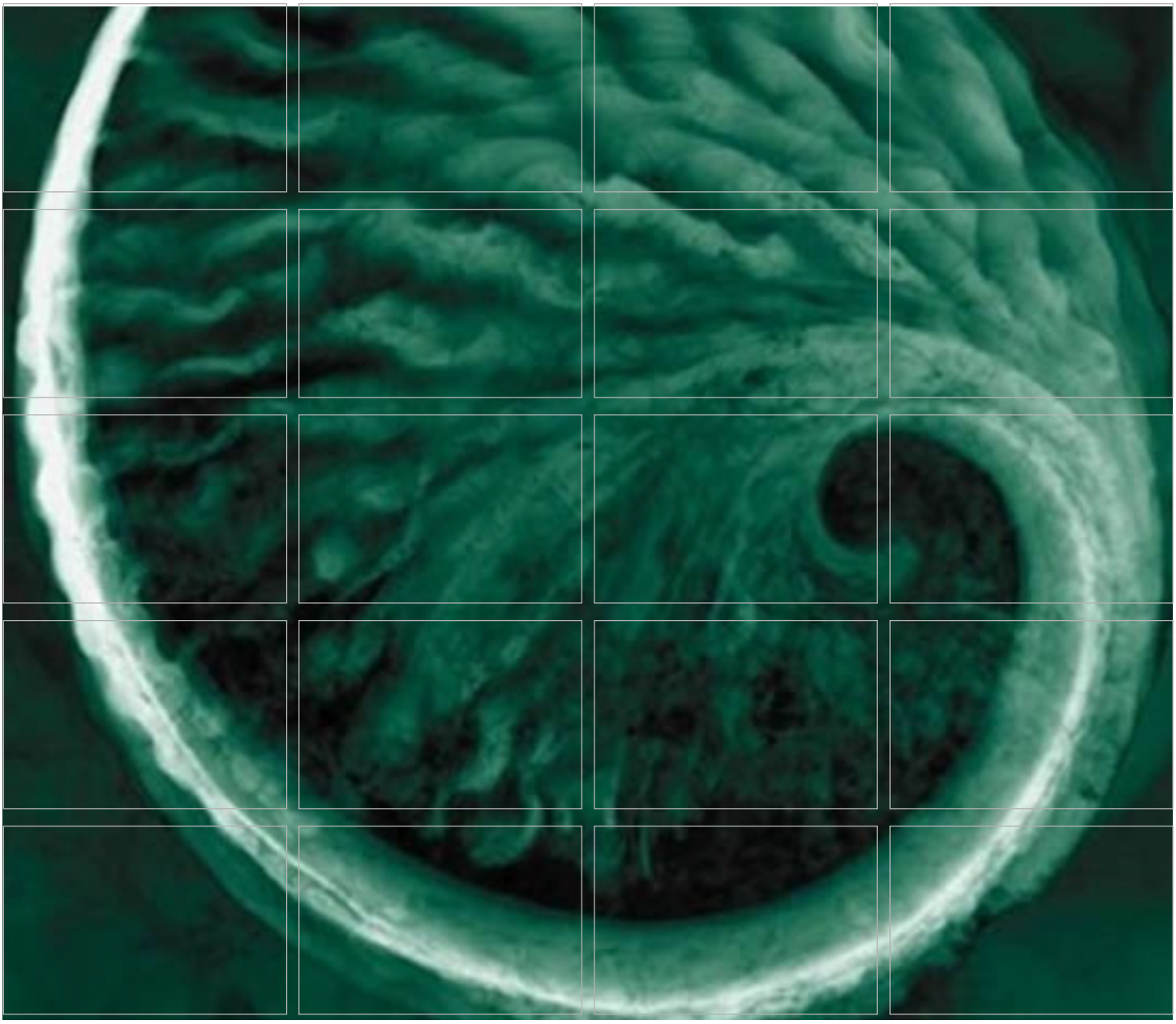

Annual Groundwater Monitoring and Corrective Action Report

CPS Energy
Calaveras Power Station – Sludge Recycle Holding Pond
San Antonio, Texas

February 2023

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Calaveras Power Station – Sludge Recycle Holding Pond

Annual Groundwater Monitoring and Corrective Action Report

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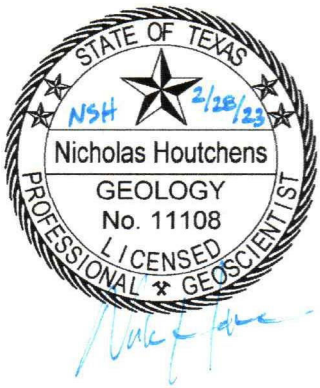

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1. CURRENT STATUS SUMMARY

As required in Title 40, Code of Federal Regulations, Part 257.90, this section provides an overview of the current status of the groundwater monitoring and corrective action program for the Sludge Recycle Holding (SRH) Pond located at the CPS Energy Calaveras Power Station:

- At the start of the 2022 annual reporting period, the SRH Pond was operating under the detection monitoring program, as defined in §257.94;
- At the end of the 2022 annual reporting period, the SRH Pond was operating under the detection monitoring program, as defined in §257.94;
- At this time, there was no confirmed statistically significant increase over background for one or more constituents listed in Appendix III pursuant to §257.94(e);
- An assessment monitoring program was not required or initiated for the SRH Pond;
- A remedy was not required or selected pursuant to §257.97 during the 2022 annual reporting period; and
- No remedial activities were initiated or are ongoing pursuant to §257.98 during the 2022 annual reporting period.

2. INTRODUCTION

CPS Energy owns and operates the Calaveras Power Station which consists of two power plants (J.T. Deely and J.K. Spruce) that are subject to regulation under Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) Subpart D (a.k.a. the CCR Rule). The Power Station is located in unincorporated Bexar County, Texas, approximately 13 miles southeast of San Antonio. Currently, two CCR units are in operation [Fly Ash Landfill (FAL) and SRH Pond] and two CCR units are undergoing closure [Bottom Ash Ponds (BAPs) and Evaporation Pond (EP)]. This *Annual Groundwater Monitoring and Corrective Action Report* (Report) addresses only the SRH Pond.

This Report was produced by Environmental Resource Management, Inc. (ERM), on behalf of CPS Energy, and summarizes the groundwater monitoring activities for the SRH Pond in 2022 and provides a statistical summary of the findings for samples collected in October 2022. Consistent with the notification requirements of the CCR Rule, this Report will be posted to the operational record and notification will be made to the State of Texas. Additionally, this Report will be placed on the publicly accessible internet site (§257.105(h), §257.106(h), §257.107(h)). The table below cross references the reporting requirements under the CCR Rule with the contents of this Report.

Regulatory Requirement Cross-Reference

Regulatory Citation	Requirement (paraphrased)	Where Addressed in this Report
§257.90(e)	Status of the groundwater monitoring and corrective action program	Sections 1 and 3
§257.90(e)	Summarize key actions completed	Section 3
§257.90(e)	Describe any problems encountered and actions to resolve problems	Section 3
§257.90(e)	Key activities for upcoming year	Section 5
§257.90(e)(1)	Map or aerial image of CCR unit and monitoring wells	Figure 1
§257.90(e)(2)	Identification of new monitoring wells installed or decommissioned during the preceding year	Section 3
§257.90(e)(3)	Summary of groundwater data, monitoring wells and dates sampled, and whether sample was required under detection or assessment monitoring	Sections 3 and 4, Tables 1 through 3, and Figure 2
§257.90(e)(4)	Narrative discussion of any transition between monitoring programs	Section 5

The SRH Pond is located east of the Power Station generating units and is adjacent to and immediately west of the BAPs. The SRH Pond consists of one pond separated by a dividing wall (oriented north and south) containing flue gas desulphurization scrubber sludge. The SRH Pond was constructed in 1992. The CCR unit location is shown on Figure 1.

3. PROGRAM STATUS

From December 2016 through October 2017, groundwater samples were collected as part of background sampling. After October 2017, groundwater samples were collected as part of Detection Monitoring. The samples were collected from the groundwater monitoring well network certified for use in determining compliance with the CCR Rule.

