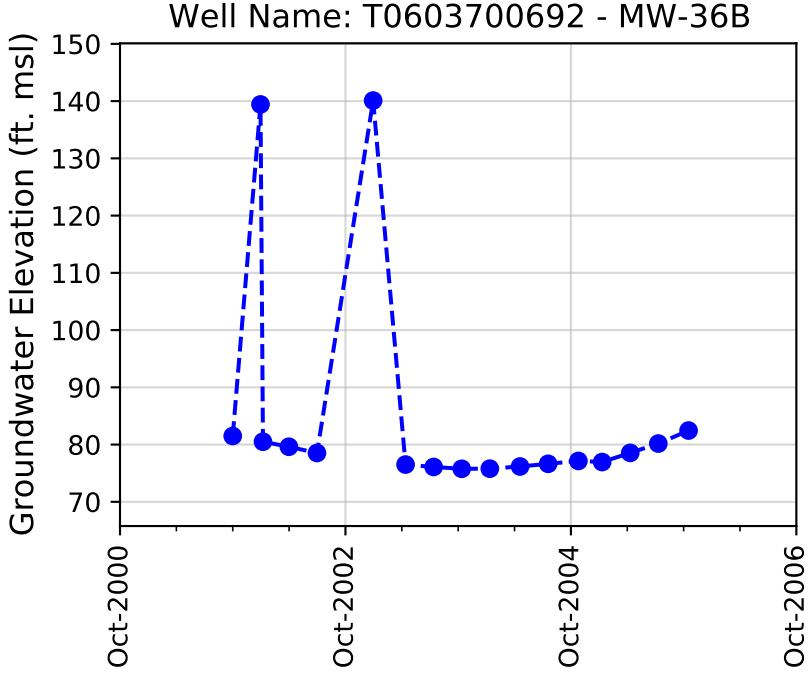

Well Name: T0603700692 - MW-29B
135
130
125
120
115
110
105
100
Oct-2000
Oct-2002
Oct-2004

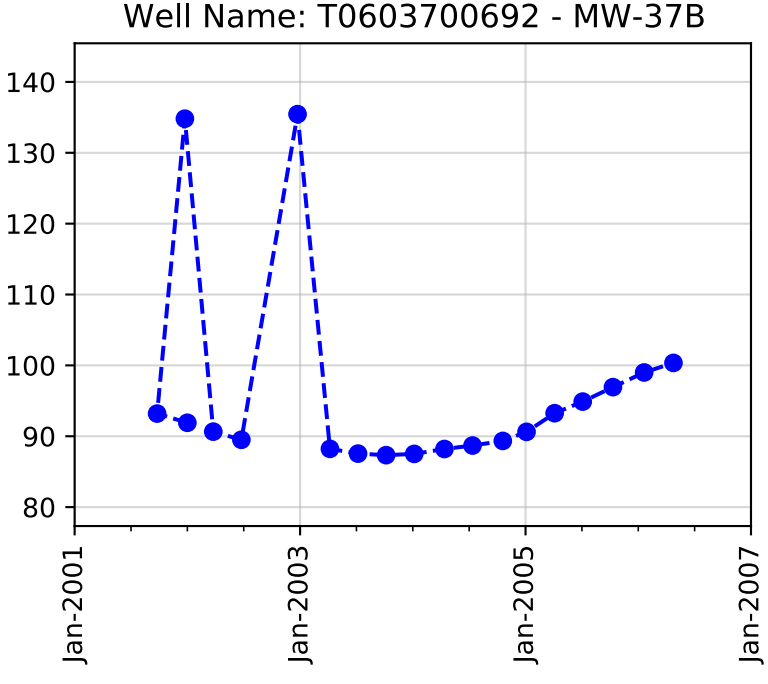

Well Name: T0603700692 - MW-32B
Groundwater Elevation (ft. msl)
180
160
140
120
100
80
60
40
20
Oct-2000
Oct-2002
Oct-2004
Oct-2006

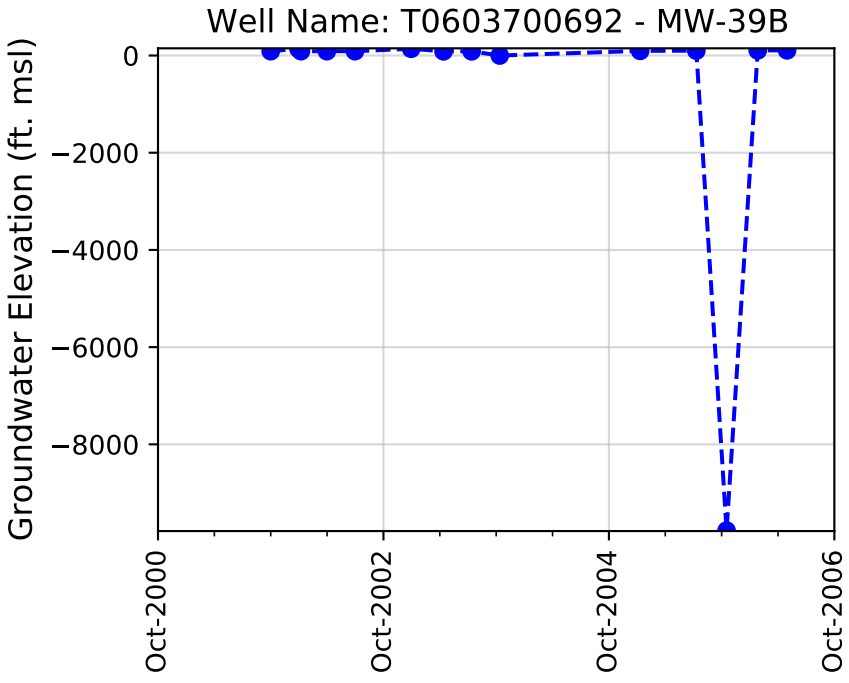

Well Name: T0603700692 - MW-33B
180
160
140
120
100
80
60
40
20
Oct-2000
Oct-2002
Oct-2004

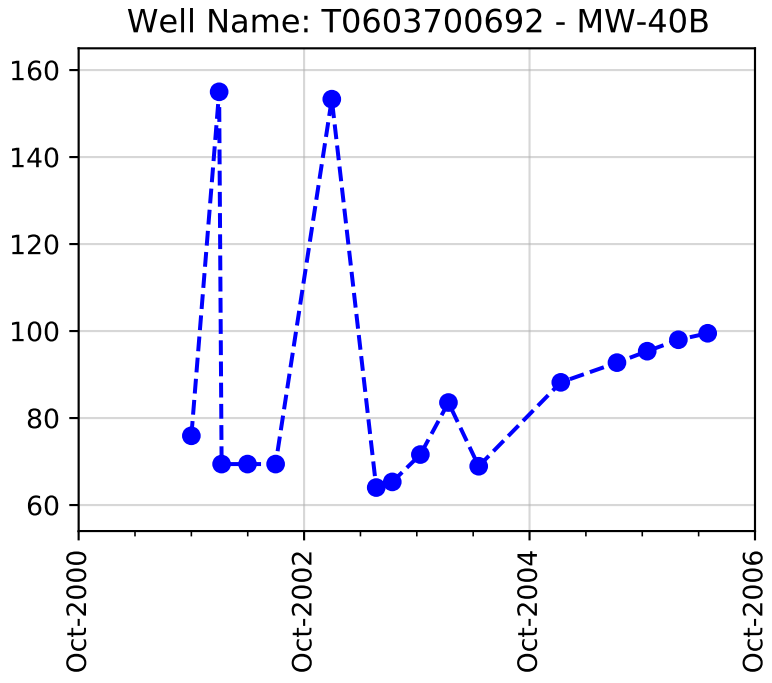

Well Name: T0603700692 - MW-34A
Groundwater Elevation (ft. msl)
200
175
150
125
100
75
50
25
0
Oct-2000
Oct-2002
Oct-2004
Oct-2006

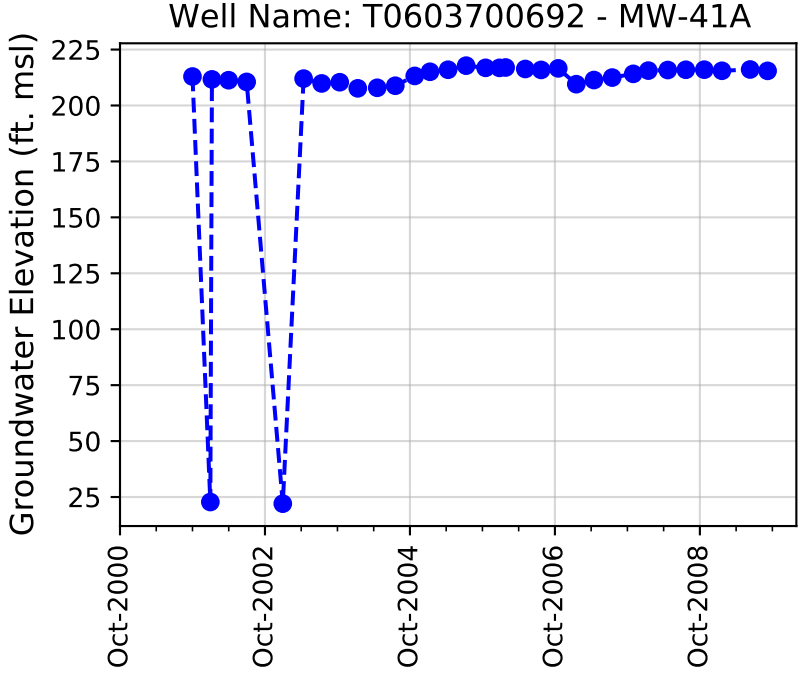

Well Name: T0603700692 - MW-35B
180
160
140
120
100
80
60
40
Oct-2000
Oct-2002
Oct-2004
Oct-2006

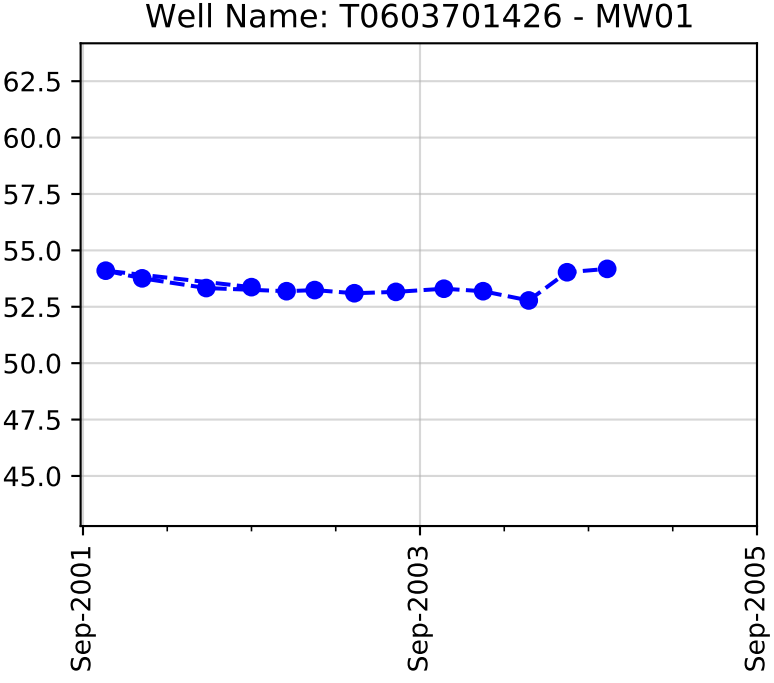

Well Name: T0603700692 - MW-36B
Groundwater Elevation (ft. msl)
150
140
130
120
110
100
90
80
70
Oct-2000
Oct-2002
Oct-2004
Oct-2006

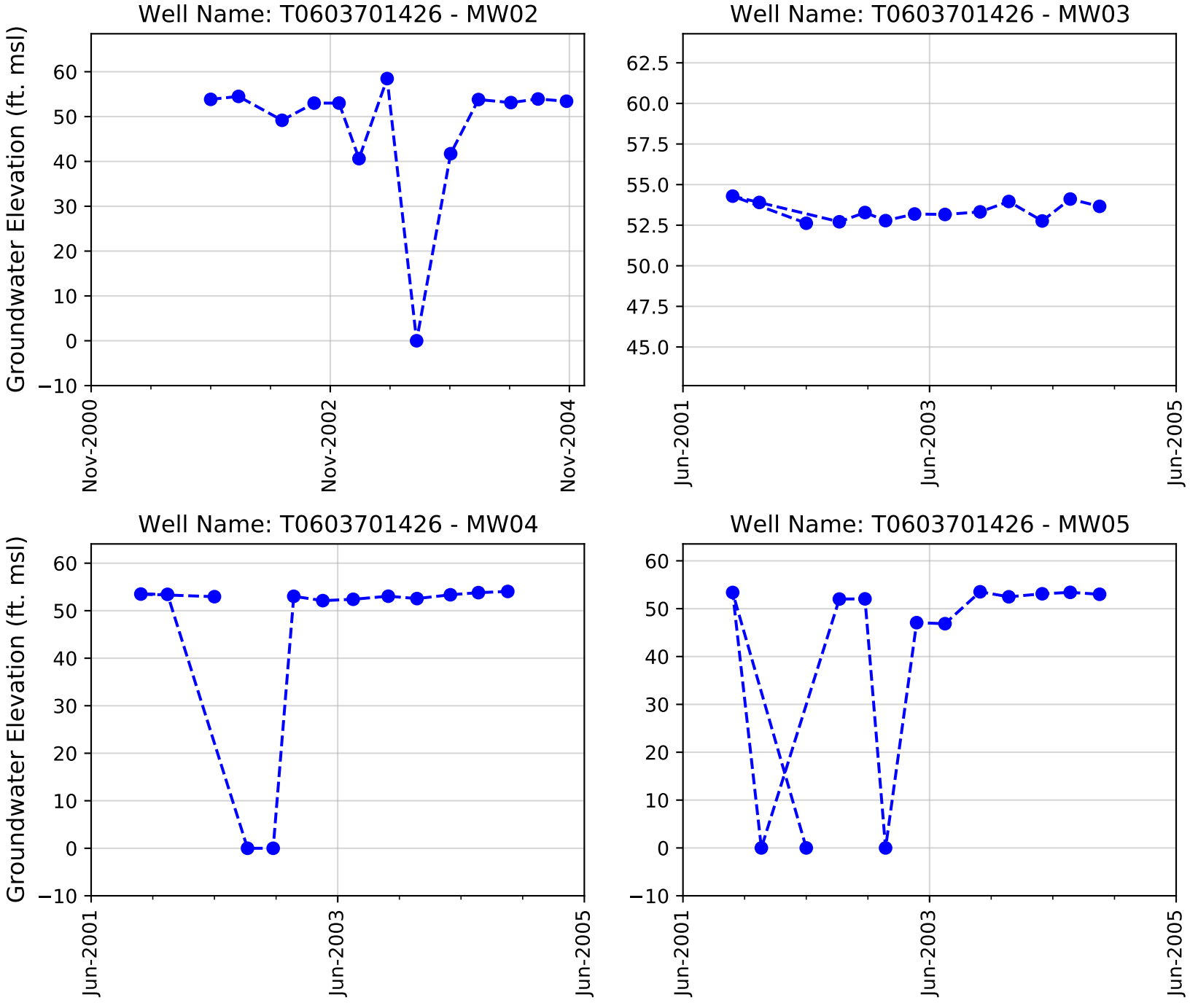

Well Name: T0603700692 - MW-37B
140
130
120
110
100
90
80
Jan-2001
Jan-2003
Jan-2005
Jan-2007

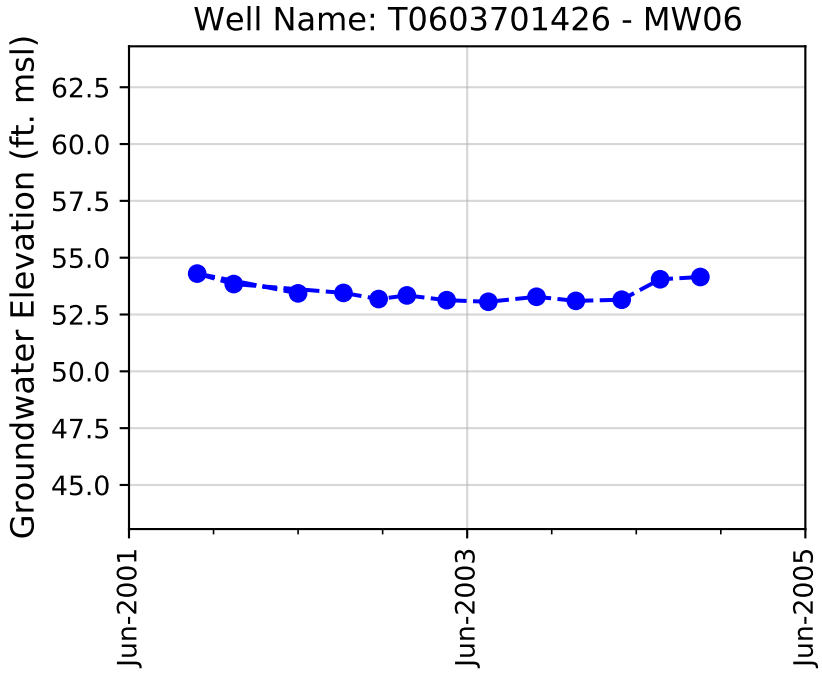

Well Name: T0603700692 - MW-39B
Groundwater Elevation (ft. msl)
0
−2000
−4000
−6000
−8000
Oct-2000
Oct-2002
Oct-2004
Oct-2006

