FREEPORT-McMoRan
COPPER & GOLD

Sierrita Operations
Environment, Land & Water Department
6200 West Duval Mine Road
PO Box 527
Green Valley, Arizona 85622-0527

March 31, 2014

Via Certified Mail # 7011 1150 0000 0283 8454
Return Receipt Requested

Ms. Madeline Keller
Arizona Department of Environmental Quality
Water Quality Compliance Section
1110 West Washington Street
Phoenix, Arizona 85007-2935

Re: Mitigation Order on Consent Docket No. P-50-06
January1st through March 31st, 2014 Status Report

Dear Ms. Keller:

In accordance with Section V.A. of the Mitigation Order on Consent, Docket No. P-50-06, Freeport-McMoRan Sierrita Inc. (Sierrita) submits the Status Report covering the period from January 1st through March 31st, 2014.

Since the last Status Report was submitted, the following actions have been taken under Section III of the Mitigation Order:

- The Sulfate Mitigation Action well field was started on January 6, 2014, and has been fully operational since then
- Completed the 1st quarter, 2014 groundwater monitoring
- Held the first Community Advisory Group meeting of the year on March 26, 2014.

The following activities are anticipated to be completed during the next quarter:

- Conduct quarterly groundwater monitoring according to the revised groundwater monitoring schedule.
- Hold the second CAG meeting of 2014.
- Submit the Semiannual groundwater monitoring report.

Also, please find the attached 2013 Interceptor Well Field Operations Monitoring Report, which Sierrita agreed to submit in the Mitigation Plan approval deferral letter sent to ADEQ on March 18, 2009.

Please do not hesitate to contact me at (520) 393-2347 if you have any questions regarding this submittal.

Sincerely,

Deborah L. Chismar

Deborah Chismar
Sr. Environmental Specialist
Freeport-McMoRan Sierrita Inc.

DC/ms
Attachment
20140331_001

xc: Mindi Cross, Arizona Department of Environmental Quality
David Haag, Arizona Department of Environmental Quality
John Broderick, Sierrita
Lana Fretz, Sierrita
Ned Hall, Freeport-McMoRan Copper & Gold
Stuart Brown, Freeport-McMoRan Copper & Gold
Jim Norris, Clear Creek Associates

TECHNICAL MEMORANDUM REPORT

TO: Ms. Martha Mottley
Chief Environmental Engineer
Freeport--McMoRan Sierrita Inc.
6200 West Duval Mine Road
Post Office Box 527
Green Valley, AZ 85622-0527

FROM: BasinWells Associates, PLLC

PREPARED BY: Buck Schmidt, Principal Hydrologist
BasinWells Associates, PLLC

REVIEWED BY: Michael W. Bostic, R.G,. Principal Hydrogeologist
BasinWells Associates, PLLC

DATE: March 30, 2014

PROJECT NO.: 13-005

SUBJECT: 2013 Freeport -- McMoran Sierrita Inc. Sulfate Mitigation Action Well Field Operations Performance Technical Memorandum Report.

1.0 INTRODUCTION

This operations performance technical memorandum presents operational information for calendar year 2013 for the Freeport-McMoRan Sierrita Inc. (Sierrita) Sulfate Mitigation Action Well Field (Well Field). The Well Field consists of two major parts: the Interceptor Well Field and the Mitigation Well Field. The Interceptor Well Field currently consists of 24 active interceptor wells (IWs). A new Interceptor Well is planned (IW-29), and is currently under construction. The Mitigation Well Field consists of four plume stabilization (PS) wells, four mass capture (MC) wells, and six focused feasibility study (FFS) wells. The PS, MC, and FFS wells were installed between 2011 and 2013 with full operation occurring in early 2014. The locations of the wells of the Well Field are shown on Figure 1. Table 1 tabulates well information including cadastral legal locations, target yield rates, well construction details, completion date and well age.

Groundwater from the Interceptor Well Field is pumped through a series of booster stations to the Mill Reservoir. The Mitigation Well Field groundwater is likewise pumped through a separate series of booster stations for delivery to the Mill Reservoir. Both systems are combined with water from other

Sierrita sources at several locations along the flow path. The mixed water in the Mill Reservoir is then used as process water for mine operations.

Well field performance goals established by Sierrita to meet the goal of operation include:

- Operate all wells on a continual duty cycle run time, as close to 100 percent as practical. Acceptable duty cycle run time is identified within the range of 90 to 95% considering required maintenance and monitoring activities.
- Operate each well at or above target yield rates developed for each well.

Figure 1. Sierrita Sulfate Mitigation Action Well Field

TABLE 1. SIERRITA SULFATE MITIGATION ACTION WELL FIELD CONSTRUCTION INFORMATION

Well	Cadastral Location	ADWR Reg. No.	Target Yield Rates (gpm)	Well Depth (ft)	Well Dia. (in.)	Borehole Diameter (in.)	Casing Material	Upper Screen Depth (ft bls)	Lower Screen Depth (ft bls)	Pump Gallery/ Interval (ft bls)	Current Pump Setting (ft bls)	Filter Pack Material	Basin Fill Alluvium Base Depth (ft bls)	Drill Year	Well Age
IW-1	D-18-13 29DCD	623129	250	855	14		STEEL	234	843	No	480	GRAVEL	760	1978	35.7
IW-2A	D-18-13 28CCC	216464	425	1051	14	20	STEEL	350	1031	600-640	620	GRAVEL	1020	2008	6.0
IW-3A	D-18-13 28CBC	201732	500	1052	14	20	STEEL	400	1030	No	540	GRAVEL	820	2004	10.2
IW-8	D-18-13 28BCC	508236	425	783	14	20	STEEL	382	783	No	540	GRAVEL	759	1984	29.7
IW-9	D-18-13 28BCC	508238	250	853	14	20	STEEL	412	853	No	605	GRAVEL	740	1984	29.7
IW-4	D-18-13 28BCB	623132	80	946	14		STEEL	312	946	No	600	GRAVEL	490	1978	35.7
IW-24	D-18-13 28BBB	200556	100	884	14	20	STEEL	348	860	No	602	GRAVEL	410	2004	10.2
IW-5A	D-18-13 28BBB	219131	90	900	14.5	20	STAINLESS STEEL	382	890	620-640	630	TACNA GRAVEL	436	2010	3.9
IW-23	D-18-13 21CCB	200555	150	964	14	20	STEEL	375	935	No	550	TACNA GRAVEL	420	2004	10.2
IW-10	D-18-13 21CBC	508237	325	831	14	20	STEEL	420	831	No	600	GRAVEL	730	1984	29.6
IW-22	D-18-13 21CBC	200554	325	590	14	20	STEEL	359	560	No	550	GRAVEL	550	2004	10.2
IW-11	D-18-13 21CBC	508235	325	605	14	20	STEEL	371	605	No	500	GRAVEL	563	1984	29.6
IW-6A	D-18-13 21BCC	545565	90	497	12	20	STEEL	356	456	No	460	GRAVEL	456	1994	19.3
IW-12	D-18-13 21BCB	545555	150	600	12	20	STEEL	358	560	No	560	GRAVEL	498	1994	19.3
IW-13	D-18-13 21BBC	545556	0	497	12	20	STEEL	355	456	No	460	GRAVEL	452	1994	19.3
IW-14	D-18-13 21BBB	545557	75	549	12	20	STEEL	357	508	No	520	GRAVEL	509	1994	19.3
IW-15	D-18-13 16CCC	545558	50	547	12	20	STEEL	357	506	No	505	GRAVEL	507	1995	19.2
IW-19	D-18-13 16BCC	545562	200	540	12	20	STEEL	379	499	No	522	GRAVEL	498	1995	19.2
IW-20	D-18-13 16BCB	545563	0	502	12	20	STEEL	380	460	No	460	GRAVEL	470	1995	19.1
IW-21	D-18-13 16BBC	545564	150	601	12	20	STEEL	400	560	No	520	GRAVEL	520	1995	19.2
IW-25	D-18-13 28CBD	219596	450	782	16	24	STAINLESS STEEL	359	720	No	732	SILICA SAND	475	2010	3.4
IW-26	D-18-13 28BCD	219143	350	780	16	24	STAINLESS STEEL	340	720	No	732	SILICA SAND	475	2010	3.4
IW-27	D-18-13 28BBD	219136	100	720	14	22	STAINLESS STEEL	380	660	No	672	SILICA SAND	465	2010	3.4
IW-28	D-18-13 21CCA	219137	400	760	16	24	STAINLESS STEEL	380	700	No	712	SILICA SAND	680	2010	3.4
PS-1	D-18-13 03BBA	220861	600	1020	16.625	24	HSLA	560	980	640-680	890	SILICA SAND	914	2011	2.3
PS-2	D-17-13 34CDC	220862	600	1130	16.625	24	HSLA	560	1090	640-680	870	SILICA SAND	1090	2012	1.9
PS-3	D-17-13 34CDD	220863	600	1200	16.625	24	HSLA	520	1160	600-640		SILICA SAND	1160	2012	1.9
PS-4	D-18-13 03BCA	220864	750	1060	16.625	24	HSLA	560	1020	640-680	893	SILICA SAND	1020	2012	1.8
MC-1	D-18-13 16DAA	221660	700	915	16.625	24	HSLA	479	875	599-639	824	SILICA SAND	875	2013	0.9
MC-2	D-18-13 10CCB	221761	700	980	16.625	24	HSLA	479	940	600-640	855	SILICA SAND	940	2013	1.1
MC-3	D-18-13 09AAA	221661	600	870	16.625	24	HSLA	530	810	No	830	SILICA SAND	810	2012	1.4
MC-4	D-18-13 04DDC	220842	600	830	16.625	24	HSLA	560	770	No	810	SILICA SAND	770	2012	1.7
FFS-1	D-18-13 21ABC	221662	700	790	16.625	24	HSLA	448	729	No	753	SILICA SAND	730	2013	1.0
FFS-2	D-18-13 16DCA	221663	600	750	16.625	24	HSLA	470	690	No	703	SILICA SAND	680	2013	1.0
FFS-3	D-18-13 16ACD	221664	300	800	16.625	24	HSLA	510	740	No	762	SILICA SAND	736	2013	1.2
FFS-4	D-18-13 16ABA	221665	190	871	16.625	24	HSLA	540	830	640-680	788	SILICA SAND	830	2012	1.3
FFS-5	D-18-13 09DBA	221666	900	800	16.625	24	HSLA	569	739	No	775	SILICA SAND	740	2012	1.3
FFS-6	D-18-13 09ACA	221667	600	830	16.625	24	HSLA	528	769	No	750	SILICA SAND	770	2012	1.4

Notes: ft bls = feet below land surface; in. = inches; HSLA = High Strength Low Alloy Steel

2.0 WELL FIELD OPERATIONS

Total groundwater withdrawals in 2013 of the Well Field are tabulated on Table 2. The well field withdrew about 7,447 acre-feet of groundwater in 2013. The Well Field, in total, produced about 85 percent of the performance goals with respect to potential total groundwater withdrawal considering the target rates.

Well performance in 2013 on a well by well basis are tabulated in Attachment A. Run time percentages of the Interceptor Well Field wells ranged from 49.7 to 99.8 percent. Lower percentages were calculated for the Mitigation Well Field wells because wells were only activated for testing in December 2013. As needed well and transmission line maintenance activities, and shut down of wells to perform monitoring activities resulted in performance of most wells within 90 to 95 percent duty cycle run times and considered acceptable.

Well field data plots including a well construction diagram; static and pumping water levels; yield rates; calculated specific capacity; sulfate concentrations; static saturated thickness of basin fill alluvium; and annotated descriptions of maintenance activities from 2005 to 2014 are included in Attachment B.

TABLE 2. 2013 SIERRITA SULFATE MITIGATION ACTION WELL FIELD TOTAL GROUNDWATER WITHDRAWAL

Total Gallons Pumped:	**2,426,945,600**
Total Acre-Feet Pumped:	**7,447**

3.0 SUMMARY OF WELL MAINTENANCE ACTIVITIES

Summary of well and pump maintenance activities performed in 2013 are tabulated on Table 3 below. All maintenance activities were performed following collection and evaluation of maintenance monitoring parameters as described in the *Sulfate Mitigation Action Well Field (Well Field) Operation and Maintenance Plan* (BasinWells, 2013).

TABLE 3. 2013 SIERRITA SULFATE MITIGATION ACTION WELL FIELD SUMMARY OF WELL AND PUMP MAINTENANCE ACTIVITIES

Well	Approx. Dates Off Line for Maintenance	Maintenance Activities
IW-1	-	Sections of tubing replaced, limited time off line
IW-2A	5/2013 - 6/2013	Replaced column pipe (6"), pump (6 Stage) and motor (75 HP)
IW-8	4/2013	Pump equipment refurbished
IW-19	8/2013 - 10/2013	Replaced column pipe (6") and submersible pump (14 Stage)
IW-20	4/2013 - 7/2013	Replaced column pipe (fiberglass 2") and submersible pump (26 Stage)
IW-26	10/2013 - 12/2013	Pump and motor issue to be diagnosed
IW-27	1/2013 - 12/2013	Pump and motor issue to be diagnosed
PS-1	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
PS-2	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
PS-3	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
PS-4	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014

TABLE 3. 2013 SIERRITA SULFATE MITIGATION ACTION WELL FIELD SUMMARY OF WELL AND PUMP MAINTENANCE ACTIVITIES

Well	Approx. Dates Off Line for Maintenance	Maintenance Activities
MC-1	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
MC-2	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
MC-3	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
MC-4	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-1	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-2	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-3	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-4	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-5	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014
FFS-6	1/1/2013 - 10/31/2013	Pending Activation
	10/31/2013 - 12/31/13	Testing Pump Equipment for Activation on 1/1/2014

4.0 FUTURE MAINTENANCE ACTIVITIES

Future maintenance activities will continue to adhere to activities and frequencies as described in *Sulfate Mitigation Action Well Field (Well Field) Operation and Maintenance Plan* (BasinWells, 2013). All maintenance activities to be performed following collection and evaluation of maintenance monitoring parameters.

Specific activities identified include the installation of a new interceptor well, IW-29, approximately 1,500 feet east of IW-28 (See Figure 1). Installation of the well is currently under way as of the date of this technical memorandum.

5.0 REFERENCES

BasinWells Associates, PLLC, *Freeport-McMoran Sierrita Inc., Sulfate Mitigation Action Well Field (Well Field) Operation and Maintenance Plan*, December 31, 2013.

ATTACHMENT A

SIERRITA SULFATE MITIGATION ACTION WELL FIELD PERFORMANCE SUMMARY

ATTACHMENT A.
SUMMARY OF 2013 INTERCEPTOR WELL PERFORMANCE
FREEPORT MCMORAN SIERRITA, INC.

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-1	Jan	4,373,400	197	13.4	370
	Feb	14,318,000	628	43.9	380
	Mar	15,576,000	723	47.8	359
	Apr	14,977,000	691	46.0	361
	May	14,706,000	632	45.1	388
	Jun	15,308,000	639	47.0	399
	Jul	16,416,000	661	50.4	414
	Aug	17,049,000	718	52.3	396
	Sep	17,587,000	738	54.0	397
	Oct	16,993,000	666	52.1	425
	Nov	16,091,000	713	49.4	376
	Dec	17,690,000	761	54.3	387

IW-1 Total Gallons Pumped:	181,084,400
IW-1 Total Acre-Feet Pumped:	556
IW-1 Average Yield Rate (gpm):	389
IW-1 % Run Time:	88.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-2A	Jan	14,089,000	729	43.2	322
	Feb	12,871,000	660	39.5	325
	Mar	13,945,000	726	42.8	320
	Apr	13,273,000	705	40.7	314
	May	12,115,000	643	37.2	314
	Jun	0	0	0.0	0
	Jul	955,000	47	2.9	341
	Aug	13,832,000	727	42.4	317
	Sep	13,692,000	746	42.0	306
	Oct	13,384,000	701	41.1	318
	Nov	12,914,000	697	39.6	309
	Dec	4,456,000	244	13.7	304

IW-2A Total Gallons Pumped:	125,526,000
IW-2A Total Acre-Feet Pumped:	385
IW-2A Average Yield Rate (gpm):	316
IW-2A % Run Time:	75.6%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-3A	Jan	28,263,000	741	86.7	636
	Feb	25,057,000	663	76.9	630
	Mar	26,977,000	730	82.8	616
	Apr	25,473,000	696	78.2	610
	May	23,451,000	667	72.0	586
	Jun	23,094,000	645	70.9	597
	Jul	27,399,000	783	84.1	583
	Aug	24,402,000	701	74.9	580
	Sep	25,451,000	747	78.1	568
	Oct	24,800,000	715	76.1	578
	Nov	23,746,000	679	72.9	583
	Dec	26,086,000	752	80.0	578

IW-3A Total Gallons Pumped:	304,199,000
IW-3A Total Acre-Feet Pumped:	933
IW-3A Average Yield Rate (gpm):	595
IW-3A % Run Time:	97.2%

Well	Month	Gallons Pumped [1]	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-8	Jan	18,322,000	763	56.2	400
	Feb	18,322,000	763	56.2	400
	Mar	18,322,000	763	56.2	400
	Apr	0	0	0.0	0
	May	17,800,000	677	54.6	438
	Jun	17,240,000	653	52.9	440
	Jul	20,304,000	789	62.3	429
	Aug	18,506,000	733	56.8	421
	Sep	18,781,000	756	57.6	414
	Oct	18,377,000	738	56.4	415
	Nov	17,047,000	693	52.3	410
	Dec	18,521,000	758	56.8	407

1 - Totalizer failure Jan - March, gallons pumped estimated.

IW-8 Total Gallons Pumped:	201,542,000
IW-8 Total Acre-Feet Pumped:	618
IW-8 Average Yield Rate (gpm):	415
IW-8 % Run Time:	92.3%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-9	Jan	9,734,000	744	29.9	218
	Feb	7,068,000	531	21.7	222
	Mar	8,593,000	639	26.4	224
	Apr	8,237,000	621	25.3	221
	May	6,994,000	577	21.5	202
	Jun	7,150,000	599	21.9	199
	Jul	7,158,000	606	22.0	197
	Aug	8,255,000	724	25.3	190
	Sep	8,340,000	755	25.6	184
	Oct	8,154,000	719	25.0	189
	Nov	7,872,000	691	24.2	190
	Dec	8,685,000	759	26.7	191

IW-9 Total Gallons Pumped:	96,240,000
IW-9 Total Acre-Feet Pumped:	295
IW-9 Average Yield Rate (gpm):	201
IW-9 % Run Time:	90.9%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-4	Jan	3,646,000	750	11.2	81
	Feb	3,273,000	665	10.0	82
	Mar	3,586,000	738	11.0	81
	Apr	3,283,000	693	10.1	79
	May	2,947,000	702	9.0	70
	Jun	2,657,000	615	8.2	72
	Jul	3,092,000	736	9.5	70
	Aug	1,326,000	316	4.1	70
	Sep	2,782,000	653	8.5	71
	Oct	3,067,000	673	9.4	76
	Nov	3,175,000	661	9.7	80
	Dec	3,388,000	693	10.4	81

IW-4 Total Gallons Pumped:	36,222,000
IW-4 Total Acre-Feet Pumped:	111
IW-4 Average Yield Rate (gpm):	76
IW-4 % Run Time:	90.1%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-24	Jan	2,140,000	660	6.6	54
	Feb	2,261,000	628	6.9	60
	Mar	2,147,000	534	6.6	67
	Apr	2,903,000	645	8.9	75
	May	3,166,000	651	9.7	81
	Jun	3,221,000	663	9.9	81
	Jul	3,750,000	801	11.5	78
	Aug	3,138,000	758	9.6	69
	Sep	2,827,000	799	8.7	59
	Oct	2,332,000	747	7.2	52
	Nov	2,074,000	705	6.4	49
	Dec	2,184,000	740	6.7	49

IW-24 Total Gallons Pumped:	32,143,000
IW-24 Total Acre-Feet Pumped:	99
IW-24 Average Yield Rate (gpm):	64
IW-24 % Run Time:	95.1%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-5A	Jan	1,971,000	747	6.0	44
	Feb	1,688,000	612	5.2	46
	Mar	1,929,000	765	5.9	42
	Apr	1,740,000	690	5.3	42
	May	1,746,000	677	5.4	43
	Jun	1,666,000	661	5.1	42
	Jul	1,838,000	806	5.6	38
	Aug	1,551,000	760	4.8	34
	Sep	1,504,000	760	4.6	33
	Oct	1,451,000	733	4.5	33
	Nov	1,607,000	496	4.9	54
	Dec	2,388,000	761	7.3	52

IW-5A Total Gallons Pumped:	21,079,000
IW-5A Total Acre-Feet Pumped:	65
IW-5A Average Yield Rate (gpm):	41
IW-5A % Run Time:	96.7%

ATTACHMENT A.
SUMMARY OF 2013 INTERCEPTOR WELL PERFORMANCE
FREEPORT MCMORAN SIERRITA, INC.

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-23	Jan	5,125,000	712	15.7	120
	Feb	4,520,000	608	13.9	124
	Mar	5,033,000	717	15.4	117
	Apr	4,762,000	696	14.6	114
	May	4,745,000	694	14.6	114
	Jun	4,444,000	692	13.6	107
	Jul	2,708,000	422	8.3	107
	Aug	3,574,000	523	11.0	114
	Sep	4,917,000	745	15.1	110
	Oct	7,626,000	515	23.4	247
	Nov	9,170,000	629	28.1	243
	Dec	10,673,000	780	32.8	228

IW-23 Total Gallons Pumped:	67,297,000
IW-23 Total Acre-Feet Pumped:	207
IW-23 Average Yield Rate (gpm):	145
IW-23 % Run Time:	88.3%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-10	Jan	13,129,000	752	40.3	291
	Feb	11,315,000	650	34.7	290
	Mar	12,419,000	729	38.1	284
	Apr	11,758,000	676	36.1	290
	May	10,535,000	620	32.3	283
	Jun	11,246,000	665	34.5	282
	Jul	13,381,000	772	41.1	289
	Aug	12,105,000	721	37.1	280
	Sep	12,327,000	729	37.8	282
	Oct	12,510,000	724	38.4	288
	Nov	11,774,000	681	36.1	288
	Dec	12,528,000	717	38.4	291

IW-10 Total Gallons Pumped:	145,027,000
IW-10 Total Acre-Feet Pumped:	445
IW-10 Average Yield Rate (gpm):	287
IW-10 % Run Time:	96.3%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-22	Jan	14,207,000	696	43.6	340
	Feb	13,348,000	654	41.0	340
	Mar	14,515,000	722	44.5	335
	Apr	13,786,000	690	42.3	333
	May	13,345,000	670	41.0	332
	Jun	13,106,000	658	40.2	332
	Jul	15,120,000	750	46.4	336
	Aug	14,114,000	717	43.3	328
	Sep	14,361,000	736	44.1	325
	Oct	17,327,000	727	53.2	397
	Nov	14,464,000	722	44.4	334
	Dec	15,205,000	749	46.7	338

IW-22 Total Gallons Pumped:	172,898,000
IW-22 Total Acre-Feet Pumped:	531
IW-22 Average Yield Rate (gpm):	339
IW-22 % Run Time:	96.9%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-11	Jan	15,565,000	719	47.8	361
	Feb	14,313,000	659	43.9	362
	Mar	15,717,000	738	48.2	355
	Apr	14,671,000	681	45.0	359
	May	14,176,000	673	43.5	351
	Jun	13,910,000	651	42.7	356
	Jul	16,346,000	763	50.2	357
	Aug	14,979,000	728	46.0	343
	Sep	15,158,000	745	46.5	339
	Oct	15,066,000	739	46.2	340
	Nov	14,324,000	686	44.0	348
	Dec	15,816,000	766	48.5	344

IW-11 Total Gallons Pumped:	180,041,000
IW-11 Total Acre-Feet Pumped:	552
IW-11 Average Yield Rate (gpm):	351
IW-11 % Run Time:	97.6%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-6A	Jan	3,715,000	728	11.4	85
	Feb	2,600,000	522	8.0	83
	Mar	2,913,000	599	8.9	81
	Apr	3,226,000	672	9.9	80
	May	3,405,000	624	10.4	91
	Jun	3,364,000	667	10.3	84
	Jul	3,790,000	743	11.6	85
	Aug	115,000	23	0.4	84
	Sep	3,486,000	700	10.7	83
	Oct	2,756,000	516	8.5	89
	Nov	1,602,000	314	4.9	85
	Dec	1,484,000	305	4.6	81

IW-6A Total Gallons Pumped:	32,456,000
IW-6A Total Acre-Feet Pumped:	100
IW-6A Average Yield Rate (gpm):	84
IW-6A % Run Time:	73.2%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-12	Jan	6,416,000	748	19.7	143
	Feb	5,720,000	657	17.6	145
	Mar	6,267,000	736	19.2	142
	Apr	5,874,000	685	18.0	143
	May	4,041,000	471	12.4	143
	Jun	3,671,000	428	11.3	143
	Jul	6,521,000	760	20.0	143
	Aug	6,048,000	705	18.6	143
	Sep	6,166,000	745	18.9	138
	Oct	6,145,000	742	18.9	138
	Nov	5,797,000	695	17.8	139
	Dec	6,379,000	763	19.6	139

IW-12 Total Gallons Pumped:	69,045,000
IW-12 Total Acre-Feet Pumped:	212
IW-12 Average Yield Rate (gpm):	141
IW-12 % Run Time:	92.9%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-13	Jan	1,006,000	762	3.1	22
	Feb	908,000	658	2.8	23
	Mar	997,000	722	3.1	23
	Apr	934,000	677	2.9	23
	May	892,000	676	2.7	22
	Jun	896,000	649	2.7	23
	Jul	1,076,000	780	3.3	23
	Aug	971,000	736	3.0	22
	Sep	982,000	744	3.0	22
	Oct	969,000	734	3.0	22
	Nov	938,000	680	2.9	23
	Dec	1,025,000	746	3.1	23

IW-13 Total Gallons Pumped:	11,594,000
IW-13 Total Acre-Feet Pumped:	36
IW-13 Average Yield Rate (gpm):	23
IW-13 % Run Time:	97.8%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-14	Jan	2,314,000	507	7.1	76
	Feb	1,678,000	359	5.1	78
	Mar	1,571,000	359	4.8	73
	Apr	1,368,000	292	4.2	78
	May	1,289,000	275	4.0	78
	Jun	1,188,000	254	3.6	78
	Jul	800,000	171	2.5	78
	Aug	1,381,000	460	4.2	50
	Sep	2,487,000	423	7.6	98
	Oct	2,428,000	413	7.5	98
	Nov	1,708,000	385	5.2	74
	Dec	2,095,000	474	6.4	74

IW-14 Total Gallons Pumped:	20,307,000
IW-14 Total Acre-Feet Pumped:	62
IW-14 Average Yield Rate (gpm):	77
IW-14 % Run Time:	49.9%

BasinWells Associates PLLC

ATTACHMENT A.
SUMMARY OF 2013 INTERCEPTOR WELL PERFORMANCE
FREEPORT MCMORAN SIERRITA, INC.

