GW – 028

2015 Annual Discharge Permit Report

PART 16 OF 16

March 2016

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Navajo Refining Company, L.L.C.	Contact Robert Combs
Address 501 E. Main St. Artesia, NM 88210	Telephone No. 575-746-5382
Facility Name Navajo Refining Company, L.L.C. Artesia	Facility Type Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude___ Longitude__

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater expressed at the ground surface due to elevated water table.	Volume of Release approximately < 1 gallon	Volume Recovered: N/A, Absorbent material applied to recover/remove hydrocarbon staining from groundwater extrusion onto concrete.
Source of Release Impacted groundwater	Date and Hour of Occurrence 12/2/15 Unknown hour	Date and Hour of Discovery 12/2/15@11:40 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? National Response Center at 11:50 am OCD Santa Fe office at 4:50 pm	
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above	
Was a Watercourse Reached? ☒ Yes ☐ No	If YES, Volume Impacting the Watercourse. < 1 gallon	

If a Watercourse was Impacted, Describe Fully.*
A small area of stained concrete located at the base of Clark Draw and Eagle Draw.

Describe Cause of Problem and Remedial Action Taken.* A hydrocarbon stained area was discovered by Refinery personnel in the base of Clark Draw on 12/2/15. There is not an active release of hydrocarbons from Refinery operations. There is no hydrocarbon sheen present in the water. The impacts of groundwater extrusion are being addressed by removal of hydrocarbons from the concrete with absorbent materials. Absorbent booms were installed downstream as a precautionary measure to prevent the potential for residual hydrocarbons to impact any flowing conditions in the waterway that may arise while the remedial action described below is being implemented.

Describe Area Affected and Cleanup Action Taken.*
The stained area was confined to small, specific areas of the concrete. The adjacent recovery trench will be monitored routinely for evidence of phase separated hydrocarbons; if present, a vacuum truck will be used for the next several days to remove any product collected in the adjacent monitoring well.

A final C-141 report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

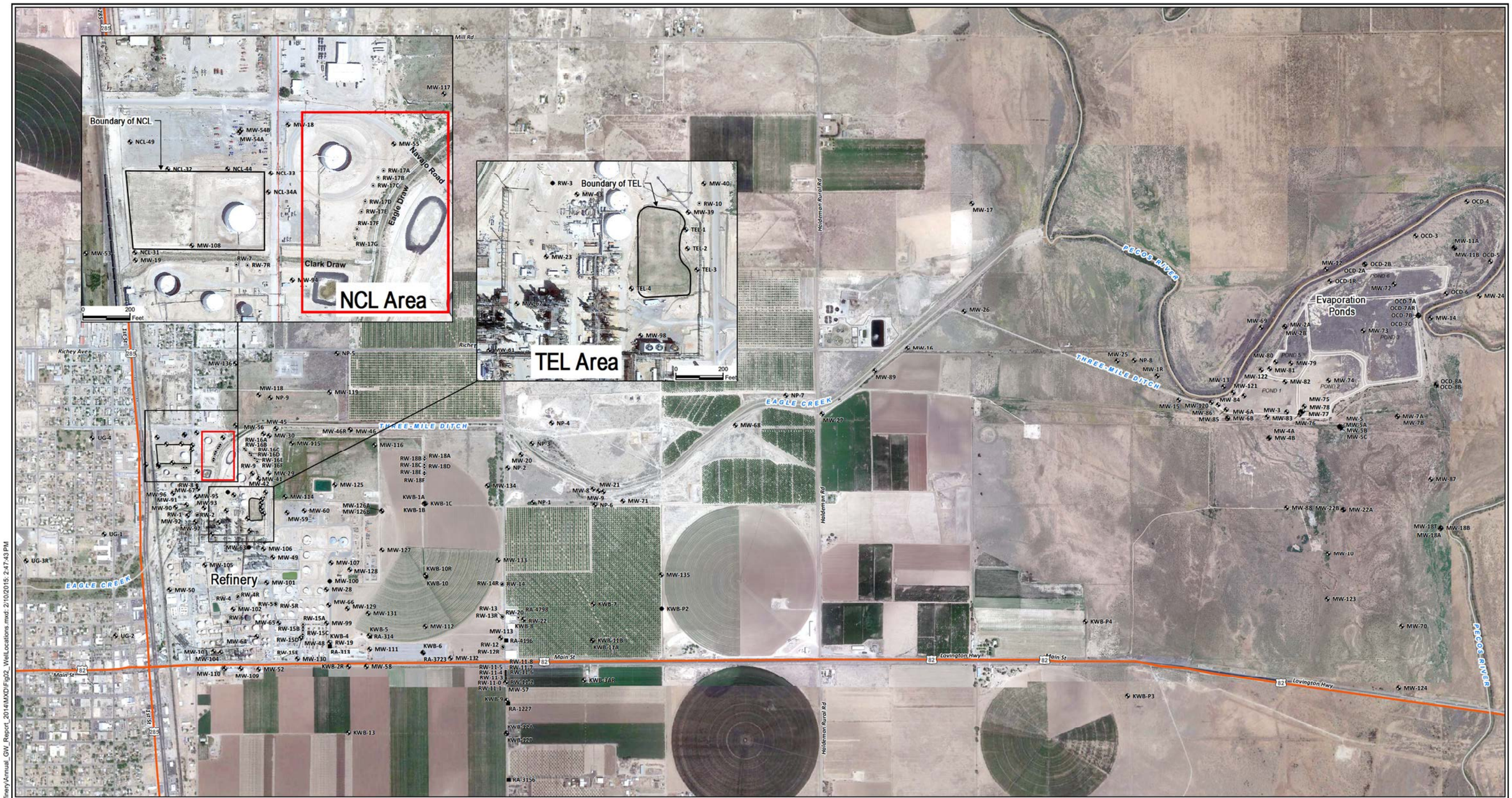
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached ☐
Date: 12/8/15 Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Attachment B

Figure 1 – Location of seepage within the Refinery



LEGEND:

- MONITORING WELL
- RECOVERY WELL
- IRRIGATION WELL
- ABANDONED WELL
- SAMPLING SITE

NAVAJO REFINING COMPANY
ARTESIA , NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLING SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SF DV/GROUP: ENV/IM DB: K ERNST LD: K SCHNEBELE PIC: PM: P KRUEGER TM: TR:
Project (Project #) TX000836.0004.0004
Path: Z:\GIS\PROJECTS_ENV\NavajoRefining\Artesia\Refinery\Annual_GW_Report_2014\MXD\Fig02_WellLocations.mxd: 2/10/2015: 2:47:43 PM

Attachment C

Figure 2 – Locations of November 19, 2015 Samples

0 25 50 100 150 200

Feet

New Mexico

Legend

- Monitoring Well
- Recovery Well
- SURFACE WATER SAMPLES
- Area Containing Stains

NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLE LOCATIONS NEAR EAGLE DRAW

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY:(HOUSTON) DIV/GROUP:(INF/GIS) LD:(V.PAOUNCIC) PIC:/PM:() TM:(R.WOOD)
PROJECT: PATH: C:\USERS\RWOOD\DOCUMENTS\ARCGIS\NAVAJO\FIGURE_2 SITE MAP.MXD DATE SAVED: 1/8/2016 BY: RWOOD

Attachment D

Table 1 – Analytical Results and Comparison Standards

Table 1. Analytical Results and Comparison Standards

Analyte	CGWSL	CGWSL Source	Human Health SWQS	Source	Aquatic Life SWQS	Source	MW-55 11/19/2015	ED01-111915 11/19/2015	ED02-1111915 11/19/2015
General Chemistry (mg/L)									
Calcium	1030	Background	--		--		□□□ □	□□□	3□□
Chloride	5930	Background	6,000	notes	--		225	580	452
Fluoride	2.95	Background	--		--		2.02	1.22	1.49
Nitrate/Nitrite	15.1	Background	132	LW	--		4.39	< 0.0197	0.041 J
Potassium	8.75	Background	--		--		0.989 J	5.59	**9.33**
Sodium	4300	Background	--		--		173 4	250	258
Sulfate	4410	Background	3,000	notes	--		2020	745	1470
TDS	16700	Background	14,000	notes	--		3480	2910	1890
Dissolved Metals (mg/L)									
Arsenic	0.01	EPA MCL	0.009	HH-OO	0.15	AL - Cr	0.00553	**0.0159**	0.00785
Barium	1	WQCC HH	2	DWS	--		0.0105	0.0882	0.063
Cadmium	0.005	EPA MCL	0.01	Irr	0.00028	AL - Cr	< 0.00016	< 0.00016	< 0.00016
Chromium	0.05	WQCC HH	0.1	Irr	0.042	AL - Cr	0.00186 J	0.00109 J	0.00104 J
Lead	0.015	EPA MCL	0.1	LW	0.001	AL - Cr	0.000389 J	0.00143 J	0.00114 J
Mercury	0.0044	Background	0.01	LW	0.00077	AL - Cr	< 0.000049	< 0.000049	< 0.000049
Selenium	0.05	WQCC HH	0.05	LW	0.005	AL - Cr	0.00845	0.000532 J	0.00642
Silver	0.05	WQCC HH	--		0.001	AL - Ac	< 0.00031	< 0.00031	< 0.00031
Total Petroleum Hydrocarbons (mg/L)									
GRO	--	--	--		--		< 0.0314	1.38	0.0469 J
DRO	0.2	NMED TPH	--		--		**0.356**	**7.21**	**2.19**
ORO	0.2	NMED TPH	--		--		0.108	**1.16**	**0.621**
Volatile Organic Carbons (mg/L)									
Benzene	0.005	EPA MCL	0.51	HH-OO	--		< 0.00019	**0.188**	0.00285
Toluene	0.75	WQCC HH	15	HH-OO	--		< 0.00018	0.0192	0.000574 J
Ethylbenzene	0.7	EPA MCL	2.1	HH-OO	--		< 0.00016	0.0158	0.000669
Xylenes	0.62	WQCC HH	--		--		0.0013 J	0.131	0.00147 J

Notes:

The selected NMED surface water quality standards are based on the following designated uses, if available. Domestic water supply criteria are only used if there are no other criteria available.
PERENNIAL WATERS - All perennial unclassified waters of the state.
A. Designated Uses: warmwater aquatic life, livestock watering, wildlife habitat and primary contact.
B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.
Hardness-dependent criteria for metals are based on a hardness of 50 mg/L.
For TDS, sulfate and chloride the criteria for the Pecos River Basin were used for comparison purposes:
PECOS RIVER BASIN - The main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of the Rio Hondo and its tributaries below Bonney canyon and perennial reaches of the Rio Felix.
A. Designated Uses: irrigation, livestock watering, wildlife habitat, secondary contact and warmwater aquatic life.
Criteria: At all flows above 50 cfs: TDS 14,000 mg/L or less, sulfate 3,000 mg/L or less and chloride 6,000 mg/L or less.