Historically, the groundwater monitoring well network consisted of two upgradient monitor wells (JKS-49 and JKS-51) and three downgradient monitor wells (JKS-52, JKS-53, and JKS-54). As documented in the *2020 Annual Groundwater Monitoring and Corrective Action Report – Sludge Recycle Holding Pond* (ERM, 2020), non-proportional changes in water levels were observed during the 2020 monitoring events and a site-wide water level study (Study) was recommended to understand temporal changes in hydrogeology. ERM completed this Study by collecting five rounds of water level measurements at each CCR Unit, which included observations from other on-site monitoring wells, from February to October 2021.

As documented in the Study, JKS-49 and JKS-51 no longer appeared to be viable background wells and ERM recommended the installation of one or two new monitor wells located north of the SRH Pond. One monitor well (JKS-70) was installed in July 2022 and was designated as a background well for the SRH Pond. As such, the revised groundwater monitoring well network consists of two upgradient monitor wells (JKS-70 and JKS-51) and three downgradient monitor wells (JKS-52, JKS-53, and JKS-54). This revision to the groundwater monitoring network will be documented in updated *Groundwater Monitoring System* and *Groundwater Sampling and Analysis Program* (*GSAP*) documents for the Power Station.

All monitor wells are screened within the uppermost groundwater bearing unit (GWBU) in the vicinity of the SRH Pond. The uppermost GWBU varies in thickness from approximately 9.5 to 21.5 feet thick and is comprised of clayey/silty sand to moderately-sorted sand. The uppermost GWBU is located below semi-confining units (i.e., clay, sandy clay, or silty clay), and above a sandstone bedrock unit.

The monitor well locations are shown in Figure 1. No problems were encountered in the data collection or in well performance, and no action was required to resolve any issues. As noted above, one new monitor well (JKS-70) was installed in July 2022 and no monitor wells were decommissioned after the certification of the well network.

3.1 GROUNDWATER OBSERVATIONS

Depth to groundwater surface measurements were made at each monitor well prior to each sampling event. Groundwater elevations were calculated by subtracting the depth to groundwater measurement from the surveyed reference elevation for each well.

Groundwater elevations collected during all the monitoring events are summarized in Table 1. Groundwater elevations and the potentiometric surface for the April and October 2022 monitoring events are shown on Figure 2A and Figure 2B, respectively. As measured during the April 2022 monitoring event, groundwater appears to flow south to southeast towards the northern portion of the BAPs. Groundwater in the vicinity of the southern and western extent of the BAPs appears to flow east to northeast towards Calaveras Lake. The horizontal gradient is approximately 0.001 feet/foot.

Groundwater elevations measured during the October 2022 monitoring event appear to display a southeastern groundwater flow towards the northern extent of the BAPs, which converges with groundwater flow from the southwest towards a potentiometric low near monitor well JKS-49. The horizontal gradient is approximately 0.003 feet/foot.

As previously documented, non-proportional changes in water levels have been observed since the 2020 monitoring events and these changes are evident in the 2022 monitoring events. CPS Energy will continue to monitor and evaluate these changes to understand temporal changes in hydrogeology.

3.2 SAMPLING SUMMARY

A summary of the total number of samples collected from each monitor well is provided in Table 2. Groundwater analytical results for Appendix III constituents for all the monitoring events are summarized in Table 3. Laboratory data packages are provided in Appendix A.

The SRH Pond monitoring wells were sampled by CPS Energy using low flow sampling techniques during the monitoring events. No data gaps were identified during the 2022 semi-annual groundwater monitoring events.

3.3 DATA QUALITY

ERM reviewed field and laboratory documentation to assess the validity, reliability and usability of the analytical results. Samples were sent to San Antonio Testing Laboratory (SATL), located in San Antonio, Texas for analysis. Chain-of-Custody procedures were followed throughout the sample handling process. Data quality information reviewed for these results

included field sampling forms, chain-of-custody documentation, holding times, lab methods, cooler temperatures, laboratory method blanks, laboratory control sample recoveries, field duplicate samples, matrix spikes / matrix spike duplicates, quantitation limits, and equipment blanks following data quality review guidance from the Environmental Protection Agency and the Texas Commission on Environmental Quality. A summary of the data usability qualifiers is included in Table 3. The data quality review found the results to be valid, reliable, and useable for decision making purposes with the listed qualifiers. No analytical results were rejected.

4. STATISTICAL ANALYSIS AND RESULTS

Consistent with the CCR Rule and with the G*SAP*, a prediction limit approach (40 CFR §257.93(f)) was used to identify potential impacts to groundwater. The steps outlined in the decision framework in the G*SAP* include:

- Interwell versus intrawell comparisons;
- Establishment of the upgradient dataset;
- Calculating prediction limits; and
- Conclusions.

Tables and figures generated as part of the statistical analysis, including updating of prediction limits, are provided in Appendix B. The remaining sections of the Report are focused on evaluation of the most recent October 2022 data. Note the April 2022 sampling results were evaluated as discussed in Appendix C. The April 2022 sampling results were evaluated relative to the existing prediction limits.

4.1 INTERWELL VERSUS INTRAWELL COMPARISONS

When multiple upgradient wells were available within the same unit, concentrations were compared among these wells to determine if they could be pooled to create a single, interwell, upgradient dataset. For each analyte, Boxplots (Appendix B, Figure 1) and Kruskal-Wallis test results (Appendix B, Table 1) are provided for upgradient wells. The statistical tests indicate that:

- All analytes were found to follow interwell (pooled) analysis.

As discussed in the *GSAP*, interwell analytes will use a pooled upgradient dataset in the following sections.

4.2 ESTABLISHMENT OF UPGRADIENT DATASET

When evaluating the concentrations of analytes in groundwater, USEPA guidance (2009) recommends performing a careful quality check of the data to identify any anomalies. In addition to the data validation that was performed, descriptive statistics, outlier testing, and temporal stationarity checks were completed to finalize the upgradient dataset.

4.2.1 Descriptive Statistics

Descriptive statistics were calculated for the upgradient wells and analytes at the site (Appendix B, Table 2). The descriptive statistics highlight a number of relevant characteristics about the upgradient datasets including:

- There are two upgradient monitoring wells and seven Appendix III constituents for Detection Monitoring.
- There are a total of seven well-analyte combinations after accounting for interwell versus intrawell analysis.
- Seven well-analyte combinations have detection rates greater than or equal to 50 percent.
- No well-analyte combinations have 100 percent non-detects,
- Six well-analyte combinations have 100 percent detects.
- Five well-analyte combinations follow a normal distribution (using Shapiro-Wilks Normality Test)
- No well-analyte combinations follow a log-normal distribution.
- Two well-analyte combinations have no discernible distribution.

4.2.2 Outlier Determination

Both statistical and visual outlier tests were performed on the upgradient datasets. A total of three outliers were initially flagged in the upgradient datasets. Data points identified as both statistical and visual outliers (Appendix B, Table 3 and Appendix B, Figure 2) were reviewed prior to exclusion from the dataset.

Of the three data points that were flagged as outliers, all three were retained in the dataset. After review, it was determined that these values were consistent with natural fluctuations and concentrations detected in other upgradient wells or in the area prior to operation. No analytical or sampling issues were identified during data review; therefore, the three outlier values were considered valid and were retained in the upgradient datasets.

4.2.3 Check for Temporal Stability

A trend test was performed for all values in the upgradient wells with at least eight detected data points and at least 50 percent detection rate. Time series figures of upgradient wells are provided in Appendix B, Figure 3. Additionally, the Mann Kendall trend test results are provided in Appendix B, Table 4. The results of the trend analysis indicate that:

- There are a total of seven well-analyte combinations in the upgradient dataset.
- Seven well-analyte combinations meet the data requirements of the trend test.
- Two well-analyte combinations had a significant increasing trend.
- No well-analyte combinations had a significant decreasing trend.
- Five well-analyte combinations had no significant trend (i.e., concentrations were stable over time).

4.3 ESTABLISHING UPPER PREDICTION LIMITS

A multi-part assessment of the monitoring wells was performed to determine what type of upper prediction limit (UPL) to calculate as a compliance point. A decision framework was applied for each upgradient well based on interwell/intrawell analysis, data availability, and presence of temporal trends. A summary of the UPLs (and LPLs) and the methods used to calculate them are provided in Appendix B, Table 5.