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-15	Jan	2,072,600	735	6.4	47
	Feb	1,874,300	665	5.8	47
	Mar	2,077,200	737	6.4	47
	Apr	1,961,400	681	6.0	48
	May	1,879,700	667	5.8	47
	Jun	1,862,700	661	5.7	47
	Jul	2,242,800	795	6.9	47
	Aug	2,026,700	719	6.2	47
	Sep	2,057,300	730	6.3	47
	Oct	2,055,100	729	6.3	47
	Nov	1,922,100	682	5.9	47
	Dec	2,149,800	759	6.6	47

IW-15 Total Gallons Pumped:	24,181,700
IW-15 Total Acre-Feet Pumped:	74
IW-15 Average Yield Rate (gpm):	47
IW-15 % Run Time:	97.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-19	Jan	6,453,000	742	19.8	145
	Feb	5,646,000	649	17.3	145
	Mar	6,291,000	733	19.3	143
	Apr	5,865,000	684	18.0	143
	May	5,547,000	660	17.0	140
	Jun	5,513,000	656	16.9	140
	Jul	6,690,000	764	20.5	146
	Aug	4,297,000	491	13.2	146
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	6,917,000	549	21.2	210
	Dec	9,567,000	761	29.4	210

IW-19 Total Gallons Pumped:	62,786,000
IW-19 Total Acre-Feet Pumped:	193
IW-19 Average Yield Rate (gpm):	156
IW-19 % Run Time:	76.4%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-20	Jan	1,627,200	695	5.0	39
	Feb	1,516,500	665	4.7	38
	Mar	1,601,600	741	4.9	36
	Apr	468,800	217	1.4	36
	May	0	0	0.0	
	Jun	654,800	352	2.0	31
	Jul	0	0	0.0	
	Aug	2,782,600	713	8.5	65
	Sep	1,360,800	756	4.2	30
	Oct	1,359,800	731	4.2	31
	Nov	1,255,200	697	3.9	30
	Dec	1,360,200	760	4.2	30

IW-20 Total Gallons Pumped:	13,987,500
IW-20 Total Acre-Feet Pumped:	43
IW-20 Average Yield Rate (gpm):	37
IW-20 % Run Time:	72.2%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-21	Jan	4,739,000	782	14.5	101
	Feb	4,185,000	691	12.8	101
	Mar	4,642,000	766	14.2	101
	Apr	4,014,000	662	12.3	101
	May	4,157,000	686	12.8	101
	Jun	4,085,000	674	12.5	101
	Jul	4,867,000	803	14.9	101
	Aug	4,409,000	728	13.5	101
	Sep	4,460,000	736	13.7	101
	Oct	4,510,000	730	13.8	103
	Nov	4,302,000	696	13.2	103
	Dec	4,752,000	763	14.6	104

IW-21 Total Gallons Pumped:	53,122,000
IW-21 Total Acre-Feet Pumped:	163
IW-21 Average Yield Rate (gpm):	102
IW-21 % Run Time:	99.5%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-25	Jan	20,377,000	738	62.5	460
	Feb	17,921,000	649	55.0	460
	Mar	20,184,000	731	61.9	460
	Apr	19,005,000	709	58.3	447
	May	17,767,000	668	54.5	443
	Jun	17,149,000	642	52.6	445
	Jul	20,735,000	777	63.6	445
	Aug	18,922,000	722	58.1	437
	Sep	19,351,000	757	59.4	426
	Oct	17,514,000	679	53.7	430
	Nov	14,226,000	544	43.7	436
	Dec	19,935,000	764	61.2	435

IW-25 Total Gallons Pumped:	223,086,000
IW-25 Total Acre-Feet Pumped:	685
IW-25 Average Yield Rate (gpm):	444
IW-25 % Run Time:	95.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-26	Jan	14,569,000	600	44.7	405
	Feb	13,354,000	568	41.0	392
	Mar	11,939,000	497	36.6	400
	Apr	13,043,000	531	40.0	409
	May	14,791,000	597	45.4	413
	Jun	12,127,000	487	37.2	415
	Jul	14,039,000	542	43.1	432
	Aug	13,069,000	509	40.1	428
	Sep	13,025,000	539	40.0	403
	Oct	10,176,000	421	31.2	403
	Nov	156,000	6	0.5	403
	Dec	16,000	1	0.0	403

IW-26 Total Gallons Pumped:	130,304,000
IW-26 Total Acre-Feet Pumped:	400
IW-26 Average Yield Rate (gpm):	410
IW-26 % Run Time:	60.5%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-27	Jan	1,450,000	161	4.4	150
	Feb	11,000	1	0.0	150
	Mar	1,000	0	0.0	150
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	0	0	0.0	0
	Dec	0	0	0.0	0

IW-27 Total Gallons Pumped:	1,462,000
IW-27 Total Acre-Feet Pumped:	4
IW-27 Average Yield Rate (gpm):	150
IW-27 % Run Time:	1.9%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-28	Jan	19,310,000	740	59.3	435
	Feb	17,074,000	732	52.4	389
	Mar	16,845,000	759	51.7	370
	Apr	14,576,000	723	44.7	336
	May	13,048,000	640	40.0	340
	Jun	13,183,000	658	40.5	334
	Jul	16,084,000	786	49.4	341
	Aug	14,321,000	719	43.9	332
	Sep	14,775,000	779	45.3	316
	Oct	14,440,000	723	44.3	333
	Nov	13,552,000	717	41.6	315
	Dec	14,525,000	765	44.6	316

IW-28 Total Gallons Pumped:	181,733,000
IW-28 Total Acre-Feet Pumped:	558
IW-28 Average Yield Rate (gpm):	347
IW-28 % Run Time:	99.8%

BasinWells Associates PLLC

ATTACHMENT A.
SUMMARY OF 2013 INTERCEPTOR WELL PERFORMANCE
FREEPORT MCMORAN SIERRITA, INC.

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
PS-1	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	655,000	15	2.0	728
	Nov	715,000	18	2.2	662
	Dec	2,543,000	63	7.8	673

PS-1 Total Gallons Pumped:	3,913,000
PS-1 Total Acre-Feet Pumped:	12
PS-1 Average Yield Rate (gpm):	679
PS-1 % Run Time:	1.1%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
PS-2	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	70,000	2	0.2	583
	Nov	787,000	19	2.4	690
	Dec	2,609,000	66	8.0	659

PS-2 Total Gallons Pumped:	3,466,000
PS-2 Total Acre-Feet Pumped:	11
PS-2 Average Yield Rate (gpm):	664
PS-2 % Run Time:	1.0%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
PS-3	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	57,000	2	0.2	475
	Nov	757,000	18	2.3	701
	Dec	2,583,000	67	7.9	643

PS-3 Total Gallons Pumped:	3,397,000
PS-3 Total Acre-Feet Pumped:	10
PS-3 Average Yield Rate (gpm):	651
PS-3 % Run Time:	1.0%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
PS-4	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	614,000	12	1.9	853
	Nov	984,000	19	3.0	863
	Dec	3,103,000	53	9.5	976

PS-4 Total Gallons Pumped:	4,701,000
PS-4 Total Acre-Feet Pumped:	14
PS-4 Average Yield Rate (gpm):	933
PS-4 % Run Time:	1.0%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
MC-1	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	34,000	1	0.1	567
	Dec	3,411,000	61	10.5	932

MC-1 Total Gallons Pumped:	3,445,000
MC-1 Total Acre-Feet Pumped:	11
MC-1 Average Yield Rate (gpm):	926
MC-1 % Run Time:	0.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
MC-2	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	23,000	1	0.1	383
	Dec	602,000	15	1.8	669

MC-2 Total Gallons Pumped:	625,000
MC-2 Total Acre-Feet Pumped:	2
MC-2 Average Yield Rate (gpm):	651
MC-2 % Run Time:	0.2%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
MC-3	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	19,000	1	0.1	317
	Dec	2,014,000	53	6.2	633

MC-3 Total Gallons Pumped:	2,033,000
MC-3 Total Acre-Feet Pumped:	6
MC-3 Average Yield Rate (gpm):	627
MC-3 % Run Time:	0.6%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
MC-4	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	17,000	1	0.1	283
	Dec	2,506,000	65	7.7	643

MC-4 Total Gallons Pumped:	2,523,000
MC-4 Total Acre-Feet Pumped:	8
MC-4 Average Yield Rate (gpm):	637
MC-4 % Run Time:	0.8%

ATTACHMENT A.
SUMMARY OF 2013 INTERCEPTOR WELL PERFORMANCE
FREEPORT MCMORAN SIERRITA, INC.

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-1	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	61,000	1	0.2	1017
	Dec	3,426,000	61	10.5	936

FFS-1 Total Gallons Pumped:	3,487,000
FFS-1 Total Acre-Feet Pumped:	11
FFS-1 Average Yield Rate (gpm):	937
FFS-1 % Run Time:	0.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-2	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	35,000	1	0.1	583
	Dec	3,596,000	61	11.0	983

FFS-2 Total Gallons Pumped:	3,631,000
FFS-2 Total Acre-Feet Pumped:	11
FFS-2 Average Yield Rate (gpm):	976
FFS-2 % Run Time:	0.7%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-3	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	11,000	1	0.0	183
	Dec	1,221,000	67	3.7	304

FFS-3 Total Gallons Pumped:	1,232,000
FFS-3 Total Acre-Feet Pumped:	4
FFS-3 Average Yield Rate (gpm):	302
FFS-3 % Run Time:	0.8%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-4	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	8,000	1	0.0	133
	Dec	778,000	65	2.4	199

FFS-4 Total Gallons Pumped:	786,000
FFS-4 Total Acre-Feet Pumped:	2
FFS-4 Average Yield Rate (gpm):	198
FFS-4 % Run Time:	0.8%

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-5	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	16,000	1	0.0	267
	Dec	3,842,000	60	11.8	1067

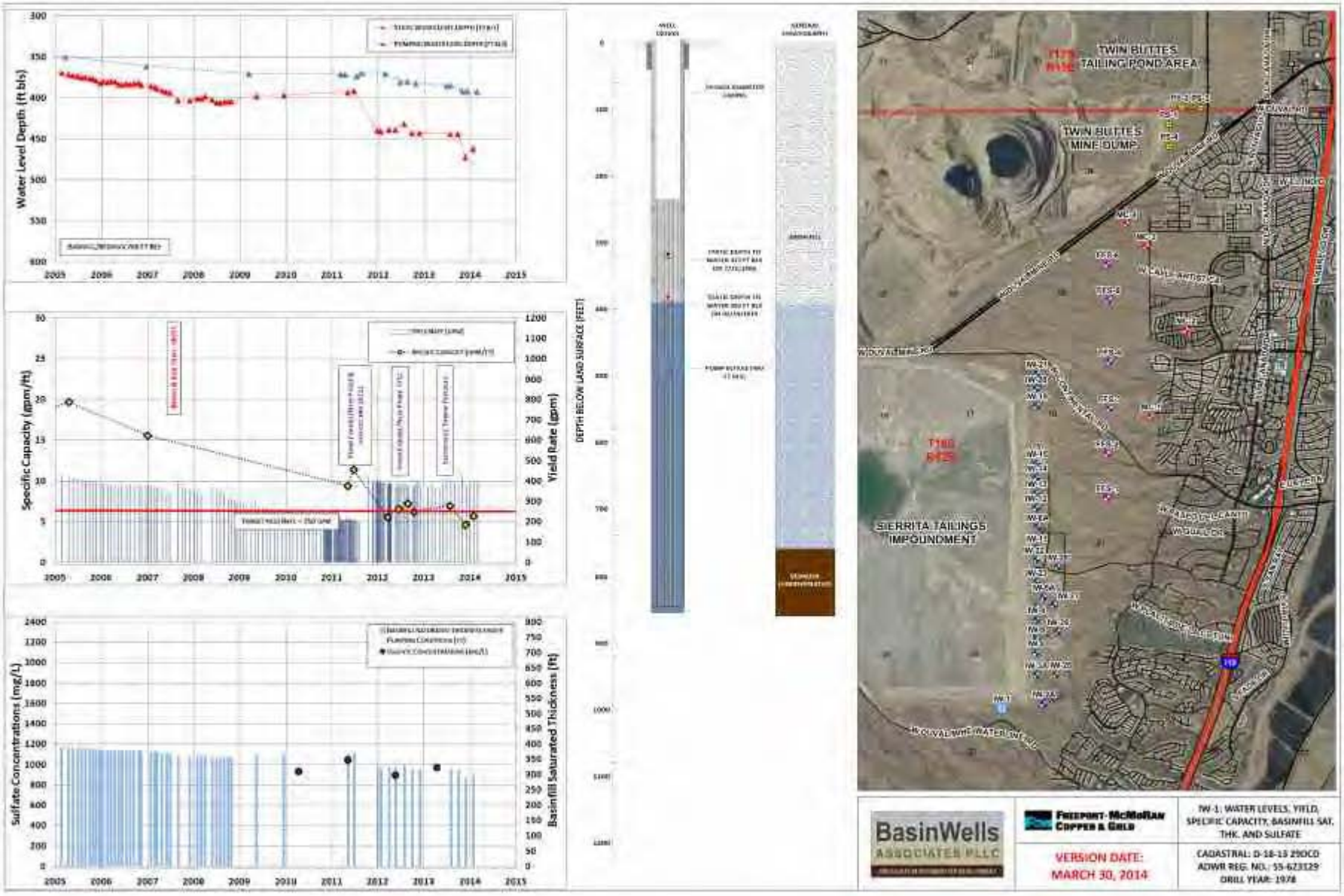
FFS-5 Total Gallons Pumped:	3,858,000
FFS-5 Total Acre-Feet Pumped:	12
FFS-5 Average Yield Rate (gpm):	1054
FFS-5 % Run Time:	0.7%

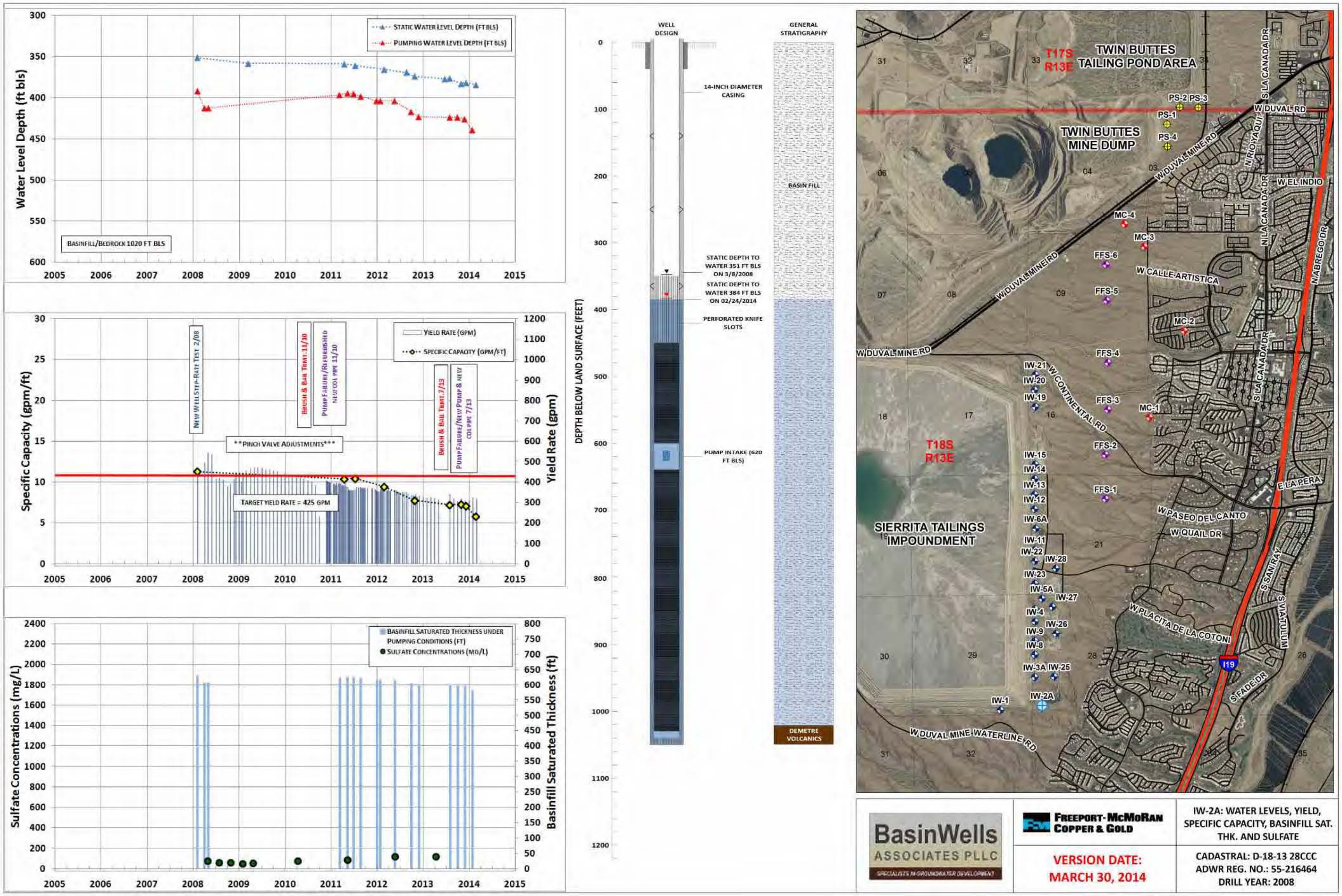
Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
FFS-6	Jan	0	0	0.0	0
	Feb	0	0	0.0	0
	Mar	0	0	0.0	0
	Apr	0	0	0.0	0
	May	0	0	0.0	0
	Jun	0	0	0.0	0
	Jul	0	0	0.0	0
	Aug	0	0	0.0	0
	Sep	0	0	0.0	0
	Oct	0	0	0.0	0
	Nov	42,000	1	0.1	700
	Dec	2,444,000	65	7.5	627

FFS-6 Total Gallons Pumped:	2,486,000
FFS-6 Total Acre-Feet Pumped:	8
FFS-6 Average Yield Rate (gpm):	628
FFS-6 % Run Time:	0.8%