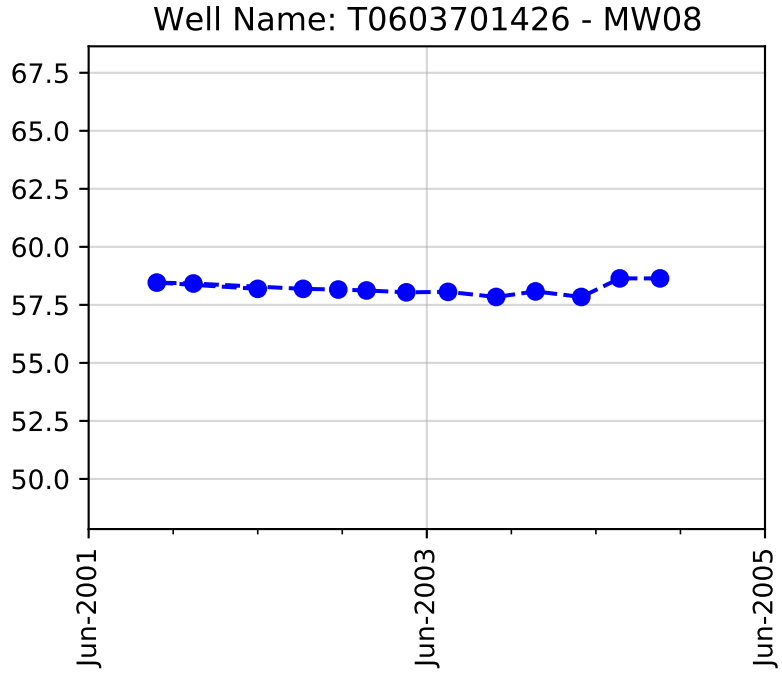

Well Name: T0603700692 - MW-40B
160
140
120
100
80
60
Oct-2000
Oct-2002
Oct-2004
Oct-2006

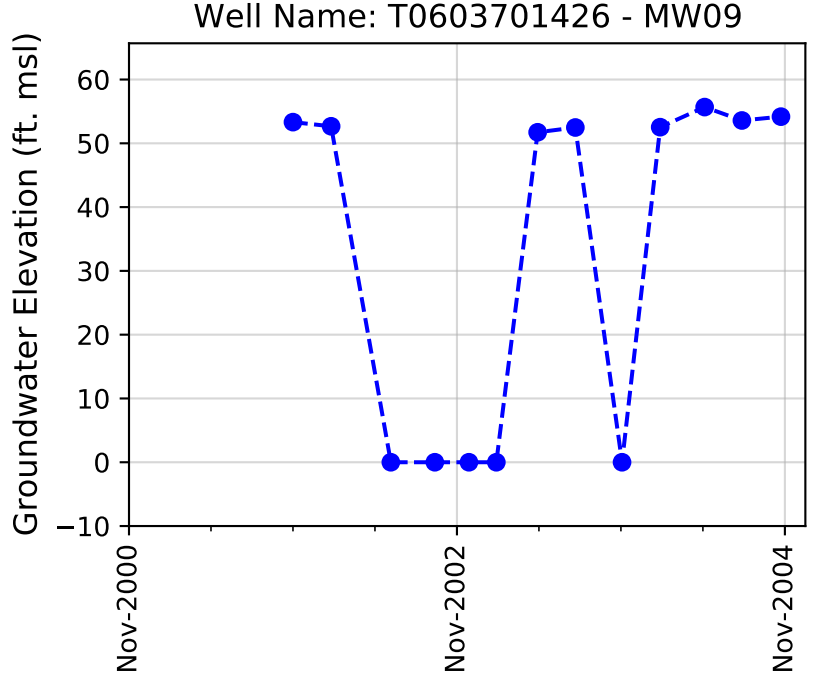

Well Name: T0603700692 - MW-41A
Groundwater Elevation (ft. msl)
225
200
175
150
125
100
75
50
25
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008

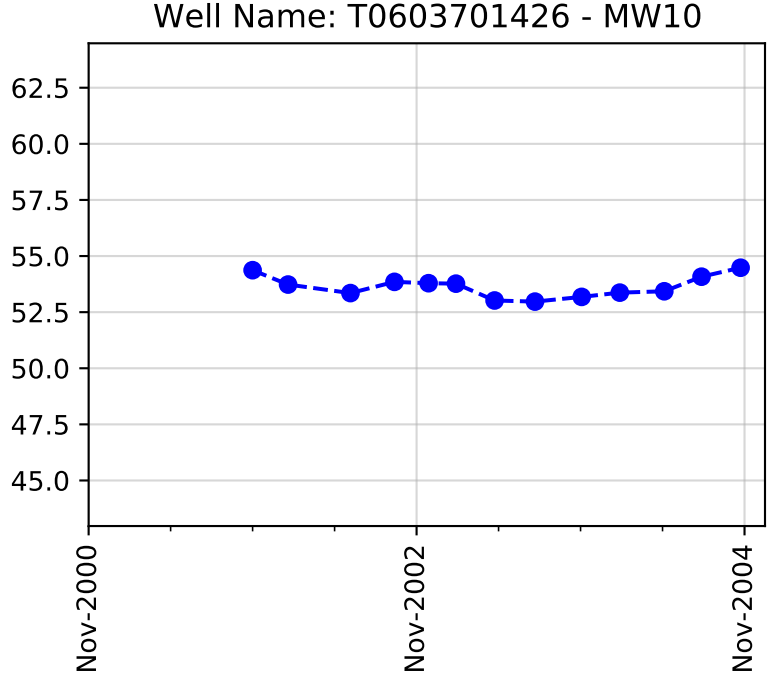

Well Name: T0603701426 - MW01
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Sep-2001
Sep-2003
Sep-2005

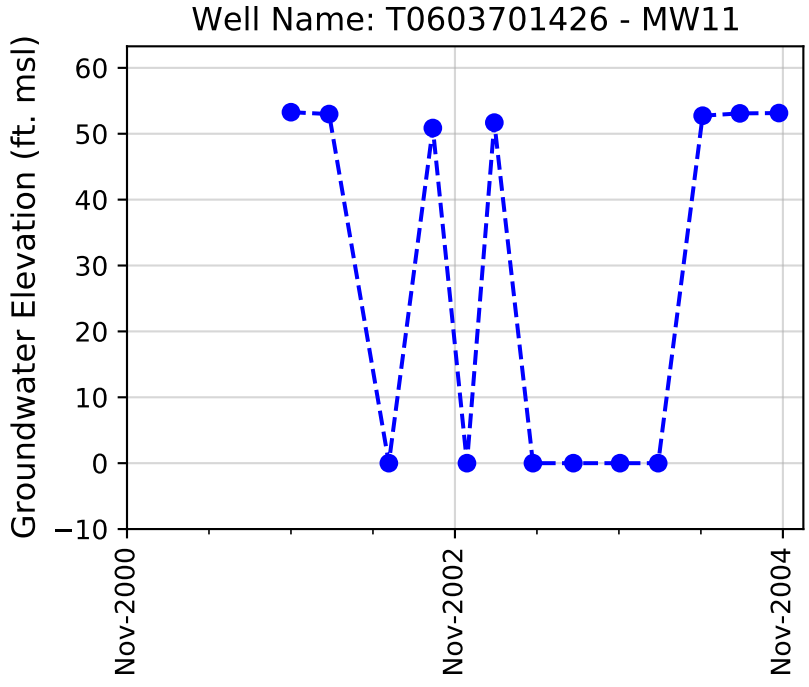

Well Name: T0603701426 - MW02
Groundwater Elevation (ft. msl)
60
50
40
30
20
10
0
−10
Nov-2000
Nov-2002
Nov-2004
Well Name: T0603701426 - MW03
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Jun-2001
Jun-2003
Jun-2005
Well Name: T0603701426 - MW04
Groundwater Elevation (ft. msl)
60
50
40
30
20
10
0
−10
Jun-2001
Jun-2003
Jun-2005
Well Name: T0603701426 - MW05
60
50
40
30
20
10
0
−10
Jun-2001
Jun-2003
Jun-2005

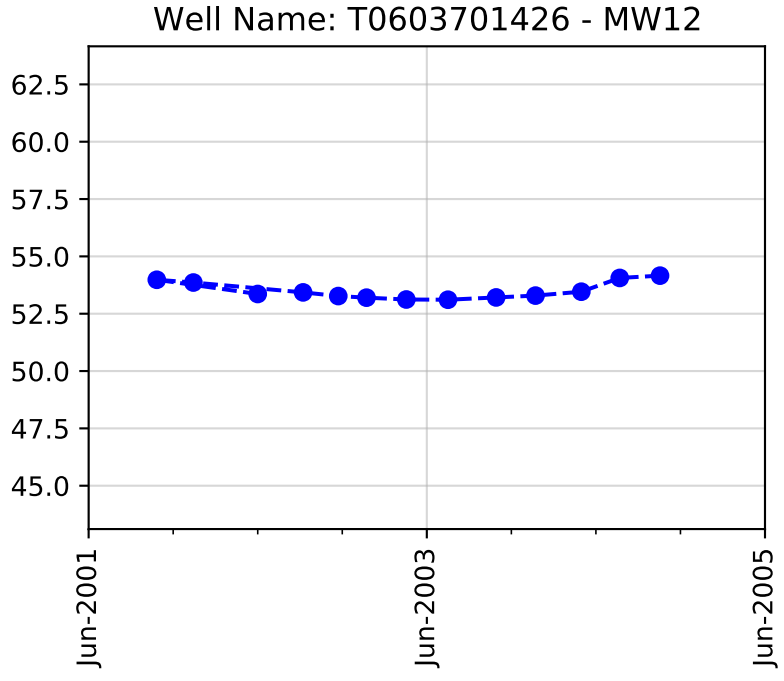

Well Name: T0603701426 - MW06
Groundwater Elevation (ft. msl)
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Jun-2001
Jun-2003
Jun-2005

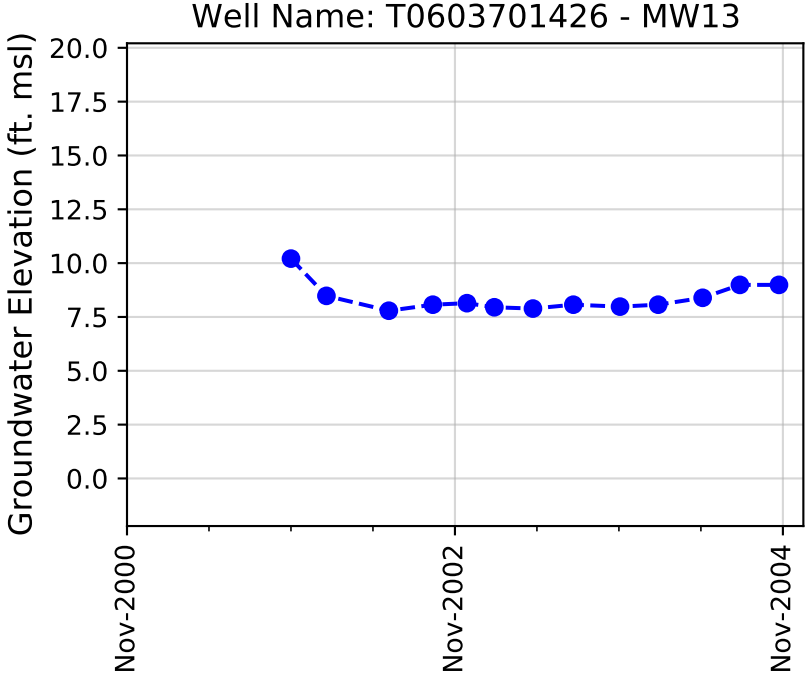

Well Name: T0603701426 - MW08
67.5
65.0
62.5
60.0
57.5
55.0
52.5
50.0
Jun-2001
Jun-2003
Jun-2005

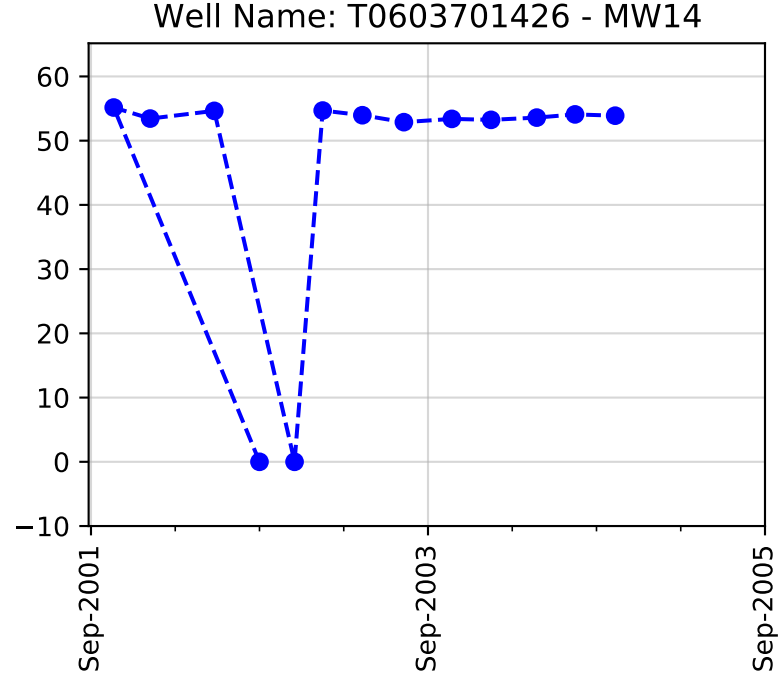

Well Name: T0603701426 - MW09
Groundwater Elevation (ft. msl)
60
50
40
30
20
10
0
−10
Nov-2000
Nov-2002
Nov-2004

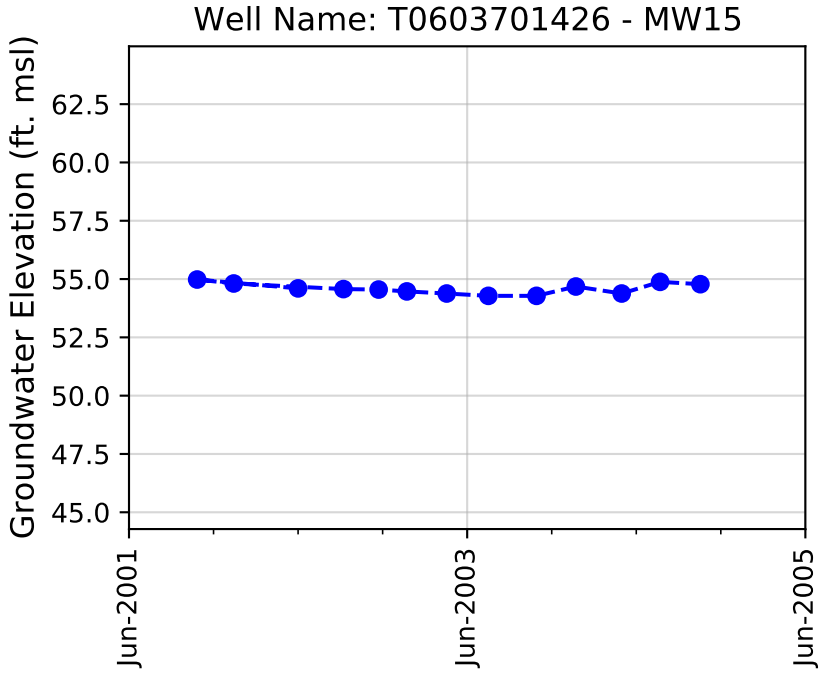

Well Name: T0603701426 - MW10
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Nov-2000
Nov-2002
Nov-2004

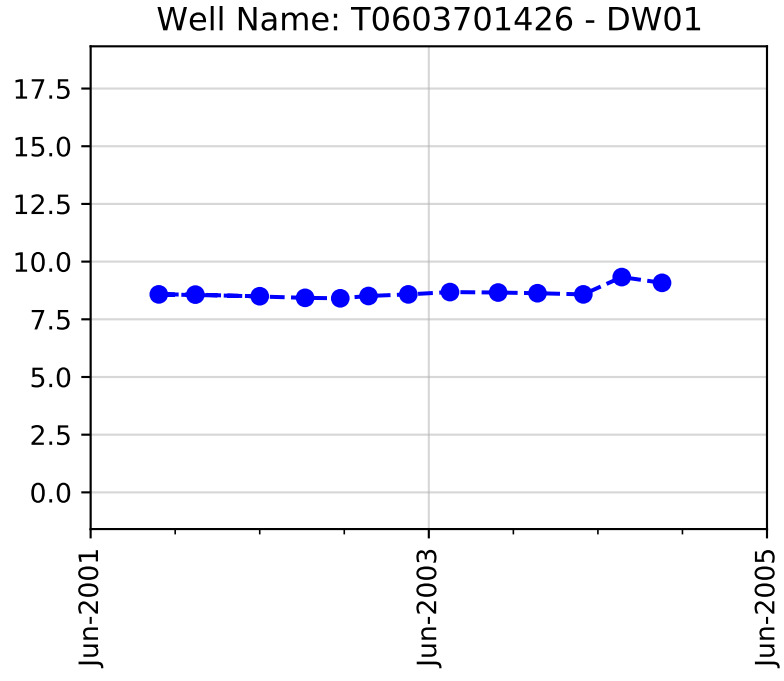

Well Name: T0603701426 - MW11
Groundwater Elevation (ft. msl)
60
50
40
30
20
10
0
−10
Nov-2000
Nov-2002
Nov-2004

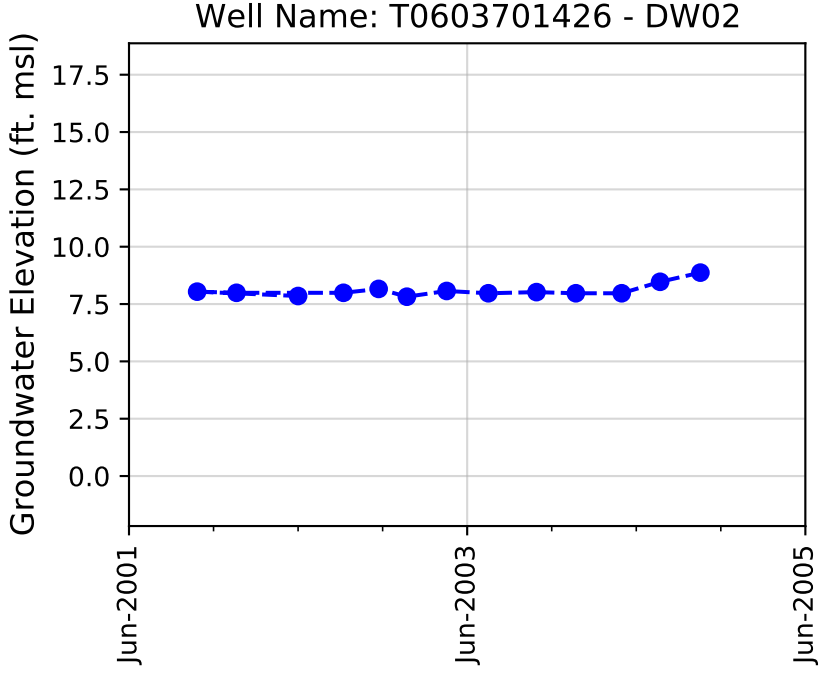

Well Name: T0603701426 - MW12
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Jun-2001
Jun-2003
Jun-2005