A total of two well-analyte combinations were found to have either increasing or decreasing trends. For these well-analyte pairs, a bootstrapped UPL calculated around a Theil Sen trend was used to derive a more accurate UPL.

The remaining five well-analyte combinations were found to have no significant trend. Sanitas was used to calculate static UPLs using an annual site-wide false positive rate of 0.1 with a 1-of-2 re-testing approach.

A final UPL was selected for each analyte and compared to the most recent sample result in each downgradient well. For pH, a final lower prediction limit (LPL) was also identified and used for comparison. For the seven analytes with interwell analysis, the upgradient dataset was pooled prior to UPL calculations, resulting in a single UPL value per analyte. A similar approach was used to determine the LPL for pH. All final UPL and LPL values are shown in the table below. Full upgradient well prediction limit calculations are provided in Appendix B, Table 5.

Final UPLs and LPLs Values

Analysis Type	Analyte	LPL	UPL	Unit
Interwell	Boron	–	0.726	mg/L
Interwell	Calcium	–	404	mg/L
Interwell	Chloride	–	658	mg/L
Interwell	Fluoride	–	0.547	mg/L
Interwell	pH	5.48	7.16	SU
Interwell	Sulfate	–	616	mg/L
Interwell	Total Dissolved Solids	–	3,180	mg/L

4.4 CONCLUSIONS

The downgradient samples collected during the October 2022 sampling event were used for compliance comparisons. All downgradient wells were below the UPLs and above the LPLs with the following exceptions shown on the table below. Full downgradient results are provided in Appendix B, Table 6.

Potential Exceedances

Analyte	Well	LPL	UPL	Sample Date	Value	Unit
Boron	JKS-52	–	0.726	2022-10-25	2.37	mg/L
Boron	JKS-53	–	0.726	2022-10-25	1.59	mg/L
Boron	JKS-54	–	0.726	2022-10-25	1.24	mg/L
Fluoride	JKS-52	–	0.547	2022-10-25	0.686	mg/L
Fluoride	JKS-54	–	0.547	2022-10-25	0.779	mg/L

Initial exceedances of the UPL may be confirmed with re-testing of the downgradient wells per the 1-of-2 retesting scheme. If the initial exceedance is confirmed with re-testing results in the same well, the well-analyte pair will be declared a statistically significant increase (SSI) above background. If an SSI is found, a notification or alternate source demonstration will be prepared within 90 days. Any wells with re-testing results at or below the UPL, and at or greater than the LPL, will be considered in compliance and will not require further action. These re-testing results will be reported in the subsequent *Alternative Source Demonstration*.

All downgradient wells with initial exceedances were examined for trends to assess the stability of concentrations. A summary of these trend test results can be found in Appendix B, Table 4. Of the wells with potential SSIs, boron concentrations had an increasing trend at JKS-52.

Trends in these wells relative to UPLs, and LPLs for pH, will be monitored closely in future monitoring events. All wells with potential SSIs are plotted in Appendix B, Figure 4. All potential SSIs are within one order of magnitude of the UPL.

5 RECOMMENDATIONS

Currently, there are no plans to transition between Detection Monitoring and Assessment Monitoring. Consistent with the 1-of-2 retesting approach described in the Unified Guidance (USEPA 2009) and the SAP, initial exceedances may be retested within 90 days. Based on these findings, Detection Monitoring and/or Assessment Monitoring will be initiated as appropriate under §257.94 and §257.95.

6. *REFERENCES*

ERM, 2017. *Groundwater Sampling and Analysis Program.* CPS Energy, Calaveras Power Station, San Antonio, Texas.

USEPA. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.* Unified Guidance. USEPA/530/R/09/007. Office of Resource Conservation and Recovery. Washington, D.C.

Tables

TABLE 1
Groundwater Elevations Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-49 Unclassified		JKS-51 Upgradient		JKS-52 Downgradient		JKS-53 Downgradient		JKS-54 Downgradient	
		TOC Elevation	498.63	TOC Elevation	496.92	TOC Elevation	493.15	TOC Elevation	494.74	TOC Elevation	496.40
Sampling Event	Sampling Event Dates	Depth to Water (feet btoc)	Water Level (msl)	Depth to Water (feet btoc)	Water Level (msl)	Depth to Water (feet btoc)	Water Level (msl)	Depth to Water (feet btoc)	Water Level (msl)	Depth to Water (feet btoc)	Water Level (msl)
1	12/6/16 to 12/8/16	8.81	489.82	10.76	486.16	7.53	485.62	7.70	487.04	10.19	486.21
2	2/21/17 to 2/23/17	8.56	490.07	10.80	486.12	7.43	485.72	8.52	486.22	10.48	485.92
3	3/28/17 to 3/30/17	8.90	489.73	10.59	486.33	7.33	485.82	8.95	485.79	10.64	485.76
4	5/2/17 to 5/4/17	8.85	489.78	10.56	486.36	7.35	485.80	8.74	486.00	10.64	485.76
5	6/20/17 to 6/21/17	8.75	489.88	10.56	486.36	7.46	485.69	8.47	486.27	10.71	485.69
6	7/25/17 to 7/26/17	8.46	490.17	10.68	486.24	7.50	485.65	8.85	485.89	10.85	485.55
7	8/29/17 to 8/30/17	7.21	491.42	10.48	486.44	7.40	485.75	8.55	486.19	9.50	486.90
8	10/10/17 to 10/11/17	11.17	487.46	10.98	485.94	7.53	485.62	9.21	485.53	11.17	485.23
9	4/4/18 to 4/5/18	9.00	489.63	10.93	485.99	8.48	484.67	8.90	485.84	10.76	485.64
10	10/30/18 to 10/31/18	6.88	491.75	10.45	486.47	8.33	484.82	8.40	486.34	10.55	485.85
11	4/9/19 to 4/10/19	12.52	486.11	11.02	485.90	7.65	485.50	8.96	485.78	10.75	485.65
12	10/22/19 to 10/23/19	14.84	483.79	12.00	484.92	9.40	483.75	9.91	484.83	11.47	484.93
13	4/28/20 to 4/29/20	13.58	485.05	11.79	485.13	8.20	484.95	9.75	484.99	11.33	485.07
14	10/20/20 to 10/21/20	14.42	484.21	12.11	484.81	8.07	485.08	9.73	485.01	11.47	484.93
15	4/13/20 to 4/14/21	13.60	485.03	11.80	485.12	8.04	485.11	9.59	485.15	11.29	485.11
16	10/19/21 to 10/20/21	13.33	485.30	11.67	485.25	7.99	485.16	9.43	485.31	11.10	485.30
17	4/13/22 to 4/14/22	14.16	484.47	12.25	484.67	8.34	484.81	10.00	484.74	11.55	484.85
18	10/25/22 to 10/26/22	14.81	483.82	12.53	484.39	8.19	484.96	9.78	484.96	11.60	484.80

NOTES:
btoc = below top of casing
msl = mean sea level

TABLE 2
Groundwater Sampling Summary
CPS Energy - Calaveras Power Station
SRH Pond

CCR Unit	Well ID	Well Function	Number of Samples Collected in 2016 - 2022	2016 - 2022 Sample Dates																	Monitoring Program
				12/6/16 to 12/8/16	2/21/17 to 2/23/17	3/28/17 to 3/30/17	5/2/17 to 5/4/17	6/20/17 to 6/21/17	7/25/17 to 7/26/17	8/29/17 to 8/30/17	10/10/17 to 10/11/17	4/4/18 to 4/5/18	10/30/18 to 10/31/18	4/9/19 to 4/10/19	10/22/19 to 10/23/19	4/28/20 to 4/29/20	10/20/20 to 10/21/20	4/13/21to 4/14/21	10/19/21 to 10/20/21	4/13/22 to 4/14/22	10/25/22 to 10/26/22	
SRH Pond	JKS-49	Unclassified	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Detection
	JKS-51	Upgradient Monitoring	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Detection
	JKS-52	Downgradient Monitoring	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Detection
	JKS-53	Downgradient Monitoring	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Detection
	JKS-54	Downgradient Monitoring	18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Detection