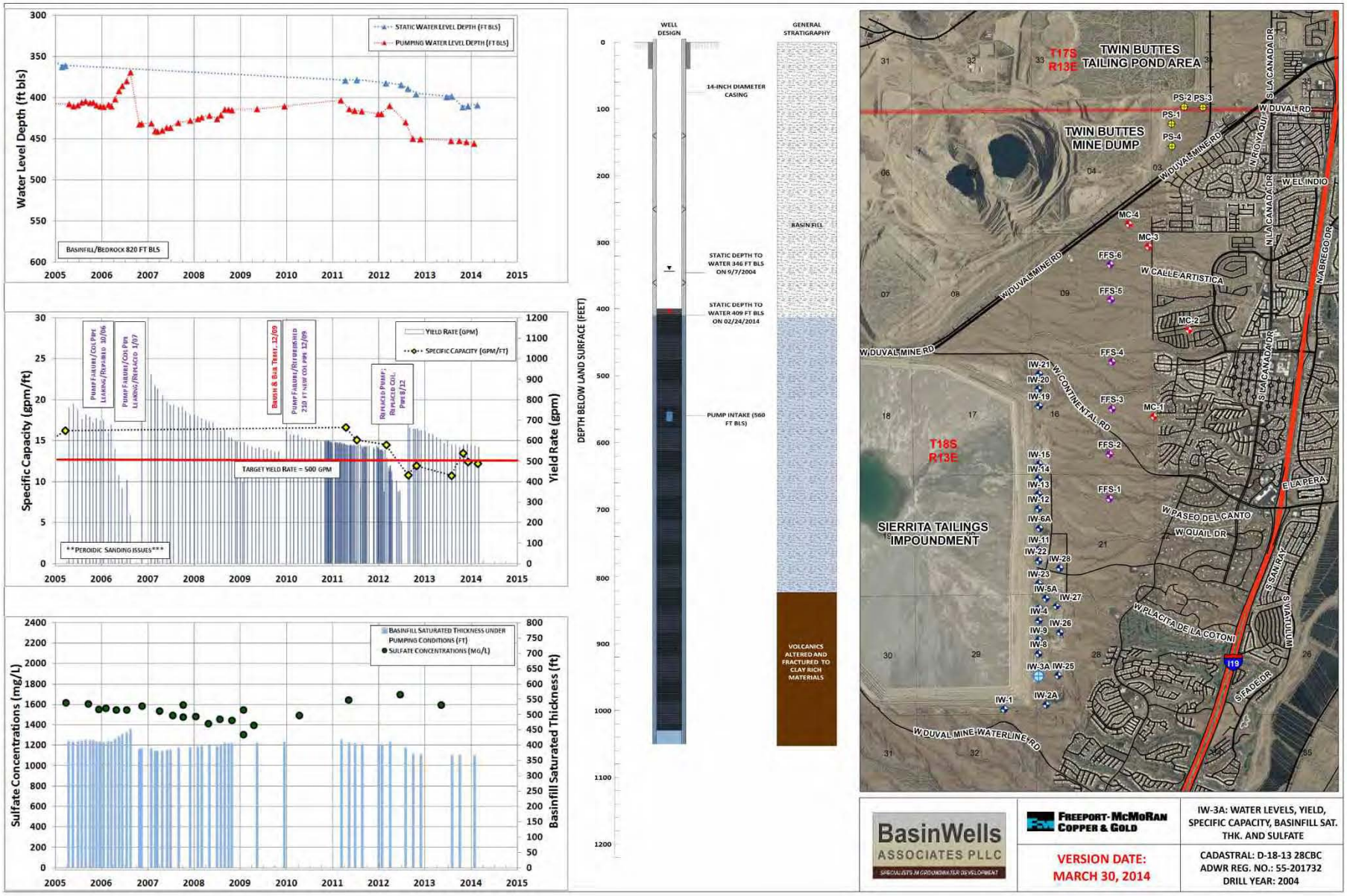
ATTACHMENT B

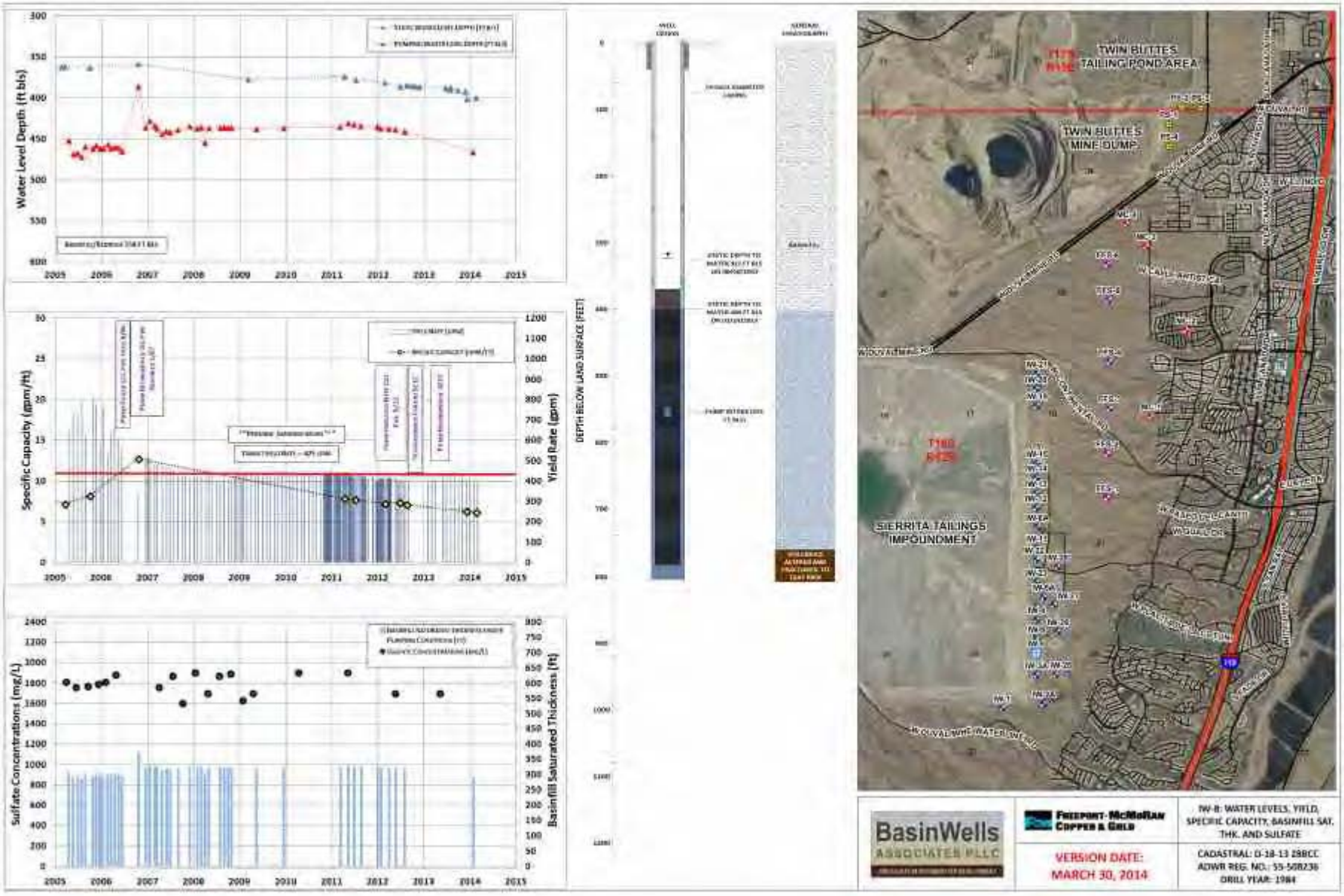
SIERRITA SULFATE MITIGATION ACTION WELL FIELD WELL FIELD DATA PLOTS

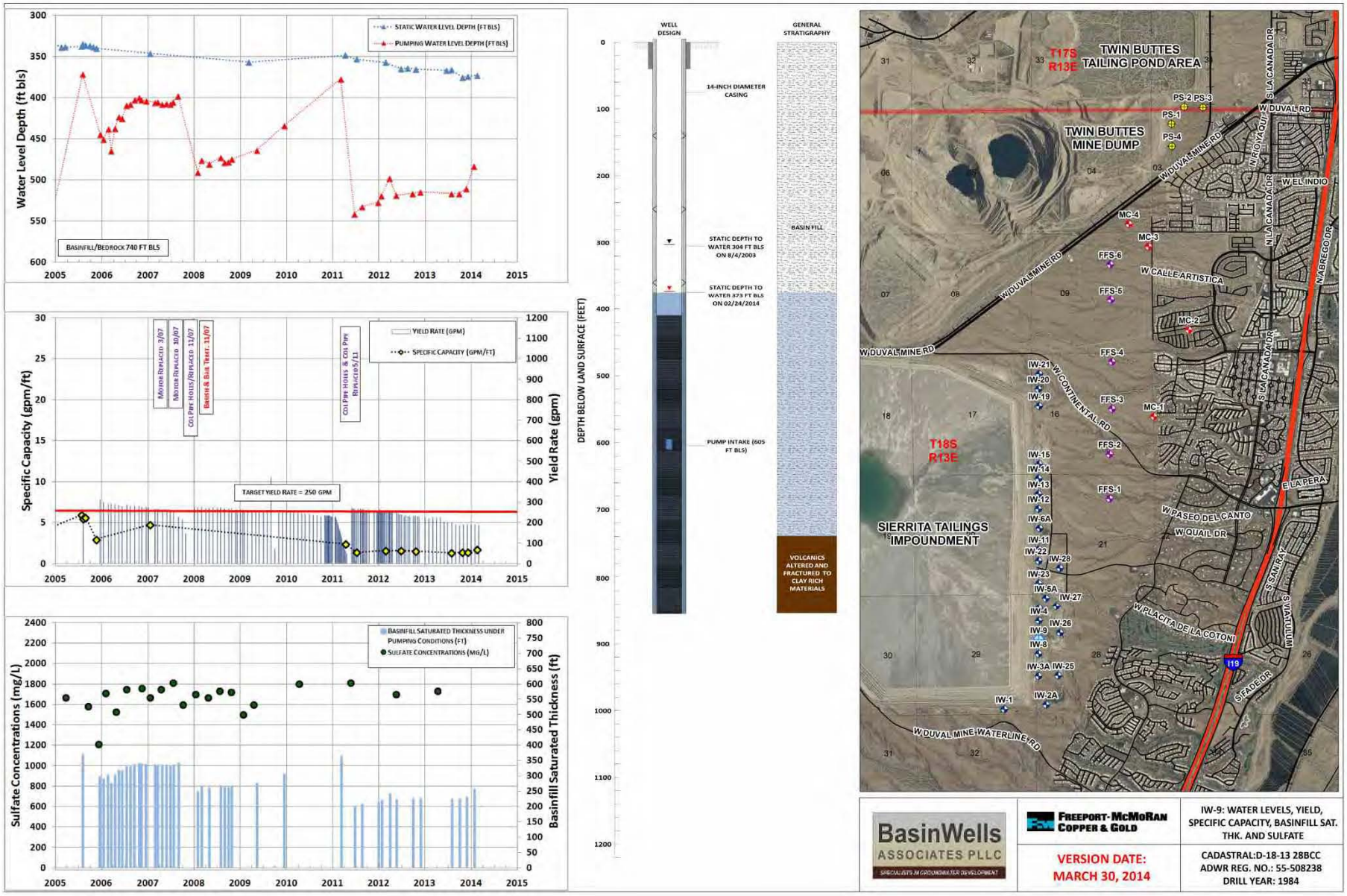

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-1: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 29DCD
ADWR REG. NO.: 55-623129
DRILL YEAR: 1978



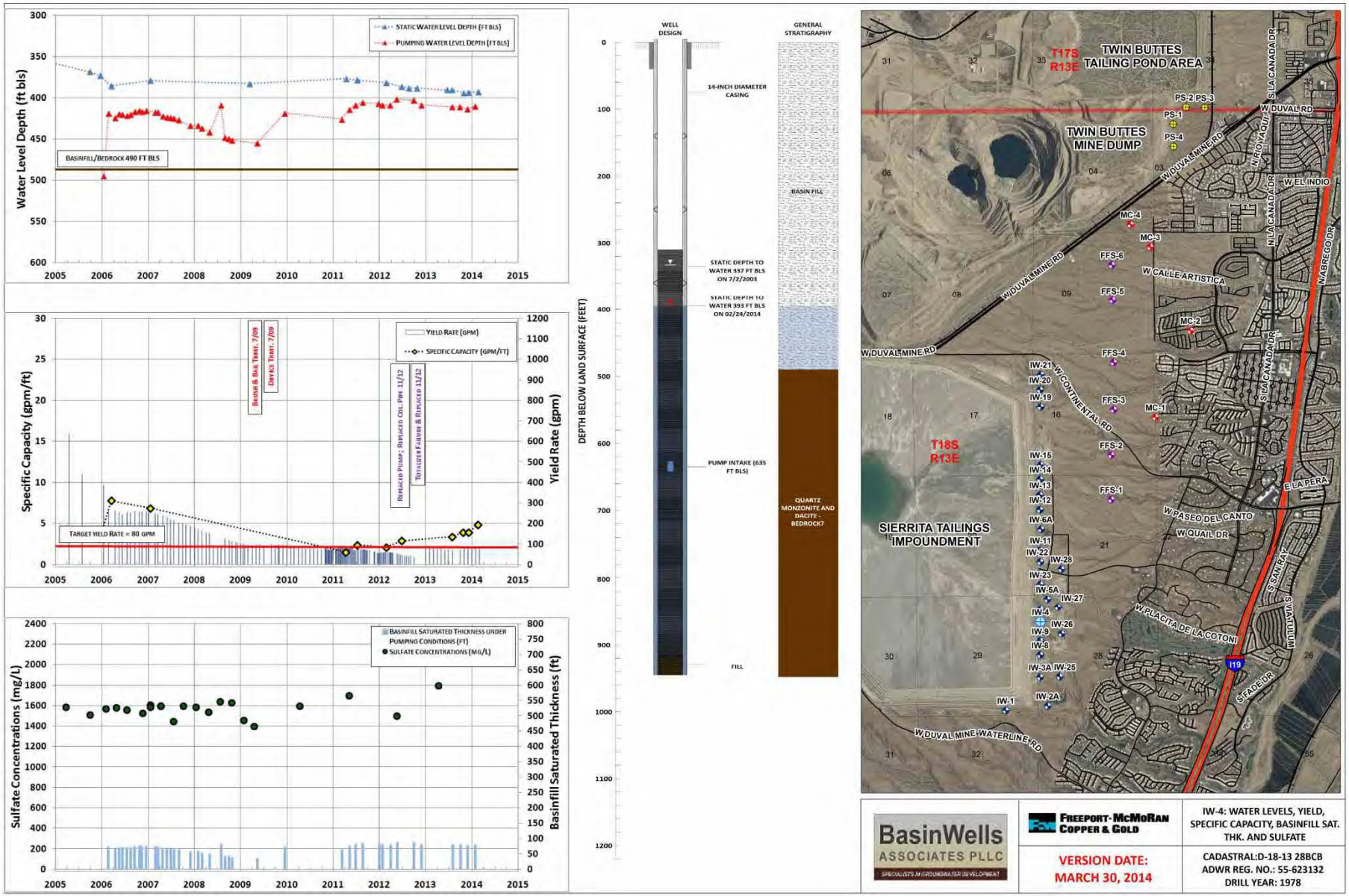
BasinWells Associates PLLC

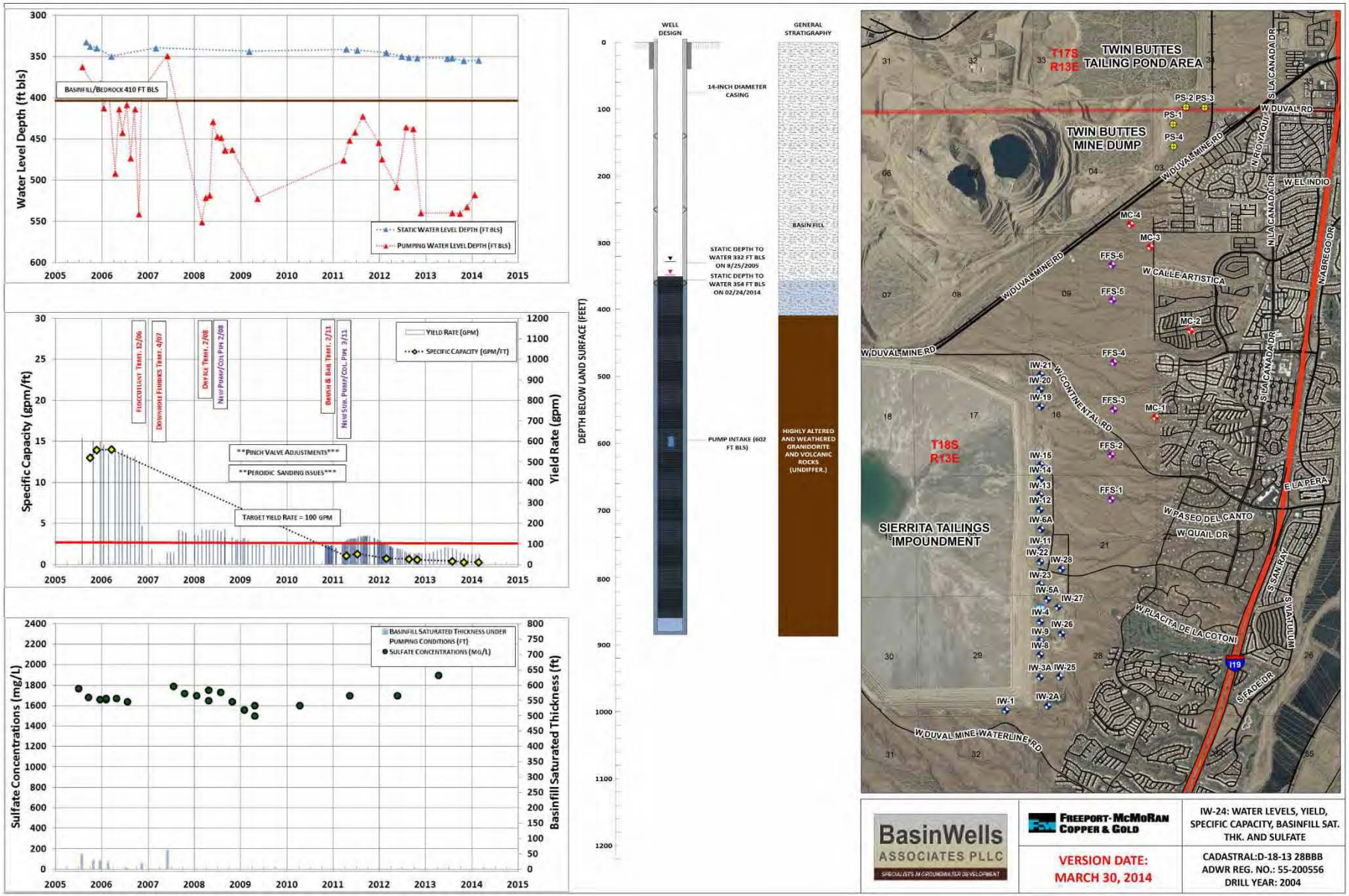

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 820 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
PUMP FAILURE/COL PIPE LEAKING/REPAIRED 10/06
PUMP FAILURE/COL PIPE LEAKING/REPLACED 1/07
BAILER & BUA TEST - 12/09
PUMP FAILURE/REFURBISHED 210 FT NEW COL PIPE 12/09
REPLACED PUMP; REPLACED COL. PIPE 8/12
TARGET YIELD RATE = 500 GPM
PERIODIC SANDING ISSUES*
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 346 FT BLS ON 9/7/2004
STATIC DEPTH TO WATER 409 FT BLS ON 02/24/2014
PUMP INTAKE (560 FT BLS)
BASIN FILL
VOLCANICS ALTERED AND FRACTURED TO CLAY RICH MATERIALS
T17S R13E
T18S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
S LA CANADA DR
N ABRECO DR
W EL INDIO
E LA PERA
S SAN RAY
S VALLUM
S FAIDEIR
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-3A: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 28CBC
ADWR REG. NO.: 55-201732
DRILL YEAR: 2004

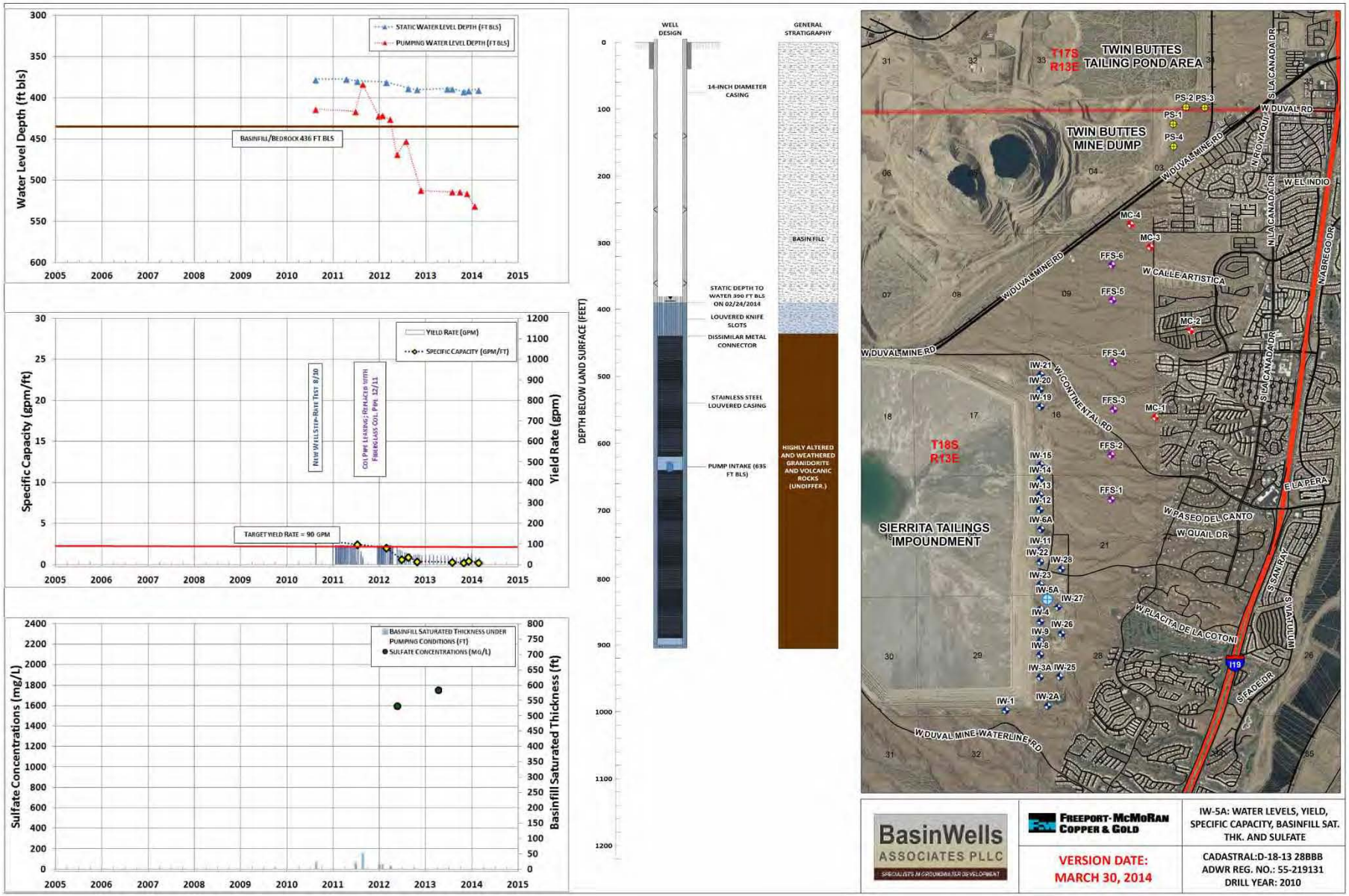

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
T17S R11E
T18S R11E
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-8: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: 0-18-13 28BCC
ADWR REG. NO.: 55-508236
DRILL YEAR: 1984



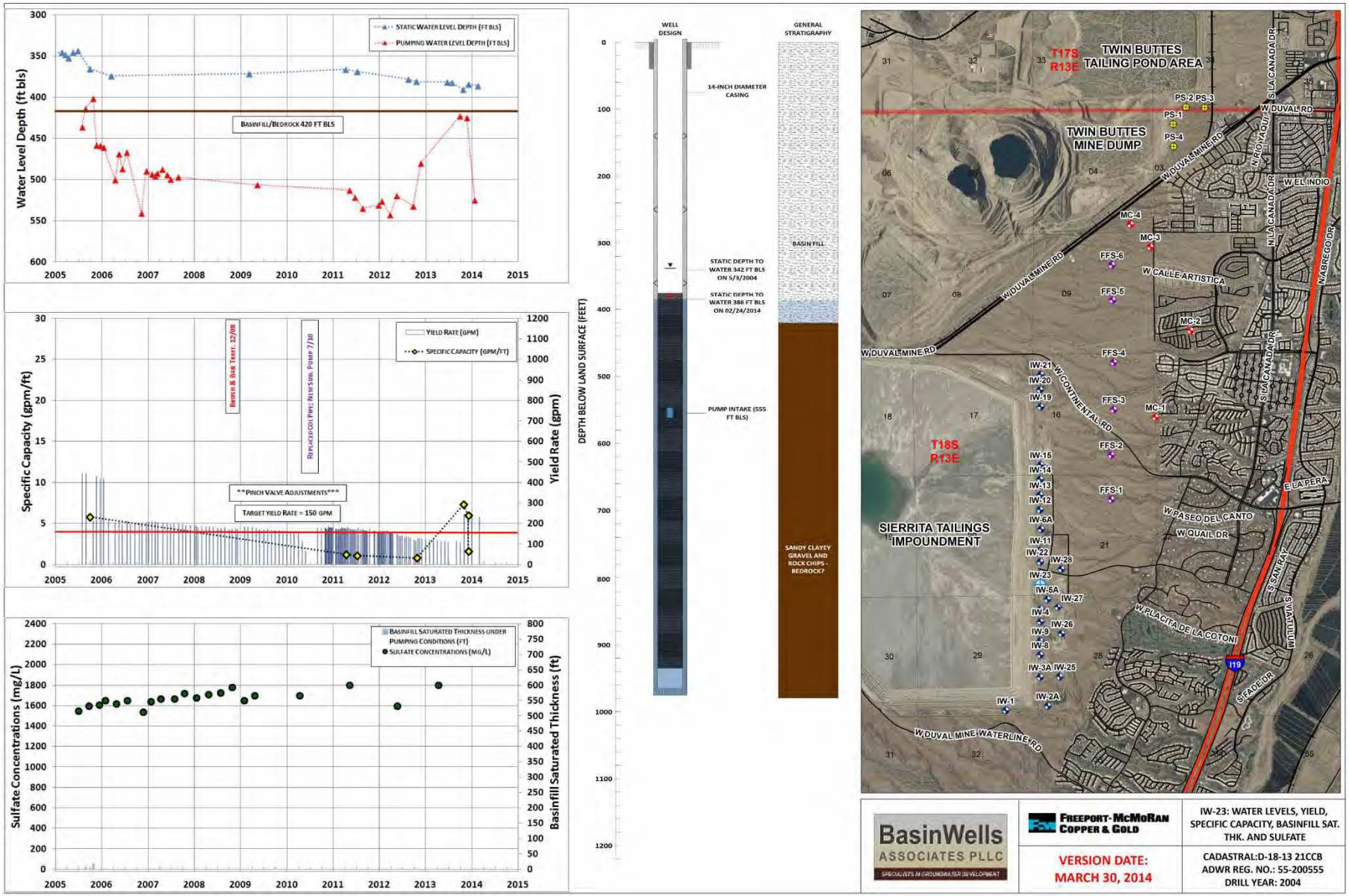
BasinWells Associates PLLC

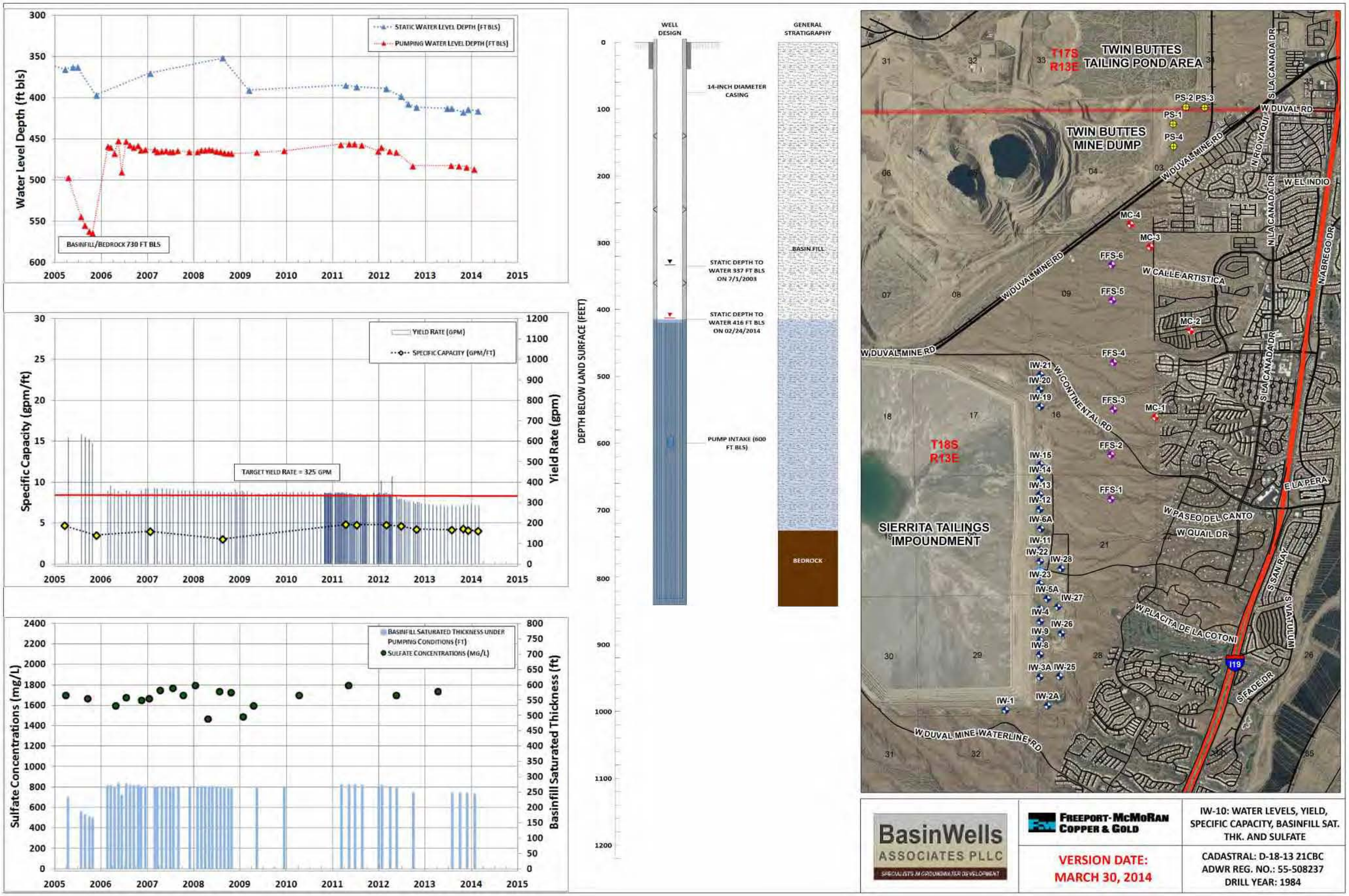

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 490 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 80 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 337 FT BLS ON 7/2/2008
STATIC DEPTH TO WATER 393 FT BLS ON 02/24/2014
PUMP INTAKE (635 FT BLS)
FILL
BASIN FILL
QUARTZ MONZONITE AND DACITE - BEDROCK?
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL MINE WATERLINE RD
S LA CANADA DR
N ABREGO DR
I19
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-4: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL:D-18-13 28BCB
ADWR REG. NO.: 55-623132
DRILL YEAR: 1978