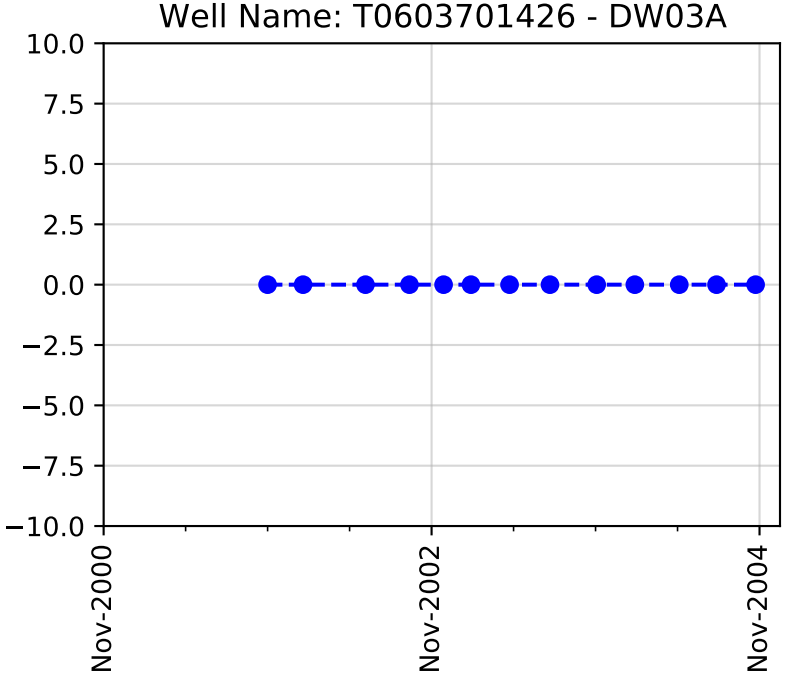

Well Name: T0603701426 - MW13
Groundwater Elevation (ft. msl)
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Nov-2000
Nov-2002
Nov-2004

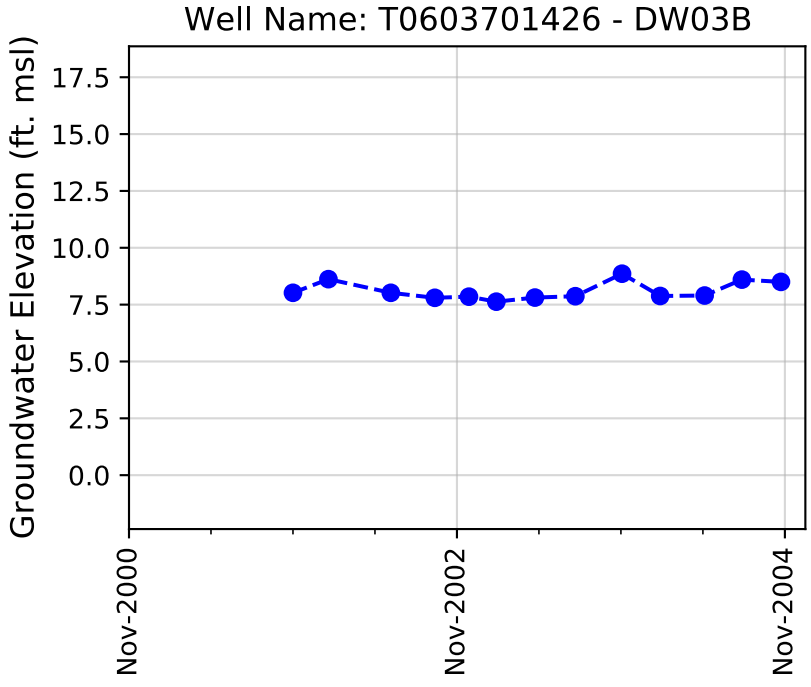

Well Name: T0603701426 - MW14
60
50
40
30
20
10
0
−10
Sep-2001
Sep-2003
Sep-2005

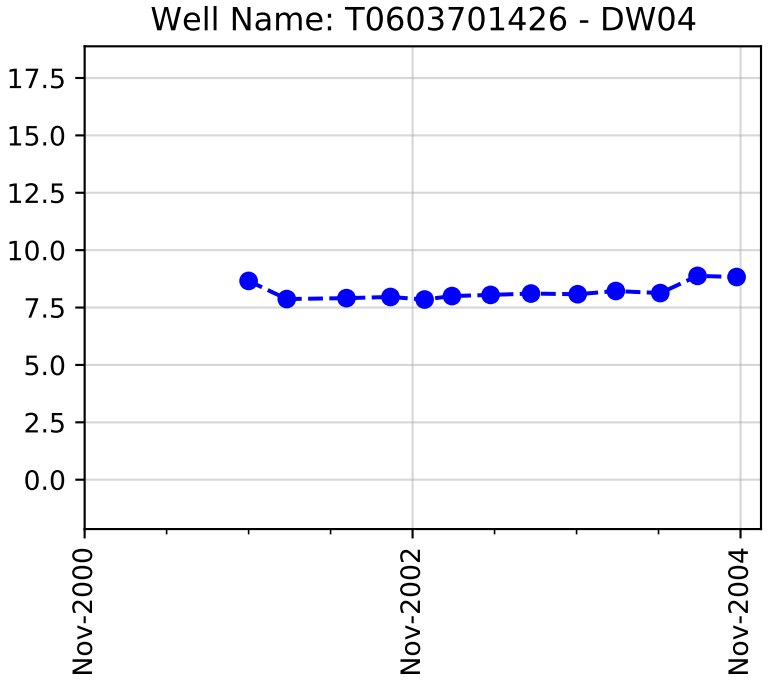

Well Name: T0603701426 - MW15
Groundwater Elevation (ft. msl)
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
Jun-2001
Jun-2003
Jun-2005

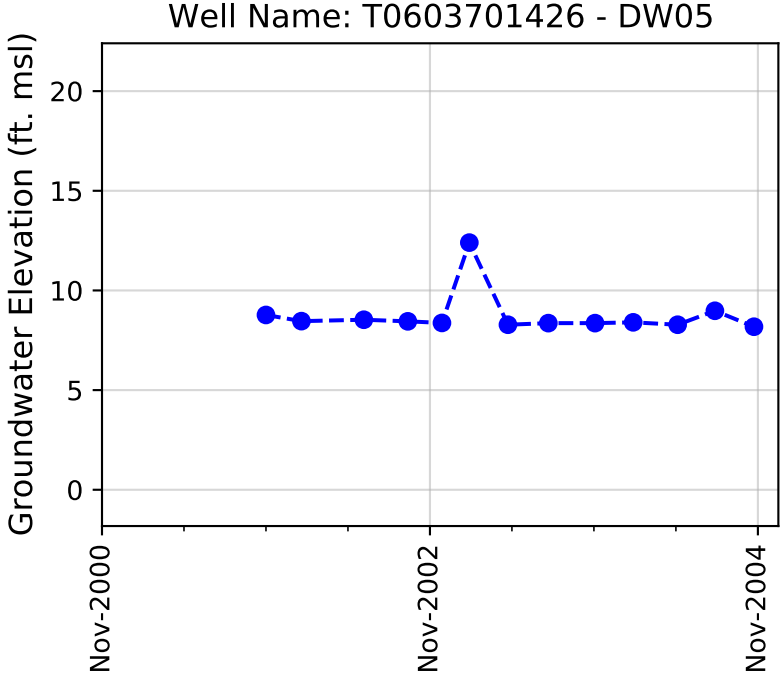

Well Name: T0603701426 - DW01
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Jun-2001
Jun-2003
Jun-2005

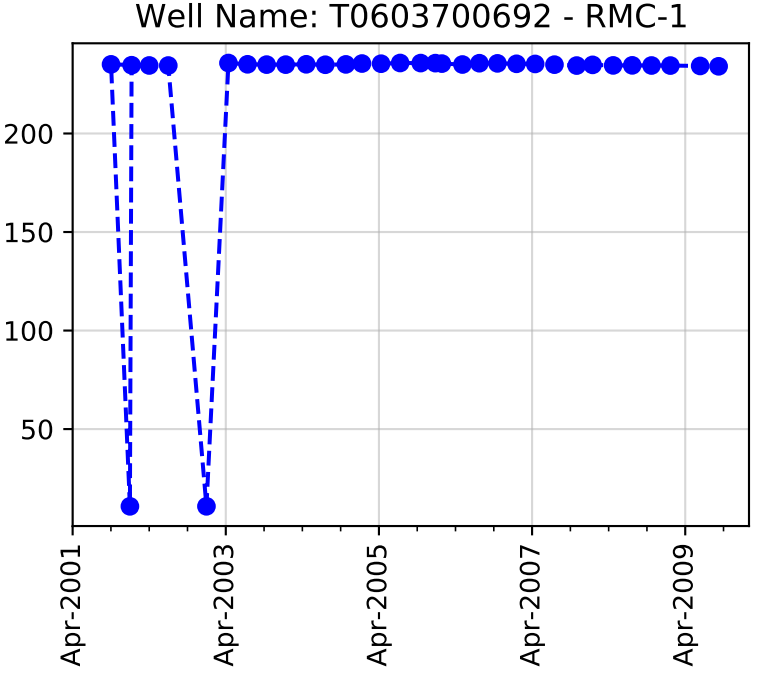

Well Name: T0603701426 - DW02
Groundwater Elevation (ft. msl)
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Jun-2001
Jun-2003
Jun-2005

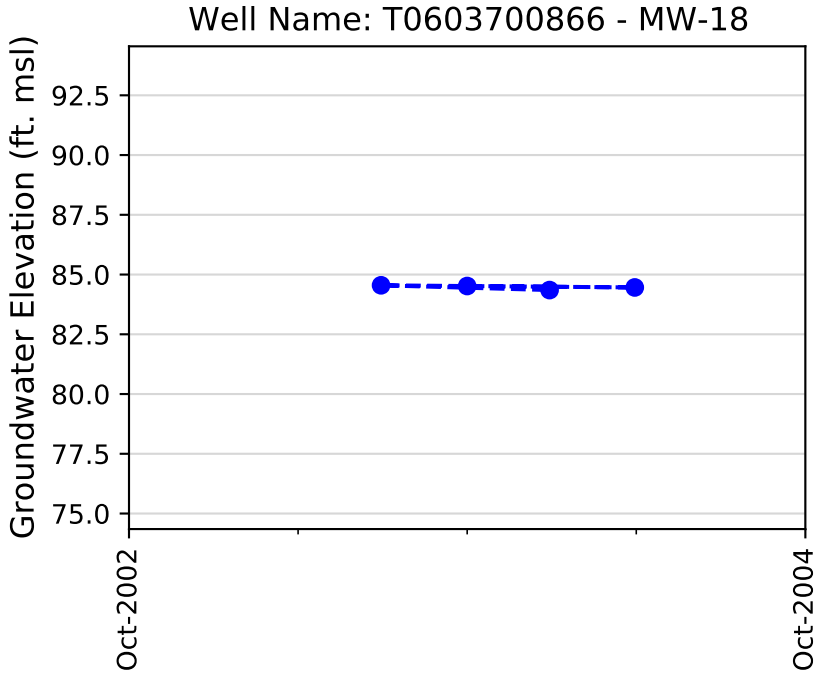

Well Name: T0603701426 - DW03A
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
Nov-2000
Nov-2002
Nov-2004

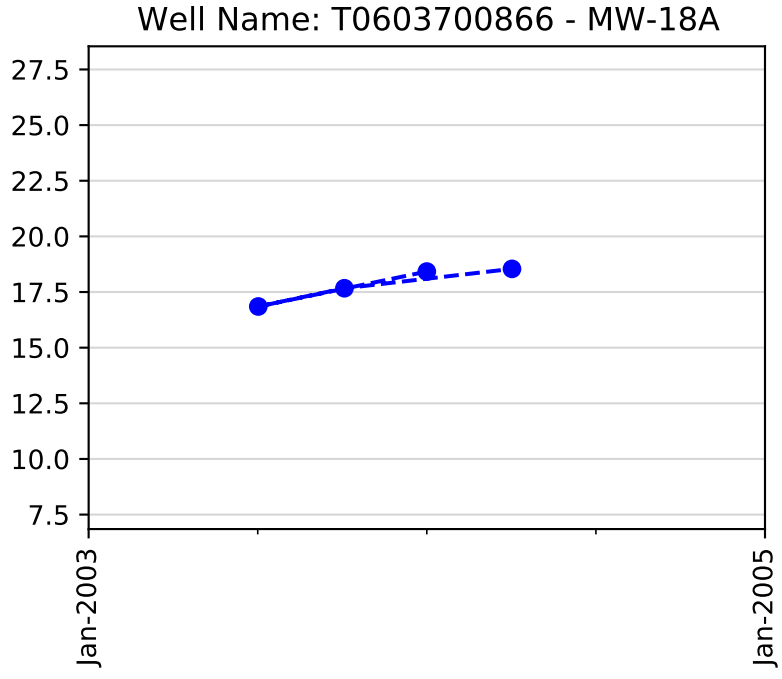

Well Name: T0603701426 - DW03B
Groundwater Elevation (ft. msl)
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Nov-2000
Nov-2002
Nov-2004

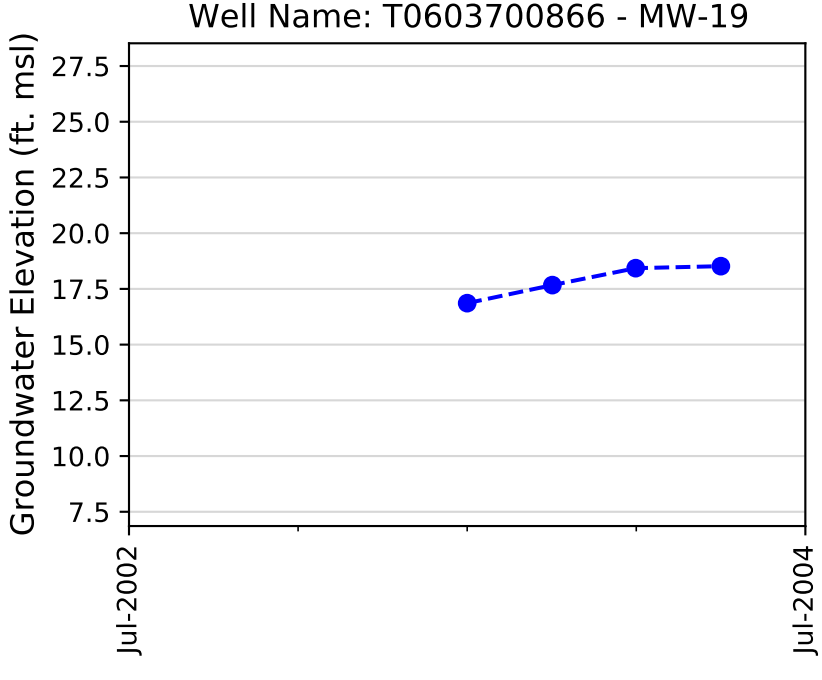

Well Name: T0603701426 - DW04
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Nov-2000
Nov-2002
Nov-2004

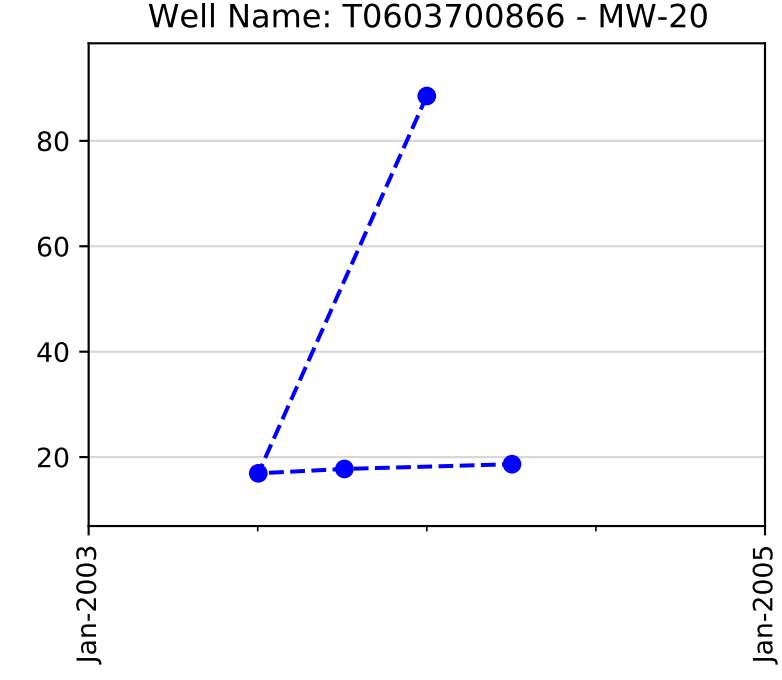

Well Name: T0603701426 - DW05
Groundwater Elevation (ft. msl)
20
15
10
5
0
Nov-2000
Nov-2002
Nov-2004