NOTES:
X = Indicates that a sample was collected.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-49 Unclassified																	
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20	4/13/21	10/19/21	4/13/22	10/25/22
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2022**
Appendix III - Detection Monitoring																			
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47	2.81	2.59	2.50	2.50	2.60
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J	132	133	119	117	117
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452	435	449	437	455	471
Fluoride	mg/L	0.715	--	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894	0.656	0.729	0.018 U	0.561	0.018 U
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217	193	211	232	228	225
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15	7.14	7.12	7.06	7.26	7.18
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240	1380	1290	1300	1380	1340
Appendix IV - Assessment Monitoring																			
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-51 Upgradient																	
Sample Date		**12/8/16**	**2/22/17**	**3/28/17**	**5/3/17**	**6/21/17**	**7/25/17**	**8/29/17**	**10/10/17**	**4/4/18**	**10/30/18**	**4/9/19**	**10/22/19**	**4/28/20**	**10/20/20**	**4/13/21**	**10/20/21**	**4/13/22**	**10/25/22**
Task		**Event 1**	**Event 2**	**Event 3**	**Event 4**	**Event 5**	**Event 6**	**Event 7**	**Event 8**	**Event 9**	**Event 10**	**Event 11**	**Event 12**	**Event 13**	**Event 14**	**Event 15**	**Event 16**	**Event 17**	**Event 18**
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2022**
Appendix III - Detection Monitoring																			
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627	0.668	0.579	0.665	0.634	0.711
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J	298	314	321	362	316
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555	493	522	543	549	620
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470	0.018 U	0.292	0.018 U	0.224	0.295
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439	376	382	421	445	503
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43	6.47	6.42	6.32	6.54	6.44
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010	1930	2190	2260	2720	2490
Appendix IV - Assessment Monitoring																			
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-52 Downgradient																	
Sample Date		**12/7/16**	**2/21/17**	**3/28/17**	**5/2/17**	**6/21/17**	**7/25/17**	**8/29/17**	**10/10/17**	**4/4/18**	**10/30/18**	**4/9/19**	**10/22/19**	**4/28/20**	**10/21/20**	**4/13/21**	**10/20/21**	**4/13/22**	**10/25/22**
Task		**Event 1**	**Event 2**	**Event 3**	**Event 4**	**Event 5**	**Event 6**	**Event 7**	**Event 8**	**Event 9**	**Event 10**	**Event 11**	**Event 12**	**Event 13**	**Event 14**	**Event 15**	**Event 16**	**Event 17**	**Event 18**
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2022**
Appendix III - Detection Monitoring																			
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05	2.21	2.51	1.69	1.84	2.37
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J	199	209	171	161	192
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433	408	470	336	381	467
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908	0.659	0.601	0.440 U	0.418	0.686
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315	282	292	282	299	319
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83	6.78	6.70	6.71	6.97	6.80
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470	1430	1590	1290	1470	1540
Appendix IV - Assessment Monitoring																			
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-53 Downgradient																	
Sample Date		**12/8/16**	**2/23/17**	**3/29/17**	**5/2/17**	**6/21/17**	**7/26/17**	**8/30/17**	**10/11/17**	**4/4/18**	**10/30/18**	**4/9/19**	**10/22/19**	**4/28/20**	**10/20/20**	**4/13/21**	**10/20/21**	**4/13/22**	**10/25/22**
Task		**Event 1**	**Event 2**	**Event 3**	**Event 4**	**Event 5**	**Event 6**	**Event 7**	**Event 8**	**Event 9**	**Event 10**	**Event 11**	**Event 12**	**Event 13**	**Event 14**	**Event 15**	**Event 16**	**Event 17**	**Event 18**
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2022**
Appendix III - Detection Monitoring																			
Boron	mg/L	1.50	1.38	1.55	1.54	1.47	1.45	1.36	1.45	1.60	1.61	1.42	1.36	1.43	1.47	1.71	1.78	1.68	1.59
Calcium	mg/L	134	105	156	NR	94.1	97.0	99.0	113	113	111 D	116	123 D	114 J	117	156	127	115	125
Chloride	mg/L	383 D	336 D	315 D	322	335 D	329 X	341	313	361	350	354	342	381	359	472	418	403	424
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	0.392 J	0.265 J	0.270 J	0.352 J	0.428	0.018 U	0.291	0.880 U	0.263	0.018 U
Sulfate	mg/L	283 D	267 D	238 D	241	236 D	234 X	227	214	249	236	224	213	244	224	279	312	274	296
pH - Field Collected	SU	6.80	6.63	6.54	6.56	6.67	6.69	6.62	6.50	6.67	6.65	6.60	5.60	6.67	6.60	6.63	6.60	6.82	6.72
Total dissolved solids	mg/L	1390	1250	1160	1180	1150	1220	1150	1140	1160	1140	1150	1250	1160	1320	1520	1560	1330	1640
Appendix IV - Assessment Monitoring																			
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000284 J	0.000266 J	0.000274 J	0.000276 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0692	0.0633	0.0633	0.0623	0.0597	0.0638	0.0541	0.0617	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000701 J	0.000525 U	0.000525 U	0.000525 U	0.000557 J	0.000906 J	0.000525 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000356 J	0.000140 J	0.000135 J	0.000165 J	0.000137 J	0.000150 J	0.000163 J	0.0000699 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0279	0.0816	0.000476 U	NR	0.0931	0.104	0.125	0.109	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000780 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000470 JX	0.0000263 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000290 J	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.306 ± 0.261	0.909 ± 0.363	0.117 ± 0.211 U	0.519 ± 0.221	0.558 ± 0.232	0.385 ± 0.244	2.76 ± 0.582	0.451 ± 0.270	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.09 ± 1.24	2.33 ± 1.13	1.81 ± 1.61	0.906 ± 1.02	-0.0622 ± 0.583	1.9 ± 1.24	1.44 ± 0.713	0.919 ± 0.853	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-54 Downgradient																	
Sample Date		**12/8/16**	**2/23/17**	**3/28/17**	**5/2/17**	**6/21/17**	**7/26/17**	**8/30/17**	**10/11/17**	**4/5/18**	**10/30/18**	**4/9/19**	**10/22/19**	**4/28/20**	**10/20/20**	**4/13/21**	**10/20/21**	**4/13/22**	**10/25/22**
Task		**Event 1**	**Event 2**	**Event 3**	**Event 4**	**Event 5**	**Event 6**	**Event 7**	**Event 8**	**Event 9**	**Event 10**	**Event 11**	**Event 12**	**Event 13**	**Event 14**	**Event 15**	**Event 16**	**Event 17**	**Event 18**
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2022**
Appendix III - Detection Monitoring																			
Boron	mg/L	1.24	1.16	1.35	1.26	1.14	1.26	1.16	1.28	1.26	1.30	1.38	1.50	1.23	1.31	1.22	1.21	1.16	1.24
Calcium	mg/L	114	106	160	--	103	102	95.8	113	111	98.2 D	117	117 D	118 J	129	148	135	149	130
Chloride	mg/L	345 D	350 D	353 D	344	355 D	354 D	339 D	328	382	356	385	368	380	383	385	401	472	448
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861	0.455 J	0.628	0.880 U	0.473	0.779
Sulfate	mg/L	308 D	312 D	315 D	312	304 D	305 D	298 D	287	309	283	309	341 D	443	398	434	438	446	403
pH - Field Collected	SU	6.98	6.78	6.92	6.89	6.88	6.91	6.79	6.69	6.86	6.85	6.75	5.60	6.76	6.74	6.72	6.64	6.84	6.77
Total dissolved solids	mg/L	1370	1430	1310	1310	1410	1320	1360	1500	1230	1240	1470	1470	1570	1530	1650	1690	1680	1680
Appendix IV - Assessment Monitoring																			
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000369 J	0.000898 J	0.000351 J	0.000354 J	0.000484 J	0.000324 J	0.000246 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0631	0.0564	0.0611	0.0537	0.0543	0.0593	0.0471	0.0558	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000162 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000657 J	0.00186 J	0.000525 U	0.000525 U	0.000693 J	0.000765 J	0.000525 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000420 J	0.000212 J	0.00199 J	0.000253 J	0.000260 J	0.000532 J	0.000334 J	0.0000699 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000862 J	0.000152 U	0.000152 U	0.000241 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0452	0.00238 U	--	0.0595	0.0599	0.0712	0.0608	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000620 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000447 J	0.000367 J	0.000377 J	0.000342 J	0.000352 J	0.000260 J	0.000255 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.88 ± 0.339	0.878 ± 0.358	0.546 ± 0.213	0.217 ± 0.217	0.433 ± 0.249	0.313 ± 0.254	0.926 ± 0.324	0.42 ± 0.205	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.12 ± 1.11	1.94 ± 1.01	0.429 ± 0.781	0.574 ± 1.41	0.451 ± 0.660	0.766 ± 1.29	1.48 ± 0.968	1.17 ± 0.827	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