HH-OO	human health-organism only
Irr	irrigation
LW	livestock watering
DWS	domestic water supply
AL - Cr	aquatic life - chronic
AL - Ac	aquatic life - acute

Attachment E

Analytical Lab Report with Contractor Field Notes

Contact: Ron Wood, ARCADIS 713-953-4840

ANALYTICAL REPORT

December 02, 2015

ARCADIS US - TX

Sample Delivery Group:	L802348
Samples Received:	11/20/2015
Project Number:	TX001155.0001.00003
Description:	Navajo Refining Company - Artesia, NM

Report To:

Pam Krueger
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Entire Report Reviewed By:

Chris McCord
Technical Service Representative

should be ED02-111915

MW-55 L802348-01 GW

Collected by	Collected date/time	Received date/time
	11/19/15 10:30	11/20/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:03	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 14:44	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:18	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 18:45	11/22/15 18:45	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:19	11/30/15 16:19	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:13	11/24/15 15:13	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 15:59	11/24/15 15:59	DJD

ED01-111915 L802348-02 GW

Collected by	Collected date/time	Received date/time
	11/19/15 12:45	11/20/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:06	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 15:54	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:35	BJF
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	5	11/20/15 23:39	11/25/15 08:23	JNS
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:10	11/22/15 19:10	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:21	11/30/15 16:21	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:28	11/24/15 15:28	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:16	11/24/15 16:16	DJD

ED-1111915 L802348-03 GW

Collected by	Collected date/time	Received date/time
	11/19/15 13:10	11/20/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:08	BRJ
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 16:01	JDG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:53	BJF
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:35	11/22/15 19:35	HJF
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:22	11/30/15 16:22	ASK
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:43	11/24/15 15:43	DJD
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:31	11/24/15 16:31	DJD

TRIP BLANK L802348-04 GW

Collected by	Collected date/time	Received date/time
	11/19/15 13:10	11/20/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG830660	1	11/22/15 17:29	11/22/15 17:29	BMB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Technical Service Representative

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	3480000		2820	10000	1	11/25/2015 17:16	WG831418

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	4390		19.7	100	1	11/30/2015 16:19	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	225000		2600	50000	50	11/24/2015 15:59	WG830779
Fluoride	2020		9.90	100	1	11/24/2015 15:13	WG830779
Sulfate	2020000		3870	250000	50	11/24/2015 15:59	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:03	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	5.53		0.250	2.00	1	11/24/2015 14:44	WG831296
Barium,Dissolved	10.5		0.360	5.00	1	11/24/2015 14:44	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 14:44	WG831296
Calcium,Dissolved	447000	4	46.0	1000	1	11/24/2015 14:44	WG831296
Chromium,Dissolved	1.86	J	0.540	2.00	1	11/24/2015 14:44	WG831296
Lead,Dissolved	0.389	J	0.240	2.00	1	11/24/2015 14:44	WG831296
Potassium,Dissolved	989	J	37.0	1000	1	11/24/2015 14:44	WG831296
Selenium,Dissolved	8.45		0.380	2.00	1	11/24/2015 14:44	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 14:44	WG831296
Sodium,Dissolved	173000	4	110	1000	1	11/24/2015 14:44	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 18:45	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 18:45	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 18:45	WG830660
Total Xylene	1.30	J	0.510	1.50	1	11/22/2015 18:45	WG830660
TPH (GC/FID) Low Fraction	U		31.4	100	1	11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(FID)	*94.9*			*62.0-128*		*11/22/2015 18:45*	WG830660
(S) a,a,a-Trifluorotoluene(PID)	*101*			*55.0-122*		*11/22/2015 18:45*	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	356		22.2	100	1	11/21/2015 18:18	WG830634
C28-C40 Oil Range	108		11.8	100	1	11/21/2015 18:18	WG830634
(S) o-Terphenyl	*107*			*50.0-150*		*11/21/2015 18:18*	WG830634

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	2910000		2820	10000	1	11/25/2015 17:16	WG831418

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	U		19.7	100	1	11/30/2015 16:21	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	580000		2600	50000	50	11/24/2015 16:16	WG830779
Fluoride	1220		9.90	100	1	11/24/2015 15:28	WG830779
Sulfate	745000		3870	250000	50	11/24/2015 16:16	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:06	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	15.9		0.250	2.00	1	11/24/2015 15:54	WG831296
Barium,Dissolved	88.2		0.360	5.00	1	11/24/2015 15:54	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 15:54	WG831296
Calcium,Dissolved	420000		46.0	1000	1	11/24/2015 15:54	WG831296
Chromium,Dissolved	1.09	J	0.540	2.00	1	11/24/2015 15:54	WG831296
Lead,Dissolved	1.43	J	0.240	2.00	1	11/24/2015 15:54	WG831296
Potassium,Dissolved	5590		37.0	1000	1	11/24/2015 15:54	WG831296
Selenium,Dissolved	0.532	J	0.380	2.00	1	11/24/2015 15:54	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 15:54	WG831296
Sodium,Dissolved	250000		110	1000	1	11/24/2015 15:54	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	188		0.190	0.500	1	11/22/2015 19:10	WG830660
Toluene	19.2		0.180	5.00	1	11/22/2015 19:10	WG830660
Ethylbenzene	15.8		0.160	0.500	1	11/22/2015 19:10	WG830660
Total Xylene	131		0.510	1.50	1	11/22/2015 19:10	WG830660
TPH (GC/FID) Low Fraction	1380		31.4	100	1	11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*62.0-128*		*11/22/2015 19:10*	WG830660
(S) a,a,a-Trifluorotoluene(PID)	*104*			*55.0-122*		*11/22/2015 19:10*	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	7210		111	500	5	11/25/2015 08:23	WG830634
C28-C40 Oil Range	1160		11.8	100	1	11/21/2015 18:35	WG830634
(S) o-Terphenyl	*120*			*50.0-150*		*11/21/2015 18:35*	WG830634

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1890000		2820	10000	1	11/25/2015 17:16	WG831418

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	41.0	J	19.7	100	1	11/30/2015 16:22	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	452000		2600	50000	50	11/24/2015 16:31	WG830779
Fluoride	1490		9.90	100	1	11/24/2015 15:43	WG830779
Sulfate	1470000		3870	250000	50	11/24/2015 16:31	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:08	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	7.85		0.250	2.00	1	11/24/2015 16:01	WG831296
Barium,Dissolved	63.0		0.360	5.00	1	11/24/2015 16:01	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 16:01	WG831296
Calcium,Dissolved	377000		46.0	1000	1	11/24/2015 16:01	WG831296
Chromium,Dissolved	1.04	J	0.540	2.00	1	11/24/2015 16:01	WG831296
Lead,Dissolved	1.14	J	0.240	2.00	1	11/24/2015 16:01	WG831296
Potassium,Dissolved	9330		37.0	1000	1	11/24/2015 16:01	WG831296
Selenium,Dissolved	6.42		0.380	2.00	1	11/24/2015 16:01	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 16:01	WG831296
Sodium,Dissolved	258000		110	1000	1	11/24/2015 16:01	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	2.85		0.190	0.500	1	11/22/2015 19:35	WG830660
Toluene	0.574	J	0.180	5.00	1	11/22/2015 19:35	WG830660
Ethylbenzene	0.669		0.160	0.500	1	11/22/2015 19:35	WG830660
Total Xylene	1.47	J	0.510	1.50	1	11/22/2015 19:35	WG830660
TPH (GC/FID) Low Fraction	46.9	J	31.4	100	1	11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(FID)	*94.5*			*62.0-128*		*11/22/2015 19:35*	WG830660
(S) a,a,a-Trifluorotoluene(PID)	*99.6*			*55.0-122*		*11/22/2015 19:35*	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	2190		22.2	100	1	11/21/2015 18:53	WG830634
C28-C40 Oil Range	621		11.8	100	1	11/21/2015 18:53	WG830634
(S) o-Terphenyl	*107*			*50.0-150*		*11/21/2015 18:53*	WG830634

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 17:29	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 17:29	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 17:29	WG830660
Total Xylene	U		0.510	1.50	1	11/22/2015 17:29	WG830660
(S) a,a,a-Trifluorotoluene(PID)	*101*			*55.0-122*		*11/22/2015 17:29*	WG830660

Method Blank (MB)

(MB) 11/25/15 17:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/25/15 17:16 • (DUP) 11/25/15 17:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	3480	3590	1	3.26		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/25/15 17:16 • (LCSD) 11/25/15 17:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dissolved Solids	8800	8720	8610	99.1	97.8	85.0-115			1.27	5

Method Blank (MB)

(MB) 11/30/15 16:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0197	0.100

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:19 • (DUP) 11/30/15 16:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	4.39	4.34	1	1.00		20

L802480-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:36 • (DUP) 11/30/15 16:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.162	0.157	1	3.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/30/15 16:11 • (LCSD) 11/30/15 16:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	4.73	4.82	95.0	96.0	90.0-110			2.00	20

L802392-01 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/30/15 16:23 • (MS) 11/30/15 16:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	5.00	1.93	6.97	101	1	90.0-110	

L802480-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/30/15 16:39 • (MS) 11/30/15 16:40 • (MSD) 11/30/15 16:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	6.08	11.0	11.0	98.0	98.0	1	90.0-110			0.000	20

Method Blank (MB)

(MB) 11/24/15 07:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	0.0916		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L801979-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 10:51 • (DUP) 11/24/15 11:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	79.7	79.7	10	0		20
Fluoride	0.491	0.496	10	1		20
Sulfate	422	422	10	0		20

L802323-07 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 14:26 • (DUP) 11/24/15 14:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	36.4	36.4	10	0		20
Fluoride	0.261	0.248	10	5		20
Sulfate	110	109	10	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 07:58 • (LCSD) 11/24/15 08:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	39.8	39.9	100	100	90-110			0	20
Fluoride	8.00	7.98	7.99	100	100	90-110			0	20
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20