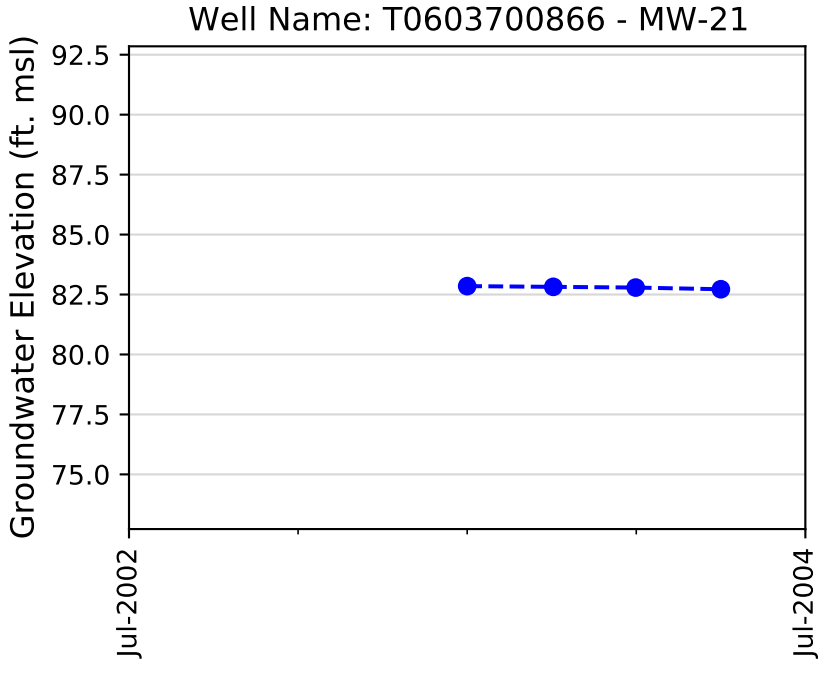

Well Name: T0603700692 - RMC-1
200
150
100
50
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009

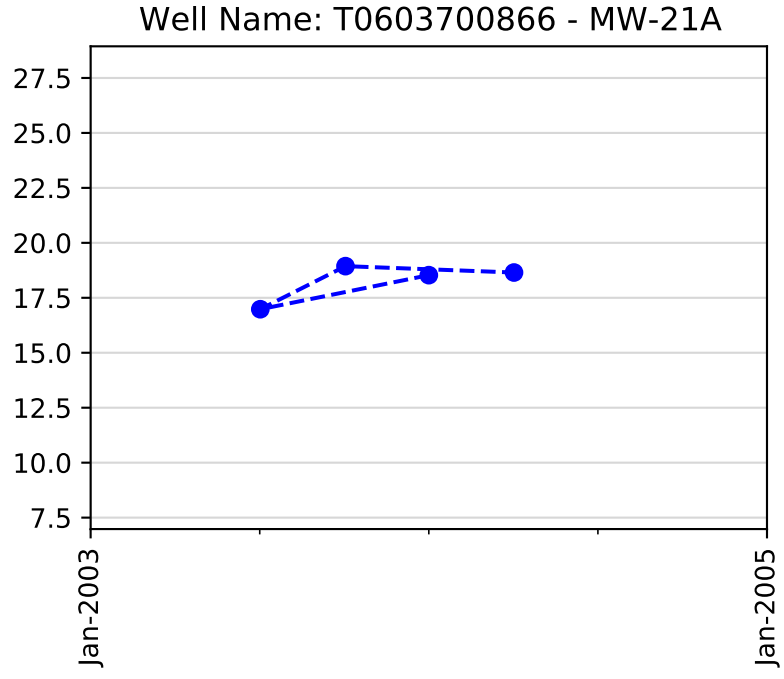

Well Name: T0603700866 - MW-18
Groundwater Elevation (ft. msl)
92.5
90.0
87.5
85.0
82.5
80.0
77.5
75.0
Oct-2002
Oct-2004

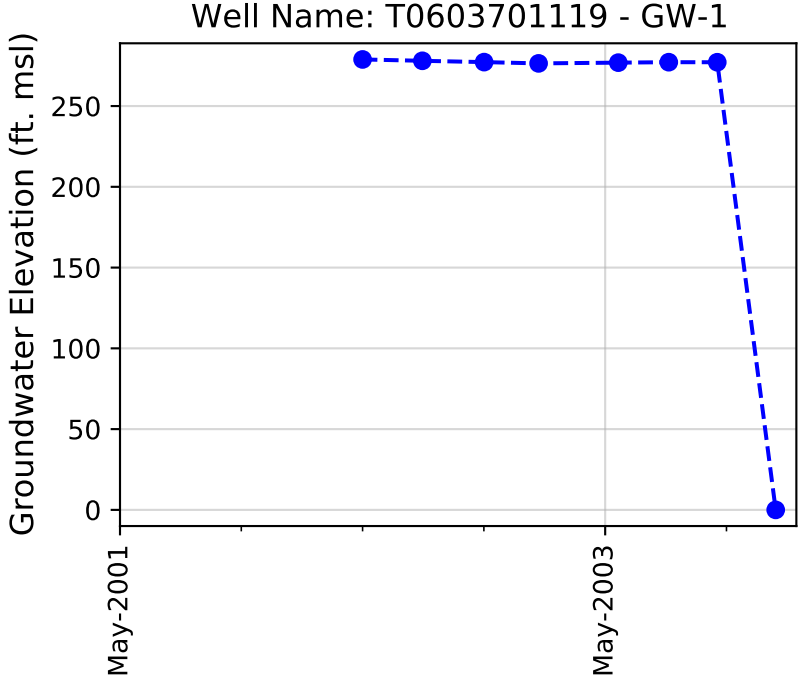

Well Name: T0603700866 - MW-18A
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
Jan-2003
Jan-2005

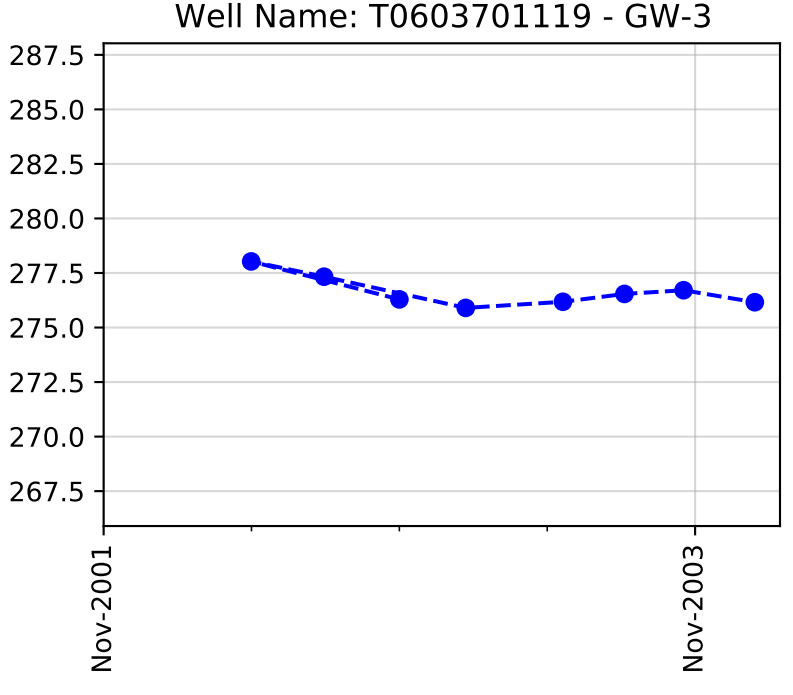

Well Name: T0603700866 - MW-19
Groundwater Elevation (ft. msl)
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
Jul-2002
Jul-2004

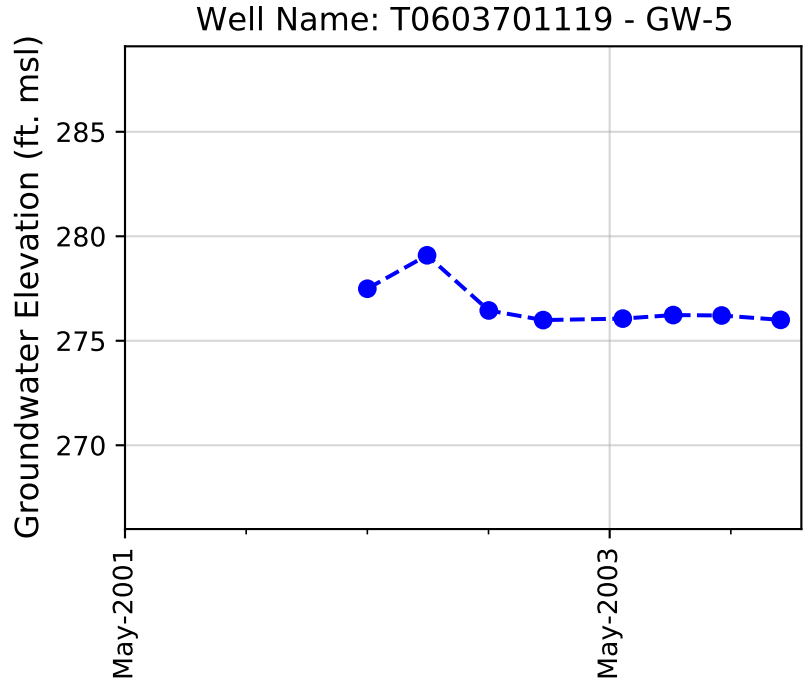

Well Name: T0603700866 - MW-20
80
60
40
20
Jan-2003
Jan-2005

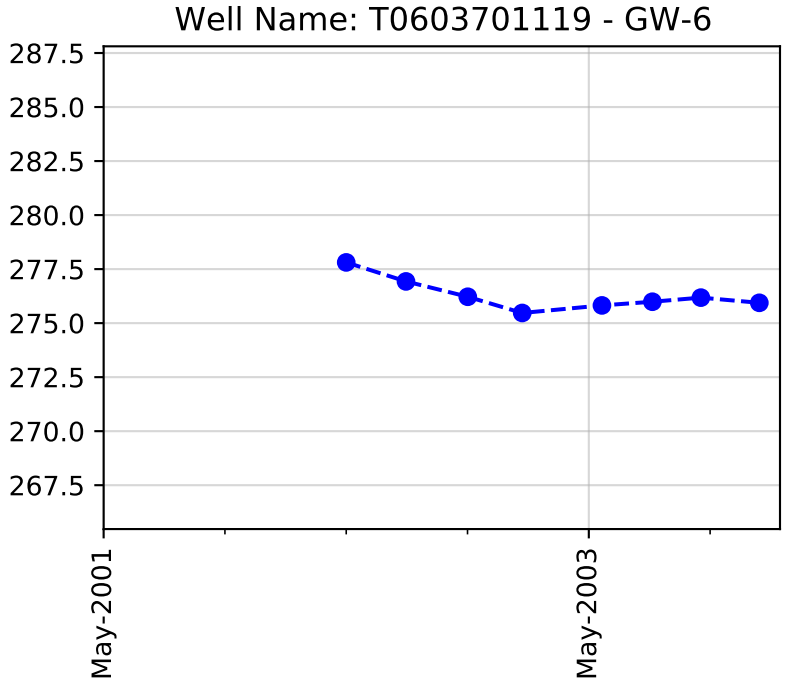

Well Name: T0603700866 - MW-21
Groundwater Elevation (ft. msl)
92.5
90.0
87.5
85.0
82.5
80.0
77.5
75.0
Jul-2002
Jul-2004

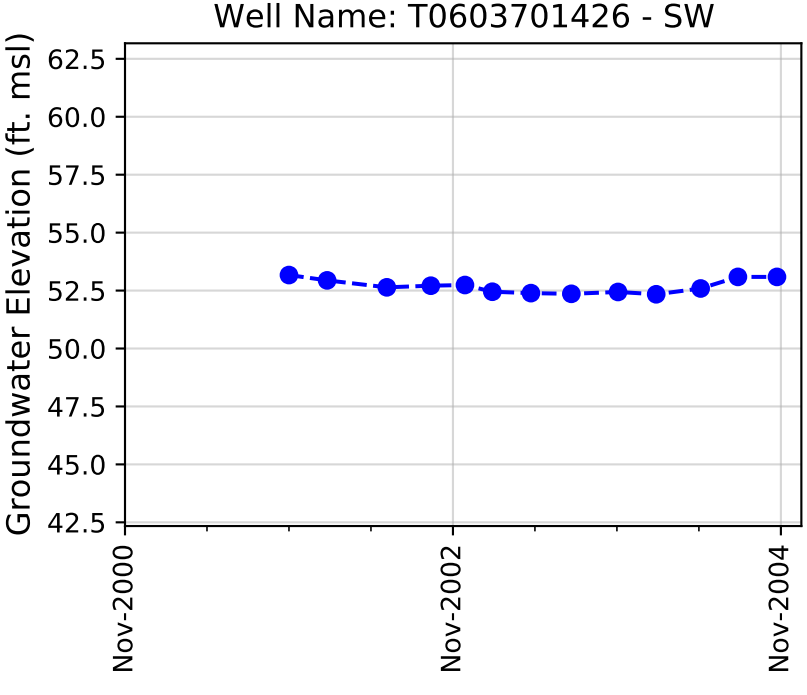

Well Name: T0603700866 - MW-21A
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
Jan-2003
Jan-2005

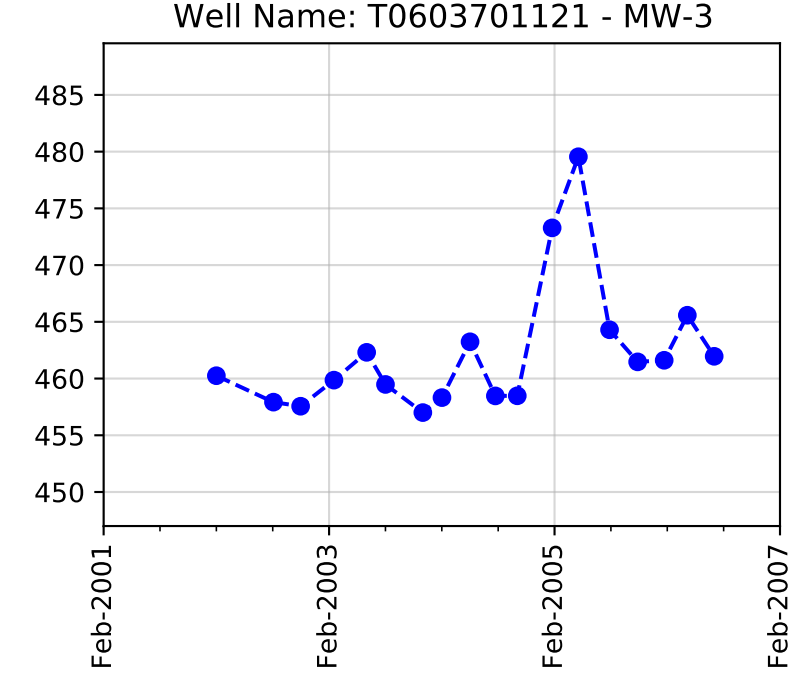

Well Name: T0603701119 - GW-1
Groundwater Elevation (ft. msl)
250
200
150
100
50
0
May-2001
May-2003

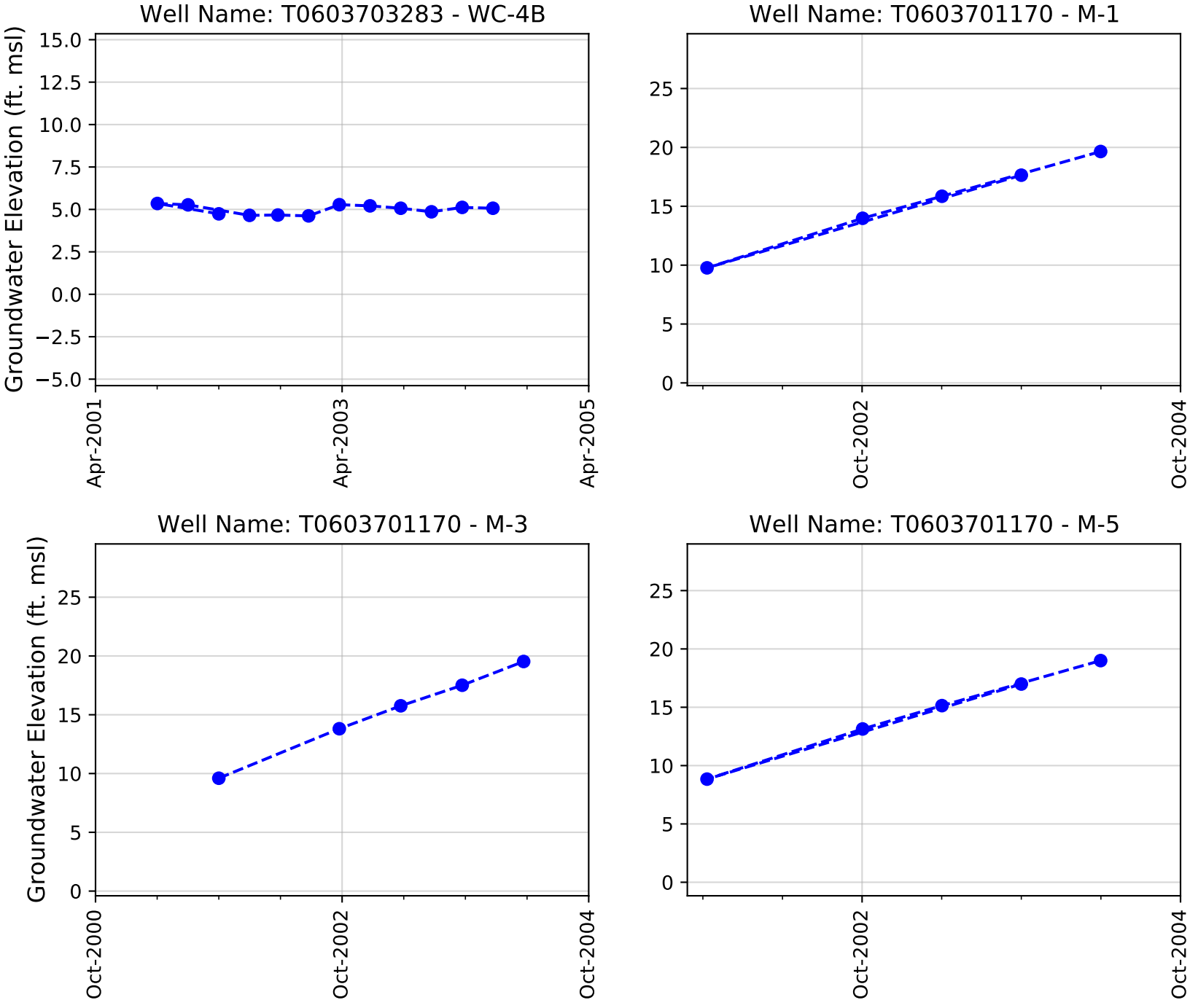

Well Name: T0603701119 - GW-3
287.5
285.0
282.5
280.0
277.5
275.0
272.5
270.0
267.5
Nov-2001
Nov-2003