Figures

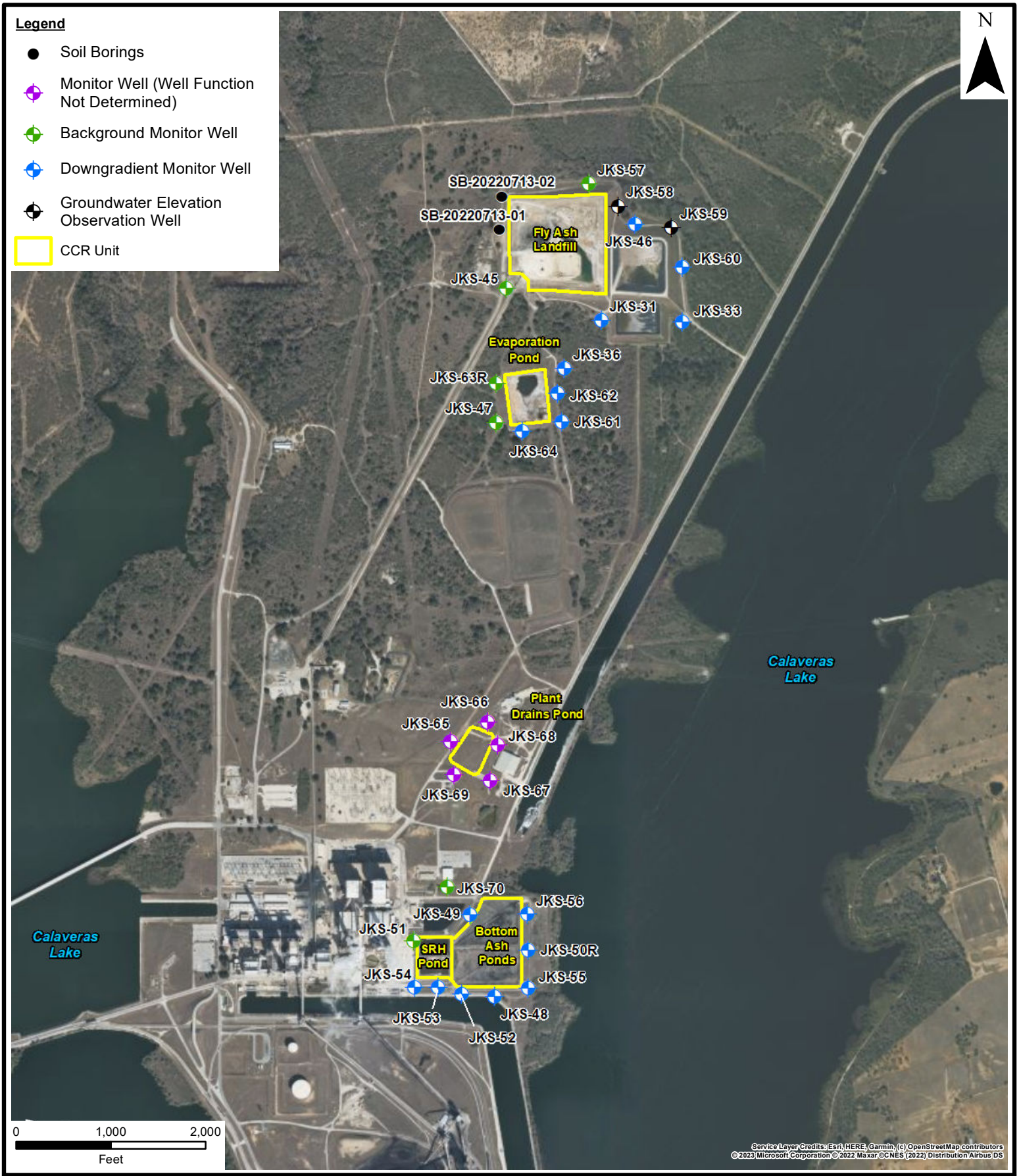

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FIGURE 1
CCR WELL NETWORK LOCATION MAP
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

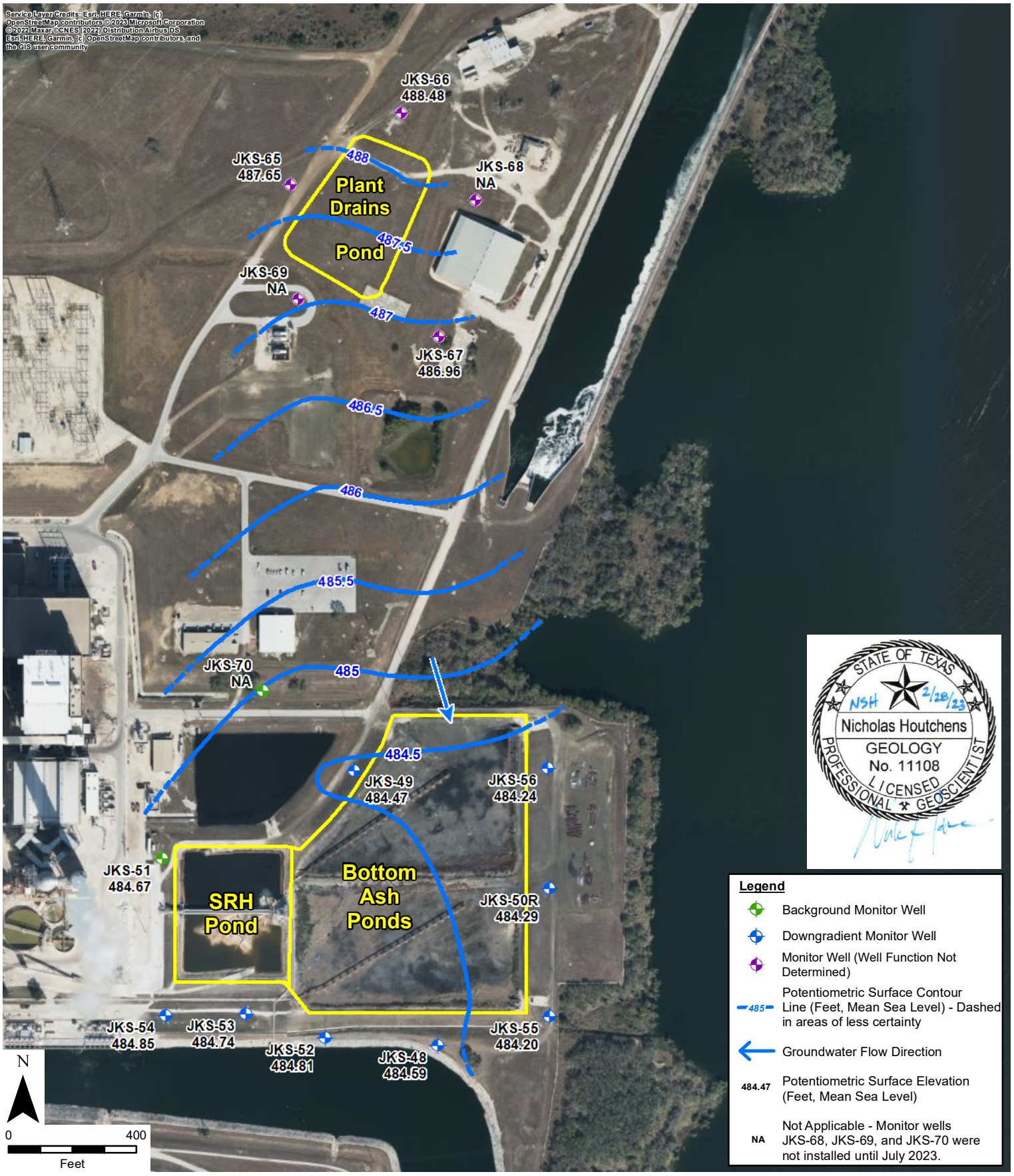

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FIGURE 2A
POTENTIOMETRIC SURFACE MAP - April 2022
Central and Southern CCR Units
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