L801999-04 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/24/15 11:21 • (MS) 11/24/15 11:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	5.00	378	862	97	10	80-120	
Fluoride	0.500	0.668	50.8	100	10	80-120	
Sulfate	5.00	207	691	97	10	80-120	

L802323-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 13:40 • (MS) 11/24/15 13:55 • (MSD) 11/24/15 14:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	5.00	17.2	509	509	98	98	10	80-120			0	20
Fluoride	0.500	0.424	50.7	50.9	101	101	10	80-120			0	20
Sulfate	5.00	539	1030	1030	97	97	10	80-120			0	20

Method Blank (MB)

(MB) 11/22/15 10:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 10:22 • (LCSD) 11/22/15 10:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00260	0.00245	87	82	80-120			6	20

L802534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 10:46 • (MS) 11/22/15 10:48 • (MSD) 11/22/15 10:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00000972	0.00281	0.00285	93	95	1	75-125			2	20

Method Blank (MB)

(MB) 11/24/15 15:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00025	0.00200
Barium,Dissolved	U		0.00036	0.00500
Cadmium,Dissolved	U		0.00016	0.00100
Calcium,Dissolved	U		0.046	1.00
Chromium,Dissolved	0.000714		0.00054	0.00200
Lead,Dissolved	0.000284		0.00024	0.00200
Potassium,Dissolved	0.0441		0.037	1.00
Selenium,Dissolved	U		0.00038	0.00200
Silver,Dissolved	U		0.00031	0.00200
Sodium,Dissolved	U		0.11	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 14:39 • (LCSD) 11/24/15 14:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.0528	0.0503	106	101	80-120			5	20
Barium,Dissolved	0.0500	0.0490	0.0501	98	100	80-120			2	20
Cadmium,Dissolved	0.0500	0.0556	0.0519	111	104	80-120			7	20
Calcium,Dissolved	5.00	4.91	5.19	98	104	80-120			6	20
Chromium,Dissolved	0.0500	0.0530	0.0517	106	103	80-120			3	20
Lead,Dissolved	0.0500	0.0507	0.0503	101	101	80-120			1	20
Potassium,Dissolved	5.00	4.87	4.97	97	99	80-120			2	20
Selenium,Dissolved	0.0500	0.0506	0.0509	101	102	80-120			1	20
Silver,Dissolved	0.0500	0.0510	0.0511	102	102	80-120			0	20
Sodium,Dissolved	5.00	5.34	5.68	107	114	80-120			6	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.00553	0.0603	0.0619	110	113	1	75-125			3	20
Barium,Dissolved	0.0500	0.0105	0.0589	0.0601	97	99	1	75-125			2	20
Cadmium,Dissolved	0.0500	0.0000293	0.0546	0.0559	109	112	1	75-125			2	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	5.00	447	437	438	0	0	1	75-125	4	4	0	20
Chromium,Dissolved	0.0500	0.00186	0.0507	0.0504	98	97	1	75-125			0	20
Potassium,Dissolved	5.00	0.989	5.49	5.45	90	89	1	75-125			1	20
Lead,Dissolved	0.0500	0.000389	0.0483	0.0490	96	97	1	75-125			1	20
Selenium,Dissolved	0.0500	0.00845	0.0591	0.0591	101	101	1	75 125			0	20
Silver,Dissolved	0.0500	0.000110	0.0490	0.0493	98	98	1	75-125			1	20
Sodium,Dissolved	5.00	173	173	176	0	55	1	75-125	4	4	2	20

Method Blank (MB)

(MB) 11/22/15 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	0.000458		0.000180	0.00500
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
TPH (GC/FID) Low Fraction	U		0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	*95.4*			*62.0-128*
(S) a,a,a-Trifluorotoluene(PID)	*101*			*55.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:00 • (LCSD) 11/22/15 15:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0487	0.0487	97.5	97.4	70.0-130			0.0400	20
Toluene	0.0500	0.0452	0.0446	90.4	89.2	70.0-130			1.40	20
Ethylbenzene	0.0500	0.0471	0.0467	94.3	93.4	70.0-130			0.940	20
Total Xylene	0.150	0.142	0.141	95.0	93.8	70.0-130			1.29	20
(S) a,a,a-Trifluorotoluene(PID)				*101*	*101*	*55.0-122*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:49 • (LCSD) 11/22/15 16:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.60	5.89	102	107	67.0-132			5.09	20
(S) a,a,a-Trifluorotoluene(FID)				*105*	*105*	*62.0-128*				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.0472	0.0487	94.5	97.5	1	57.2-131			3.14	20
Toluene	0.0500	ND	0.0431	0.0443	86.2	88.6	1	63.7-134			2.73	20
Ethylbenzene	0.0500	ND	0.0454	0.0469	90.9	93.8	1	67.5-135			3.23	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Total Xylene	0.150	0.00130	0.136	0.140	90.0	92.4	1	65.9-138			2.62	20
(S) a,a,a-Trifluorotoluene(PID)					*99.6*	*99.7*		*55.0-122*				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 23:22 • (MSD) 11/22/15 23:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	5.22	5.70	94.8	104	1	50.0-143			8.97	20
(S) a,a,a-Trifluorotoluene(FID)					*97.1*	*98.4*		*62.0-128*				

Method Blank (MB)

(MB) 11/21/15 17:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C40 Oil Range	U		0.0118	0.100
(S) o-Terphenyl	*110*			*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/21/15 17:26 • (LCSD) 11/21/15 17:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	1.50	1.46	1.43	97.2	95.3	70.0-130			1.95	20
(S) o-Terphenyl				*117*	*109*	*50.0-150*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
4	The sample concentration was greater than 4 times the spike value.
J	Estimated value.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES

YOUR LAB OF CHOICE

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L# 302378

D081

Acctnum: ARCADHTX

Template: T107511

Prelogin: P531474

TSR: 526 - Chris McCord

PB: 11-18-15

Shipped Via: FedEX Priority

ARCADIS US - TX

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Suite 300
Houston, TX 77042

Billing Information:
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630 Plaza Drive, Suite 600
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Email To: pam.krueger@arcadis.com

Report to: Pam Krueger

Project Description: Navajo Refining Company - Artesia, NM

City/State Collected:

Phone: 713-953-4800
Fax:

Client Project # TX001155.0001.00003

Lab Project # ARCADHTX-NAVAJORUSH

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	Cl, Fl, SO4 125mlHDPE-NoPres	DROORolVI 40mlAmb-HCl-BT	Dissolved Metals 500mlHDPE-NoPres	GRO 40mlAmb HCl	NO2NO3 250mlHDPE-H2SO4	TDS 250mlHDPE-NoPres	Total Metals			Rem./Contaminant	Sample # (lab only)
MW-55	G	GW	—	11/19/15	1030	17 11	X	X	X	X	X	X	X	X				01
EDO1-111915	G	GW	—	11/19/15	1245	R 11	X	X	X	X	X	X	X	X				02
EDO1-111915	G	GW	—	11/19/15	1310	17 11	X	X	X	X	X	X	X	X				03
		GW				11	X	X	X	X	X	X	X	X				
Trip Blank	—	—	—	—	—	1	X											04

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

pH ___ Temp ___

Flow ___ Other ___

652919073789

Remarks: Dissolved Metals = M6020RCRA8-D + CADG,KDG,NADG

Hold Metals until word from Pam Krueger

Hold #

Condition: 7F OK (lab use only)

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/19/15	1345	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☑ FedEx ☐ UPS ☐ Courier ☐ ___

Temp: 3.5 °C Bottles Received: 37

Date: 11/20/15 Time: 0940

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF: N

11/19/15 Weather: Sunny, 50s

Eagle Draw Surface Sampling Personnel: R. Wood

0700 Arrived onsite. Attempted to get badge waiver but safety does not issue waivers for background checks anymore

0745 R. Combs spoke w/ safety and informed me that Domingo could escort me into Refinery

0830 Met Domingo @ Warehouse to gather equipment

0925 Arrived @ MW-55 to begin sampling

1030 - Sample time

1045 Left area to go find bottleware from ESC

1115 Could not locate sample bottles. Broke for lunch

1210 Arrived back onsite. Stopped FedEx driver to collect sample bottles.

1230 Arrived back @ Eagle Draw

1245 Collected ED01-111915

- Taken from surface water on the east side of Eagle Draw South of Navajo Rd

1310 Collected ED02-111915

- Taken from surface water on the west side of Eagle Draw east ~~north~~ of Navajo Rd.