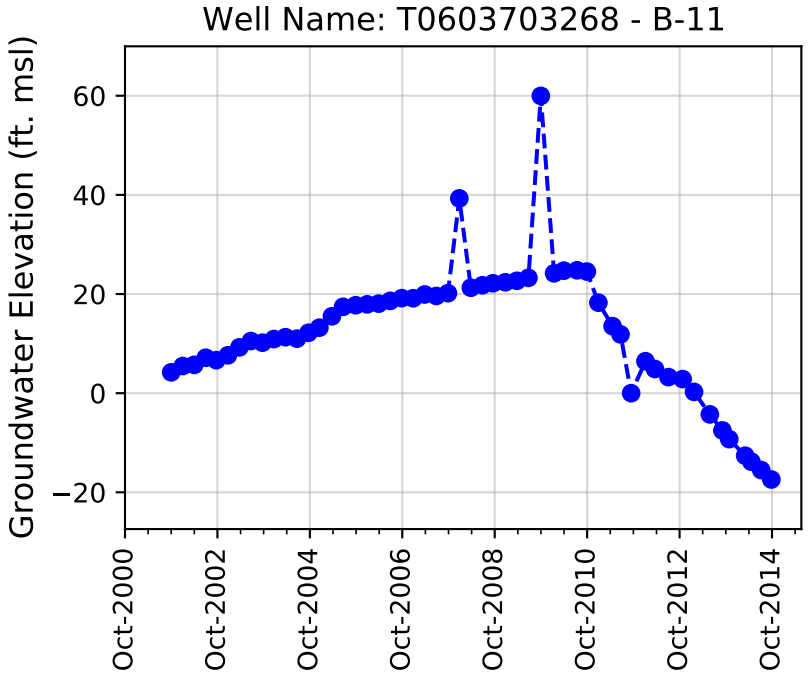

Well Name: T0603701119 - GW-5
Groundwater Elevation (ft. msl)
285
280
275
270
May-2001
May-2003

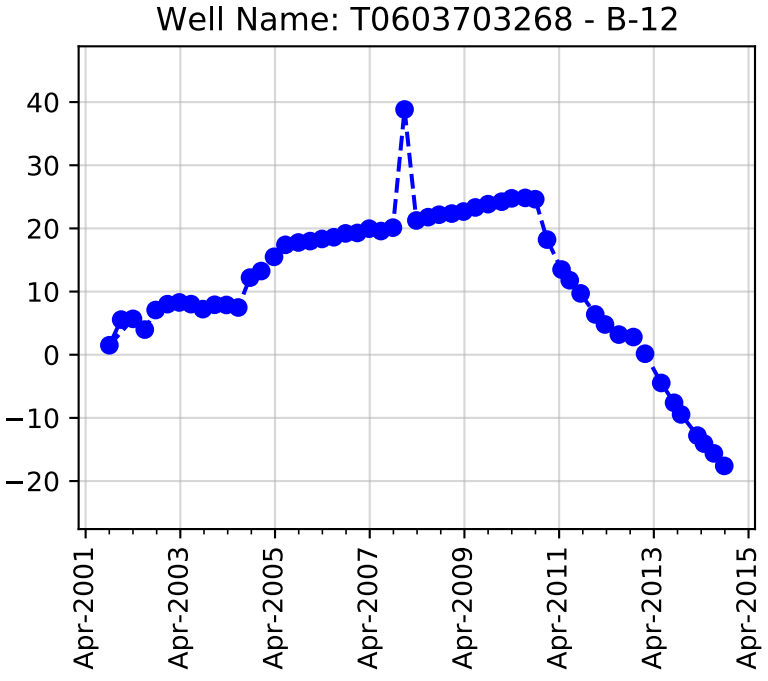

Well Name: T0603701119 - GW-6
287.5
285.0
282.5
280.0
277.5
275.0
272.5
270.0
267.5
May-2001
May-2003

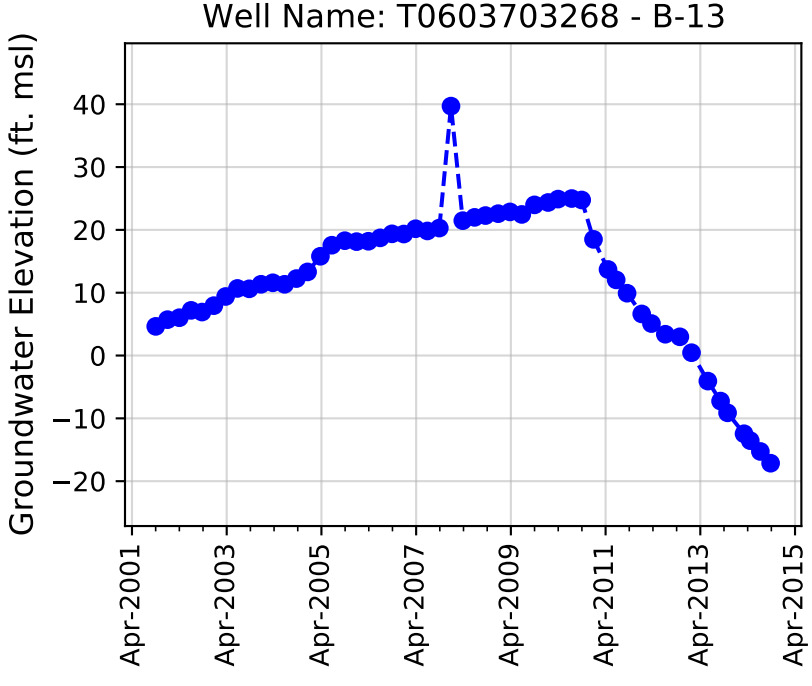

Well Name: T0603701426 - SW
Groundwater Elevation (ft. msl)
62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
42.5
Nov-2000
Nov-2002
Nov-2004

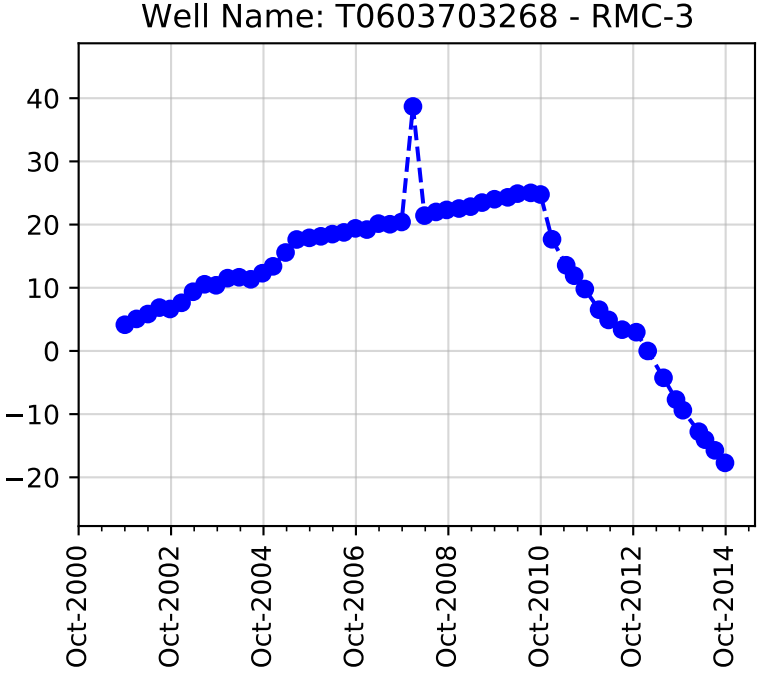

Well Name: T0603701121 - MW-3
485
480
475
470
465
460
455
450
Feb-2001
Feb-2003
Feb-2005
Feb-2007

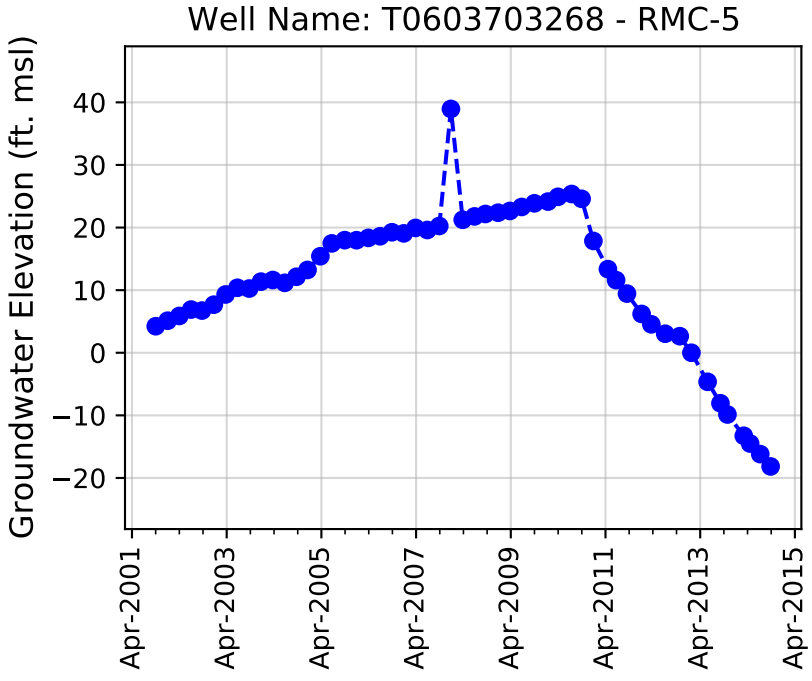

Well Name: T0603703283 - WC-4B
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Apr-2001
Apr-2003
Apr-2005
Well Name: T0603701170 - M-1
25
20
15
10
5
0
Oct-2002
Oct-2004
Well Name: T0603701170 - M-3
Groundwater Elevation (ft. msl)
25
20
15
10
5
0
Oct-2000
Oct-2002
Oct-2004
Well Name: T0603701170 - M-5
25
20
15
10
5
0
Oct-2002
Oct-2004

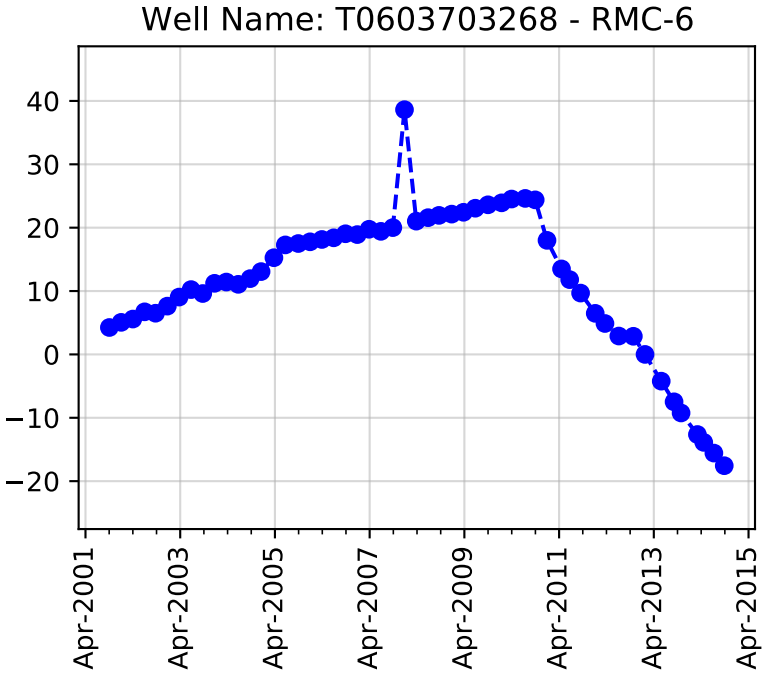

Well Name: T0603703268 - B-11
Groundwater Elevation (ft. msl)
60
40
20
0
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

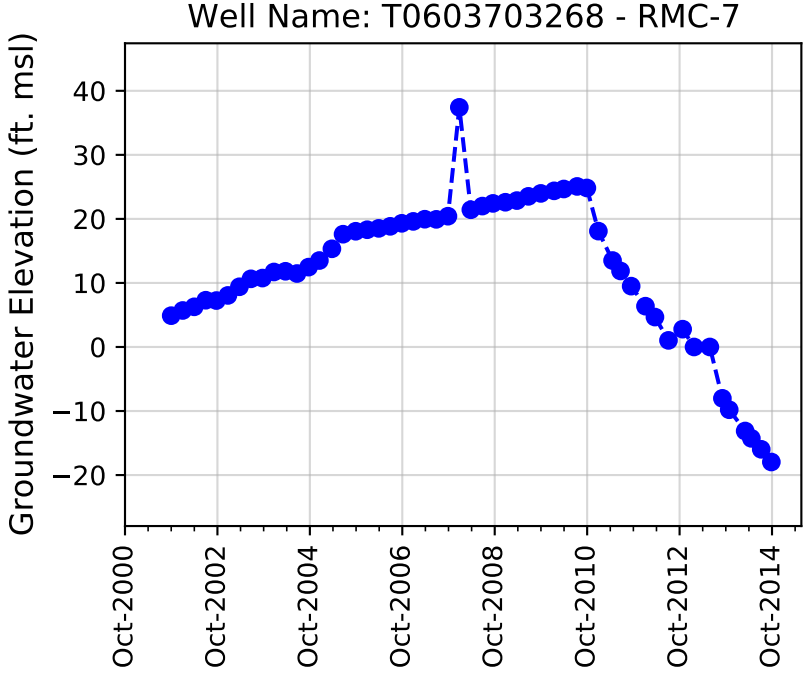

Well Name: T0603703268 - B-12
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015

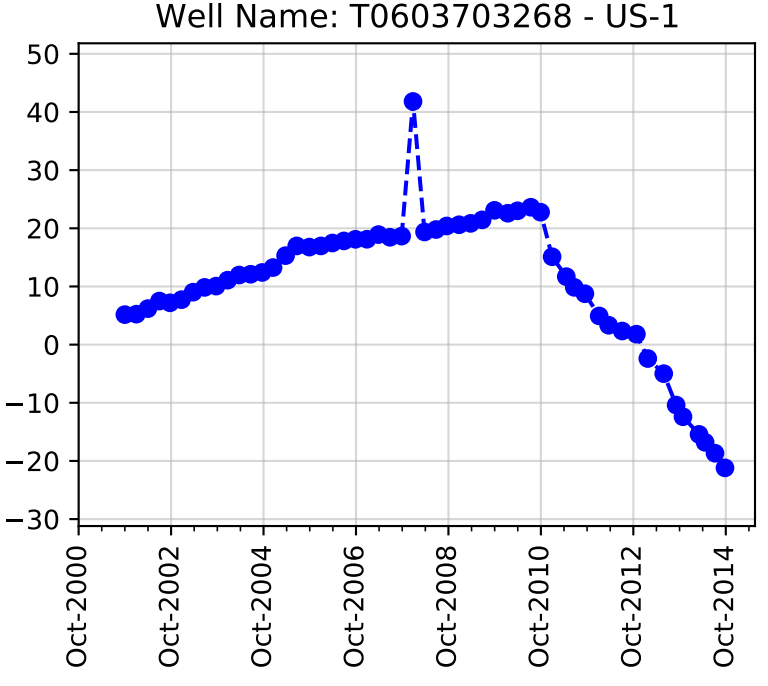

Well Name: T0603703268 - B-13
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015