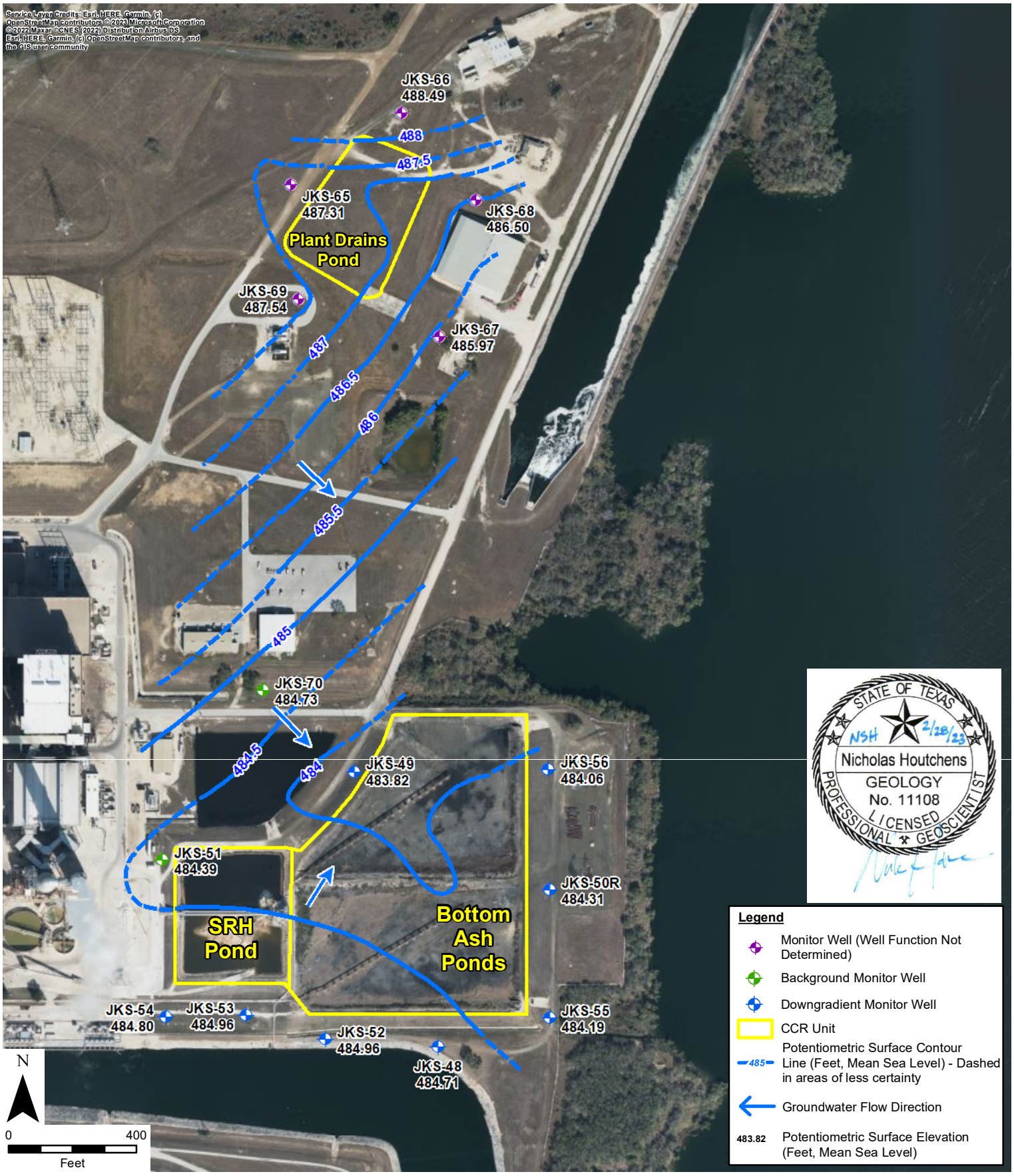

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FIGURE 2B
POTENTIOMETRIC SURFACE MAP - October 2022
Central and Southern CCR Units
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Laboratory Data Packages

Appendix A

(*Data Packages Available Upon Request*)

Statistical Analysis Tables and Figures

Appendix B

Appendix B - Table 1
Kruskal-Wallis Test Comparisons of Upgradient Wells
Calaveras Power Station
SRH Pond

Analyte	N	N Detect	Percent Detect	DF	statistic	p-value	Conclusion	UPL Type
Boron	19	19	100.00%	1	2.7	0.1	No Significant Difference	Interwell
Calcium	19	19	100.00%	1	2.7	0.1	No Significant Difference	Interwell
Chloride	19	19	100.00%	1	2.7	0.1	No Significant Difference	Interwell
Fluoride	19	16	84.21%	1	0.534	0.465	No Significant Difference	Interwell
pH	19	19	100.00%	1	2.7	0.1	No Significant Difference	Interwell
Sulfate	19	19	100.00%	1	2.7	0.1	No Significant Difference	Interwell
Total dissolved solids	19	19	100.00%	1	2.71	0.0998	No Significant Difference	Interwell

Notes
Non-detects were substituted with a value of half the detection limit for calculations
N: number of data points
DF: degrees of freedom
statistic: Kruskal Wallis test statistic
p-value: P-values below 0.05 indicate that the median concentrations in the upgradient wells are significantly different from each other and the upgradient wells should not be pooled.
p-value: P-values equal or above 0.05 indicate that the median concentrations in the upgradient wells are not significantly different from each other and the upgradient wells can be pooled.

Appendix B - Table 2
Descriptive Statistics for Upgradient Wells
Calaveras Power Station
SRH Pond

Analyte	Well	Units	N	N Detect	Percent Detect	Min ND	Max ND	Min Detect	Median	Mean	Max Detect	SD	CV	Distribution
Boron	Pooled	mg/L	19	19	100.00%			0.316	0.517	0.538	0.711	0.106	0.19721095	Normal
Calcium	Pooled	mg/L	19	19	100.00%			47.7	292	273	362	73.9	0.2708514	NDD
Chloride	Pooled	mg/L	19	19	100.00%			116	447	445	620	120	0.2685545	Normal
Fluoride	Pooled	mg/L	19	16	84.21%	0.009	0.048	0.224	0.305	0.296	0.534	0.145	0.4895237	Normal
pH	Pooled	SU	19	19	100.00%			5.48	6.44	6.42	7.16	0.348	0.05425626	NDD
Sulfate	Pooled	mg/L	19	19	100.00%			83.3	354	353	503	89.1	0.25224967	Normal
Total dissolved solids	Pooled	mg/L	19	19	100.00%			912	1650	1770	2720	480	0.27067827	Normal

Notes
Non-detects were substituted with a value of half the detection limit for calculations
Well = Pooled, indicates that the summary statistics were produced for the pooled upgradient wells based on the Kruskal-Wallis test (Table 1).
SU: Standard units
N: number of data points
ND: Non-detect
SD: Standard Deviation
CV: Coefficient of Variation (standard deviation divided by the mean)

Appendix B - Table 3
Potential Outliers in Upgradient Wells
Calaveras Power Station
SRH Pond