1330 Started packing samples

1345 Dropped samples off @ FedEx building

1420 offsite

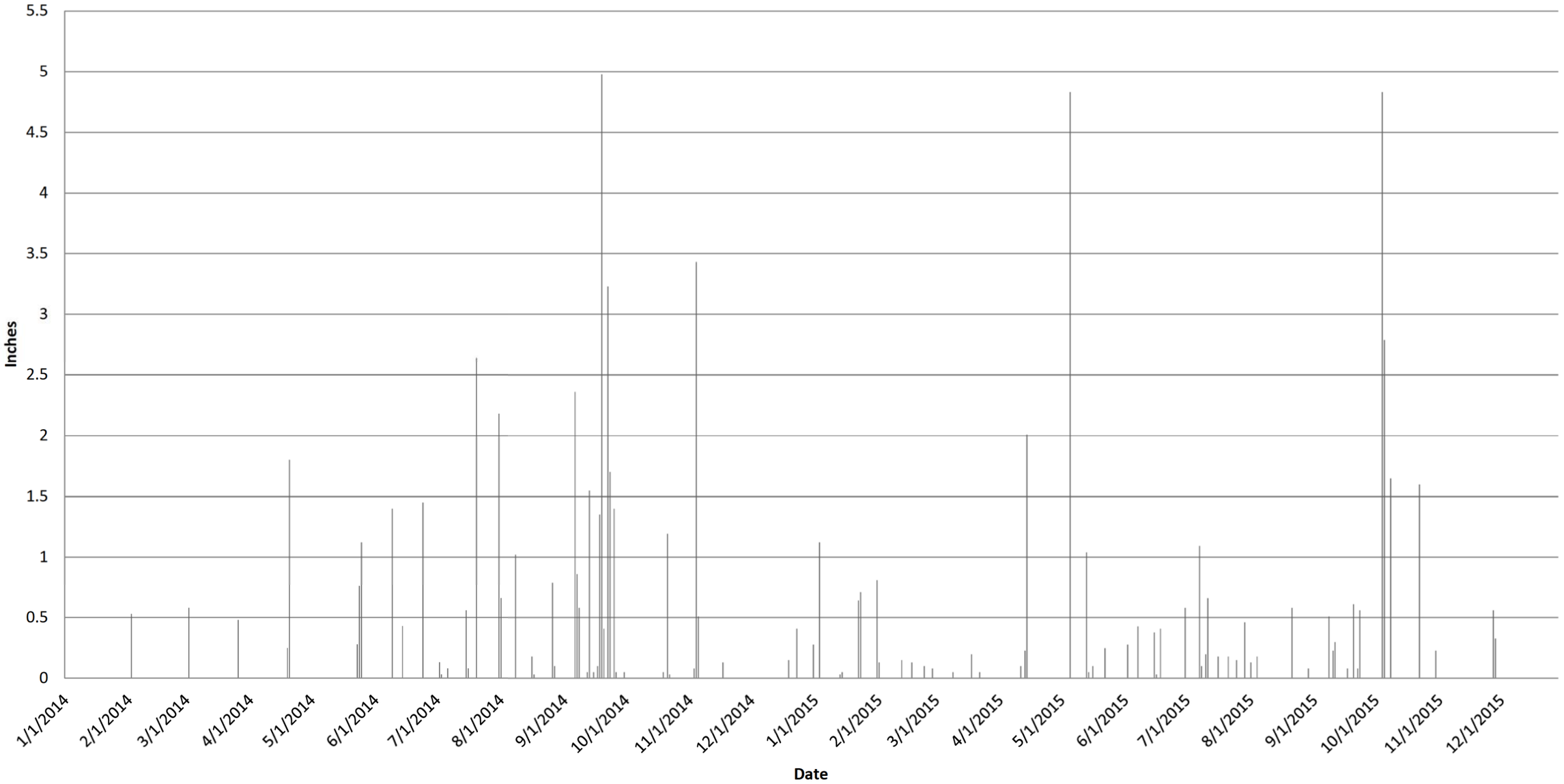
Scale: 1 square =

Attachment F

Precipitation Data January 2011 – November 2015

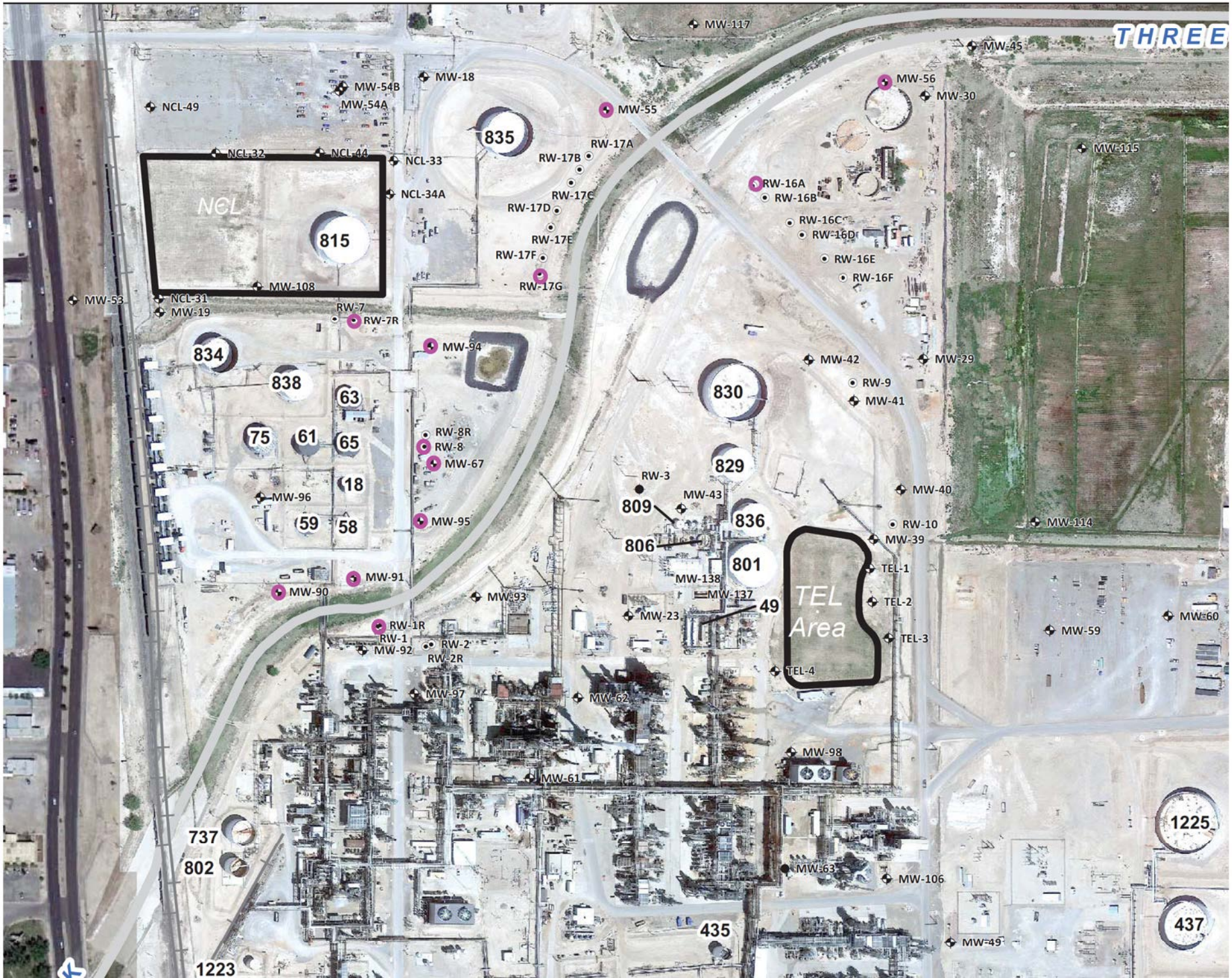
Precipitation

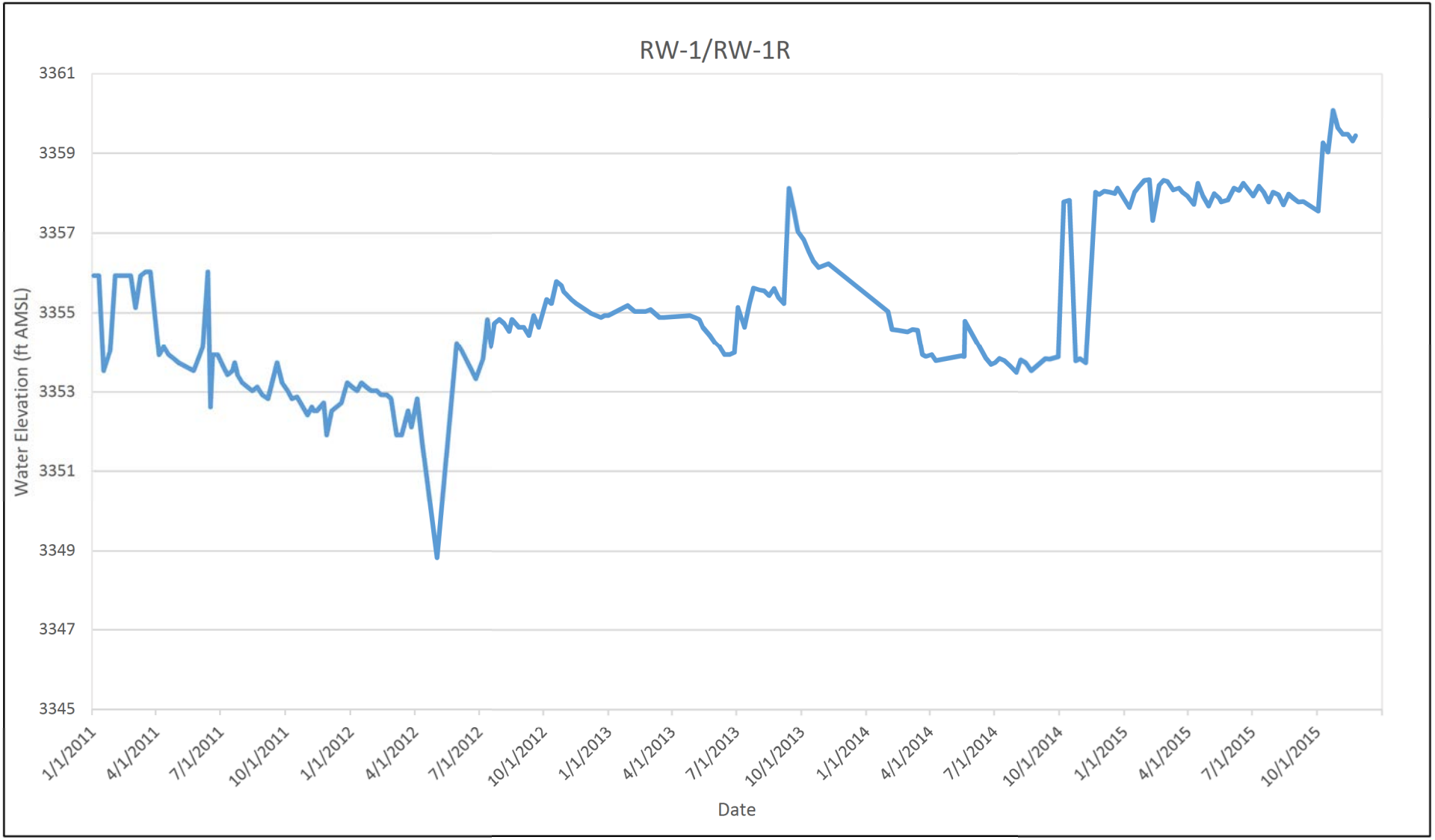
(January 2014 – Present)