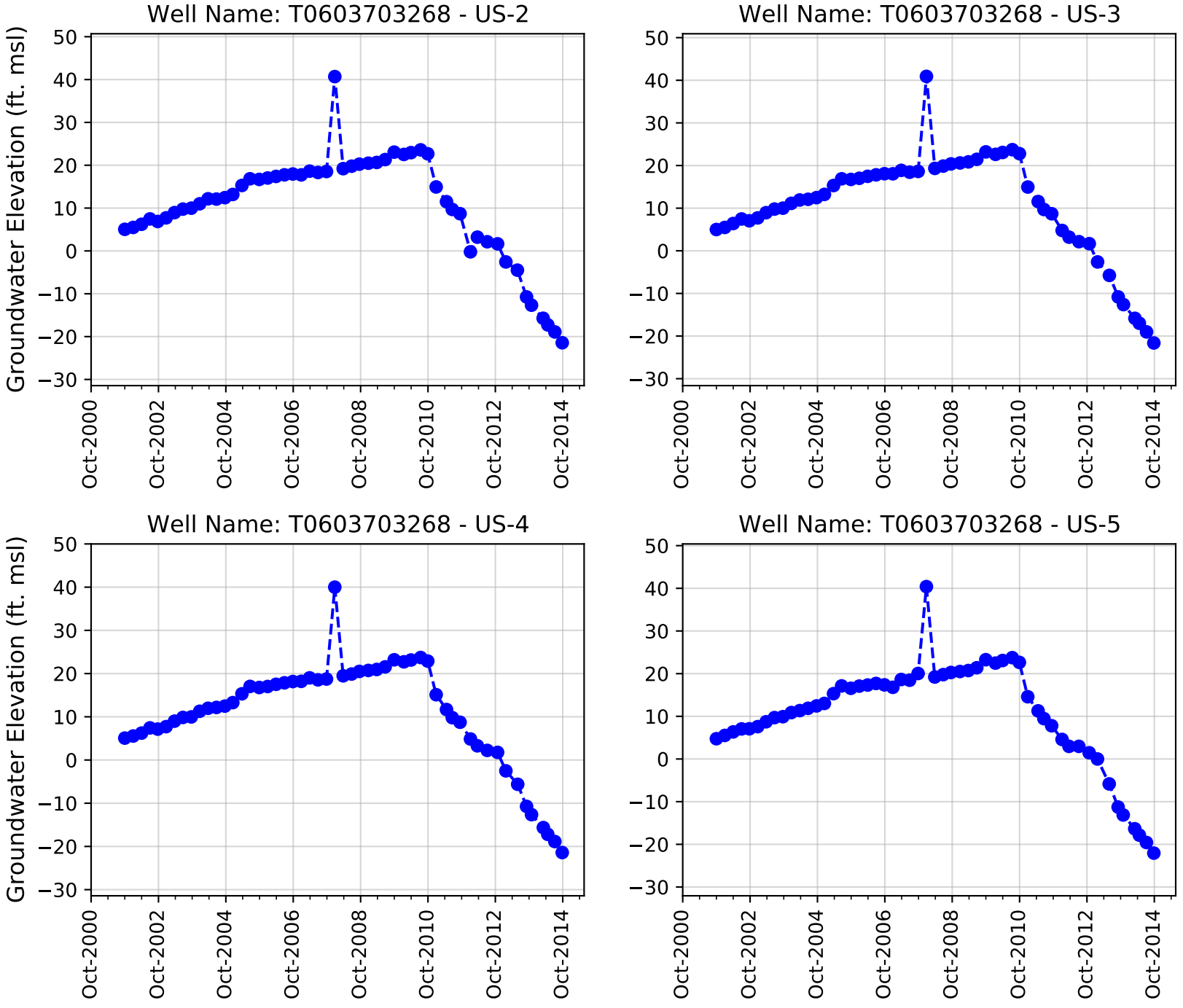

Well Name: T0603703268 - RMC-3
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

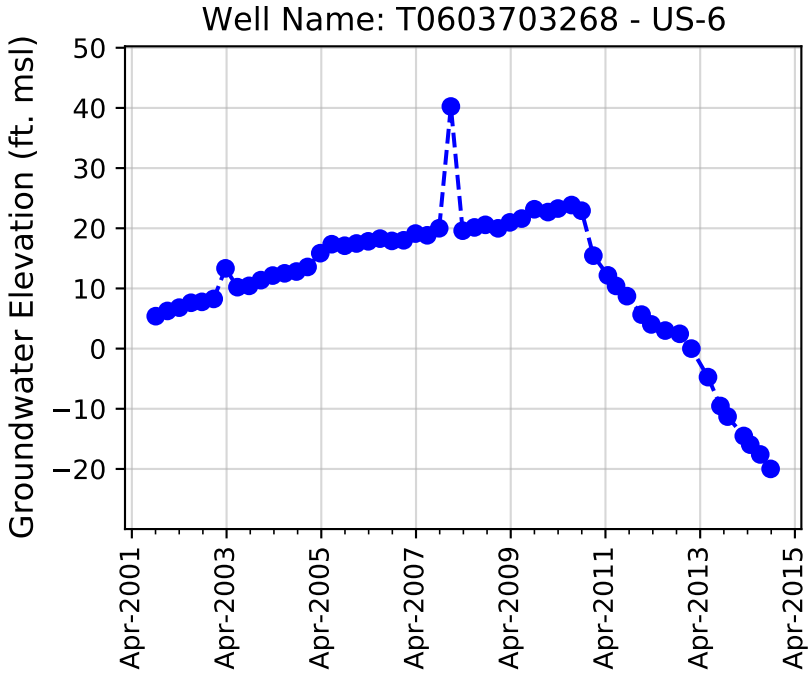

Well Name: T0603703268 - RMC-5
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015

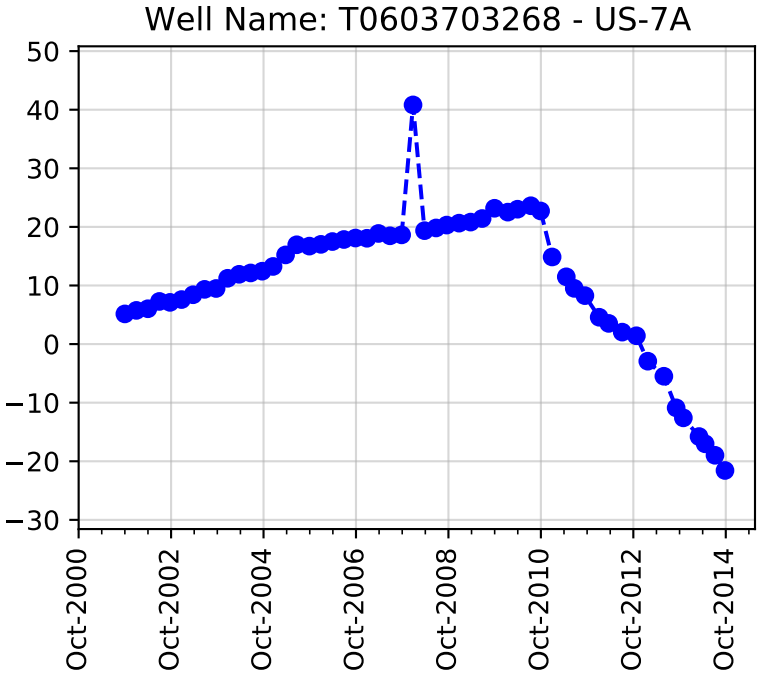

Well Name: T0603703268 - RMC-6
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015


Well Name: T0603703268 - RMC-7
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703268 - US-1
50
40
30
20
10
0
−10
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703268 - US-2
Well Name: T0603703268 - US-3
Well Name: T0603703268 - US-4
Well Name: T0603703268 - US-5
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
−10
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703268 - US-6
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015


Well Name: T0603703268 - US-7A
50
40
30
20
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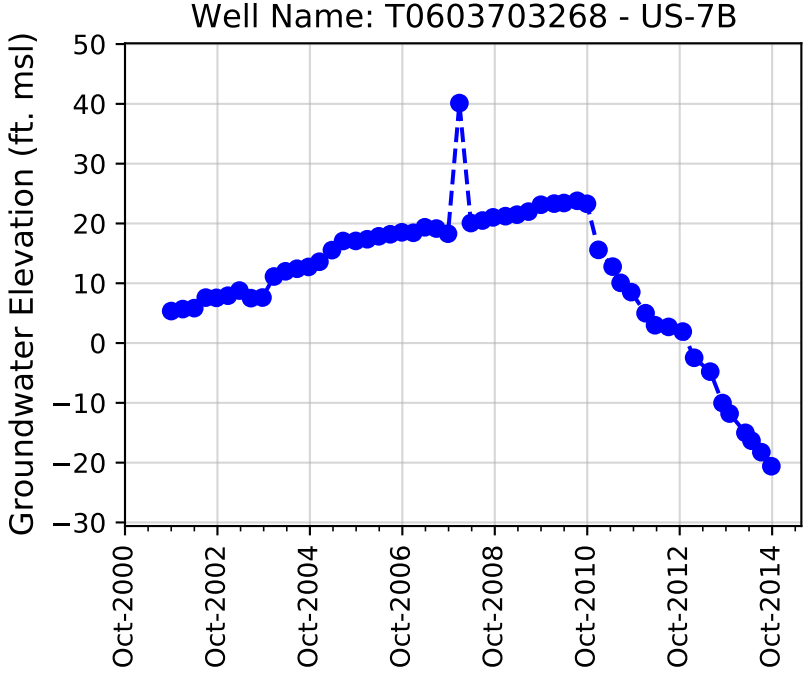
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703268 - US-7B
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
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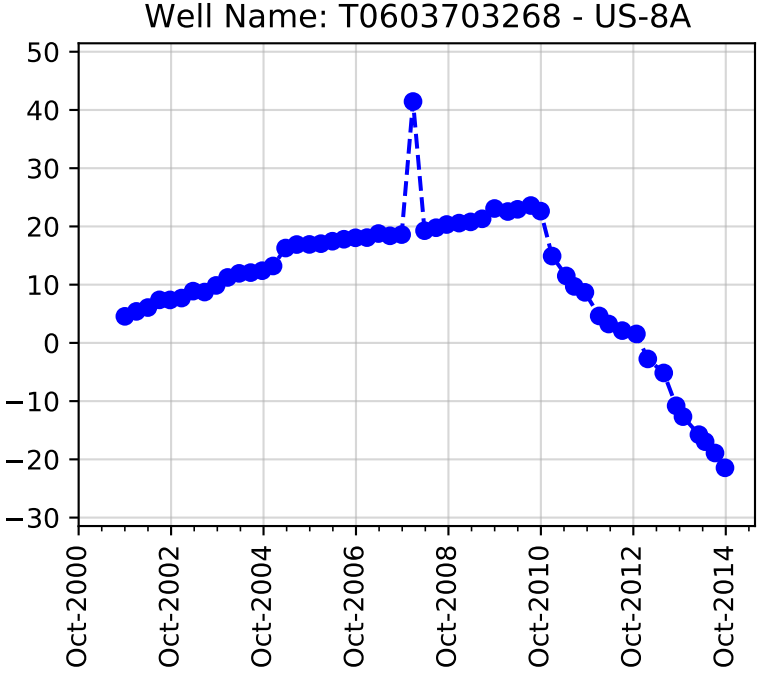
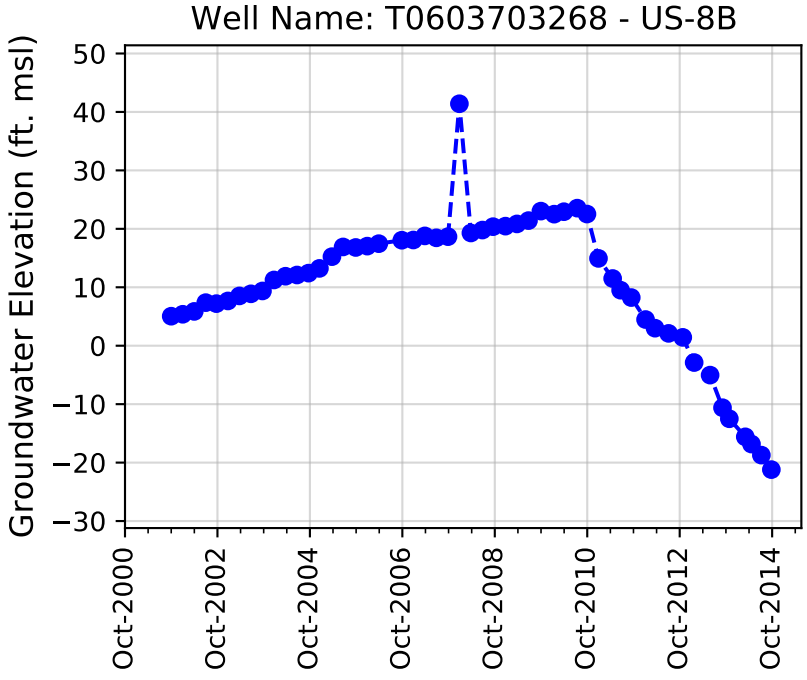
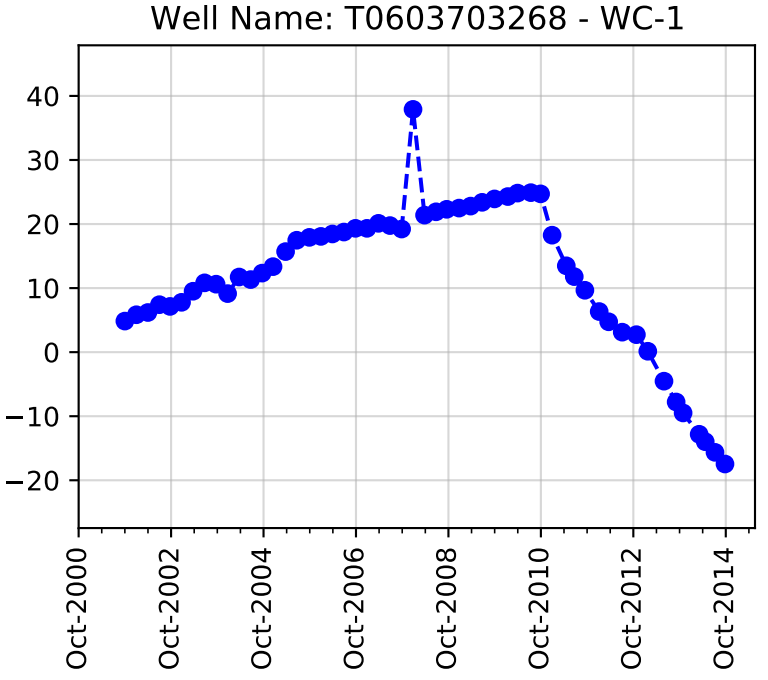
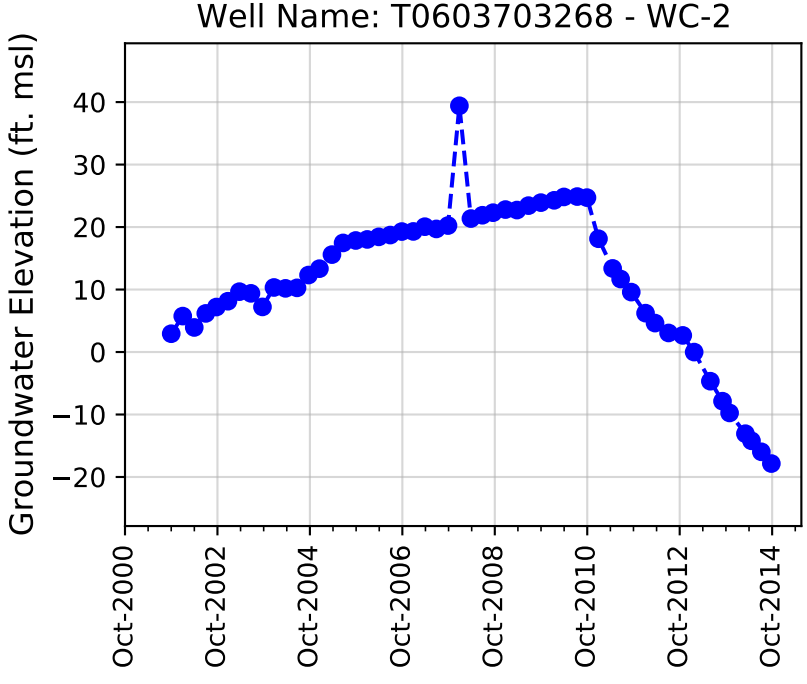
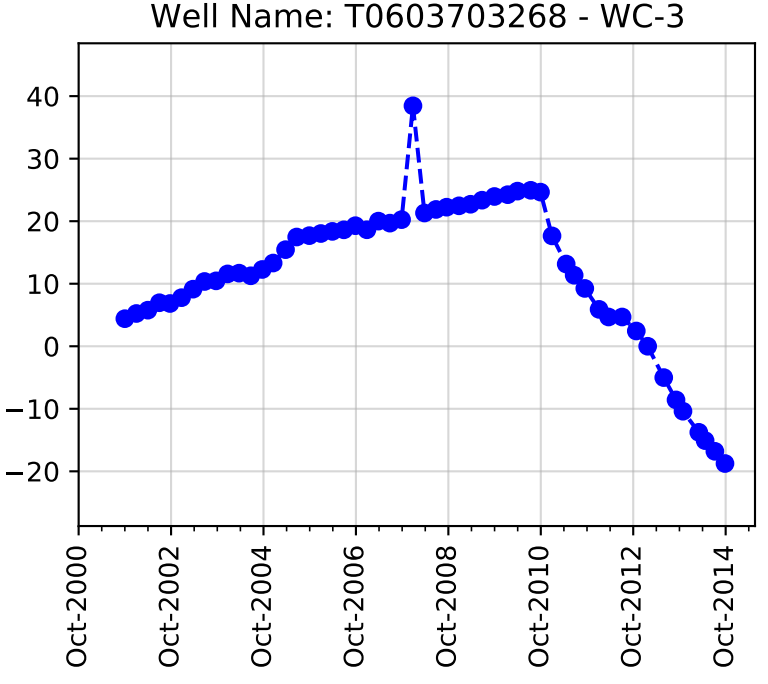
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

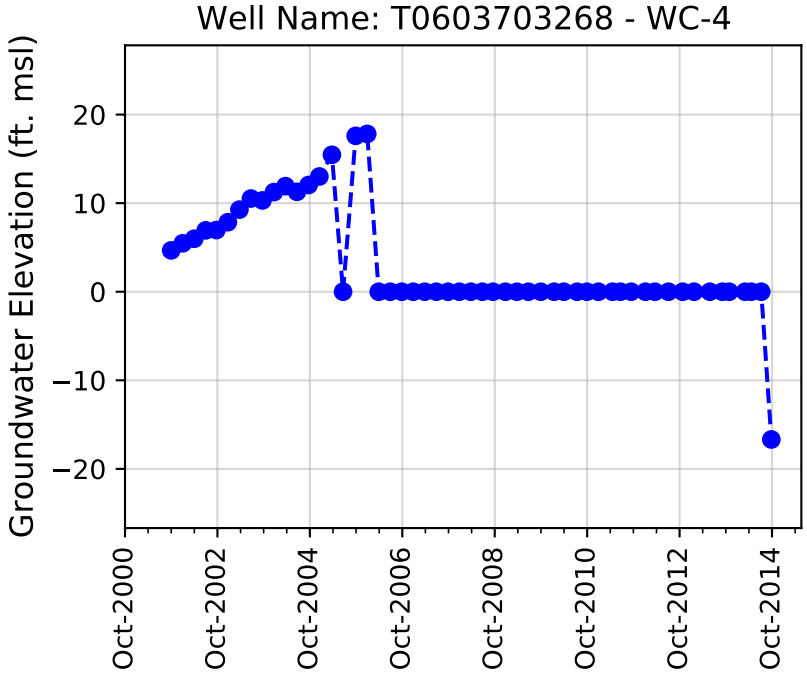

Well Name: T0603703268 - US-8A
50
40
30
20
10
0
−10
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