Well	Sample	Date	Analyte	Units	Detect	Concentration	UPL type	Distribution	Statistical Outlier	Visual Outlier	Normal Outlier	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical and Visual Outlier	Final Outlier Decision	Notes
JKS-51	JKS-51-WG-20170725	07/25/2017	pH	SU	TRUE	5.48	Interwell	NDD	X	X	X	X	X	X	0		
JKS-51	JKS-51-WG-20171010	10/10/2017	pH	SU	TRUE	6.2	Interwell	NDD		X			X				
JKS-51	JKS-51-WG-20191022-02	10/22/2019	pH	SU	TRUE	5.73	Interwell	NDD	X	X	X	X	X	X	0		
JKS-70	JKS-70-WG-20221025-02	10/25/2022	pH	SU	TRUE	7.16	Interwell	NDD	X	X	X	X	X	X	0		

Notes
NDD: No Discernible Distribution
SU: Standard units
Outlier tests were performed on detected data only.
Statistical outliers were determined using a Dixon's test for N < 25 and with Rosner's test for N > 25.
Visual outliers were identified if they fall above the confidence envelope on the QQ plot.
Data points were considered potential outliers if they were both statistical and visual outliers.
NDD wells had data points considered as potential outliers if they were either a normal or lognormal outlier.
[Blank] data distribution indicates that the well data did not have enough detected data points for outlier analysis.
Lognormally distributed data was first log-transformed before visual and statistical outlier tests were performed.
Normal data distribution indicates that the well data was directly used for statistical and visual outlier tests.
NDD indicates that both the untransformed and transformed data were examined with statistical and visual outlier tests.
'0' indicates that the data point was a statistical and visual outlier but was retained after review by the hydrogeologist.

Appendix B - Table 4
Mann Kendall Test for Trends in Upgradient Wells
Calaveras Power Station
SRH Pond

Analyte	UPL Type	Well	N	Num Detects	Percent Detect	p-value	tau	Conclusion
Boron	Interwell	JKS-51, JKS-70	19	19	100.00%	0.141	0.246	Stable, No Trend
Calcium	Interwell	JKS-51, JKS-70	19	19	100.00%	0.447	0.135	Stable, No Trend
Chloride	Interwell	JKS-51, JKS-70	19	19	100.00%	0.0684	0.31	Stable, No Trend
Fluoride	Interwell	JKS-51, JKS-70	19	16	84.21%	0.123	-0.26	Stable, No Trend
pH	Interwell	JKS-51, JKS-70	19	19	100.00%	1	0	Stable, No Trend
Sulfate	Interwell	JKS-51, JKS-70	19	19	100.00%	0.0251	0.375	Increasing Trend
Total dissolved solids	Interwell	JKS-51, JKS-70	19	19	100.00%	0.0496	0.33	Increasing Trend

Notes
Non-detects were substituted with a value of zero for trend calculations
N: number of data points
tau: Kendall's tau statistic
p-value: A two-sided p-value describing the probability of the H0 being true (α=0.05)
Trend tests were performed on all upgradient data, only if the dataset met the minimum data quality criteria (ERM 2017).

Appendix B - Table 5
Calculated UPLs for Upgradient Datasets
Calaveras Power Station
SRH Pond

Analyte	UPL Type	Trend	Well	N	Num Detects	Percent Detects	LPL	UPL	Units	ND adjustment	Transformation	Alpha	Method	Final LPL	Final UPL	Notes
Boron	Interwell	Stable, No Trend	JKS-51, JKS-70	19	19	100.00%		0.726	mg/L				95% UPL (t)		X	
Calcium	Interwell	Stable, No Trend	JKS-51, JKS-70	19	19	100.00%		404	mg/L				95% UPL (t)		X	
Chloride	Interwell	Stable, No Trend	JKS-51, JKS-70	19	19	100.00%		658	mg/L				95% UPL (t)		X	
Fluoride	Interwell	Stable, No Trend	JKS-51, JKS-70	19	16	84.21%		0.547	mg/L				95% KM UPL (t)		X	
pH	Interwell	Stable, No Trend	JKS-51, JKS-70	19	19	100.00%	5.48	7.16	SU				95% UPL	X	X	
Sulfate	Interwell	Increasing Trend	JKS-51, JKS-70	19	19	100.00%		616	mg/L	None	No		NP Detrended UPL		X	
Total dissolved solids	Interwell	Increasing Trend	JKS-51, JKS-70	19	19	100.00%		3180	mg/L	None	No		NP Detrended UPL		X	

Notes

Non-detects were substituted with a value of half the detection limit for calculations
UPL: upper prediction limit
LPL: Lower prediction limit. These were only calculated for pH
UPLs were constructed with a site wide false positive rate of 0.1 and a 1 of 2 retesting.
UPLs were calculated using Sanitas Software.
SU: Standard units
NP: non parametric
RL: Reporting Limit
Intra: indicates an intrawell UPL was used
Inter: indicates an interwell UPL was used
In the case where multiple UPLs were calculated for an analyte, the maximum UPL was used as the final UPL.
In the case where multiple LPLs were calculated for an pH the minimum LPL was used as the final LPL.

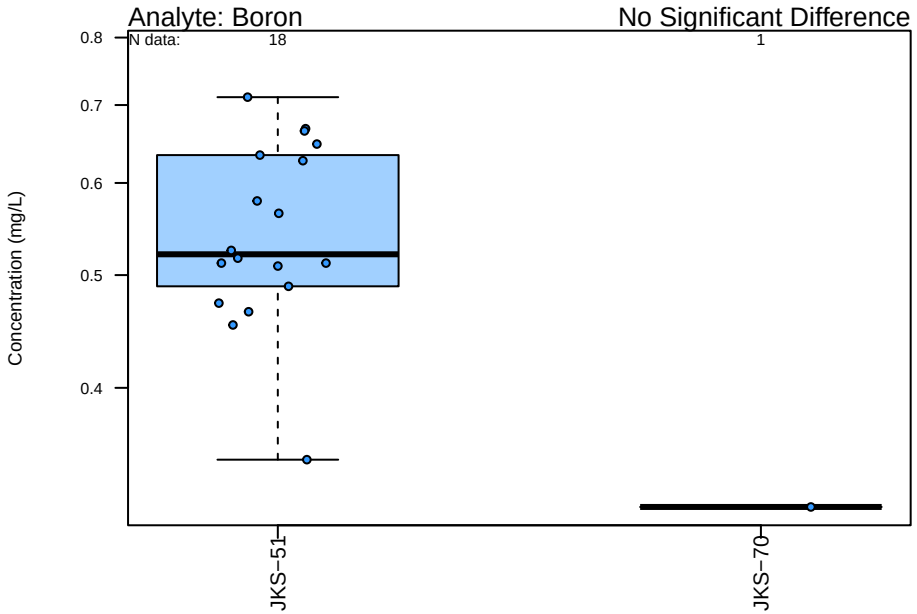
Appendix B - Table 6
Comparisons of Downgradient Wells to UPLs
Calaveras Power Station
SRH Pond