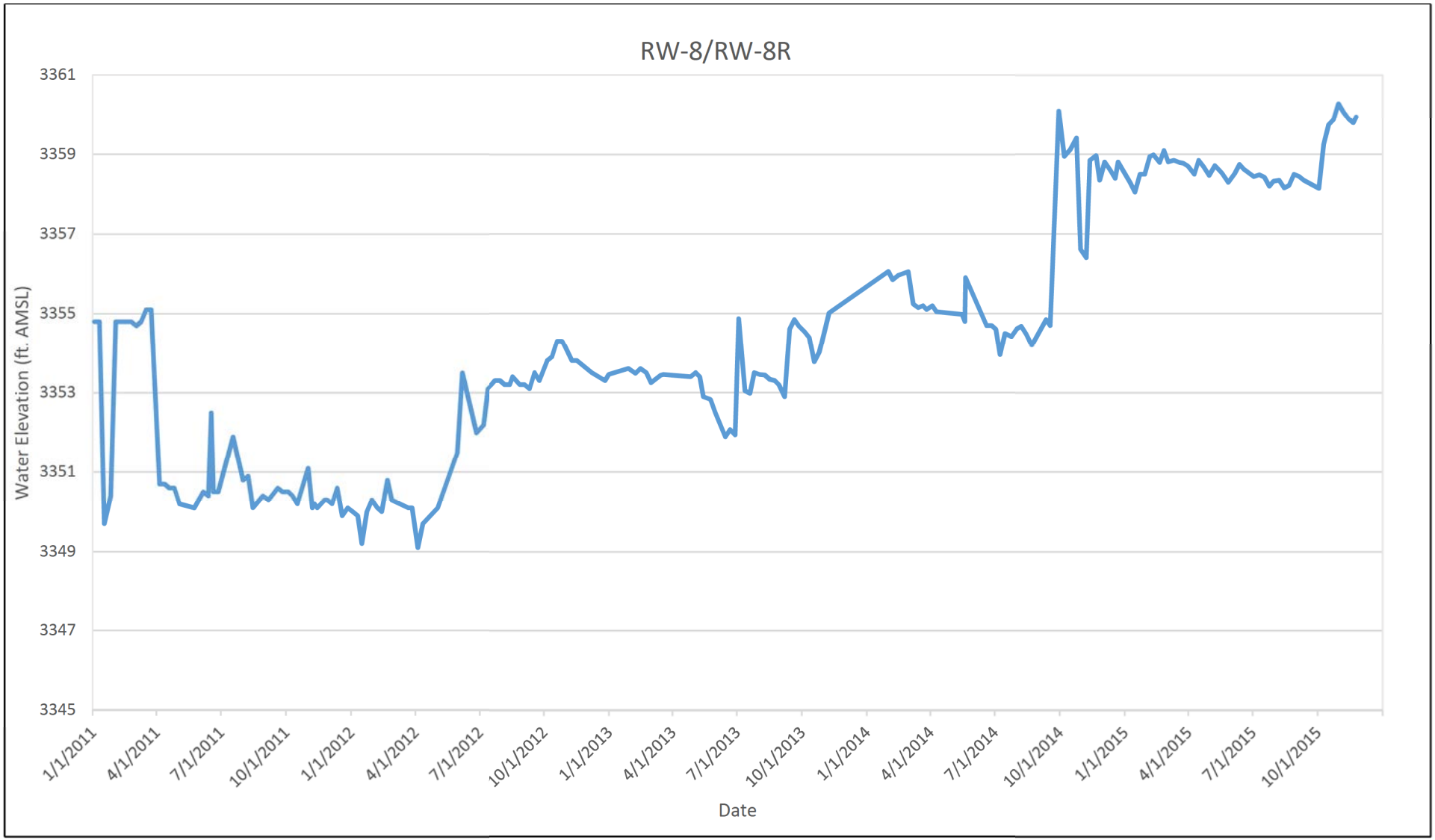
Attachment G

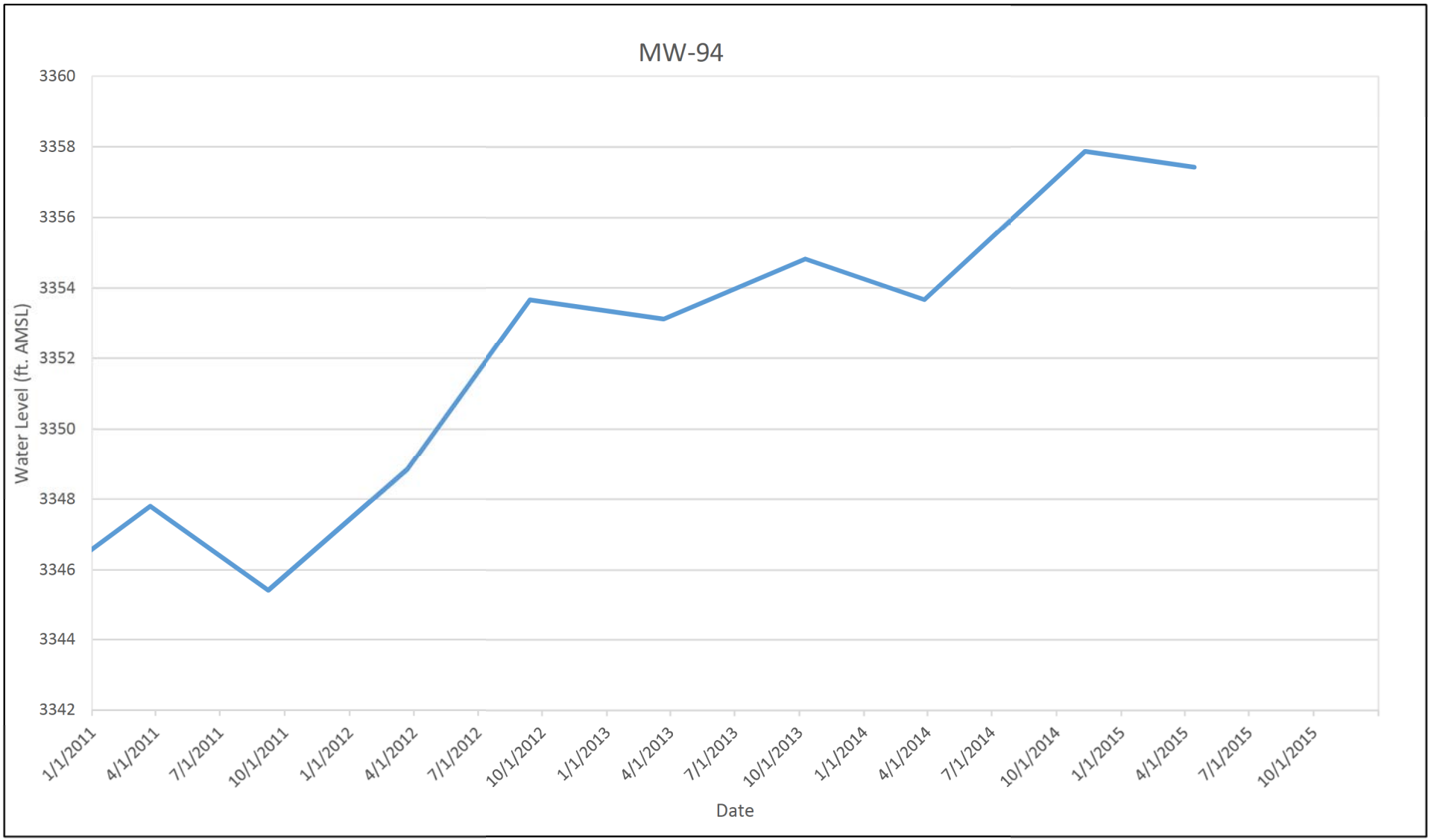
GW Level Trends

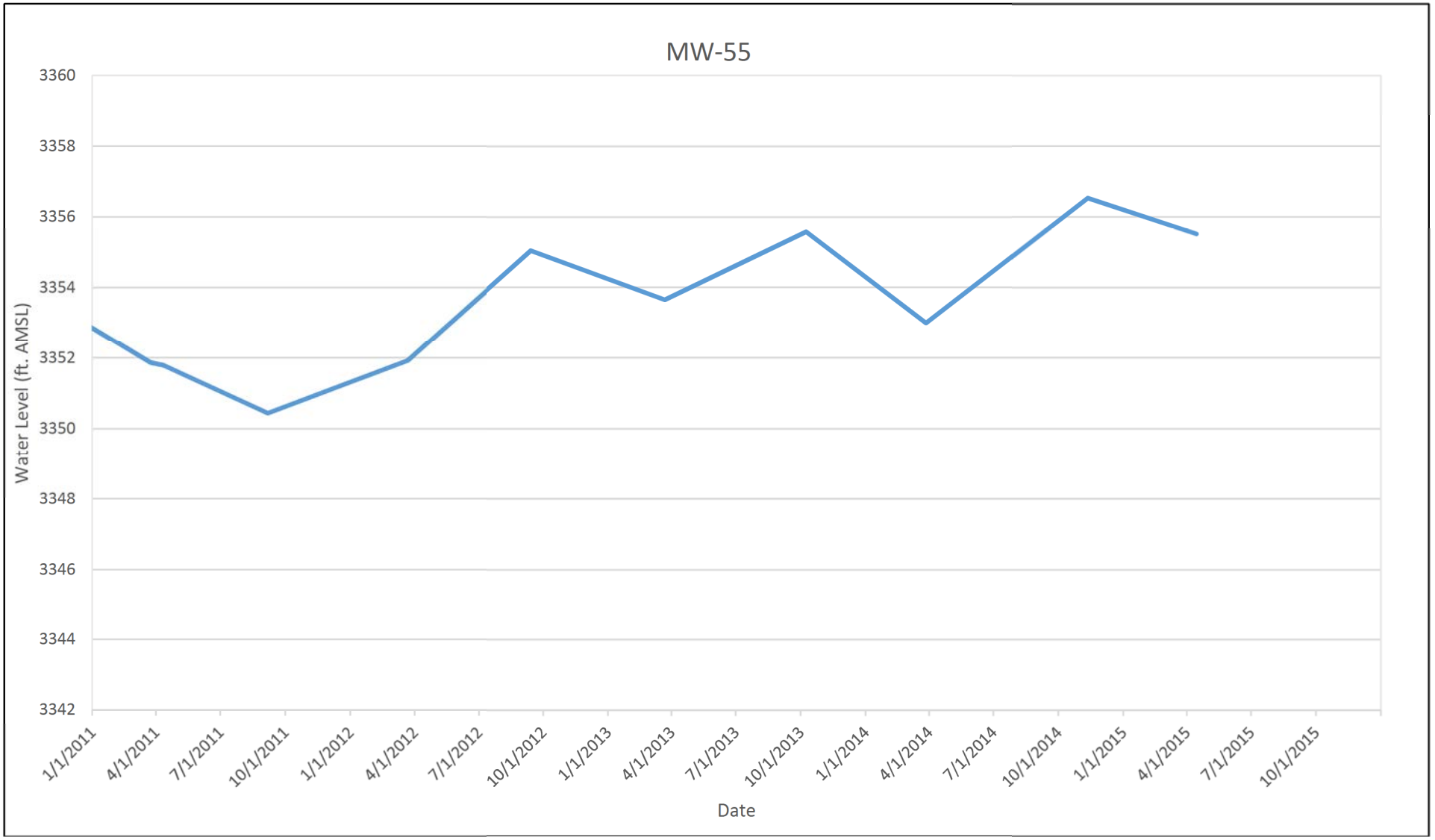

THREE
MW-117
MW-45
MW-18
MW-54B
MW-54A
NCL-49
MW-55
MW-56
MW-30
835
RW-17A
RW-17B
NCL-32
NCL-44
NCL-33
MW-115
RW-16A
RW-16B
NCL-34A
RW-17C
RW-17D
NCL
815
RW-16C
RW-16D
RW-17E
RW-17F
RW-16E
RW-16F
RW-17G
MW-108
MW-53
NCL-31
MW-19
RW-7
RW-7R
MW-94
834
MW-42
MW-29
838
RW-9
MW-41
830
63
75
61
65
RW-8R
RW-8
MW-67
829
RW-3
MW-40
18
MW-96
MW-43
809
836
RW-10
MW-114
59
58
MW-95
MW-39
806
801