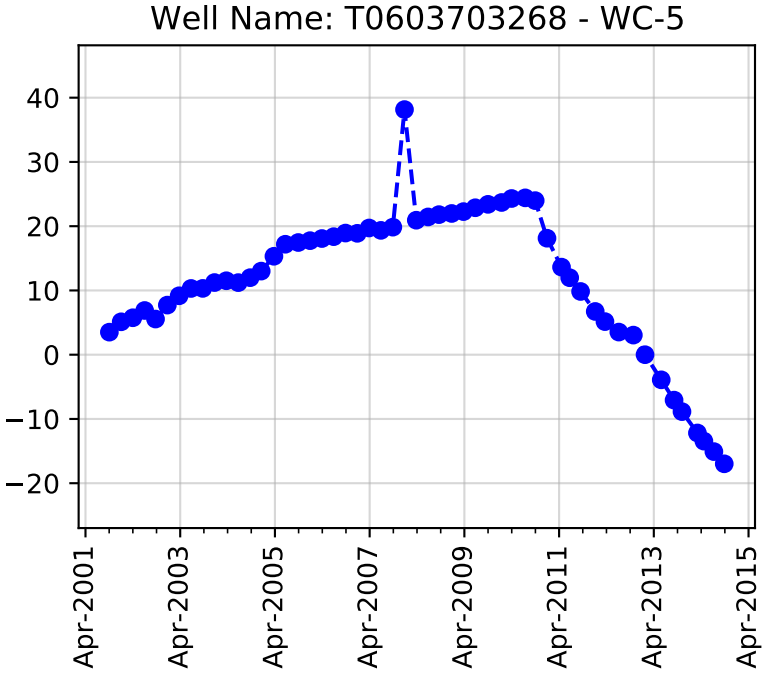

Well Name: T0603703268 - US-8B
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
−10
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

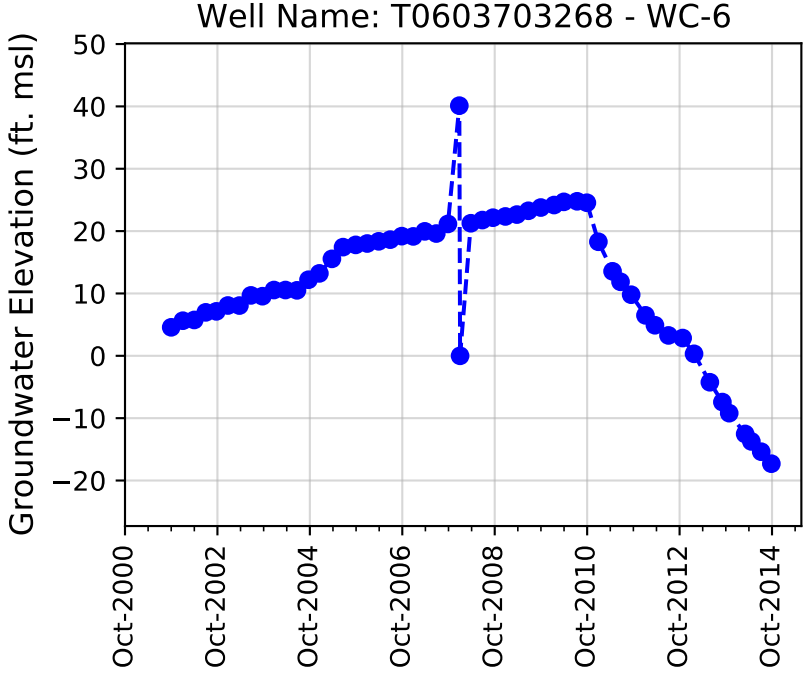

Well Name: T0603703268 - WC-1
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

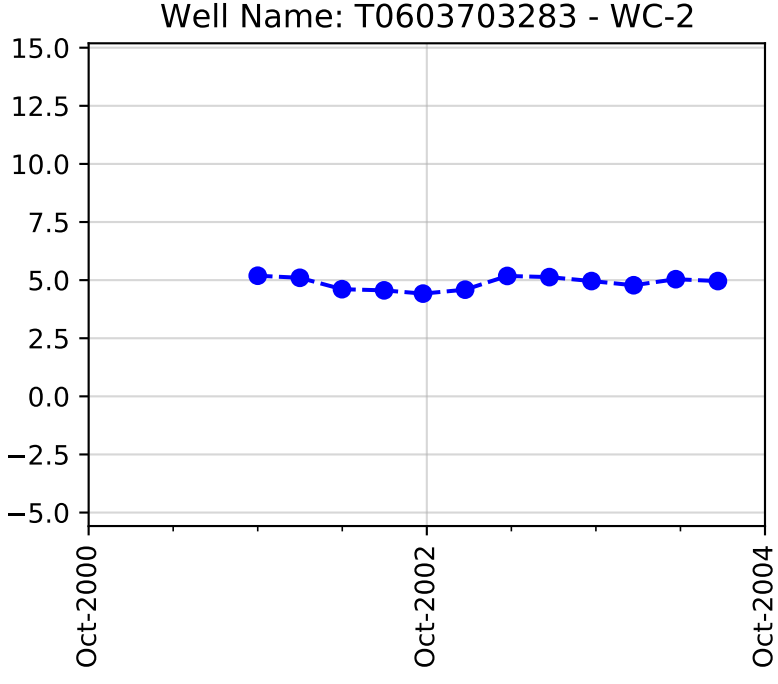

Well Name: T0603703268 - WC-2
Groundwater Elevation (ft. msl)
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

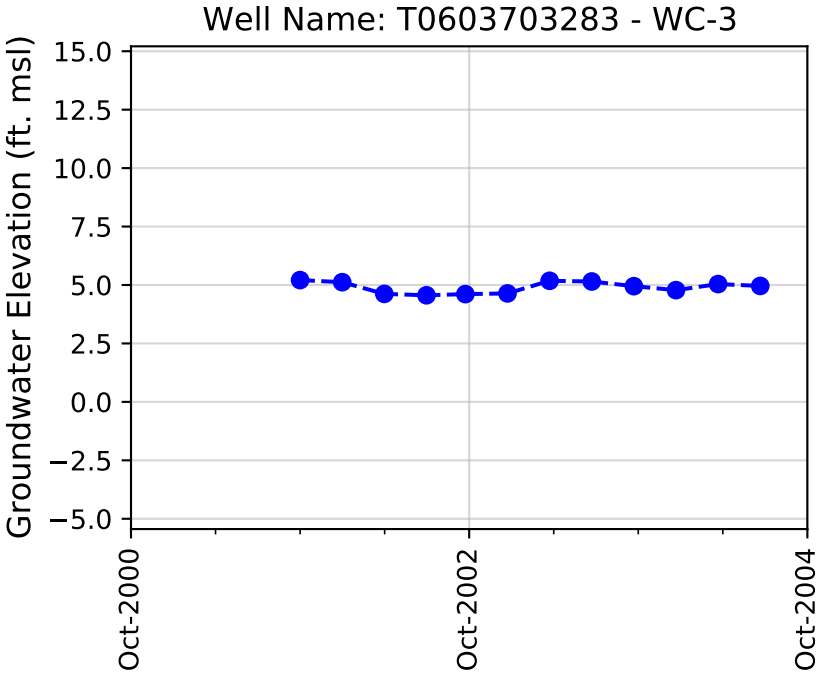

Well Name: T0603703268 - WC-3
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

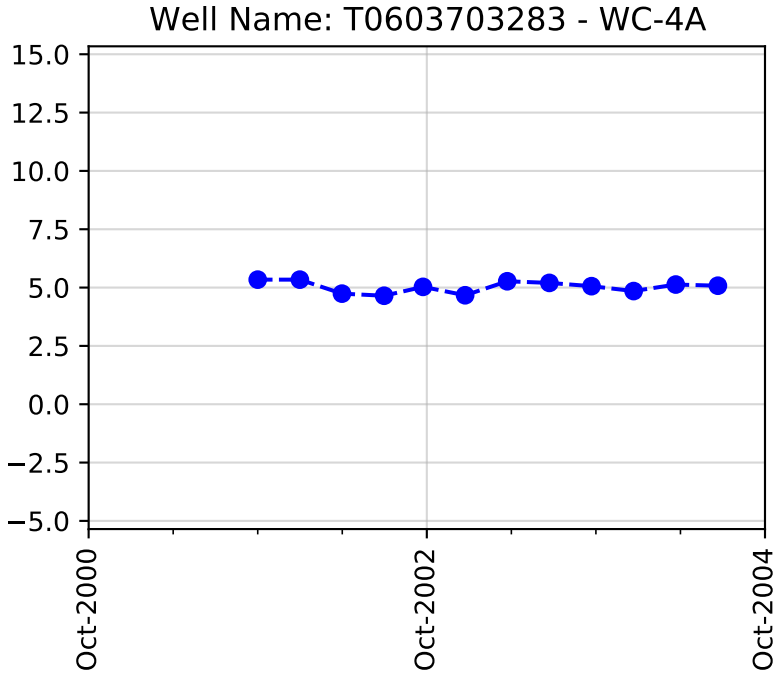

Well Name: T0603703268 - WC-4
Groundwater Elevation (ft. msl)
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

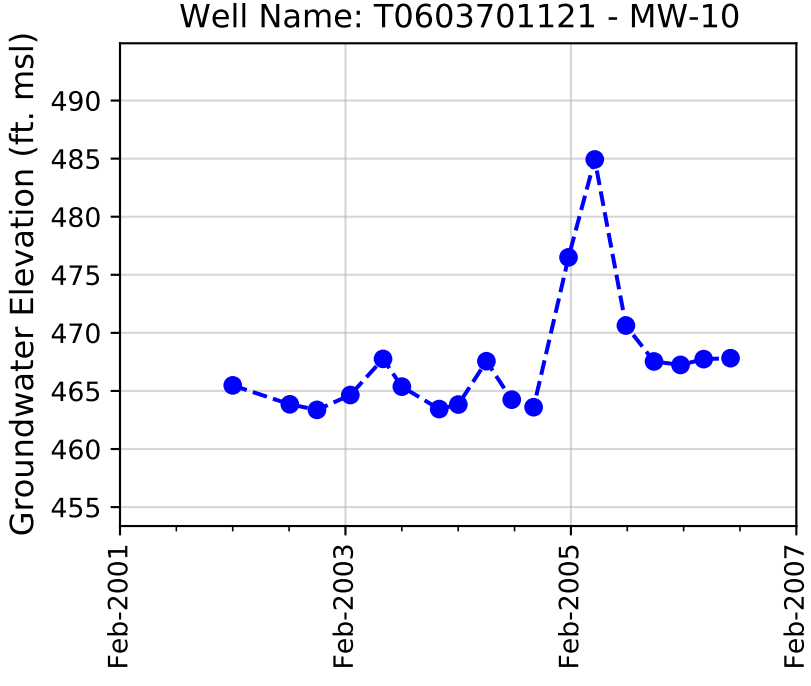

Well Name: T0603703268 - WC-5
40
30
20
10
0
−10
−20
Apr-2001
Apr-2003
Apr-2005
Apr-2007
Apr-2009
Apr-2011
Apr-2013
Apr-2015

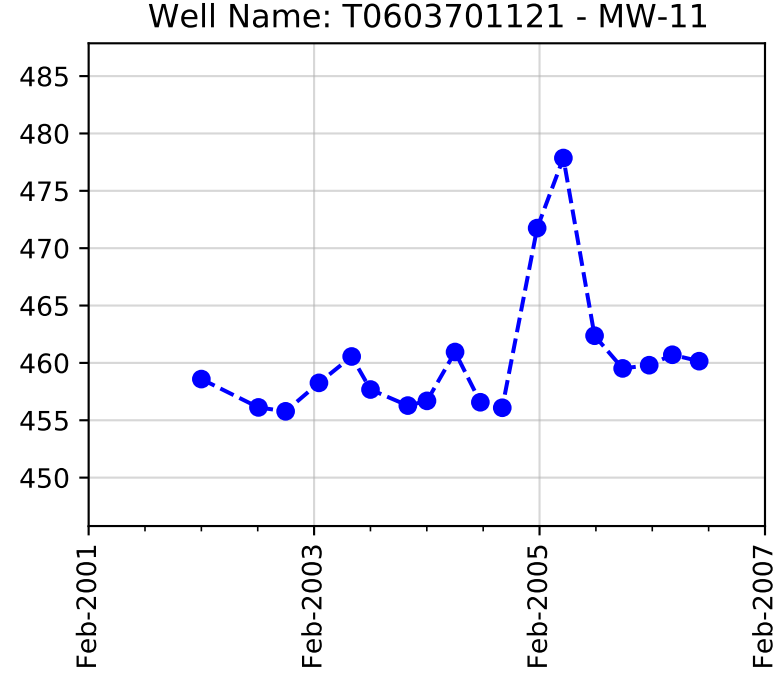

Well Name: T0603703268 - WC-6
Groundwater Elevation (ft. msl)
50
40
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

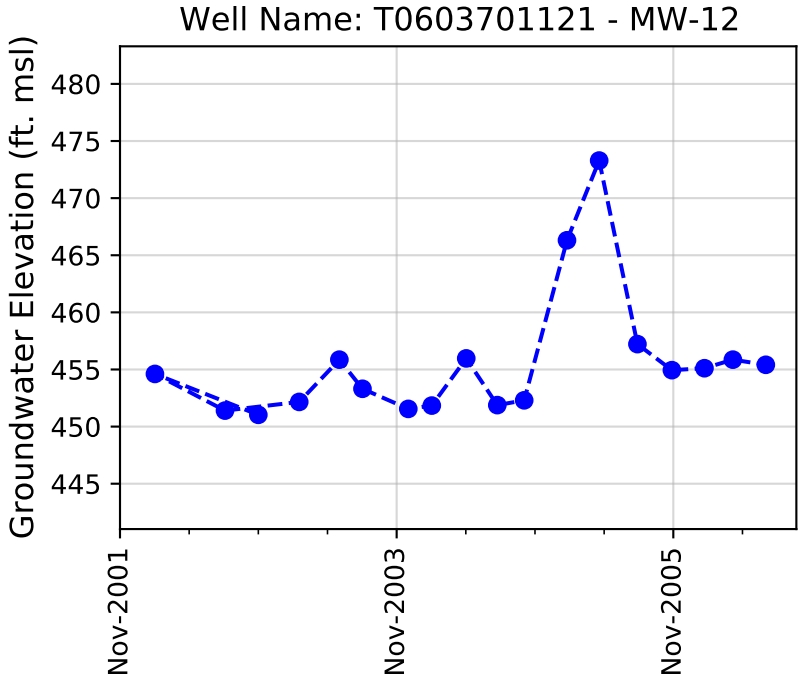

Well Name: T0603703283 - WC-2
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

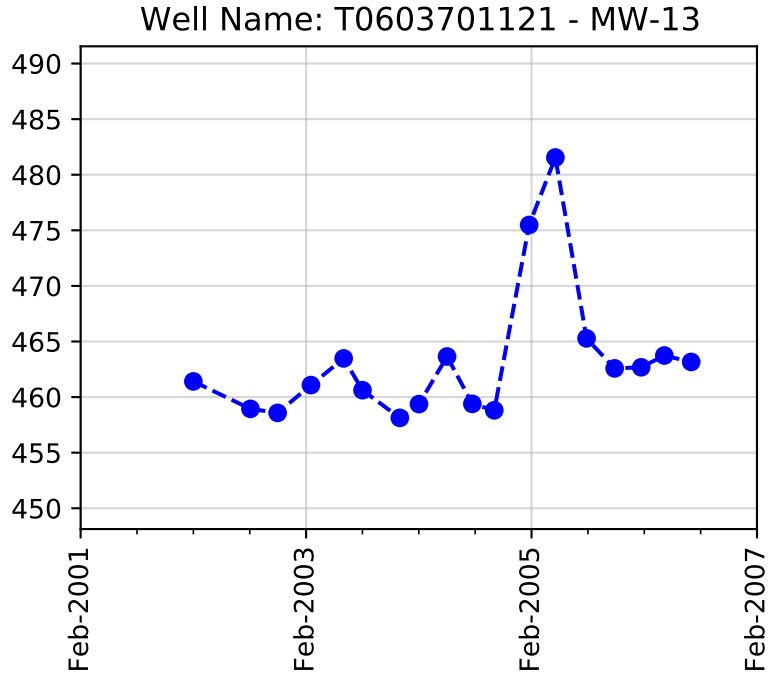

Well Name: T0603703283 - WC-3
Groundwater Elevation (ft. msl)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

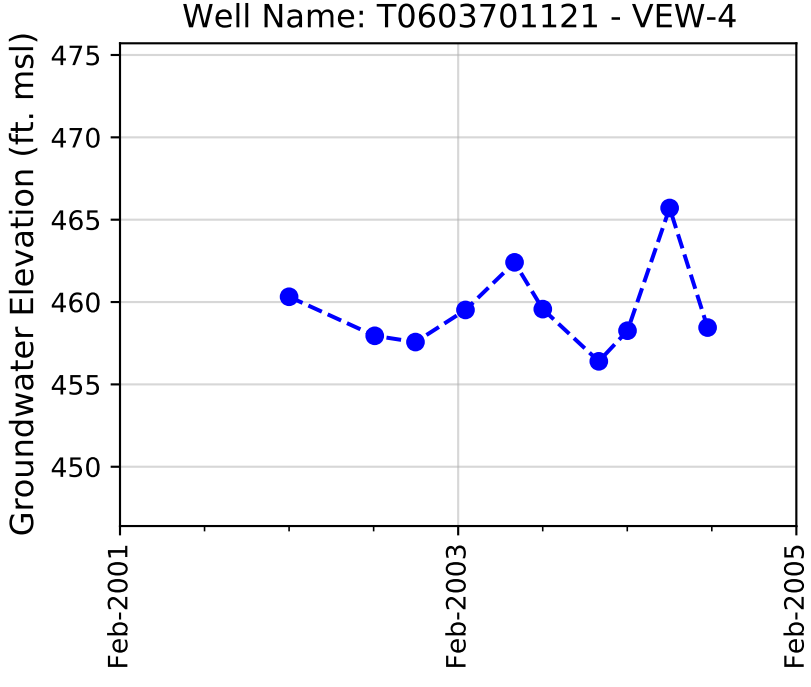

Well Name: T0603703283 - WC-4A
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