Water Level Depth (ft bls)
BASINFILL/BEDROCK 410 FT BLS
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
FLOCCULENT TEST: 12/06
DOWNHOLE FIBERS TEST: 4/07
DRY ICE TEST: 2/08
NEW PUMP/COIL PIPE 2/08
BENTN & BAG TEST: 2/11
NEW SUB. PUMP/COIL PIPE 3/11
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
PINCH VALVE ADJUSTMENTS*
PERIODIC SANDING ISSUES*
TARGET YIELD RATE = 100 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 332 FT BLS ON 8/25/2005
STATIC DEPTH TO WATER 354 FT BLS ON 02/24/2014
PUMP INTAKE (602 FT BLS)
BASIN FILL
HIGHLY ALTERED AND WEATHERED GRANODIORITE AND VOLCANIC ROCKS (UNDIFFER.)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
S LA CANADA DR
N ABREGO DR
W EL INDIO
E LA PERA
S SAN RAY
S VALLUM
S FAIRVIEW
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-24: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL:D-18-13 28BBB
ADWR REG. NO.: 55-200556
DRILL YEAR: 2004



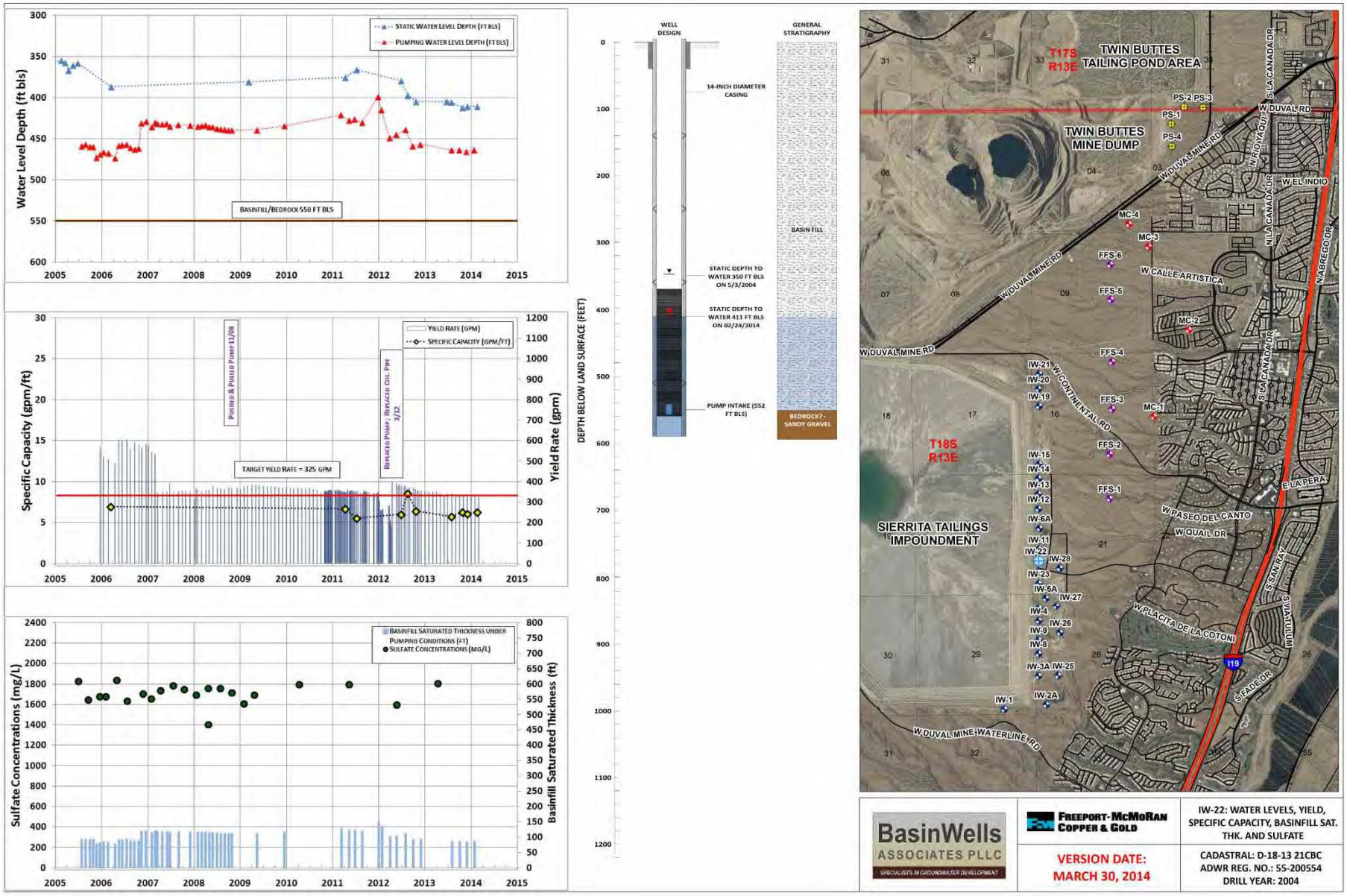
BasinWells Associates PLLC

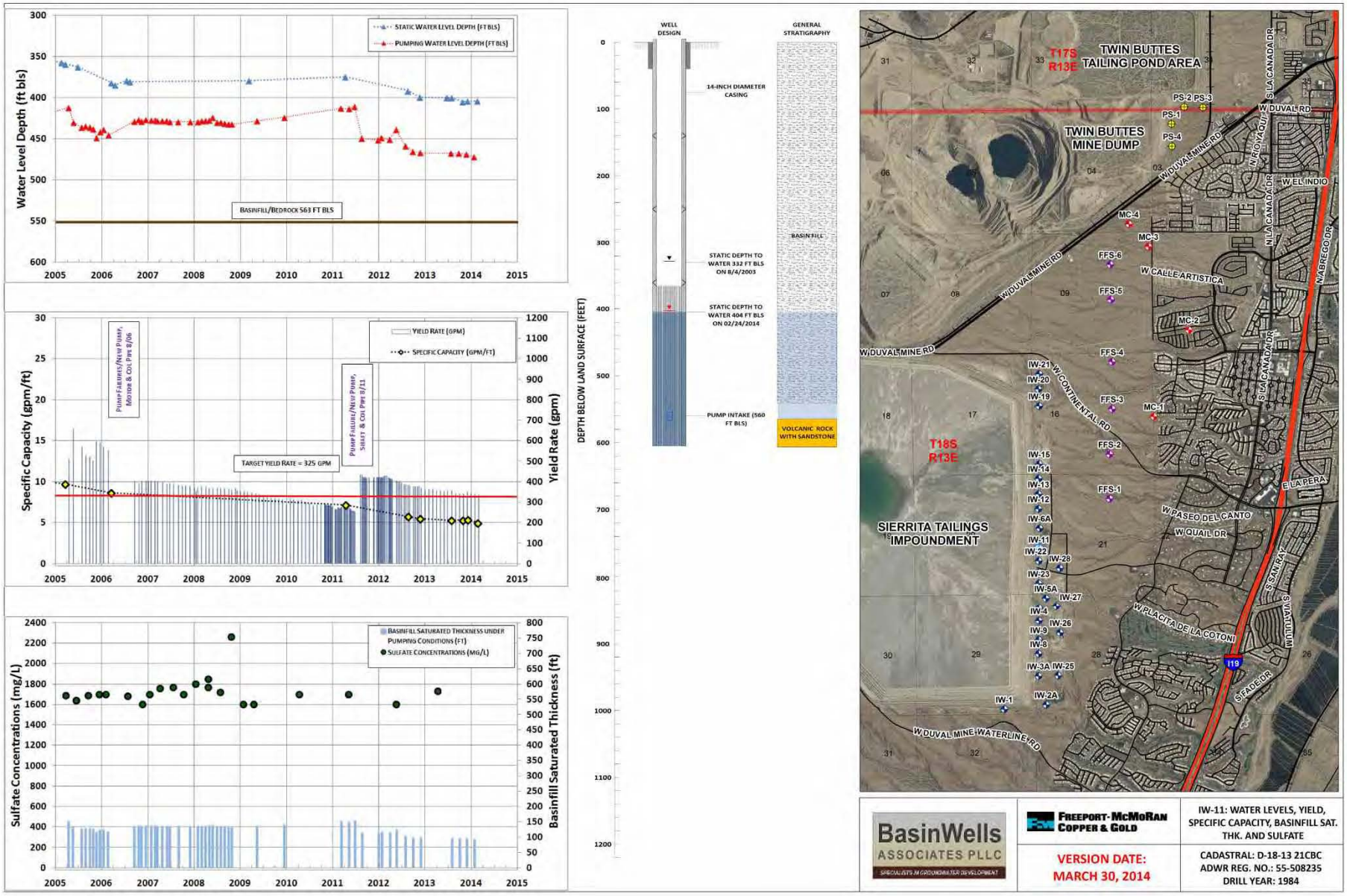

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 420 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
Basin & Bail Test - 12/08
Replaced Col Pipe; New Stnl. Pump 7/10
PINCH VALVE ADJUSTMENTS*
TARGET YIELD RATE = 150 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 342 FT BLS ON 5/3/2004
STATIC DEPTH TO WATER 386 FT BLS ON 02/24/2014
PUMP INTAKE (555 FT BLS)
BASIN FILL
SANDY CLAYEY GRAVEL AND ROCK CHIPS - BEDROCK?
T17S R13E
T18S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL RD
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
S LA CANADA DR
N LA CANADA DR
W EL INDIO
N ABRECO DR
E LA PERA
S SAN RAY
S WALTHALL
S FAIRGR
I19
PS-1
PS-2
PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-23: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL:D-18-13 21CCB
ADWR REG. NO.: 55-200555
DRILL YEAR: 2004

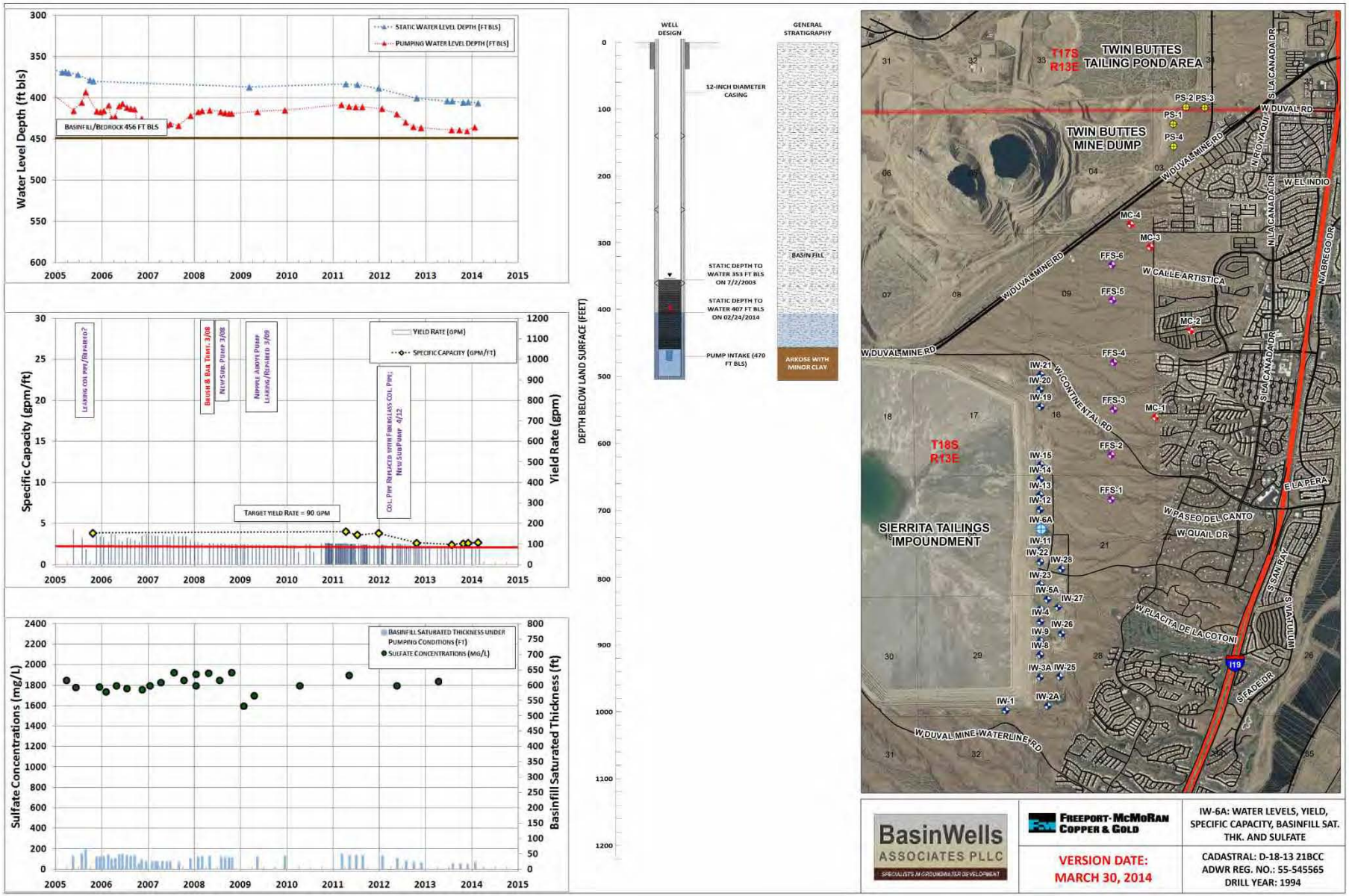

Water Level Depth (ft bls)
Static Water Level Depth (ft bls)
Pumping Water Level Depth (ft bls)
Basinfill/Bedrock 730 ft bls
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Specific Capacity (gpm/ft)
Target Yield Rate = 325 gpm
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
Basinfill Saturated Thickness under Pumping Conditions (ft)
Sulfate Concentrations (mg/L)
Well Design
General Stratigraphy
Depth Below Land Surface (feet)
14-inch diameter casing
Static depth to water 337 ft bls on 7/1/2003
Static depth to water 416 ft bls on 02/24/2014
Pump intake (600 ft bls)
Basin Fill
Bedrock
T17S R13E
Twin Buttes Tailing Pond Area
Twin Buttes Mine Dump
T18S R13E
Sierrita Tailings Impoundment
W Duval Mine Rd
W Continental Rd
W Duval Mine Waterline Rd
BasinWells Associates PLLC
Specialists in Groundwater Development
Freeport-McMoRan Copper & Gold
Version Date: March 30, 2014
IW-10: Water Levels, Yield, Specific Capacity, Basinfill Sat. Thk. and Sulfate
Cadastral: D-18-13 21CBC
ADWR Reg. No.: 55-508237
Drill Year: 1984

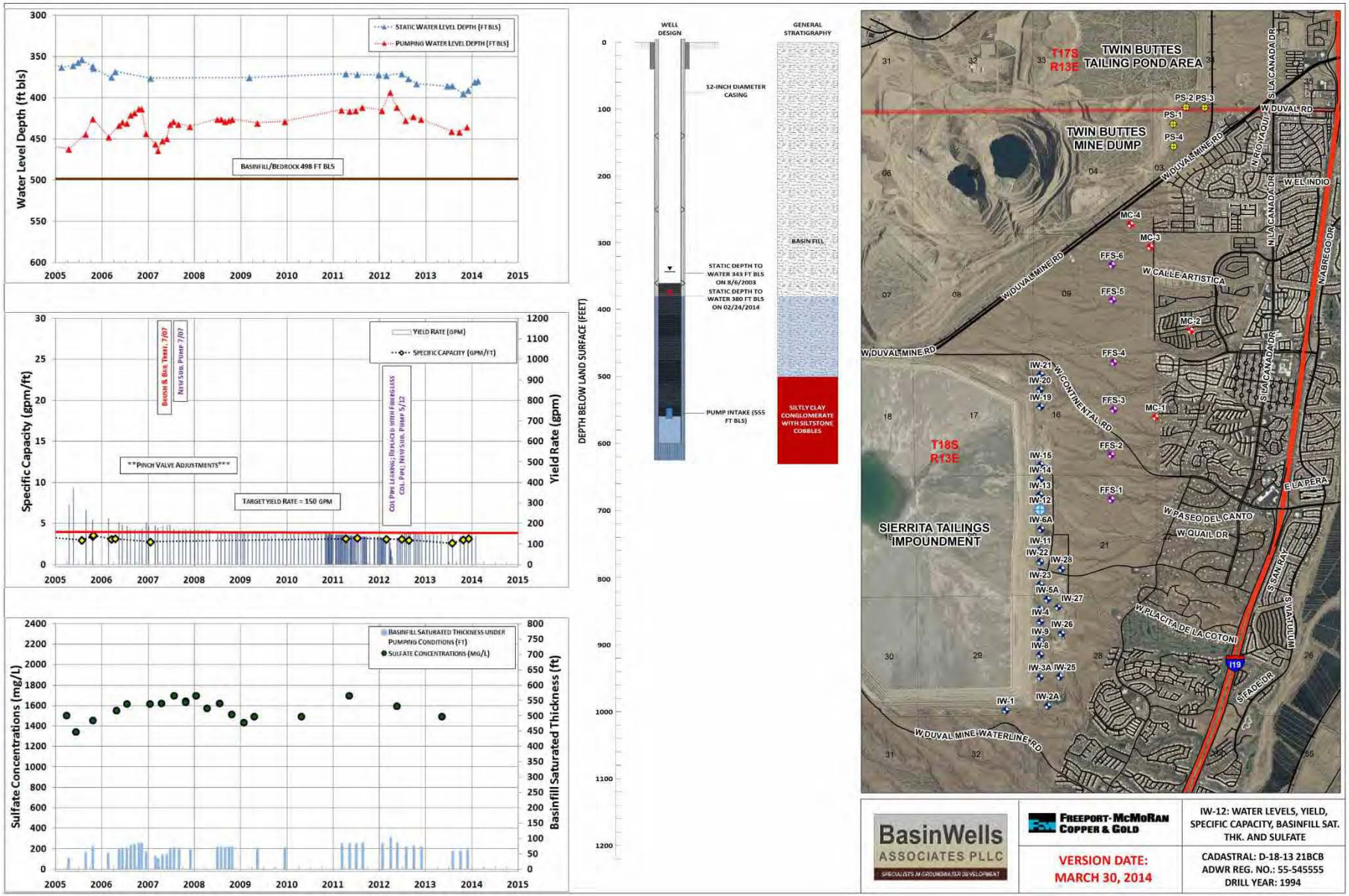
BasinWells Associates PLLC

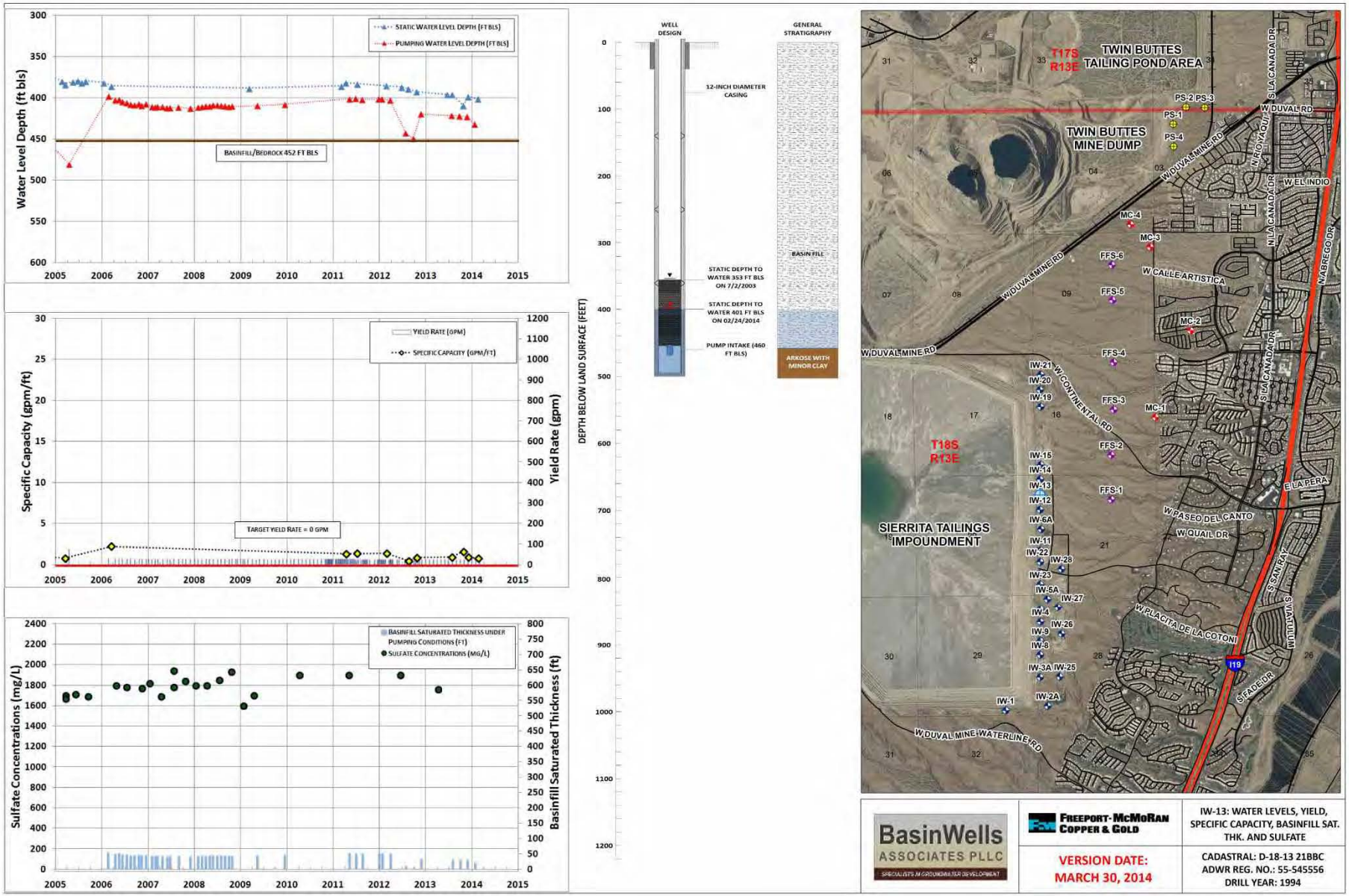
c:\basinwells_associates_031711\2013_projects\fmi\iw-wellfield_monitoring\deliverable\report\final\basinwells_final_fmi_2013_iw_well_field_operations_performance_tm_033014.docx\3/27/2014\b