TEL-1
MW-91
MW-138
MW-137
MW-90
MW-93
TEL
Area
49
TEL-2
MW-23
MW-60
RW-1R
RW-1
RW-2
MW-59
MW-92
RW-2R
TEL-3
TEL-4
MW-97
MW-62
MW-98
MW-61
1225
737
802
MW-63
MW-106
435
437
MW-49
1223

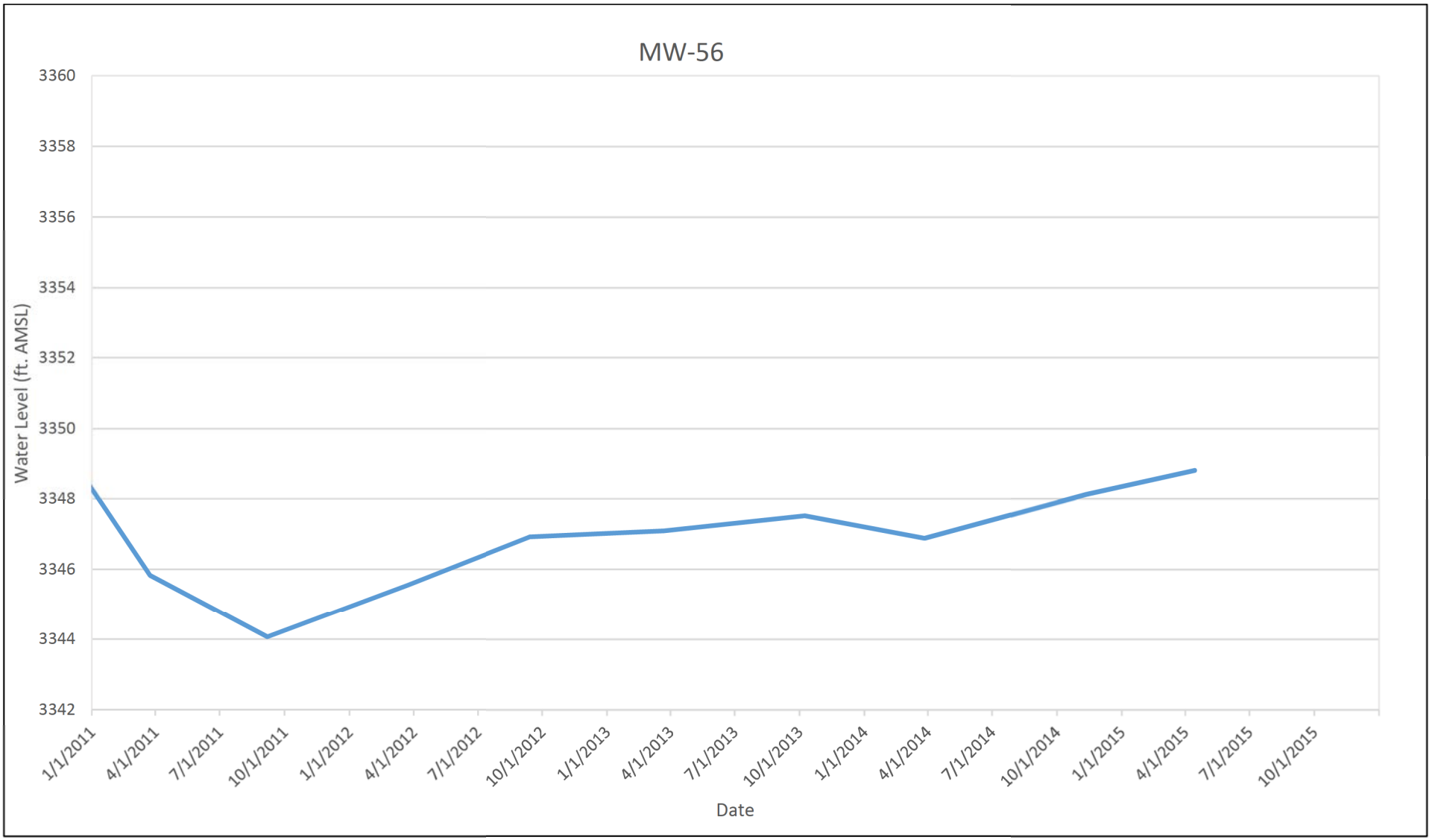

RW-1/RW-1R
Water Elevation (ft AMSL)
3361
3359
3357
3355
3353
3351
3349
3347
3345
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

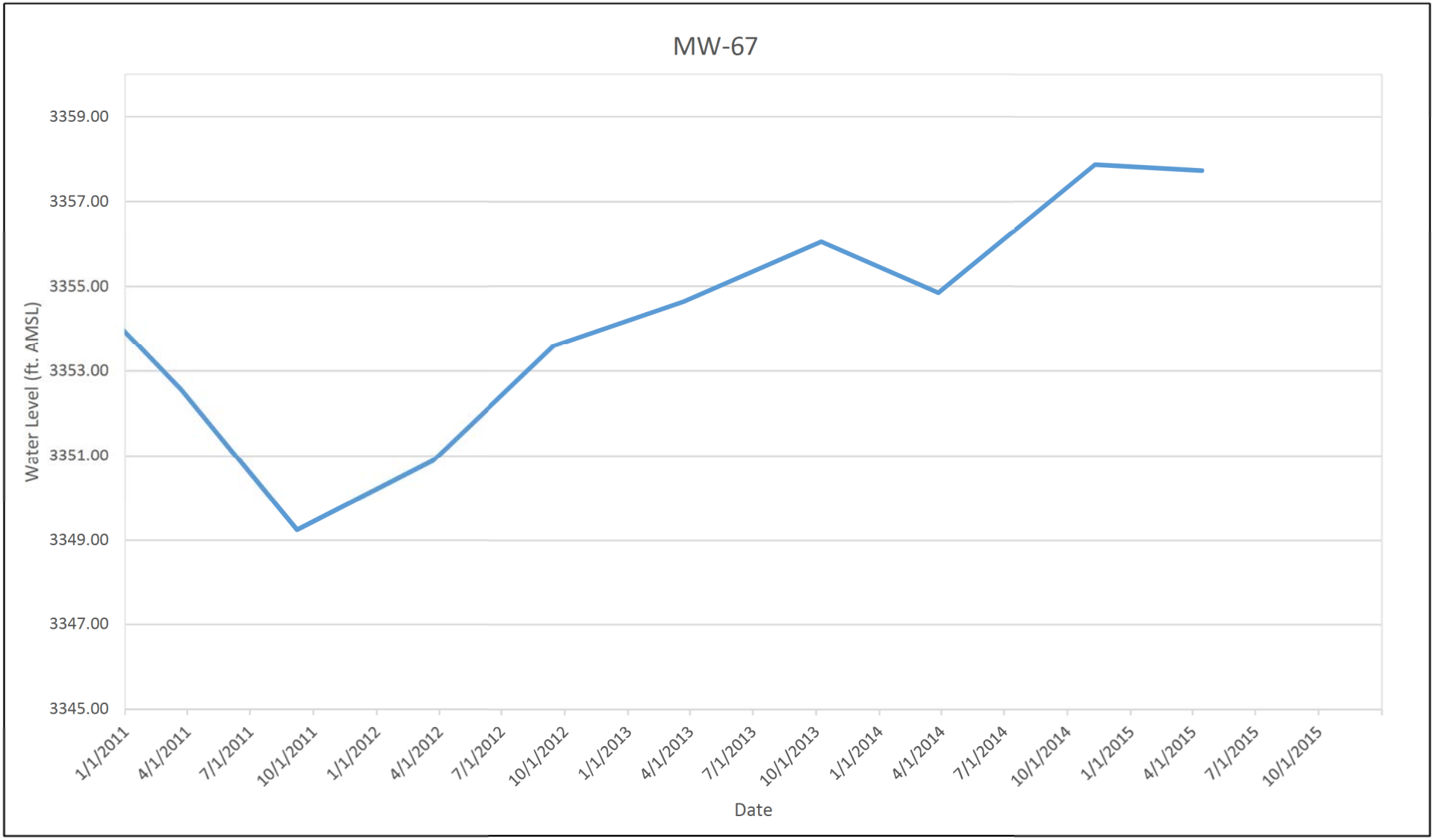

RW-7/RW-7R
Water Elevation (ft AMSL)
3361
3359
3357
3355
3353
3351
3349
3347
3345
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