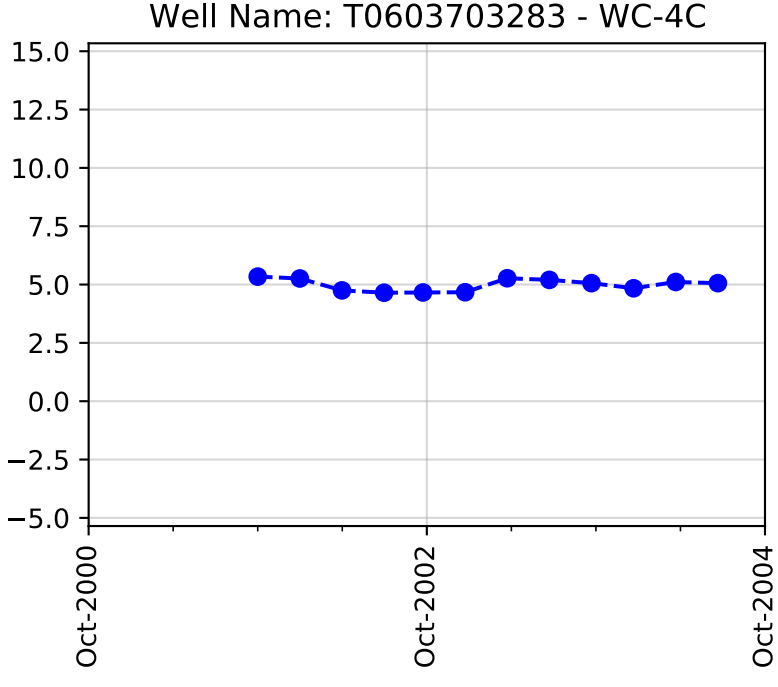

Well Name: T0603701121 - MW-10
Groundwater Elevation (ft. msl)
490
485
480
475
470
465
460
455
Feb-2001
Feb-2003
Feb-2005
Feb-2007

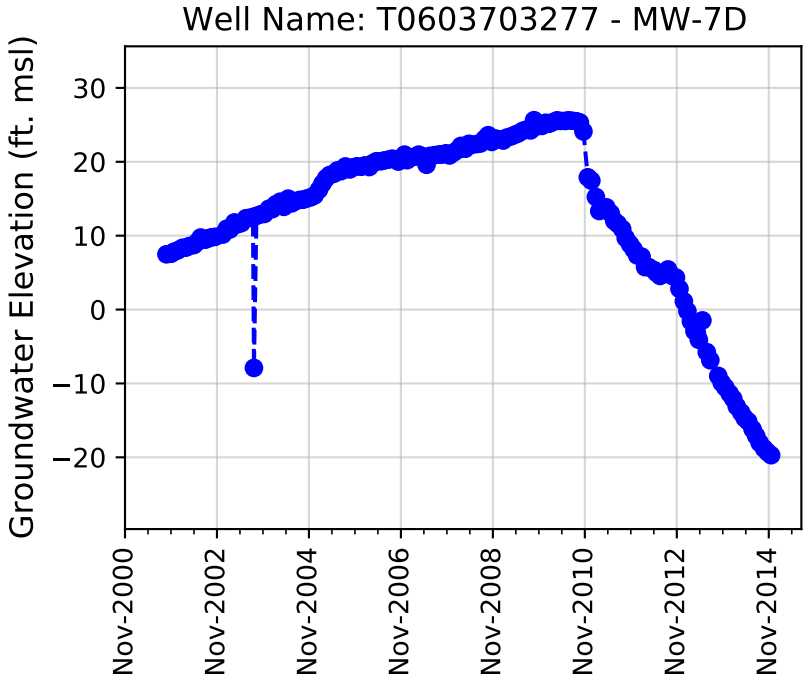

Well Name: T0603701121 - MW-11
485
480
475
470
465
460
455
450
Feb-2001
Feb-2003
Feb-2005
Feb-2007

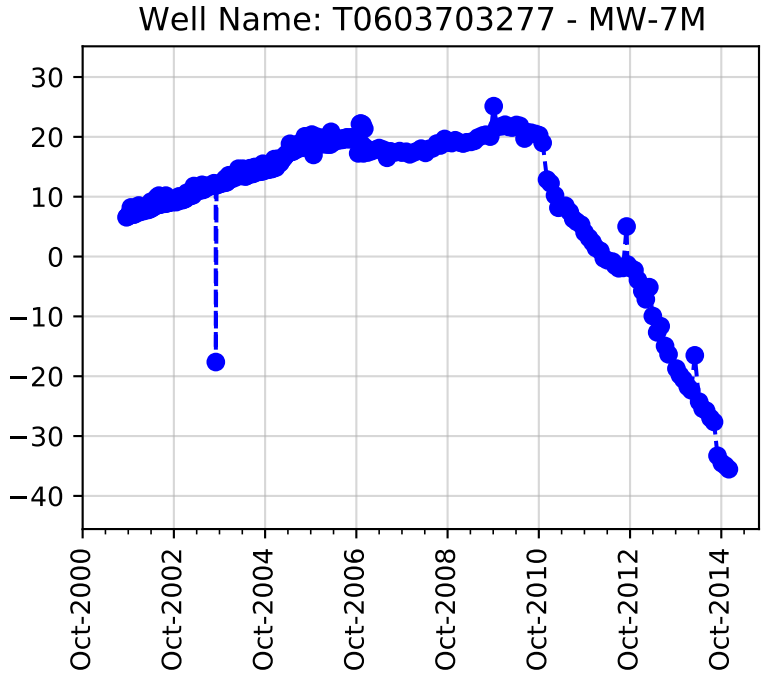

Well Name: T0603701121 - MW-12
Groundwater Elevation (ft. msl)
480
475
470
465
460
455
450
445
Nov-2001
Nov-2003
Nov-2005

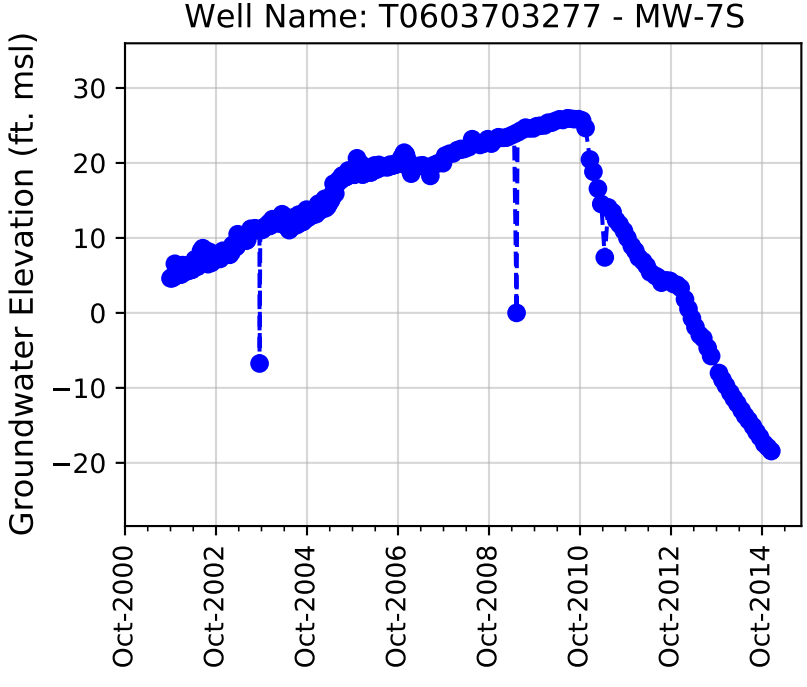

Well Name: T0603701121 - MW-13
490
485
480
475
470
465
460
455
450
Feb-2001
Feb-2003
Feb-2005
Feb-2007

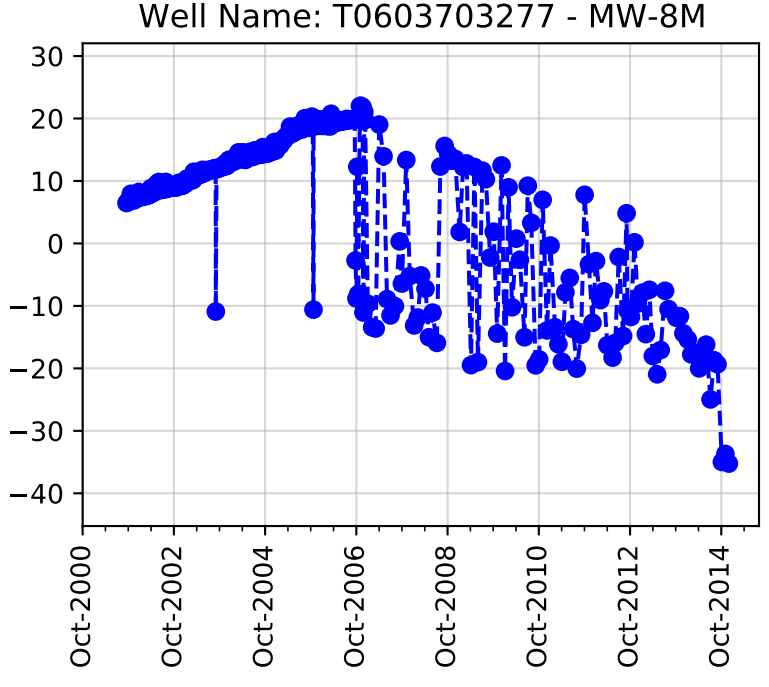

Well Name: T0603701121 - VEW-4
Groundwater Elevation (ft. msl)
475
470
465
460
455
450
Feb-2001
Feb-2003
Feb-2005

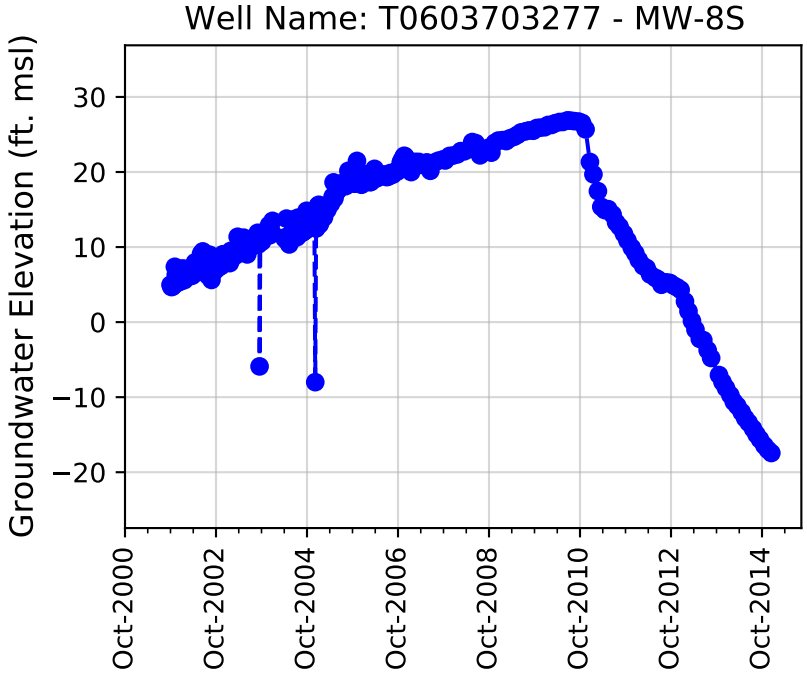

Well Name: T0603703283 - WC-4C
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
Oct-2000
Oct-2002
Oct-2004

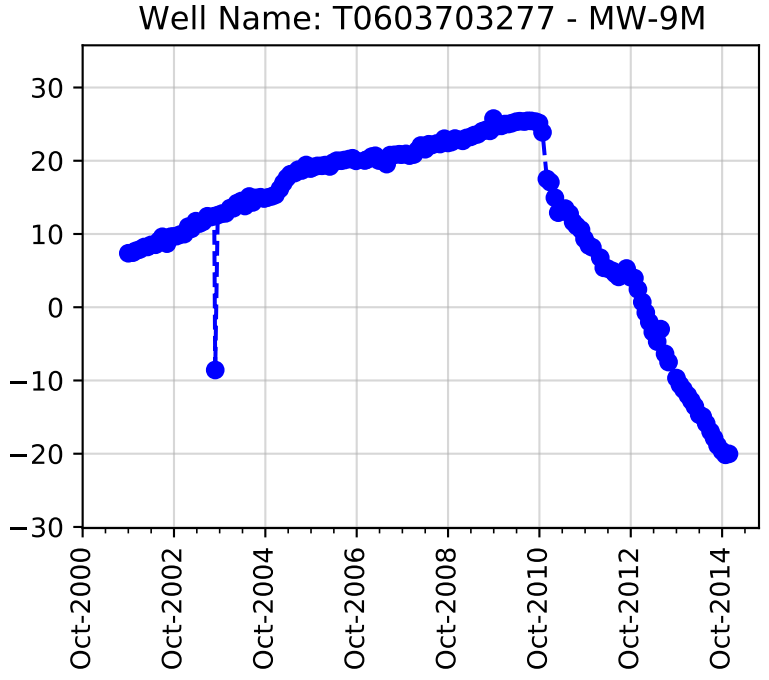

Well Name: T0603703277 - MW-7D
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
Nov-2000
Nov-2002
Nov-2004
Nov-2006
Nov-2008
Nov-2010
Nov-2012
Nov-2014

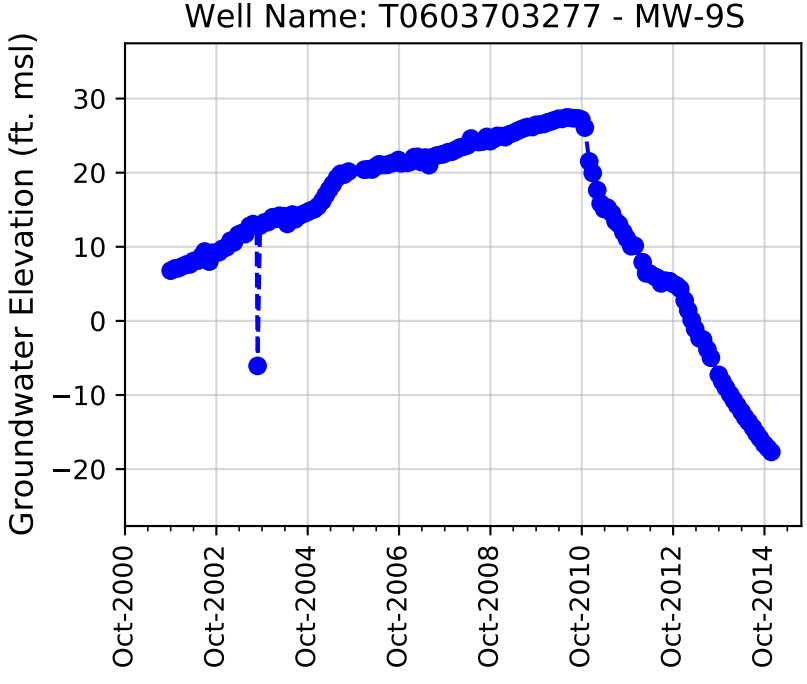

Well Name: T0603703277 - MW-7M
30
20
10
0
−10
−20
−30
−40
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014

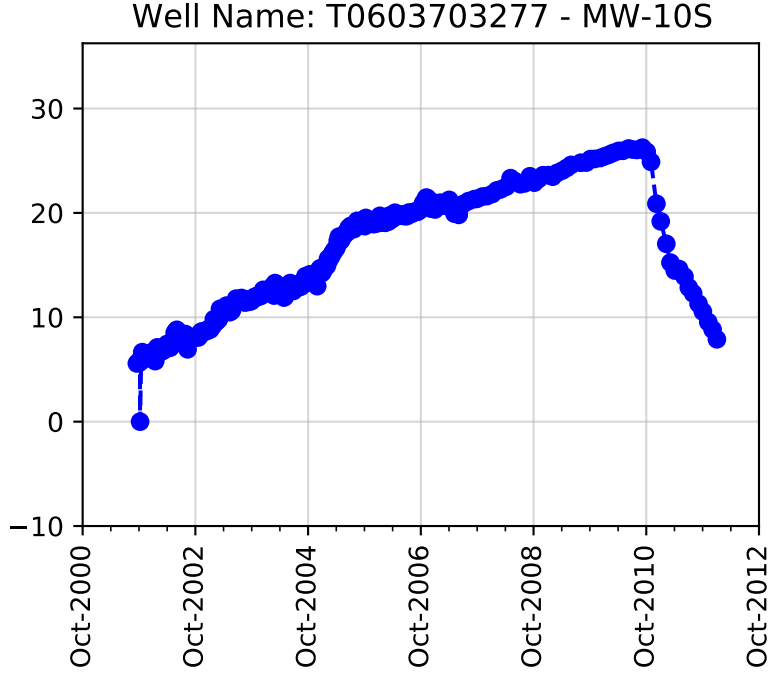

Well Name: T0603703277 - MW-7S
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703277 - MW-8M
30
20
10
0
−10
−20
−30
−40
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703277 - MW-8S
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703277 - MW-9M
30
20
10
0
−10
−20
−30
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703277 - MW-9S
Groundwater Elevation (ft. msl)
30
20
10
0
−10
−20
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012
Oct-2014


Well Name: T0603703277 - MW-10S
30
20
10
0
−10
Oct-2000
Oct-2002
Oct-2004
Oct-2006
Oct-2008
Oct-2010
Oct-2012