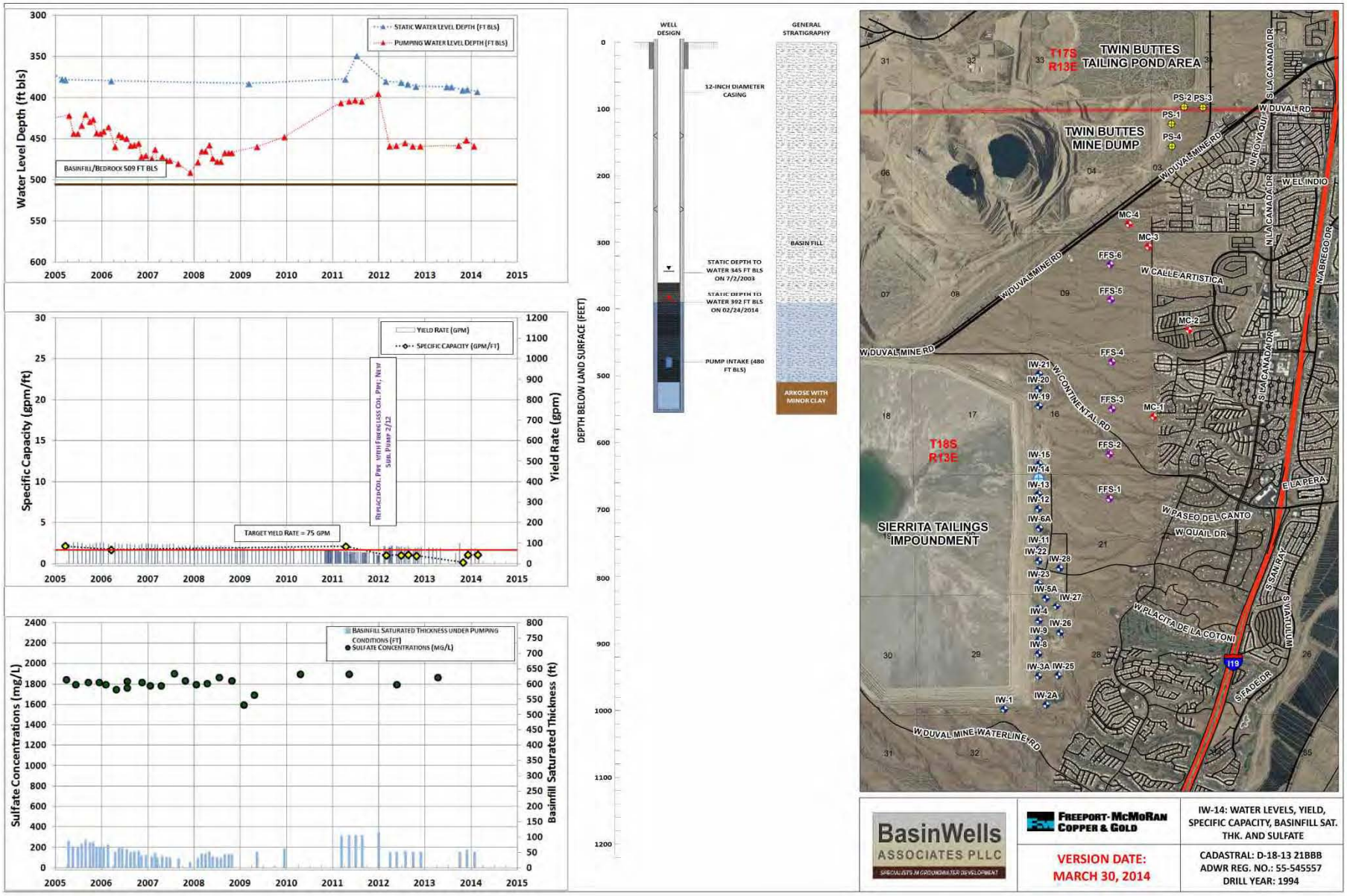

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 550 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 325 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 350 FT BLS ON 5/3/2004
STATIC DEPTH TO WATER 411 FT BLS ON 02/24/2014
PUMP INTAKE (552 FT BLS)
BASIN FILL
BEDROCK? - SANDY GRAVEL
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL RD
W EL INDIO
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
I-19
IW-22: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
FREEPORT-MCMORAN COPPER & GOLD
BasinWells ASSOCIATES PLLC
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21CBC
ADWR REG. NO.: 55-200554
DRILL YEAR: 2004

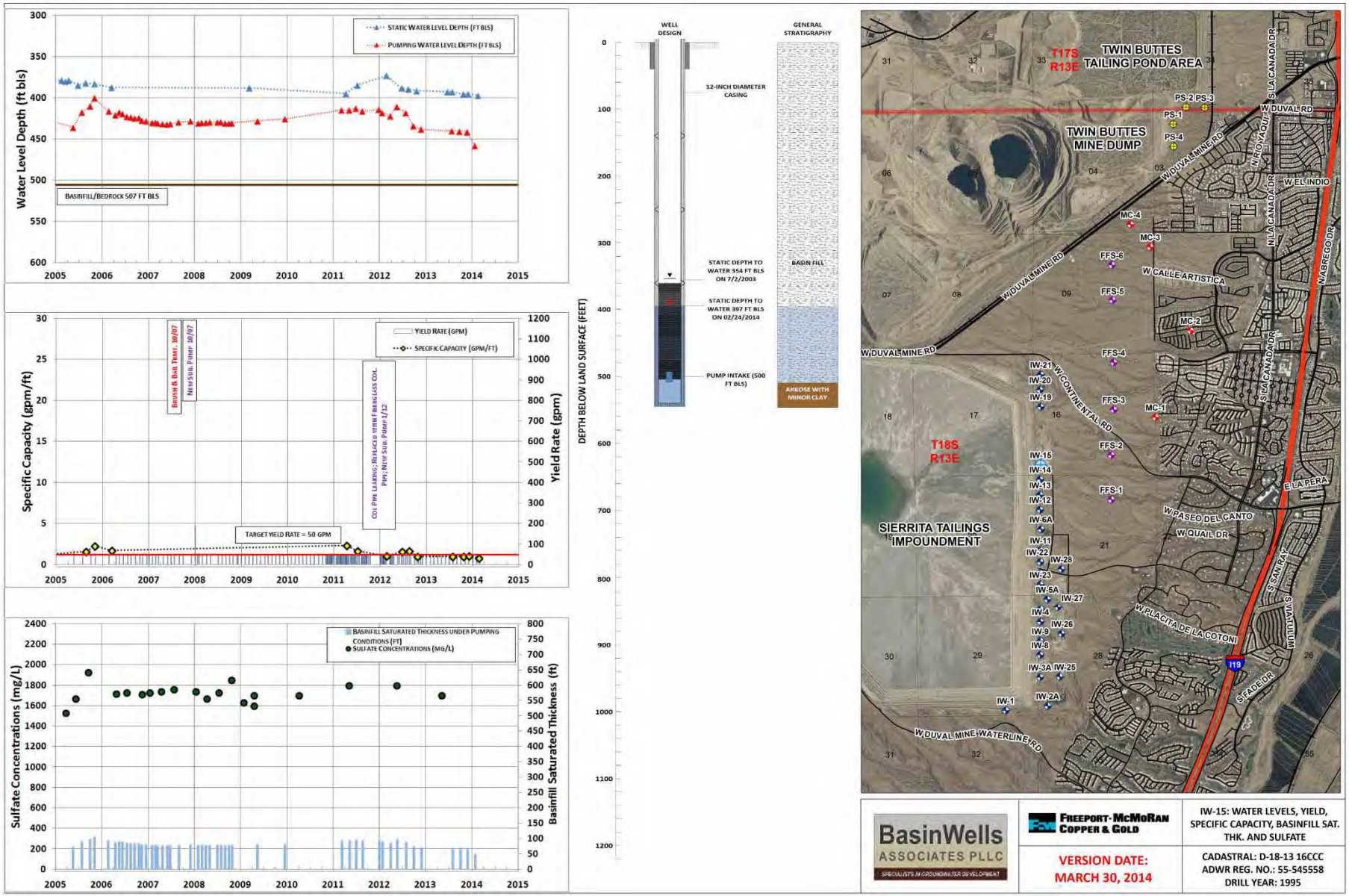

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 563 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
PUMP FAILURES/NEW PUMP, MOTOR & COL PIPE 9/06
PUMP FAILURES/NEW PUMP, SHAFT & COL PIPE 8/11
TARGET YIELD RATE = 325 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
14-INCH DIAMETER CASING
STATIC DEPTH TO WATER 332 FT BLS ON 8/4/2003
STATIC DEPTH TO WATER 404 FT BLS ON 02/24/2014
PUMP INTAKE (560 FT BLS)
BASINFILL
VOLCANIC ROCK WITH SANDSTONE
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
S SAN RAY
S WALTON
S FAIRVIEW
W DUVAL RD
W RIO YAQUI
W EL INDIO
I19
PS-1
PS-2
PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-11: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21CBC
ADWR REG. NO.: 55-508235
DRILL YEAR: 1984

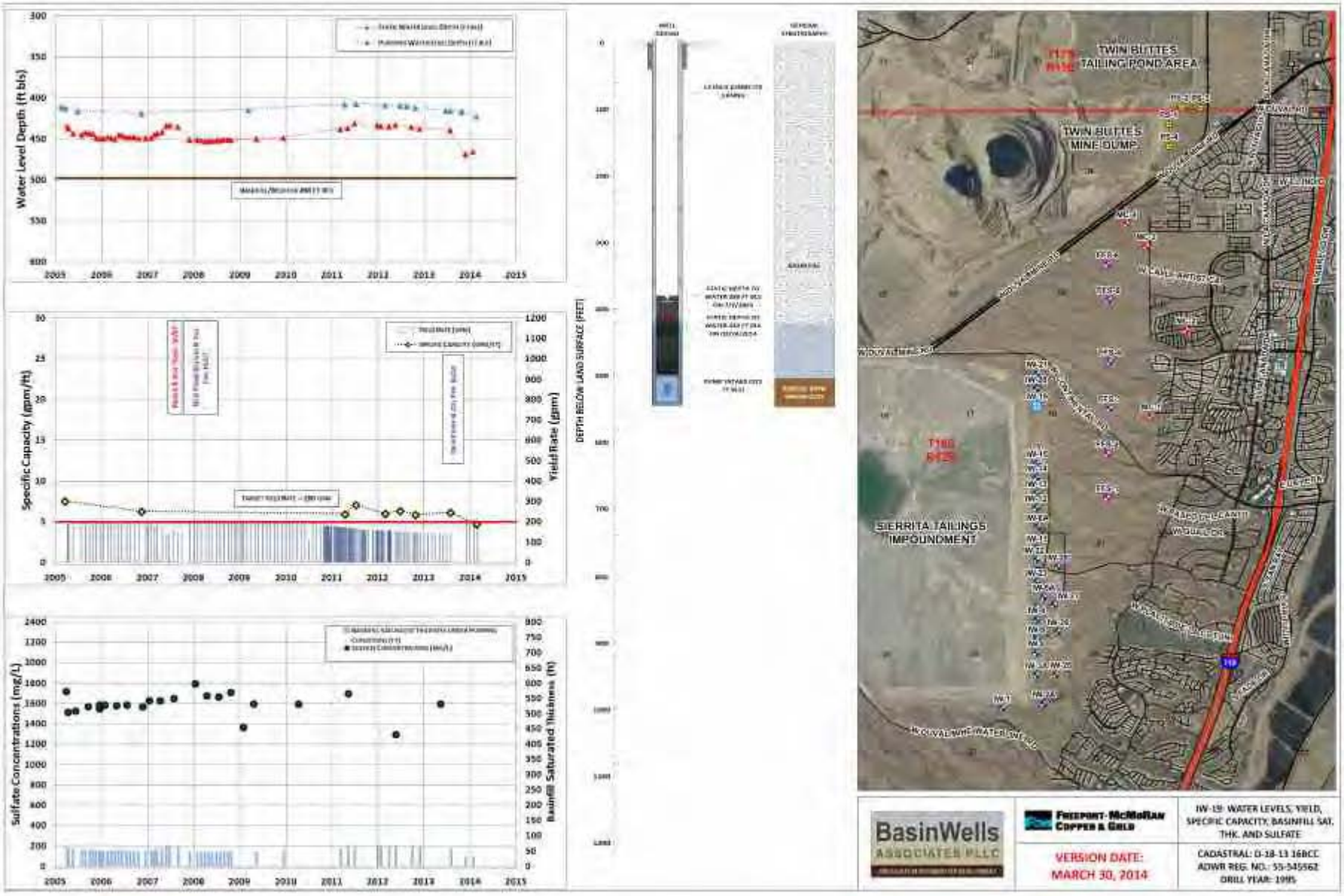

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 456 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 90 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 353 FT BLS ON 7/2/2003
STATIC DEPTH TO WATER 407 FT BLS ON 02/24/2014
PUMP INTAKE (470 FT BLS)
BASIN FILL
ARKOSE WITH MINOR CLAY
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
W EL INDIO
N ABREGO DR
I19
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
MC-1
MC-2
MC-3
MC-4
PS-1
PS-2
PS-3
PS-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-6A: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21BCC
ADWR REG. NO.: 55-545565
DRILL YEAR: 1994

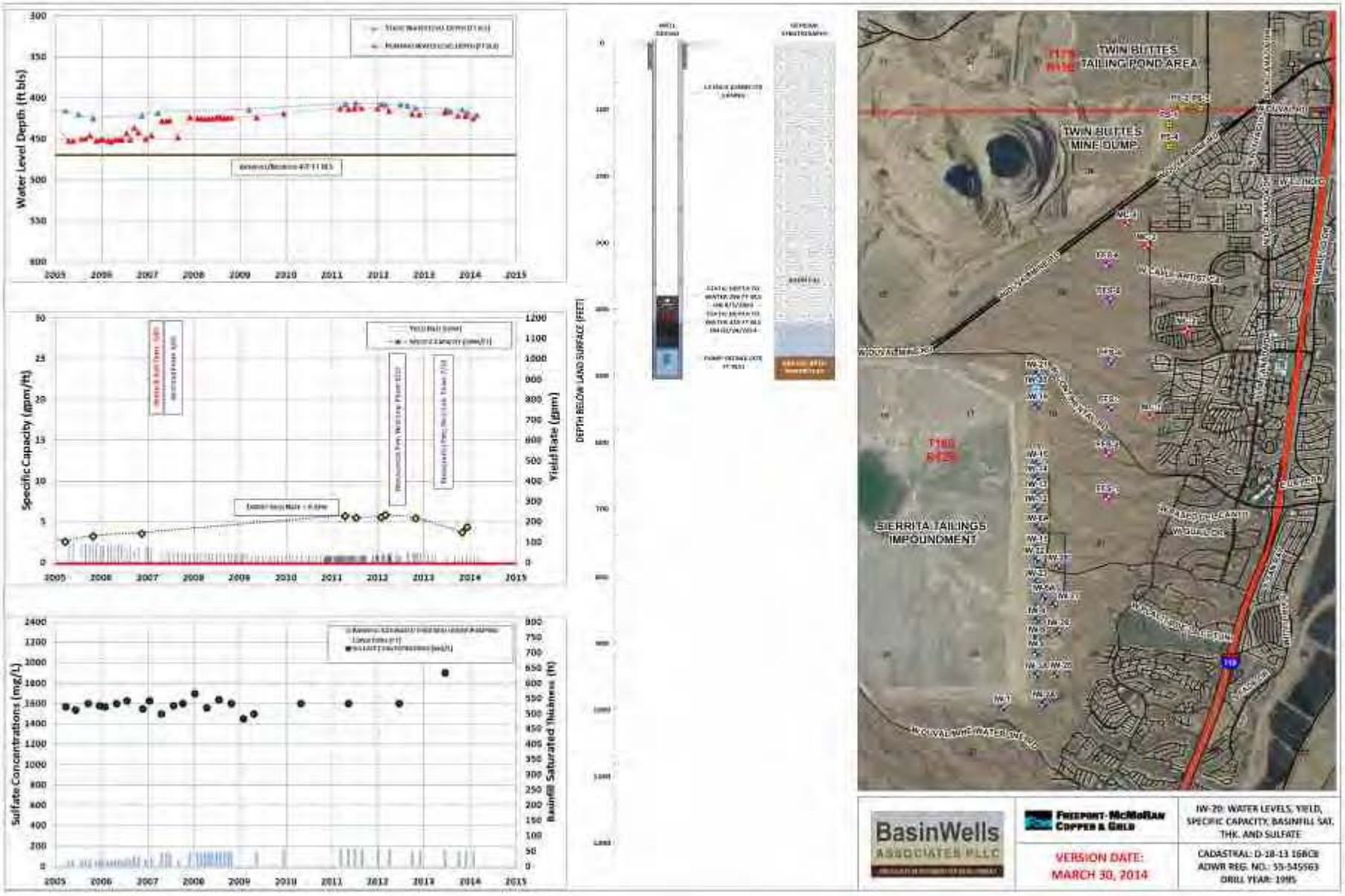

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 498 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
BRUSH & BUR. TEST - 7/07
NEW SUB. PUMP - 7/07
PINCH VALVE ADJUSTMENTS*
TARGET YIELD RATE = 150 GPM
COL PIPE LEAKING; REPLACED WITH FIBERGLASS COL. PIPE; NEW SUB. PUMP 5/12
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 343 FT BLS ON 8/6/2003
STATIC DEPTH TO WATER 380 FT BLS ON 02/24/2014
PUMP INTAKE (555 FT BLS)
BASIN FILL
SILTLY CLAY CONGLOMERATE WITH SILTSTONE COBBLES
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
W EL INDIO
I19
PS-1
PS-2 PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A IW-25
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-12: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21BCB
ADWR REG. NO.: 55-545555
DRILL YEAR: 1994

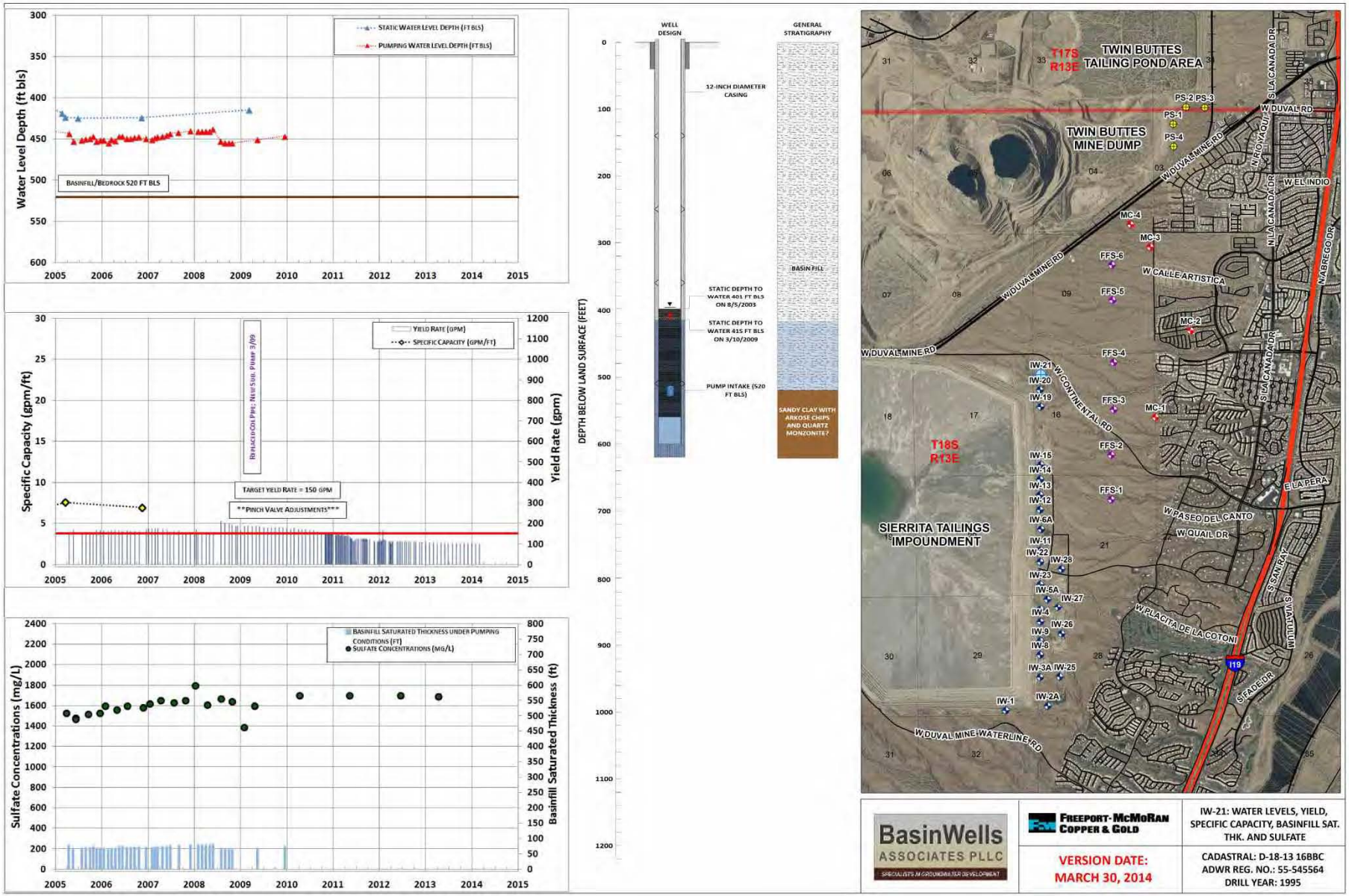

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 452 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 0 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 353 FT BLS ON 7/2/2003
STATIC DEPTH TO WATER 401 FT BLS ON 02/24/2014
PUMP INTAKE (460 FT BLS)
BASIN FILL
ARKOSE WITH MINOR CLAY
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABRECO DR
W EL INDIO
I19
PS-1
PS-2
PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-13: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21BBC
ADWR REG. NO.: 55-545556
DRILL YEAR: 1994

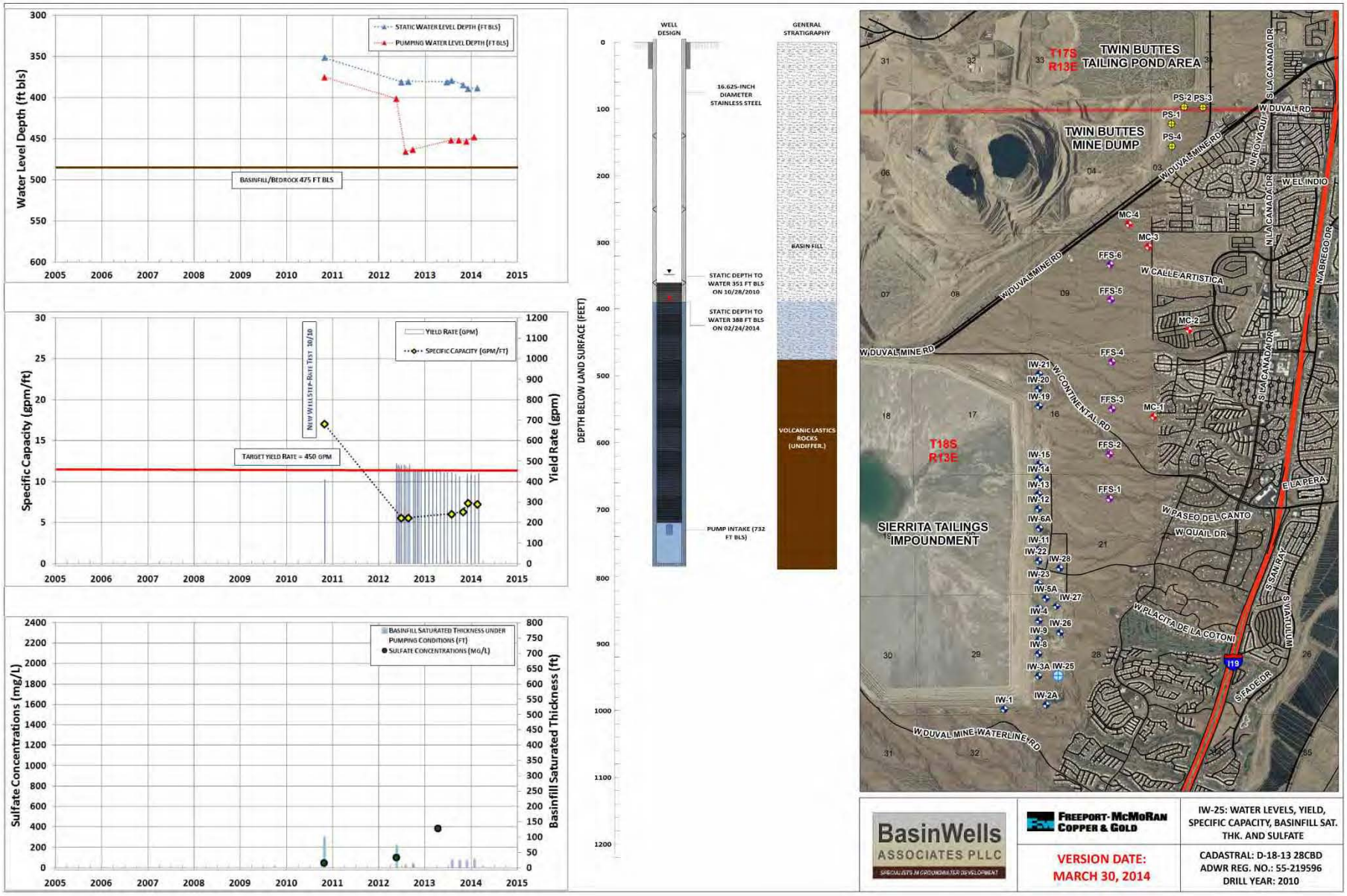

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 509 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 75 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 345 FT BLS ON 7/2/2003
STATIC DEPTH TO WATER 392 FT BLS ON 02/24/2014
PUMP INTAKE (480 FT BLS)
BASIN FILL
ARKOSE WITH MINOR CLAY
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
T18S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL MINE WATERLINE RD
S LA CANADA DR
N LA CANADA DR
W EL INDIO
N ABRECO DR
E LA PERA
S SAN RAY
S VALLIMUIR
S FAIRGEAR
I19
PS-1
PS-2
PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-14: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21BBB
ADWR REG. NO.: 55-545557
DRILL YEAR: 1994