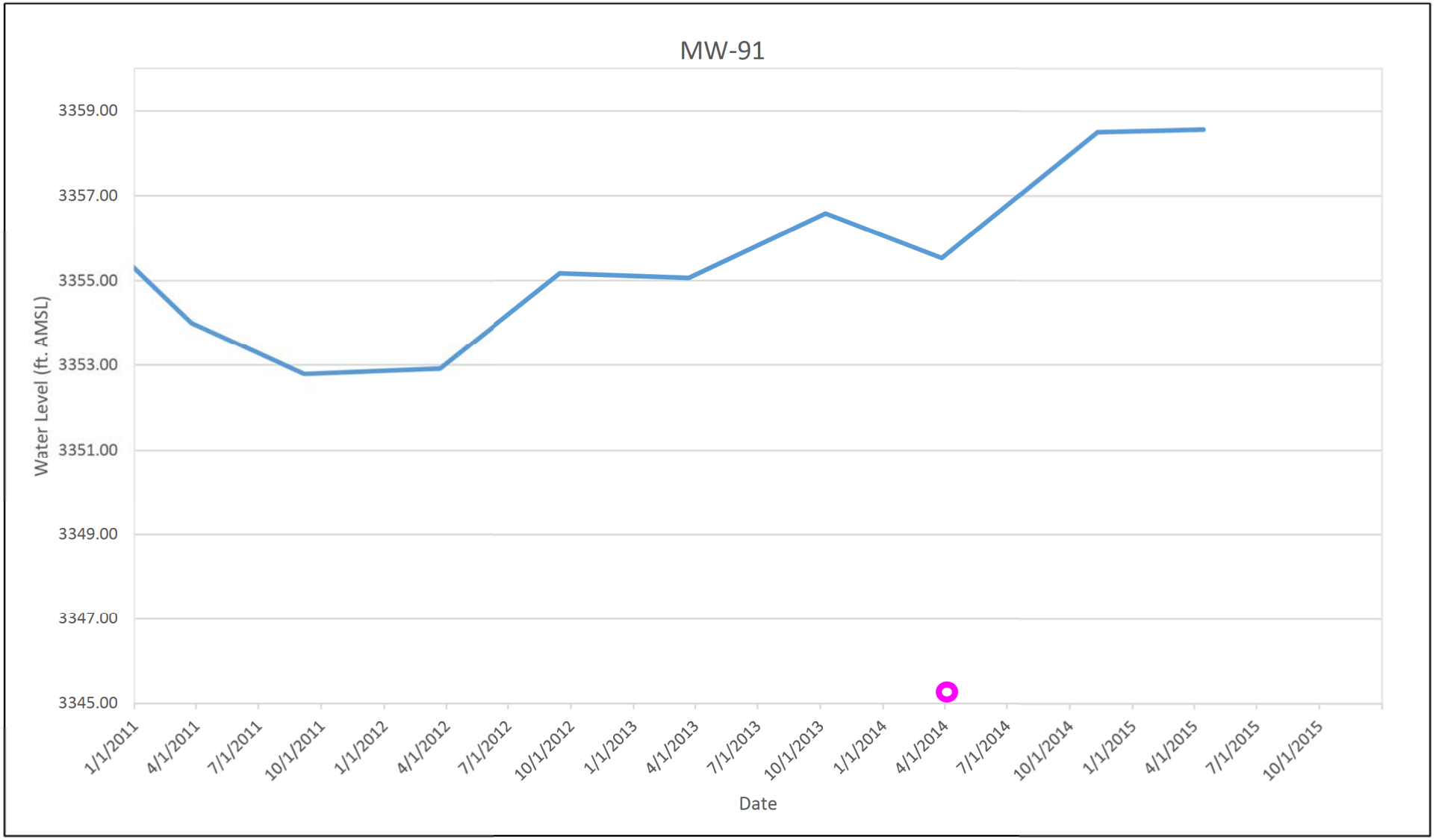

RW-8/RW-8R
Water Elevation (ft. AMSL)
3361
3359
3357
3355
3353
3351
3349
3347
3345
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

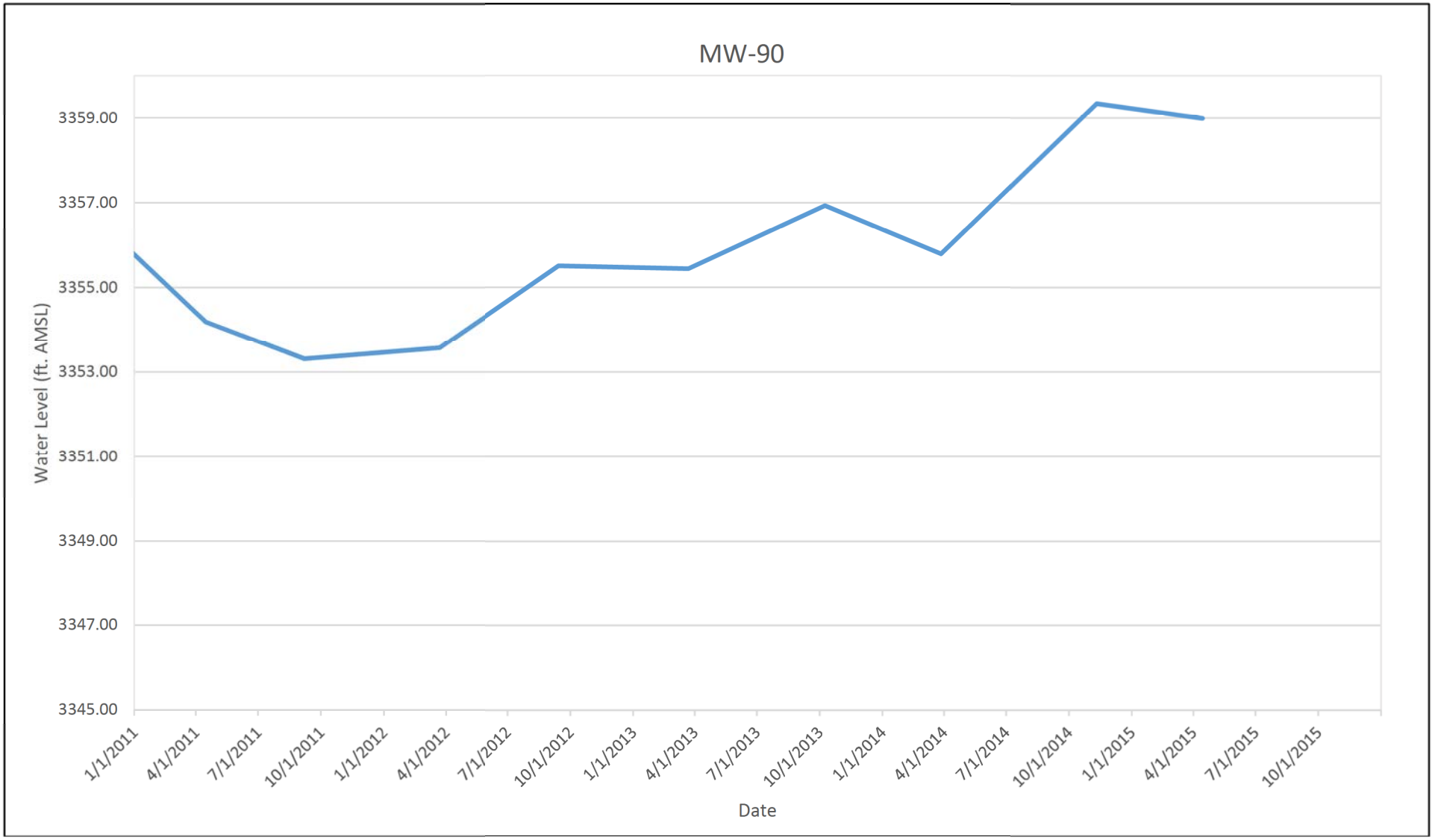

MW-94
Water Level (ft. AMSL)
3360
3358
3356
3354
3352
3350
3348
3346
3344
3342
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

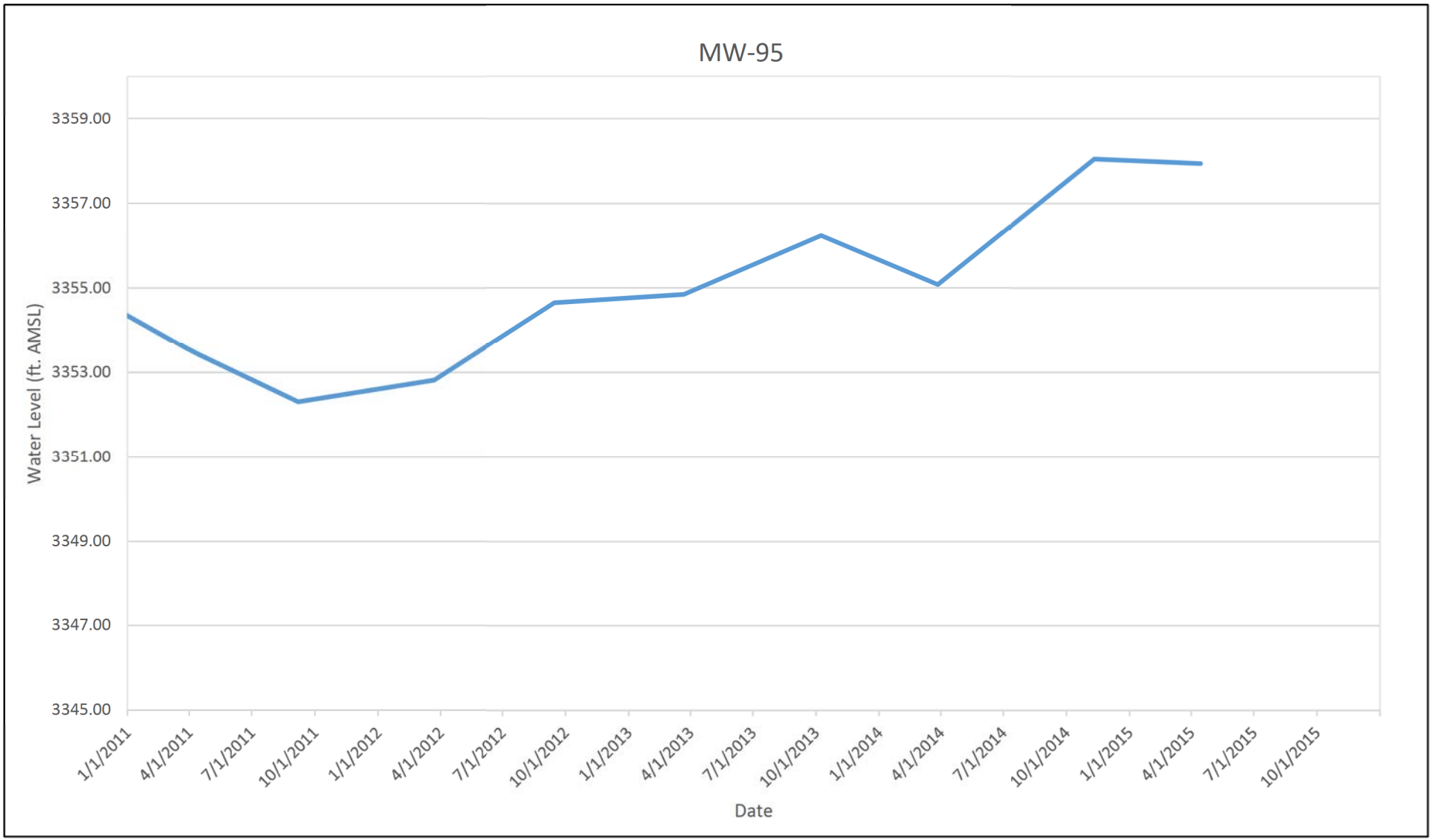

MW-55
Water Level (ft. AMSL)
3360
3358
3356
3354
3352
3350
3348
3346
3344
3342
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