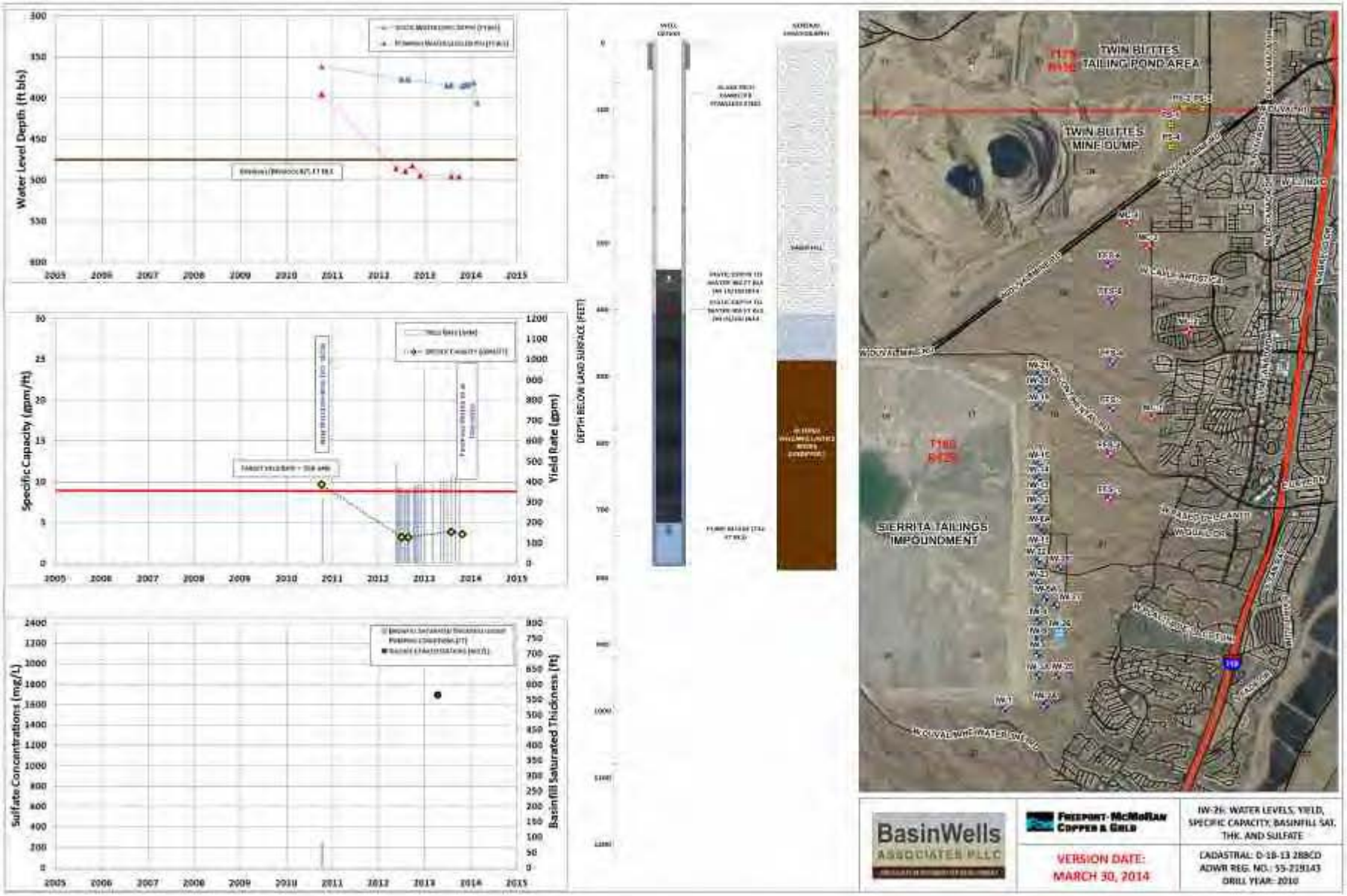

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 507 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 50 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 354 FT BLS ON 7/2/2003
STATIC DEPTH TO WATER 397 FT BLS ON 02/24/2014
PUMP INTAKE (500 FT BLS)
BASIN FILL
ARKOSE WITH MINOR CLAY
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
I19
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
IW-15: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 16CCC
ADWR REG. NO.: 55-545558
DRILL YEAR: 1995

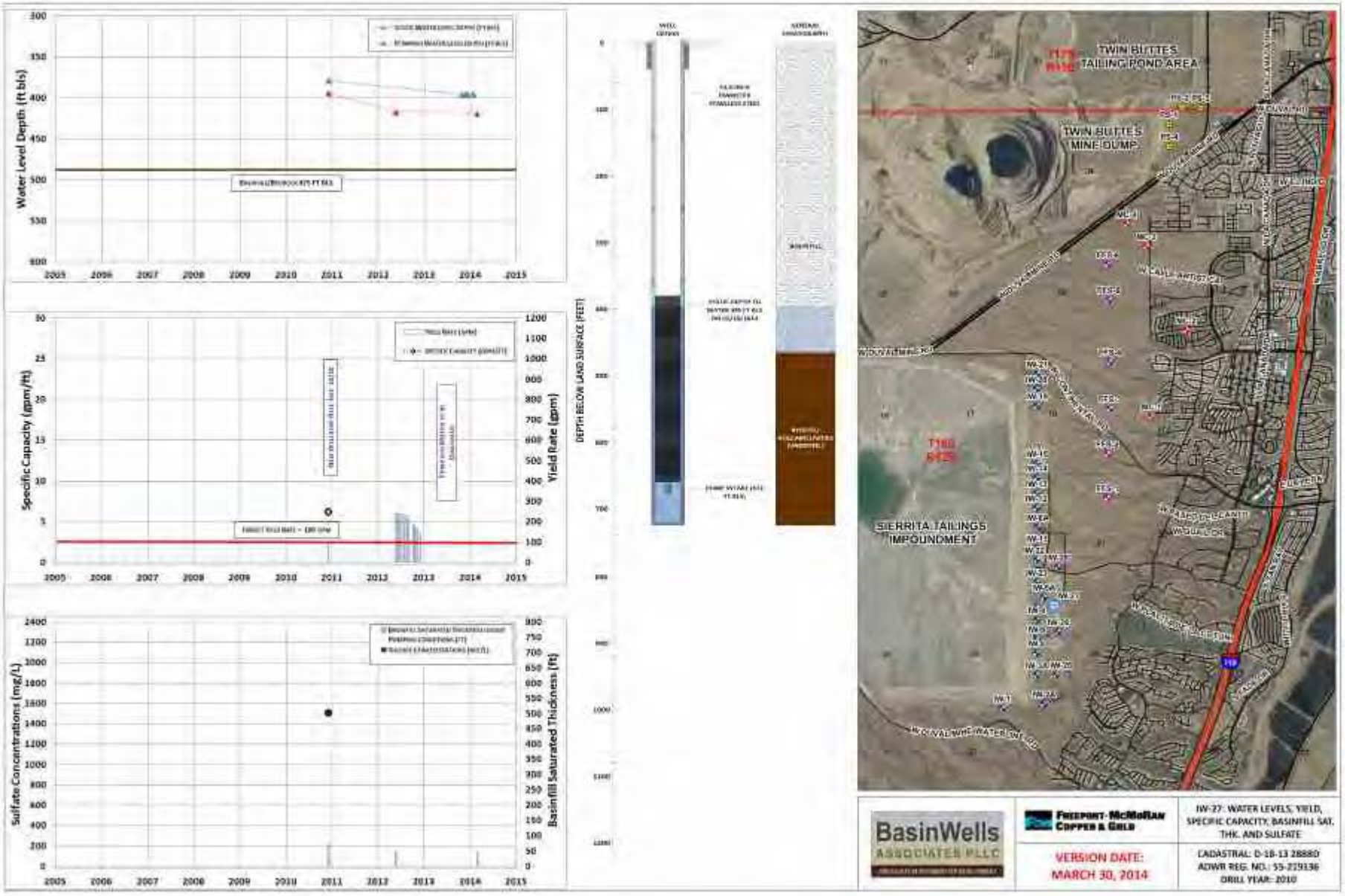

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield/Rate (gpm)
Sulfate Concentrations (mg/L)
Basin@ Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-19: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 16BCC
ADWR REG. NO.: 55-545562
DRILL YEAR: 1995

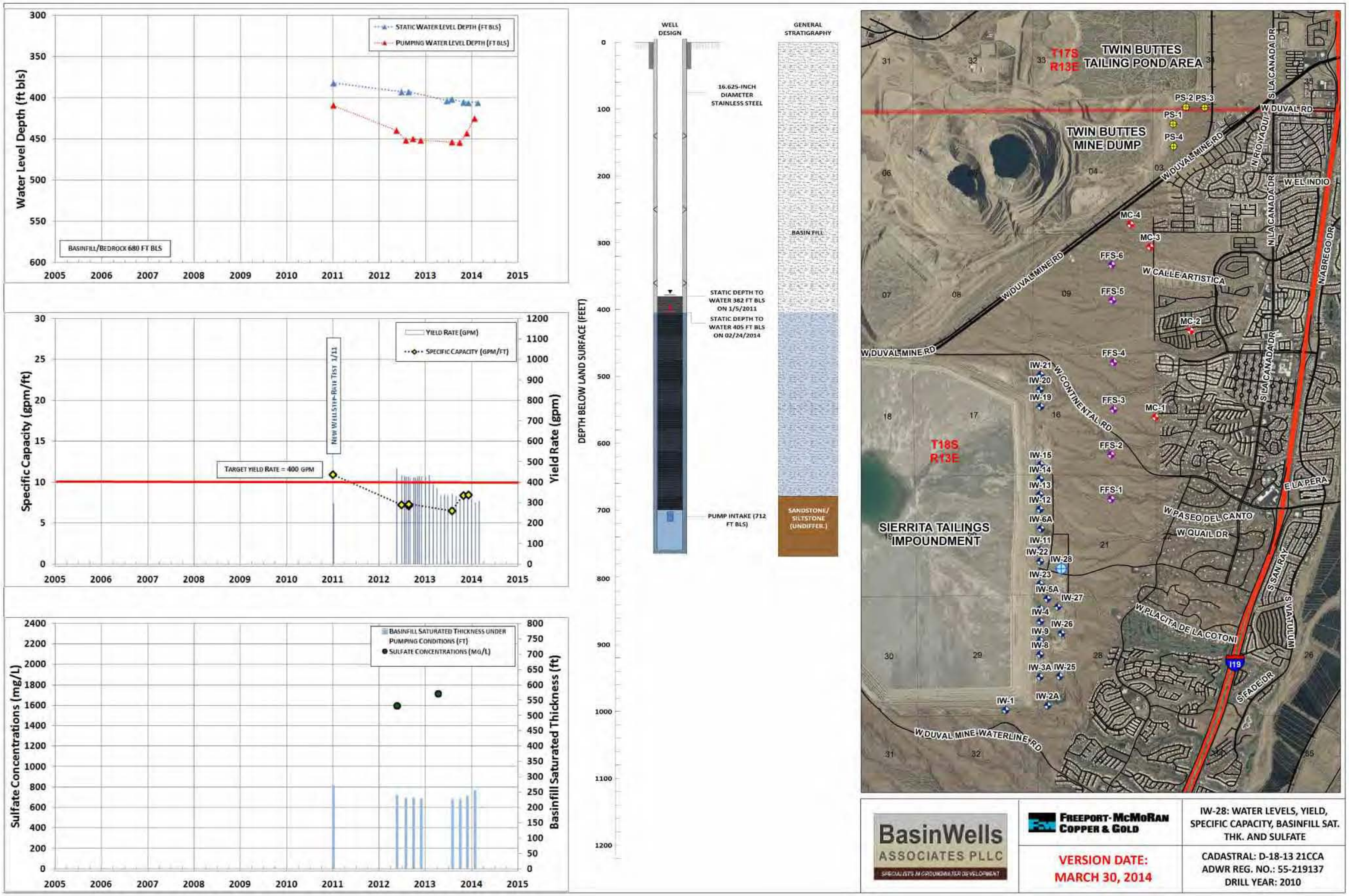

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield/Rate (gpm)
Sulfate Concentrations (mg/L)
Basin@ Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-20: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 16BCB
ADWR REG. NO.: 55-545563
DRILL YEAR: 1995


Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 520 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 150 GPM
PINCH VALVE ADJUSTMENTS*
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
12-INCH DIAMETER CASING
STATIC DEPTH TO WATER 401 FT BLS ON 8/5/2003
STATIC DEPTH TO WATER 415 FT BLS ON 3/10/2009
PUMP INTAKE (520 FT BLS)
BASIN FILL
SANDY CLAY WITH ARKOSE CHIPS AND QUARTZ MONZONITE?
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CALLE ARTISTICA
W CONTINENTAL RD
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
W EL INDIO
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-21: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 16BBC
ADWR REG. NO.: 55-545564
DRILL YEAR: 1995

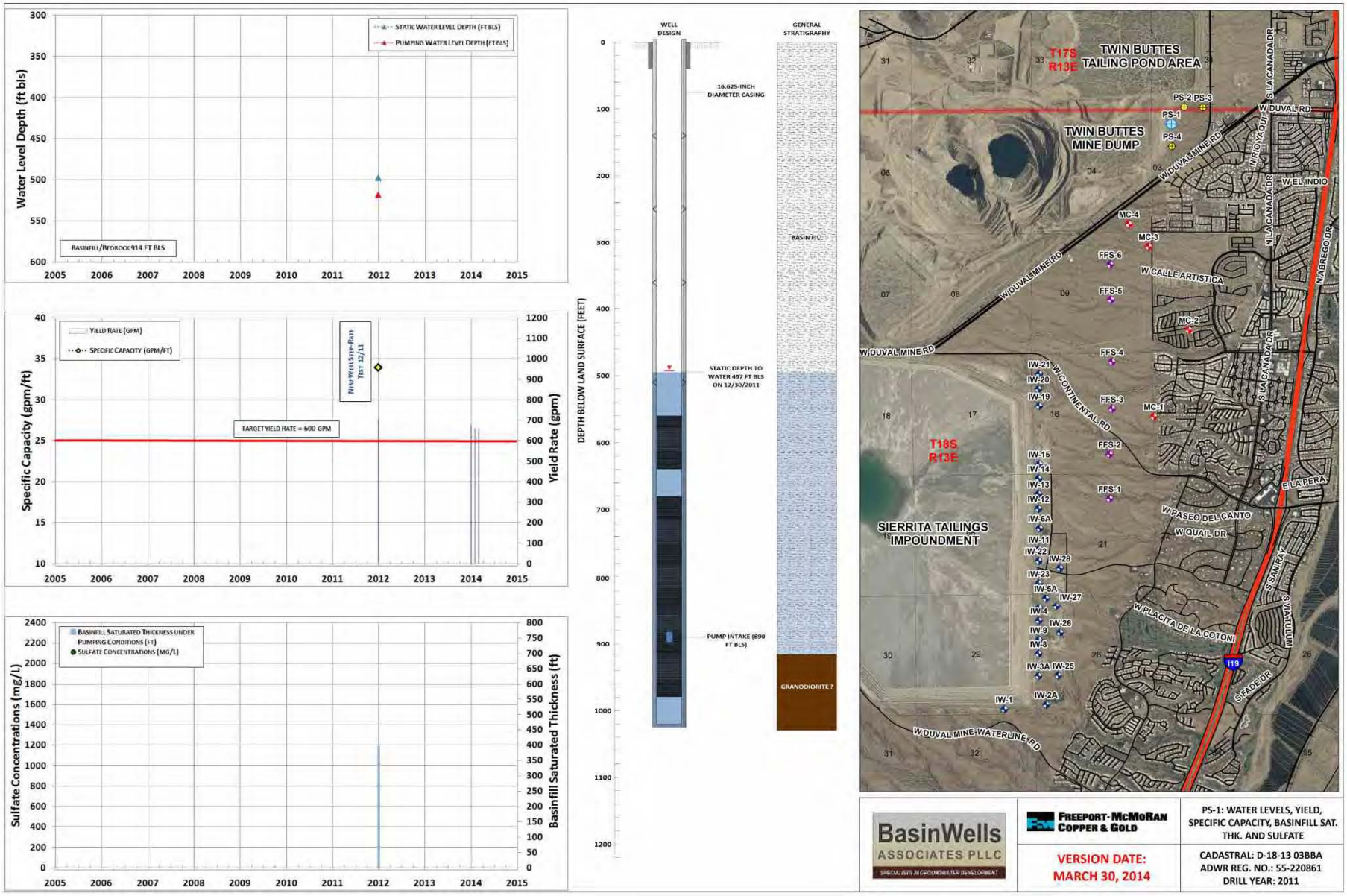

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 475 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
NEW WELL STEP-RATE TEST 10/10
TARGET YIELD RATE = 450 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
16.625-INCH DIAMETER STAINLESS STEEL
STATIC DEPTH TO WATER 351 FT BLS ON 10/28/2010
STATIC DEPTH TO WATER 388 FT BLS ON 02/24/2014
PUMP INTAKE (732 FT BLS)
BASIN FILL
VOLCANIC LASTICS ROCKS (UNDIFFER.)
T17S R13E
T18S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL RD
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
S LA CANADA DR
N LA CANADA DR
W EL INDIO
E LA PERA
S SAN RAY
S VALLADOLID
S FAIRGEM
I19
PS-1
PS-2
PS-3
PS-4
MC-1
MC-2
MC-3
MC-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-25
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-25: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 28CBD
ADWR REG. NO.: 55-219596
DRILL YEAR: 2010

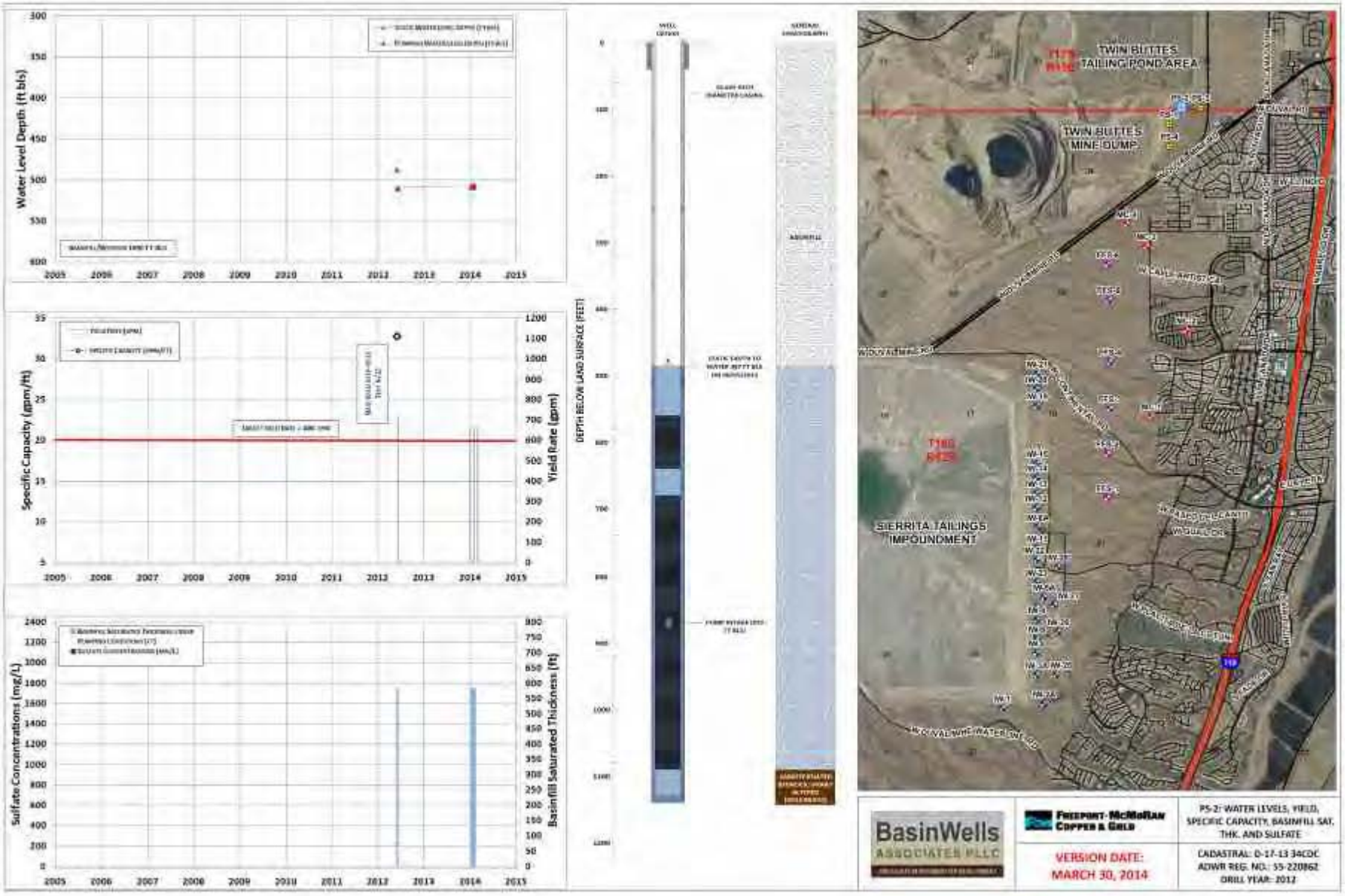

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-26: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 28BCD
ADWR REG. NO.: 55-219143
DRILL YEAR: 2010

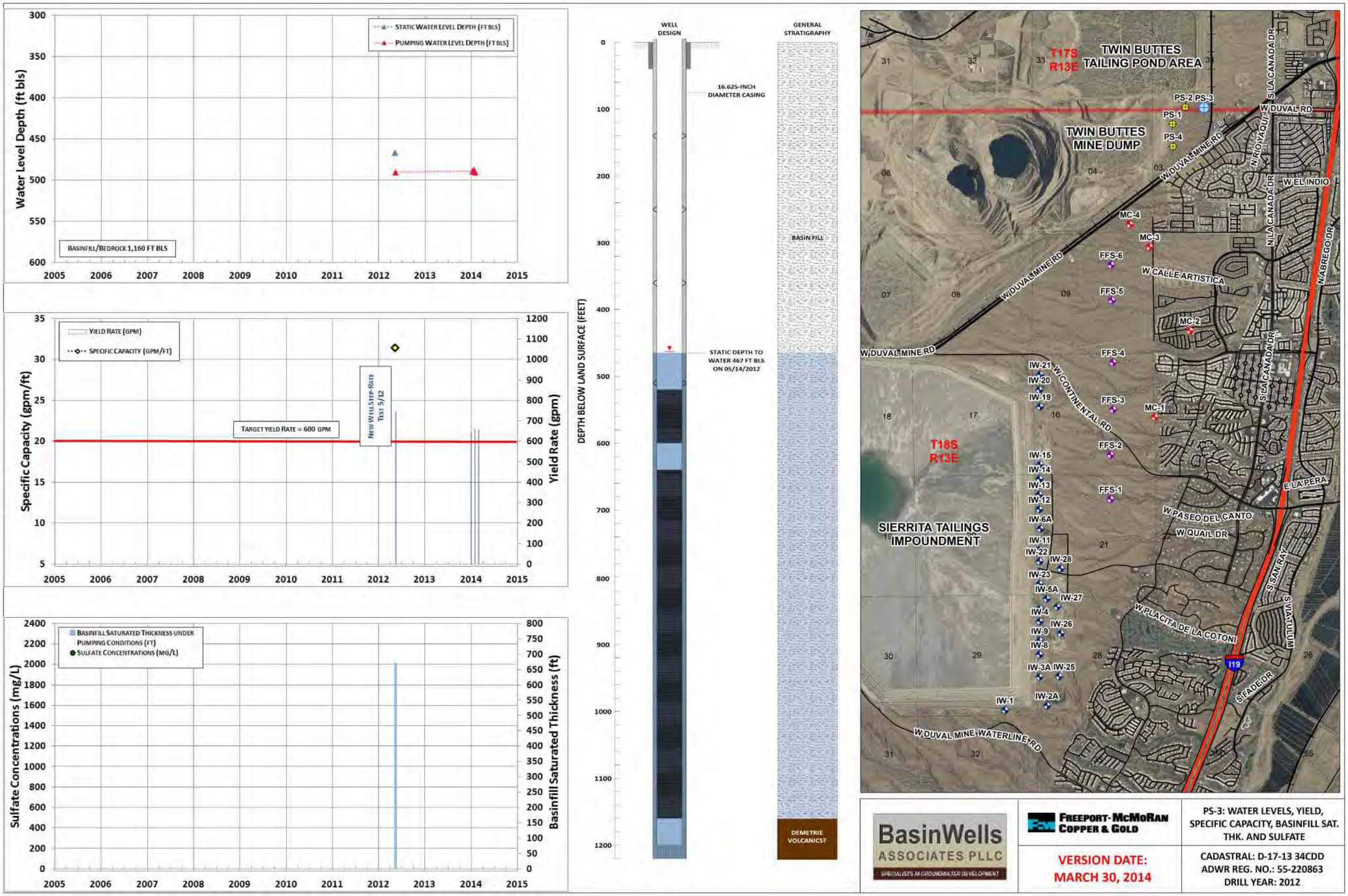

Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
IW-27: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 28BBD
ADWR REG. NO.: 55-219136
DRILL YEAR: 2010