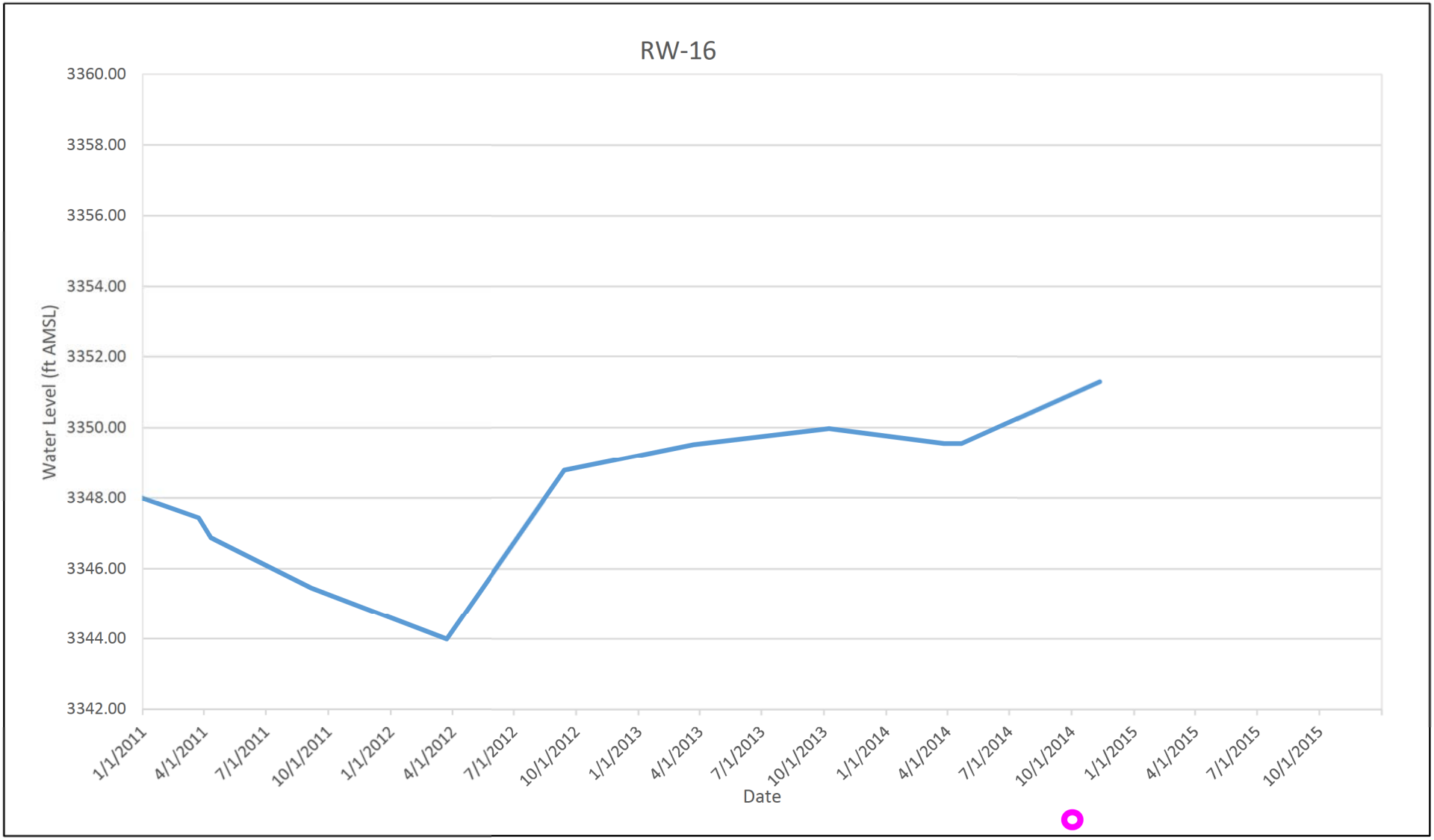

MW-56
Water Level (ft. AMSL)
3360
3358
3356
3354
3352
3350
3348
3346
3344
3342
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date

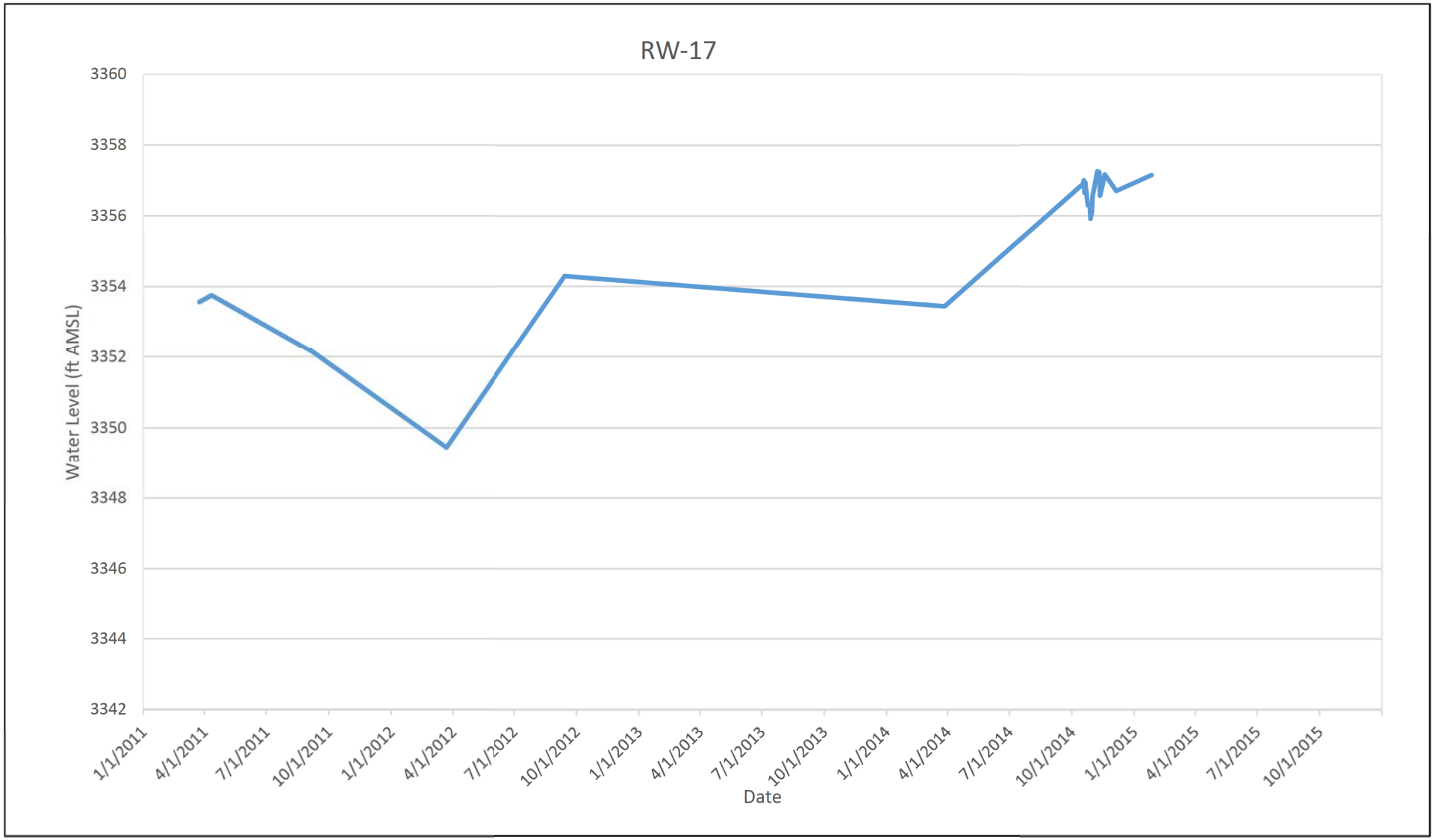

MW-67
Water Level (ft. AMSL)
3359.00
3357.00
3355.00
3353.00
3351.00
3349.00
3347.00
3345.00
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date


MW-91
Water Level (ft. AMSL)
3359.00
3357.00
3355.00
3353.00
3351.00
3349.00
3347.00
3345.00
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date


MW-90
Water Level (ft. AMSL)
3359.00
3357.00
3355.00
3353.00
3351.00
3349.00
3347.00
3345.00
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date


MW-95
Water Level (ft. AMSL)
3359.00
3357.00
3355.00
3353.00
3351.00
3349.00
3347.00
3345.00
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date


RW-16
Water Level (ft AMSL)
3360.00
3358.00
3356.00
3354.00
3352.00
3350.00
3348.00
3346.00
3344.00
3342.00
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date


RW-17
Water Level (ft AMSL)
3360
3358
3356
3354
3352
3350
3348
3346
3344
3342
1/1/2011
4/1/2011
7/1/2011
10/1/2011
1/1/2012
4/1/2012
7/1/2012
10/1/2012
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
Date