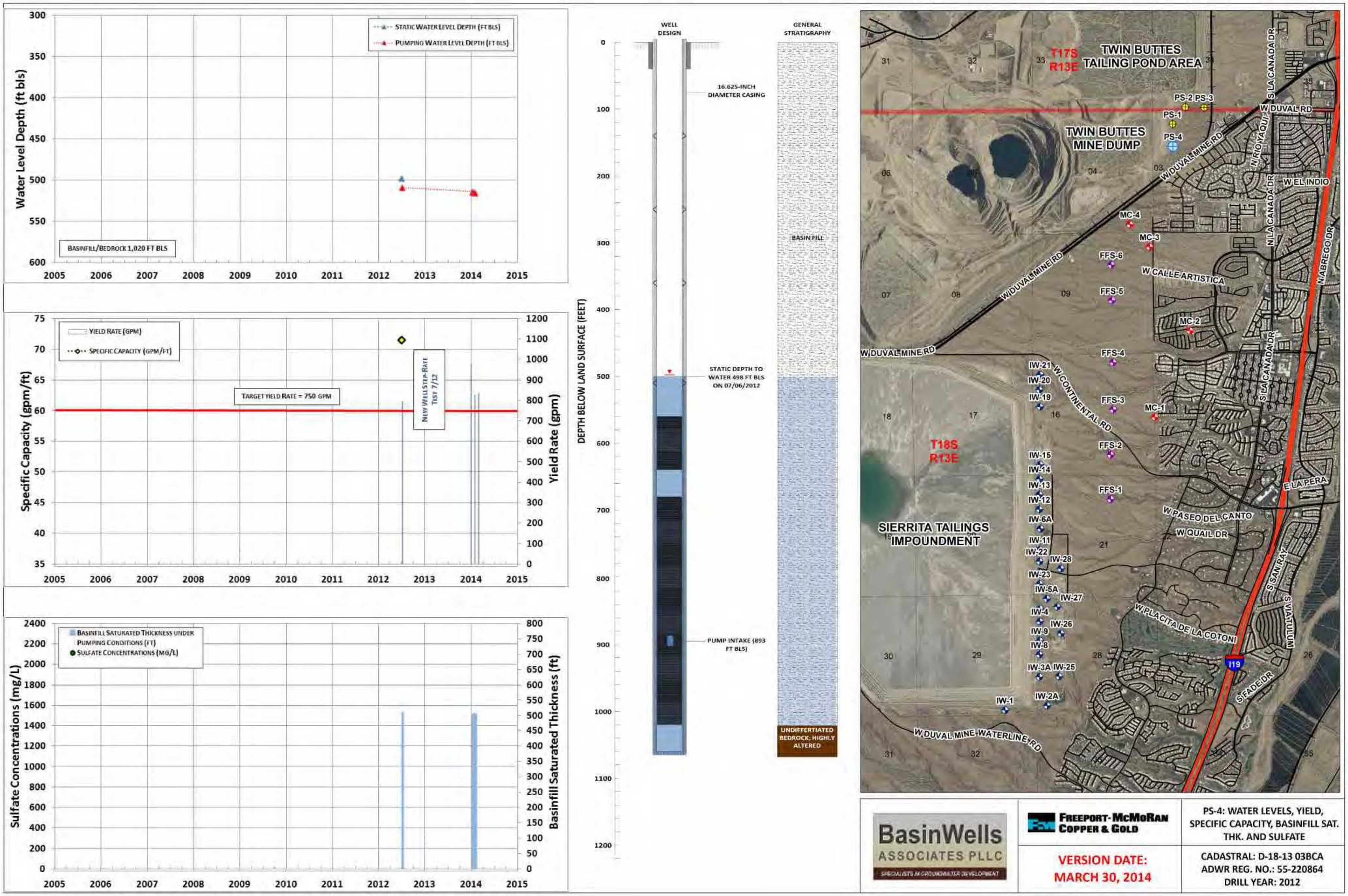


BasinWells Associates PLLC

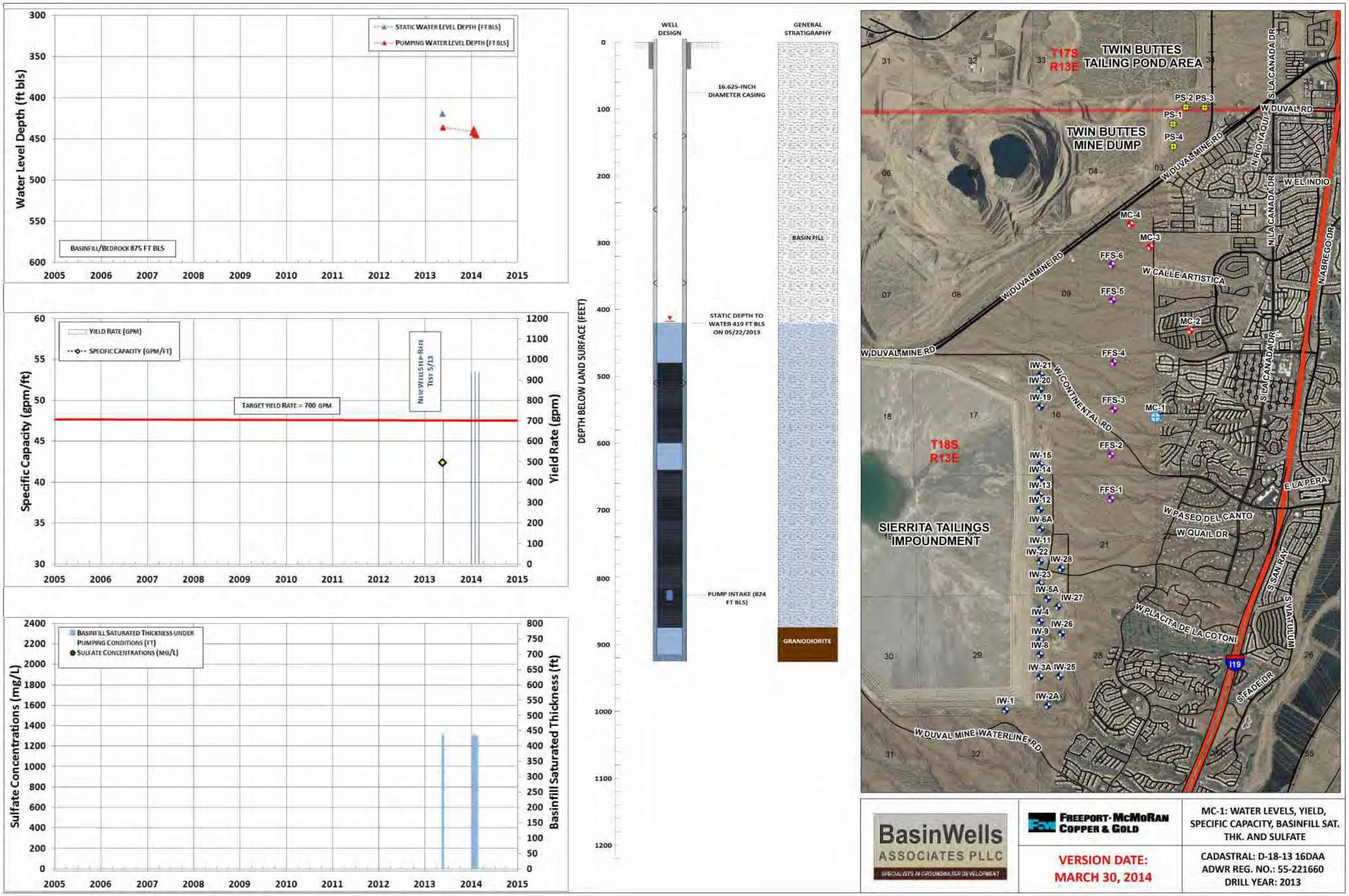

Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 914 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
NEW WELLS STEP-RATE TEST 12/11
TARGET YIELD RATE = 600 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
16.625-INCH DIAMETER CASING
STATIC DEPTH TO WATER 497 FT BLS ON 12/30/2011
PUMP INTAKE (890 FT BLS)
BASIN FILL
GRANODIORITE ?
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL RD
W EL INDIO
S LA CANADA DR
N LA CANADA DR
N ABRECO DR
S SAN RAY
S VALLUM
E LA PERA
S FAIRGLEN
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
PS-1: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 03BBA
ADWR REG. NO.: 55-220861
DRILL YEAR: 2011


Water Level Depth (ft bls)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
SIERRITA TAILINGS IMPOUNDMENT
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
PS-2: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-17-13 34CDC
ADWR REG. NO.: 55-220862
DRILL YEAR: 2012

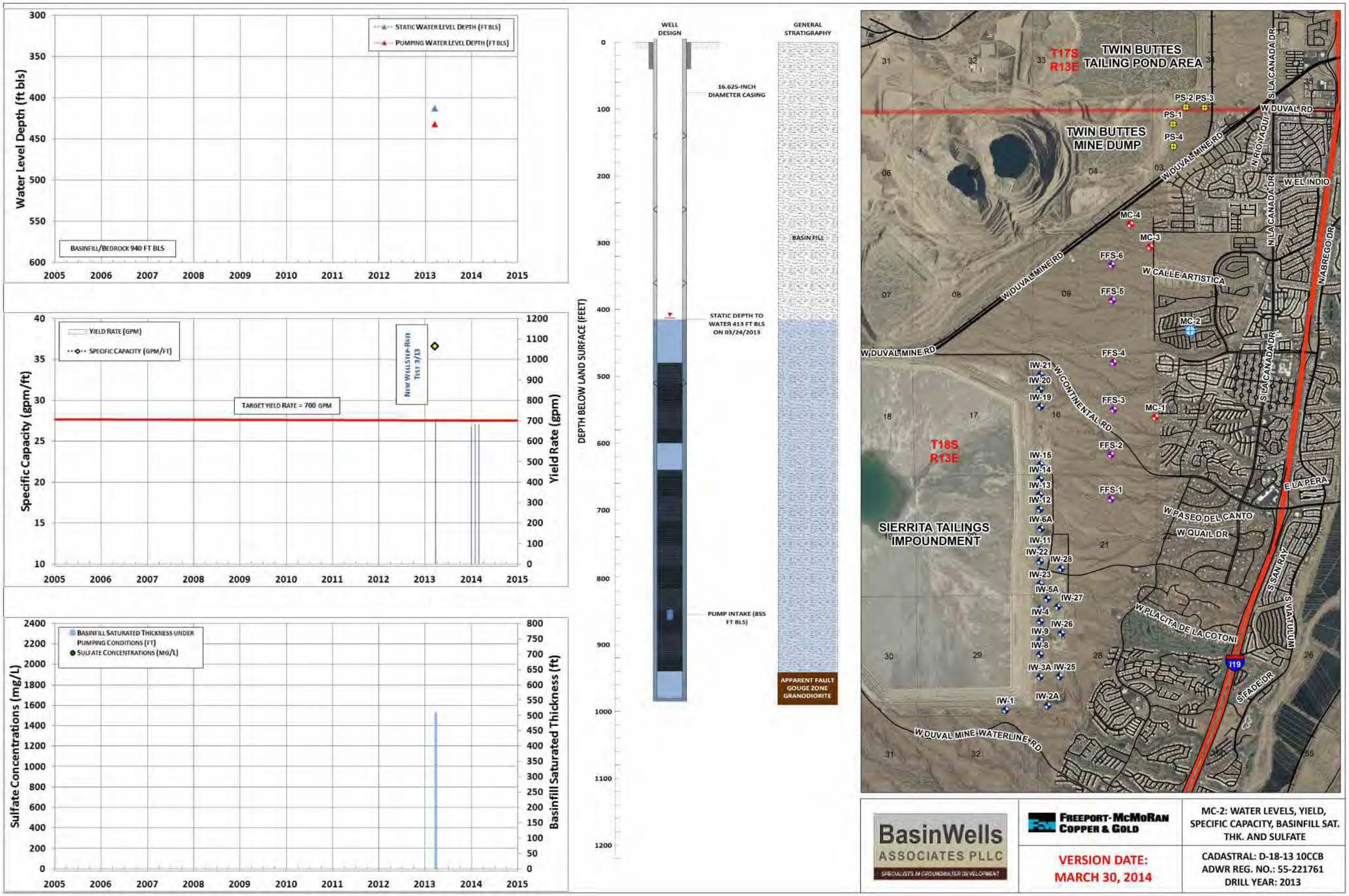

STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
Water Level Depth (ft bls)
BASINFILL/BEDROCK 1,160 FT BLS
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
TARGET YIELD RATE = 600 GPM
NEW WELL STEP-RATE TEST 5/12
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
WELL DESIGN
GENERAL STRATIGRAPHY
16.625-INCH DIAMETER CASING
STATIC DEPTH TO WATER 467 FT BLS ON 05/14/2012
BASIN FILL
DEMETRIE VOLCANICS?
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
E LA PERA
W EL INDIO
W DUVAL RD
BasinWells ASSOCIATES PLLC
FREEPORT-MCMORAN COPPER & GOLD
VERSION DATE: MARCH 30, 2014
PS-3: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
CADASTRAL: D-17-13 34CDD
ADWR REG. NO.: 55-220863
DRILL YEAR: 2012



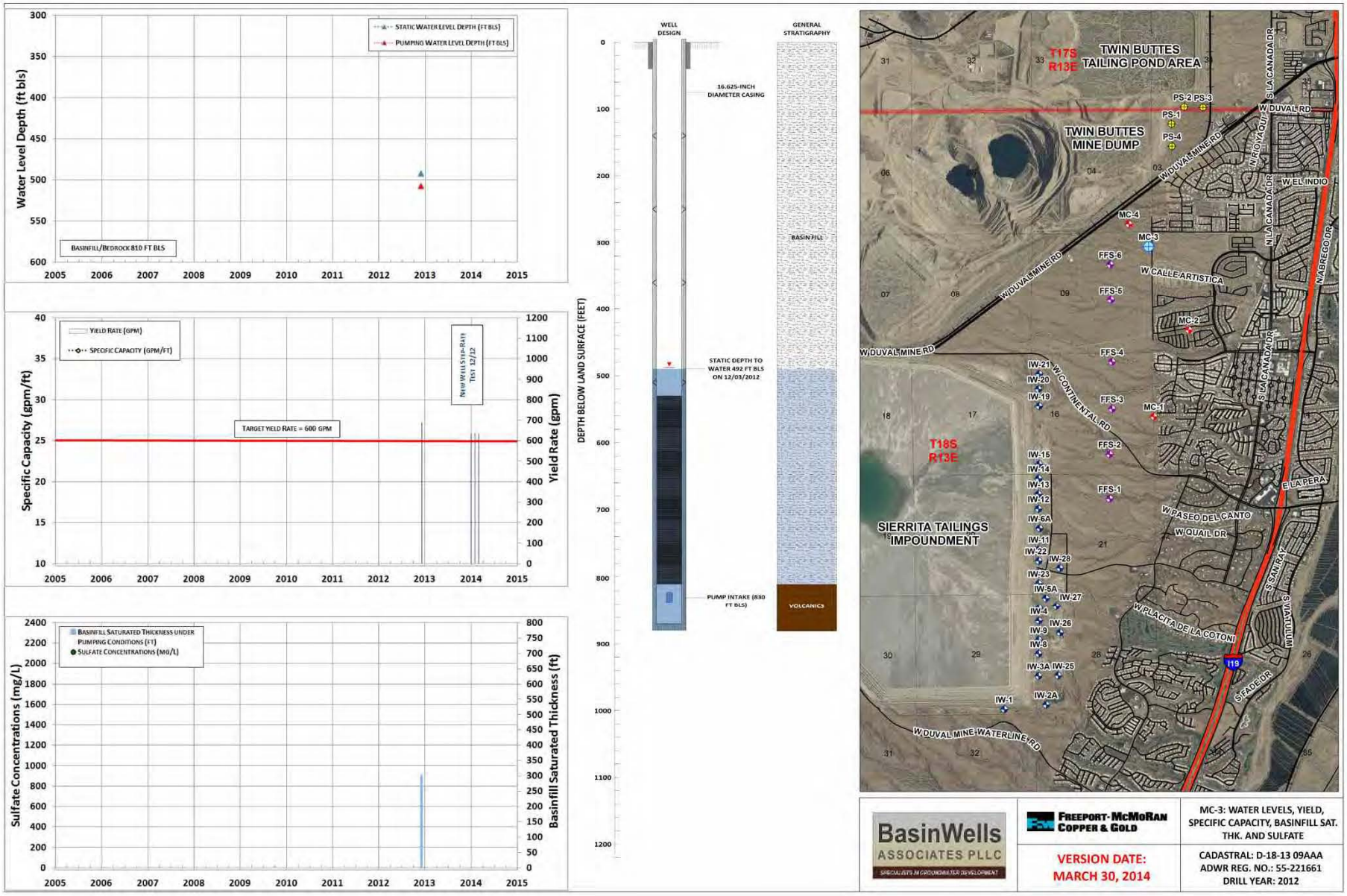
BasinWells Associates PLLC

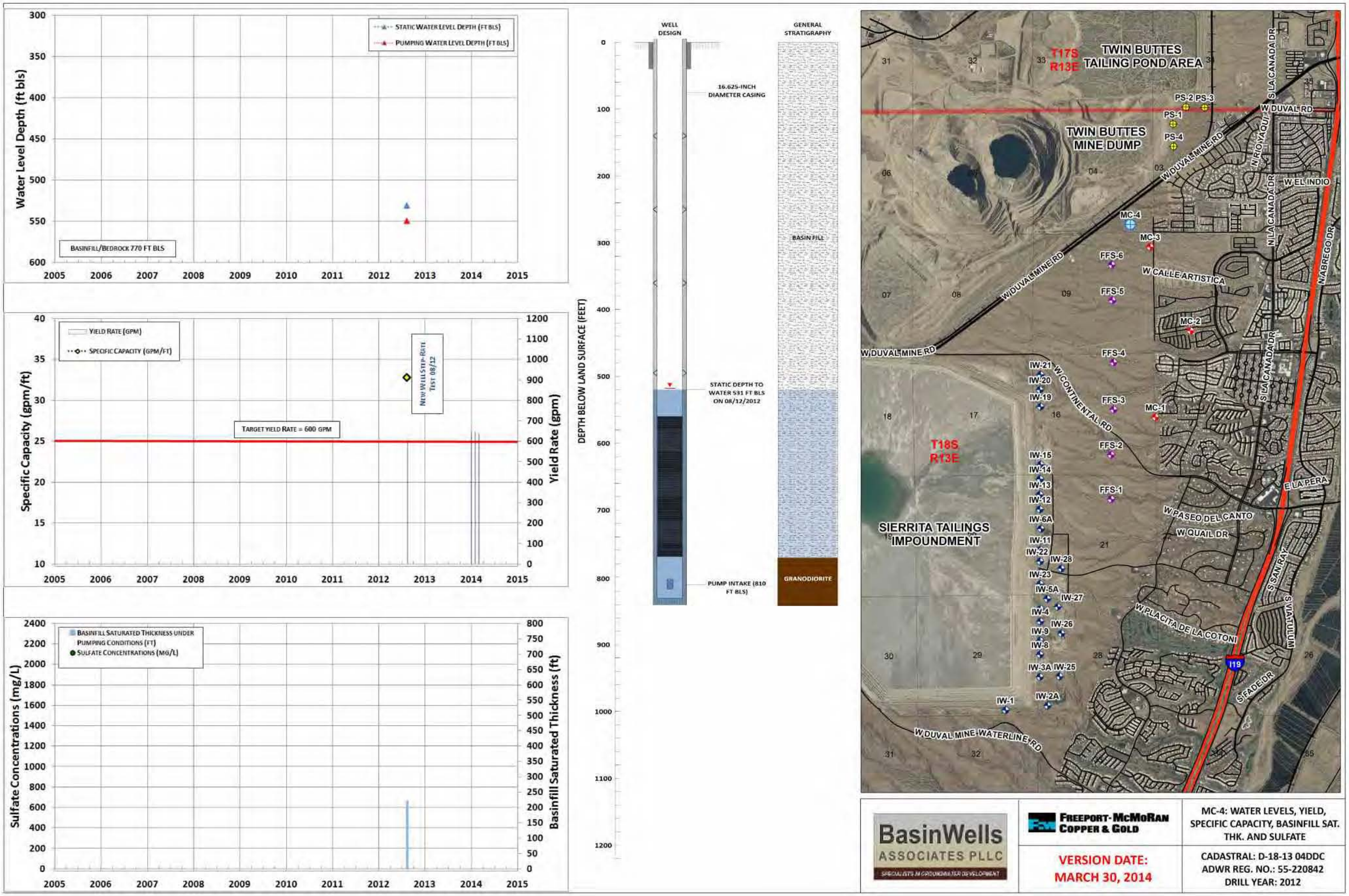


BasinWells Associates PLLC

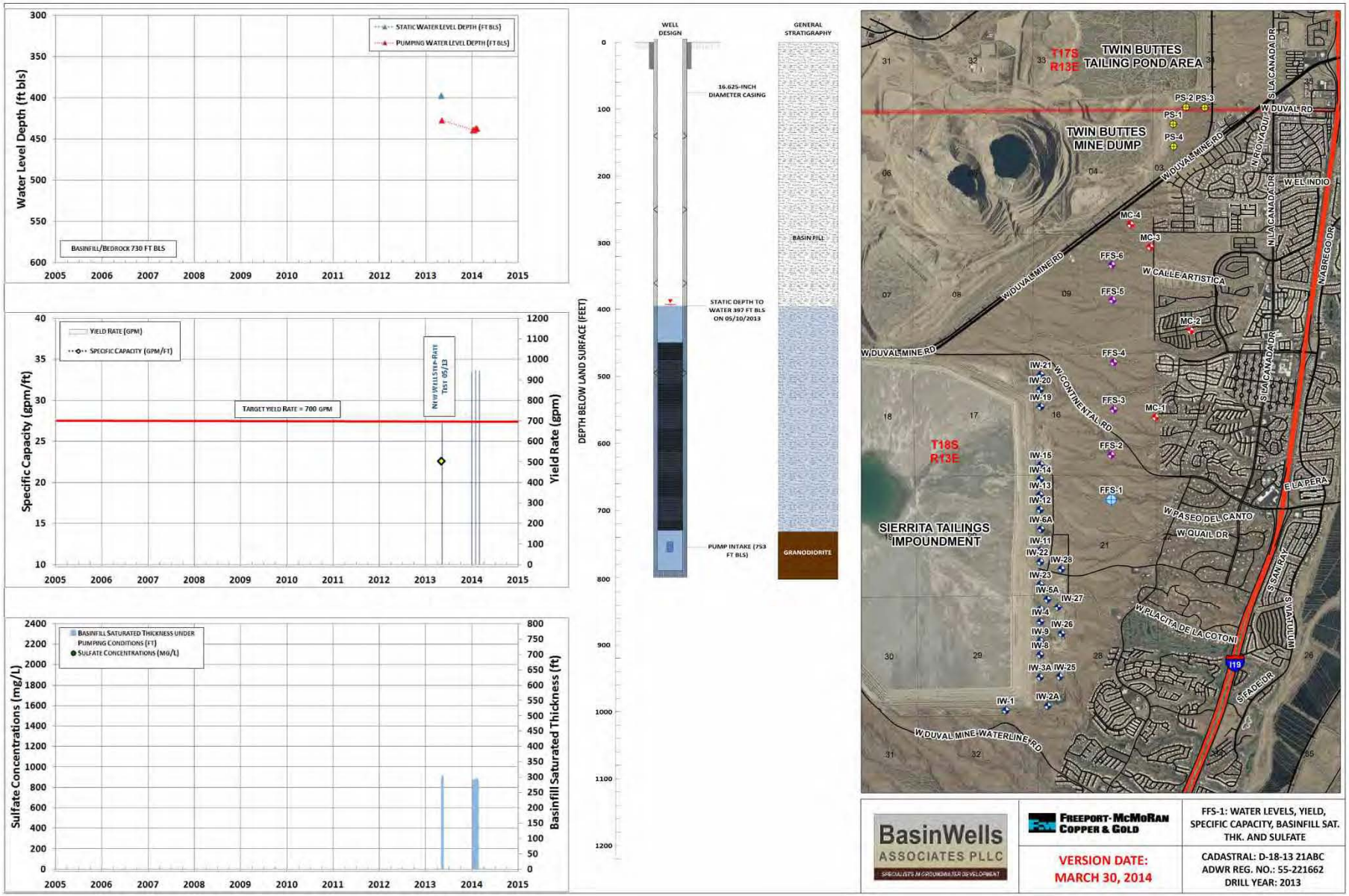


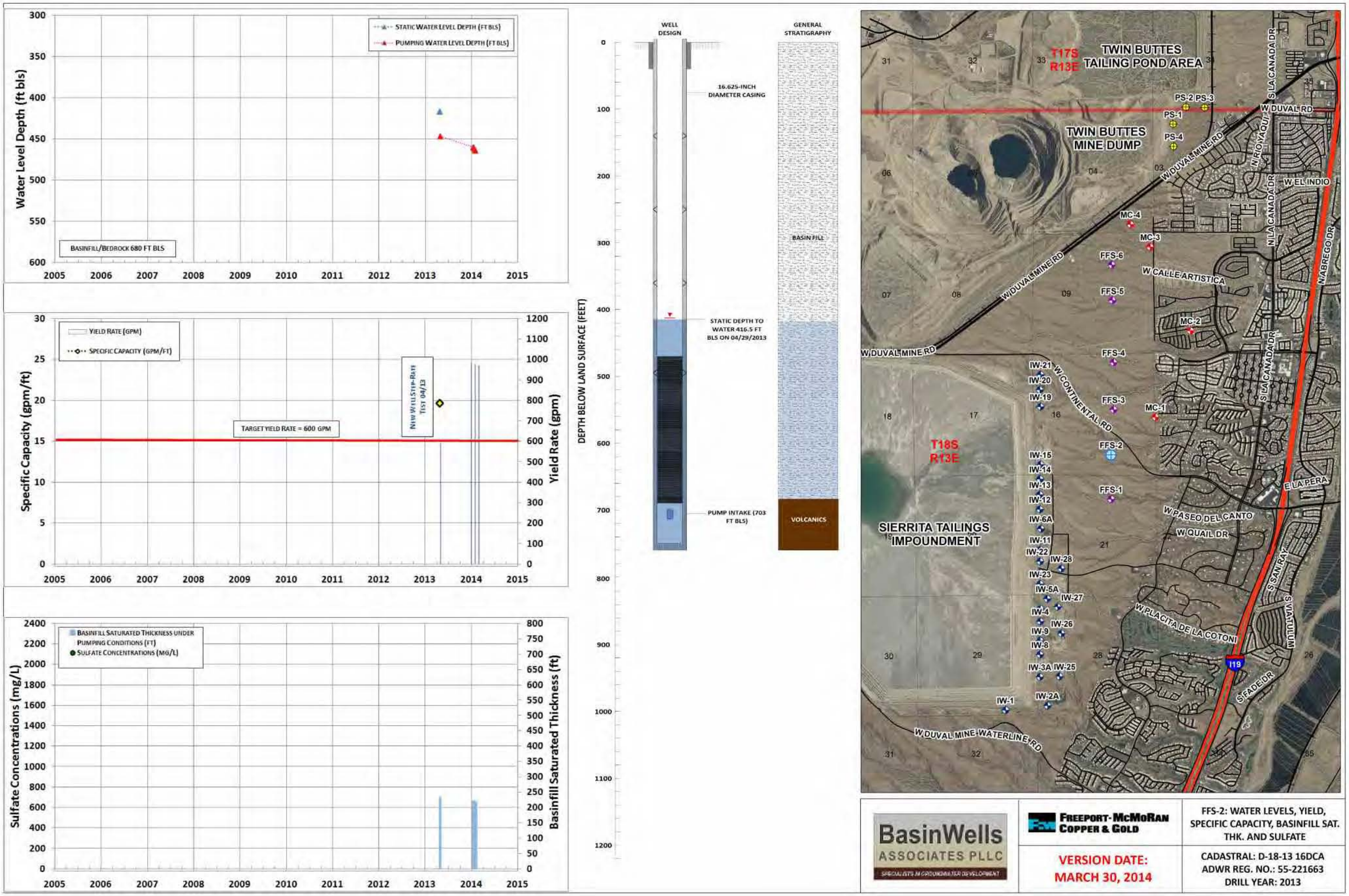
BasinWells Associates PLLC


Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 810 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
NEW WELL STEP-RATE TEST 12/12
TARGET YIELD RATE = 600 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
16.625-INCH DIAMETER CASING
STATIC DEPTH TO WATER 492 FT BLS ON 12/03/2012
PUMP INTAKE (830 FT BLS)
BASIN FILL
VOLCANICS
DEPTH BELOW LAND SURFACE (FEET)
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
S LA CANADA DR
N LA CANADA DR
W EL INDIO
N ABREGO DR
S WILMOT RD
I19
MC-1
MC-2
MC-3
MC-4
PS-1
PS-2
PS-3
PS-4
FFS-1
FFS-2
FFS-3
FFS-4
FFS-5
FFS-6
IW-1
IW-2A
IW-3A
IW-4
IW-5A
IW-6A
IW-8
IW-9
IW-11
IW-12
IW-13
IW-14
IW-15
IW-19
IW-20
IW-21
IW-22
IW-23
IW-26
IW-27
IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
MC-3: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 09AAA
ADWR REG. NO.: 55-221661
DRILL YEAR: 2012

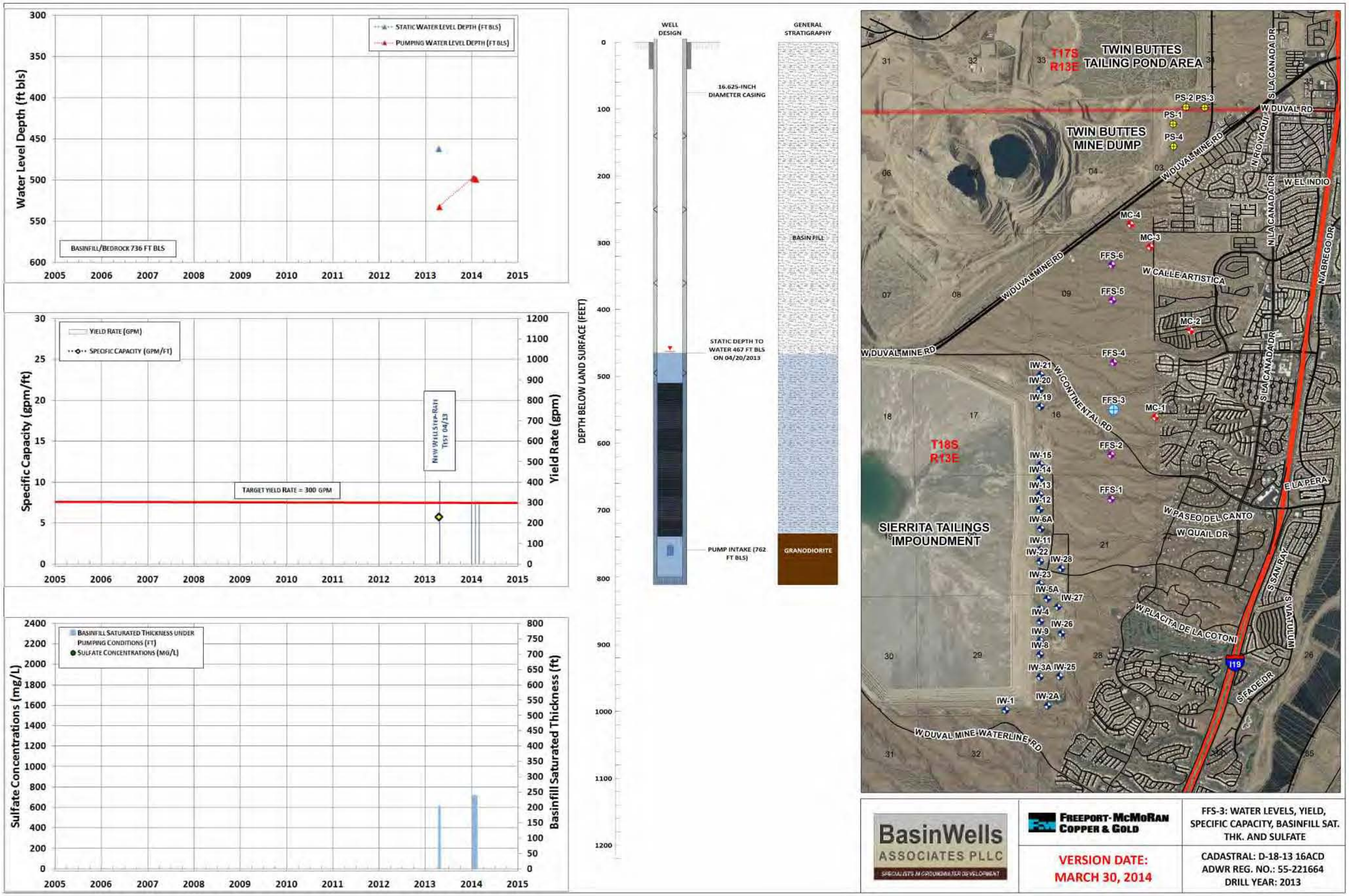


BasinWells Associates PLLC


Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 730 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 700 GPM
NEW WELL STEP-RATE TEST 05/13
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
16.625-INCH DIAMETER CASING
STATIC DEPTH TO WATER 397 FT BLS ON 05/10/2013
PUMP INTAKE (753 FT BLS)
BASIN FILL
GRANODIORITE
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL MINE WATERLINE RD
S LA CANADA DR
N LA CANADA DR
W EL INDIO
N ABRECO DR
S LA PERA
S SAN RAY
S VALLADOLID
I19
S FAIRGLEN
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
FFS-1: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 21ABC
ADWR REG. NO.: 55-221662
DRILL YEAR: 2013



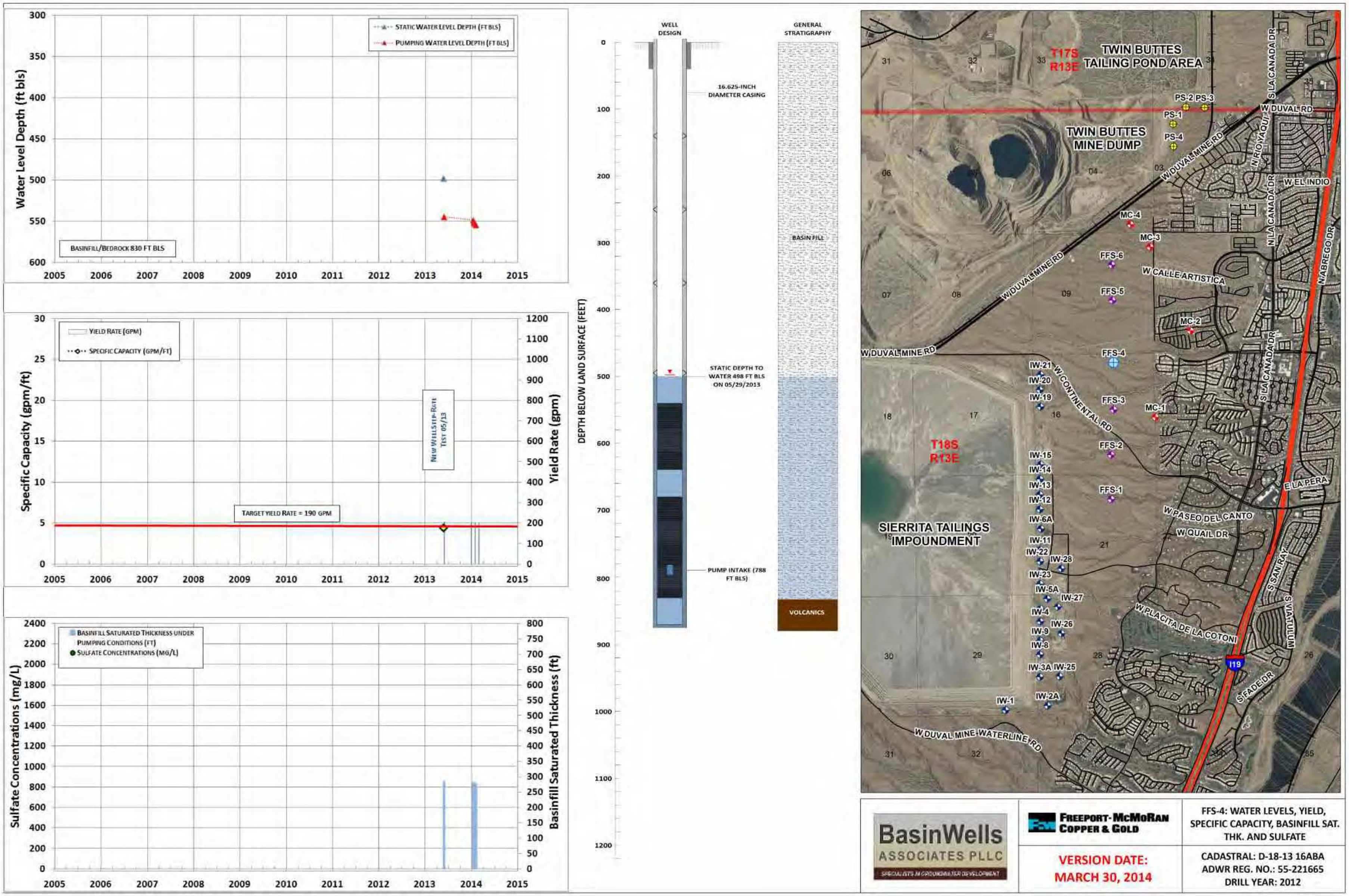
BasinWells Associates PLLC



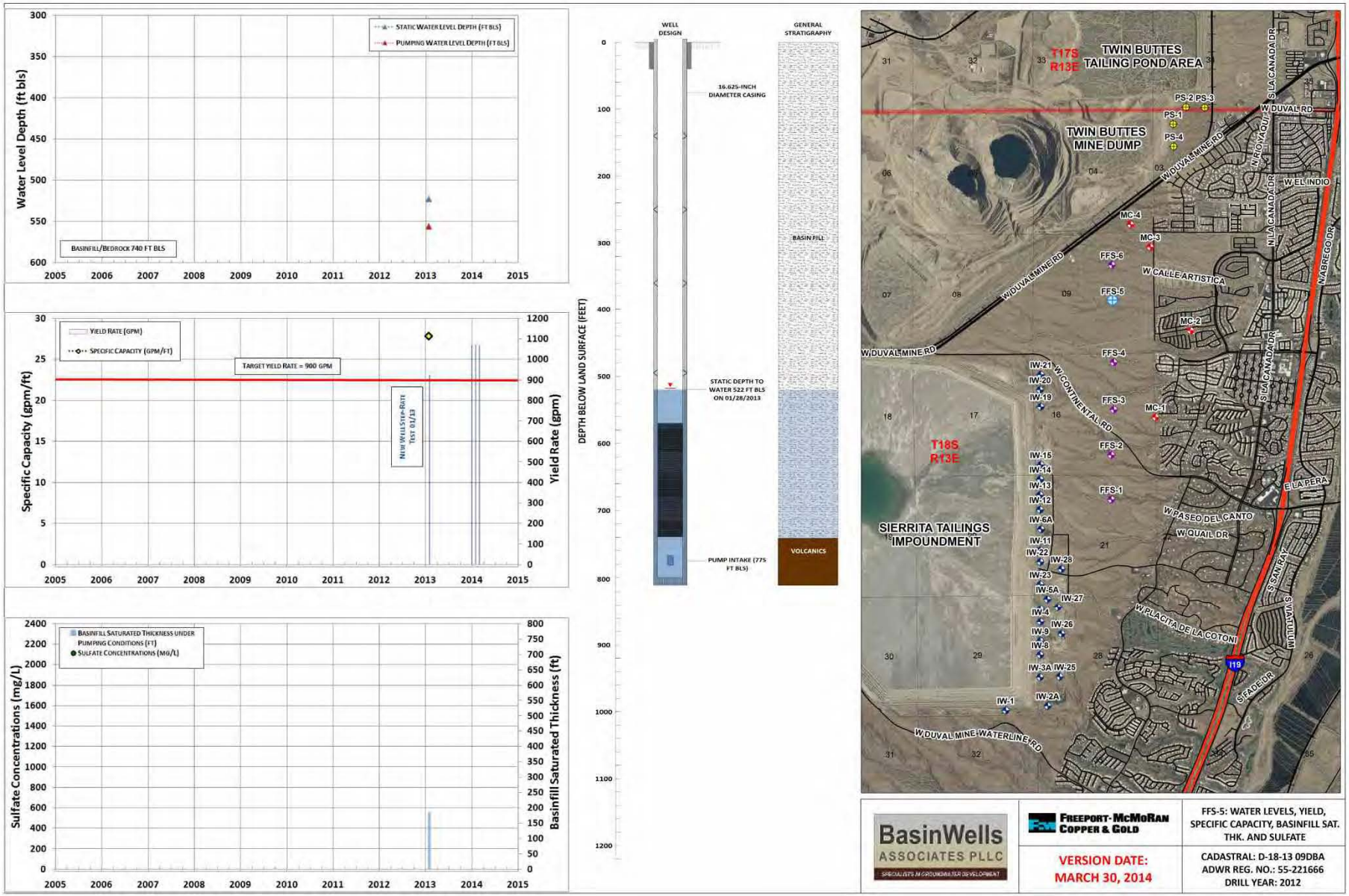
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
Water Level Depth (ft bls)
BASINFILL/BEDROCK 736 FT BLS
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
Specific Capacity (gpm/ft)
Yield Rate (gpm)
NEW WELL STEP-RATE TEST 04/13
TARGET YIELD RATE = 300 GPM
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
DEPTH BELOW LAND SURFACE (FEET)
WELL DESIGN
GENERAL STRATIGRAPHY
16.625-INCH DIAMETER CASING
BASIN FILL
STATIC DEPTH TO WATER 467 FT BLS ON 04/20/2013
PUMP INTAKE (762 FT BLS)
GRANODIORITE
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL MINE WATERLINE RD
E LA PERA
S SANTA CANADA DR
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRAN COPPER & GOLD
VERSION DATE: MARCH 30, 2014
FFS-3: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
CADASTRAL: D-18-13 16ACD
ADWR REG. NO.: 55-221664
DRILL YEAR: 2013

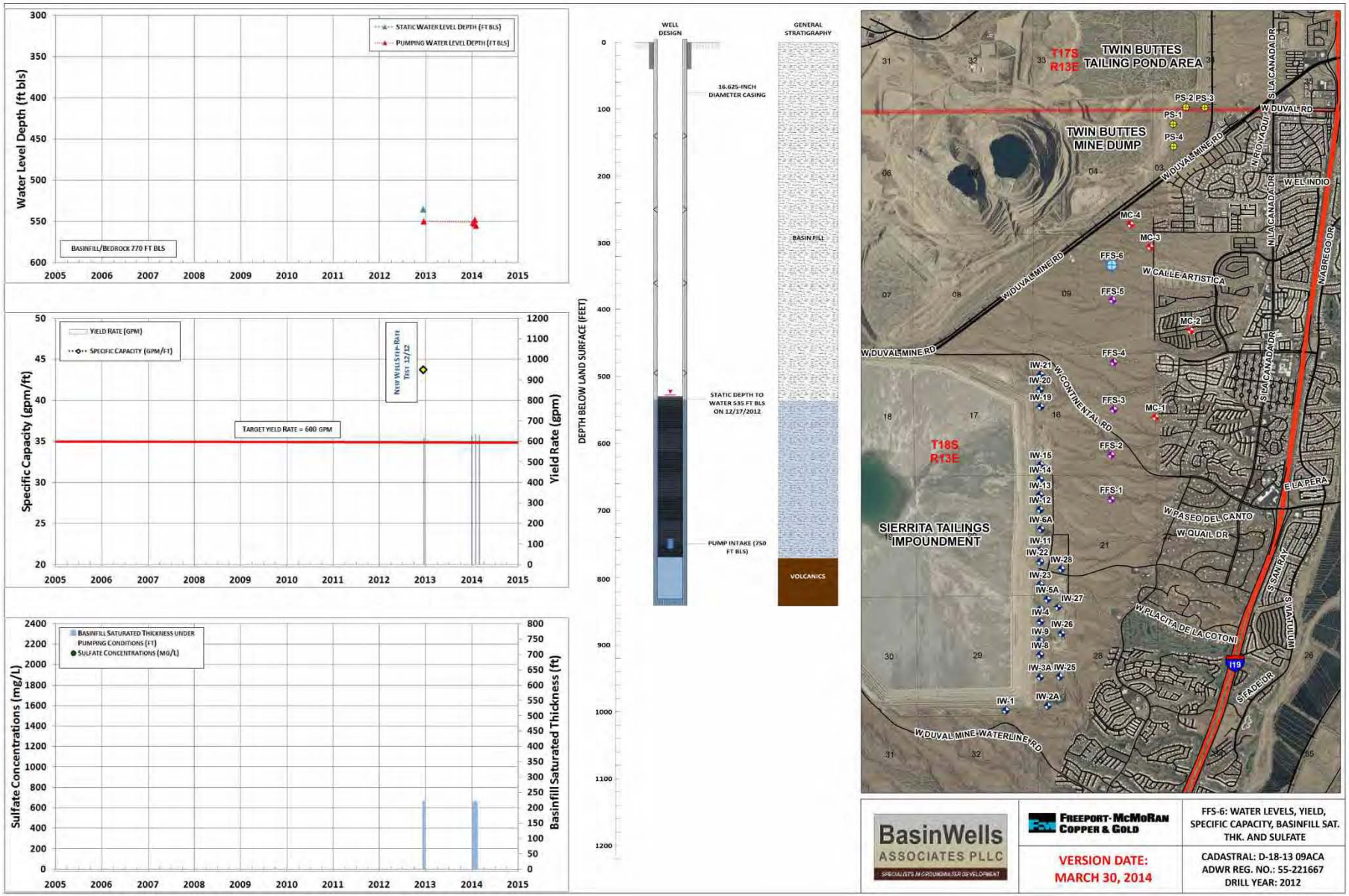
BasinWells Associates PLLC

c:\basinwells_associates_031711\2013_projects\fmi\iw-wellfield_monitoring\deliverable\report\final\basinwells_final_fmi_2013_iw_well_field_operations_performance_tm_033014.docx\3/27/2014\b



BasinWells Associates PLLC


Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 740 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
TARGET YIELD RATE = 900 GPM
NEW WELL STEP-RATE TEST 01/13
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
16.625-INCH DIAMETER CASING
BASIN FILL
STATIC DEPTH TO WATER 522 FT BLS ON 01/28/2013
PUMP INTAKE (775 FT BLS)
VOLCANICS
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W EL INDIO
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
S SAN RAY
S VALLUM
E LA PERA
S FAIRGEM
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
FREEPORT-McMoRan COPPER & GOLD
FFS-5: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 09DBA
ADWR REG. NO.: 55-221666
DRILL YEAR: 2012


Water Level Depth (ft bls)
STATIC WATER LEVEL DEPTH (FT BLS)
PUMPING WATER LEVEL DEPTH (FT BLS)
BASINFILL/BEDROCK 770 FT BLS
Specific Capacity (gpm/ft)
Yield Rate (gpm)
YIELD RATE (GPM)
SPECIFIC CAPACITY (GPM/FT)
NEW WELLS HI-RATE TEST 12/12
TARGET YIELD RATE = 600 GPM
Sulfate Concentrations (mg/L)
Basinfill Saturated Thickness (ft)
BASINFILL SATURATED THICKNESS UNDER PUMPING CONDITIONS (FT)
SULFATE CONCENTRATIONS (MG/L)
WELL DESIGN
GENERAL STRATIGRAPHY
DEPTH BELOW LAND SURFACE (FEET)
16.625-INCH DIAMETER CASING
BASIN FILL
STATIC DEPTH TO WATER 535 FT BLS ON 12/17/2012
PUMP INTAKE (750 FT BLS)
VOLCANICS
T17S R13E
TWIN BUTTES TAILING POND AREA
TWIN BUTTES MINE DUMP
T18S R13E
SIERRITA TAILINGS IMPOUNDMENT
W DUVAL MINE RD
W DUVAL MINE WATERLINE RD
W CONTINENTAL RD
W CALLE ARTISTICA
W PASEO DEL CANTO
W QUAIL DR
W PLACITA DE LA COTONI
W DUVAL RD
W EL INDIO
S LA CANADA DR
N LA CANADA DR
N ABREGO DR
S SAN RAY
S WALTHALL
E LA PERA
S FAIRGEM
I19
PS-1 PS-2 PS-3 PS-4
MC-1 MC-2 MC-3 MC-4
FFS-1 FFS-2 FFS-3 FFS-4 FFS-5 FFS-6
IW-1 IW-2A IW-3A IW-4 IW-5A IW-6A IW-8 IW-9 IW-11 IW-12 IW-13 IW-14 IW-15 IW-19 IW-20 IW-21 IW-22 IW-23 IW-25 IW-26 IW-27 IW-28
BasinWells ASSOCIATES PLLC
SPECIALISTS IN GROUNDWATER DEVELOPMENT
FREEPORT-McMoRan COPPER & GOLD
FFS-6: WATER LEVELS, YIELD, SPECIFIC CAPACITY, BASINFILL SAT. THK. AND SULFATE
VERSION DATE: MARCH 30, 2014
CADASTRAL: D-18-13 09ACA
ADWR REG. NO.: 55-221667
DRILL YEAR: 2012