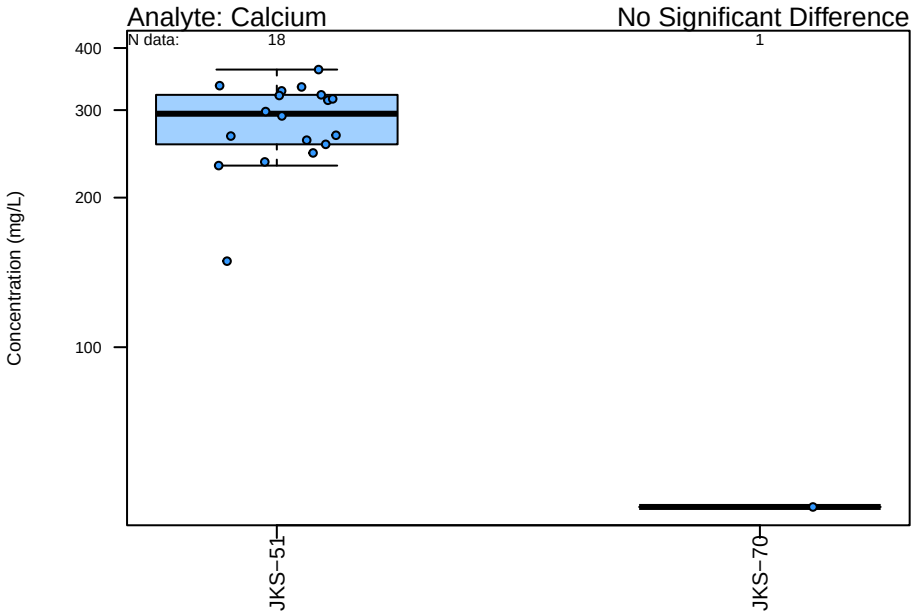
Analyte	Well	LPL	UPL	Units	Recent Date	Observation	Qualifier	Obs > UPL	Notes	Mann Kendall p-value	Mann Kendall tau	WRS p-value	WRS Conclusion	Exceed Median	Overall Conclusion
Boron	JKS-52		0.726	mg/L	10/25/2022	2.37		X	Trend Test: Increasing Trend	0.0338	0.367	<0.001	***	X	Both Exceedance
Boron	JKS-53		0.726	mg/L	10/25/2022	1.59		X	Trend Test: Stable, No Trend	0.172	0.238	<0.001	***	X	Both Exceedance
Boron	JKS-54		0.726	mg/L	10/25/2022	1.24		X	Trend Test: Stable, No Trend	0.939	0.0134	<0.001	***	X	Both Exceedance
Calcium	JKS-52		404	mg/L	10/25/2022	192						1	NS		No Exceedance
Calcium	JKS-53		404	mg/L	10/25/2022	125						1	NS		No Exceedance
Calcium	JKS-54		404	mg/L	10/25/2022	130						1	NS		No Exceedance
Chloride	JKS-52		658	mg/L	10/25/2022	467						1	NS		No Exceedance
Chloride	JKS-53		658	mg/L	10/25/2022	424						1	NS		No Exceedance
Chloride	JKS-54		658	mg/L	10/25/2022	448						1	NS		No Exceedance
Fluoride	JKS-52		0.547	mg/L	10/25/2022	0.686		X	Trend Test: Stable, No Trend	0.15	-0.249	0.0152	*	X	Both Exceedance
Fluoride	JKS-53		0.547	mg/L	10/25/2022	0.009	ND					1	NS		No Exceedance
Fluoride	JKS-54		0.547	mg/L	10/25/2022	0.779		X	Trend Test: Stable, No Trend	0.544	-0.105	0.00602	**	X	Both Exceedance
pH	JKS-52	5.48	7.16	SU	10/25/2022	6.8						1	NS		No Exceedance
pH	JKS-53	5.48	7.16	SU	10/25/2022	6.72						1	NS		No Exceedance
pH	JKS-54	5.48	7.16	SU	10/25/2022	6.77						1	NS		No Exceedance
Sulfate	JKS-52		616	mg/L	10/25/2022	319						1	NS		No Exceedance
Sulfate	JKS-53		616	mg/L	10/25/2022	296						1	NS		No Exceedance
Sulfate	JKS-54		616	mg/L	10/25/2022	403						1	NS		No Exceedance
Total dissolved solids	JKS-52		3180	mg/L	10/25/2022	1540						1	NS		No Exceedance
Total dissolved solids	JKS-53		3180	mg/L	10/25/2022	1640						1	NS		No Exceedance
Total dissolved solids	JKS-54		3180	mg/L	10/25/2022	1680						1	NS		No Exceedance

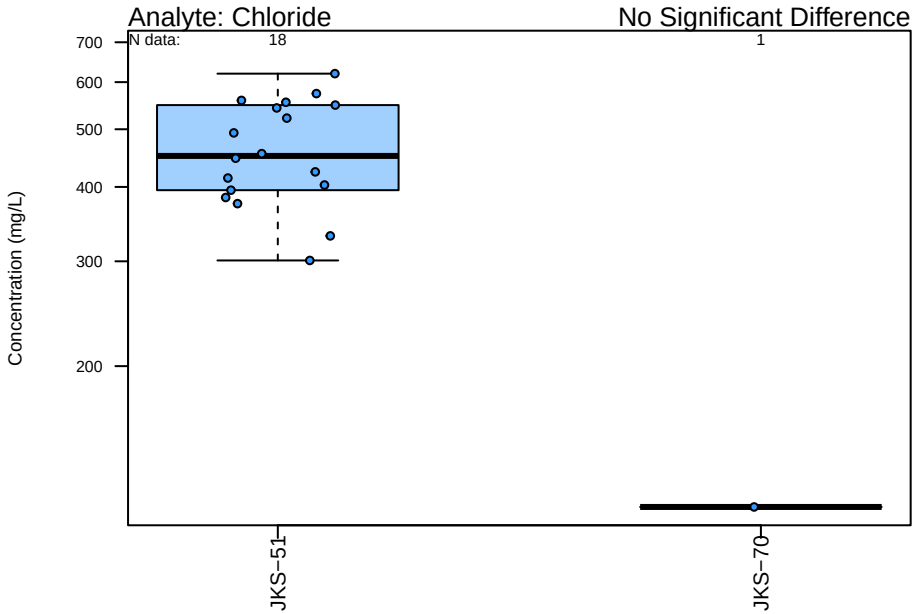
Notes

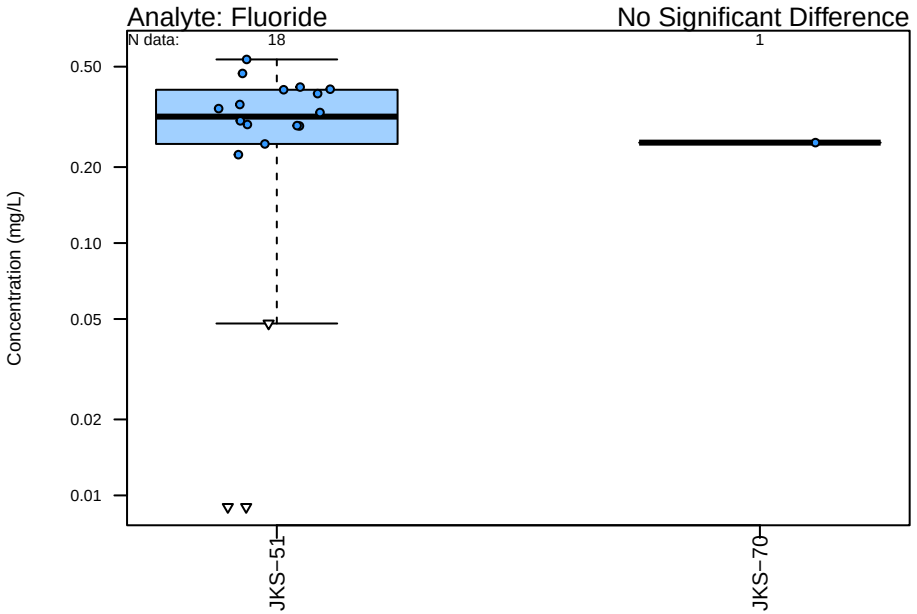
Non-detects were substituted with a value of zero for trend calculations
UPL: Upper Prediction Limit
ND: Not detected
SU: Standard units
tau: Kendall's tau statistic
Obs > UCL: Exceed 'X' indicates that the most recent observed value is higher than the UPL (or out of range of the LPL and UPL in the case of pH.)
Obs > UCL: Exceed 'X0' indicates that the two most recent values are higher than the UPL, but the upgradient well is 100% ND.
Obs > UCL: Exceed '0' indicated that the most recent observed value is higher than the UPL, but is not scored as an SSI due to Double Quantification Rule (ERM 2017).
WRS: Wilcoxon Rank Sum test comparing if median of downgradient well is larger than the UPL (for pH, also checks if median is less than LPL)
WRS p-value: A one-sided p-value describing the probability of the H0 (UPL/LPL) being true (a=0.05)
Overall: UPL Exceedance - most recent sampling event exceeds the UPL, but median of the well is not greater than UPL
Overall: WRS Exceedance - most recent sampling event does not exceed the UPL, but median of the well is greater than UPL
Overall: Both Exceedance - most recent sampling event exceeds the UPL and median of the well is larger than the UPL

Appendix B − Figure 1
Unit: SRH Pond
Boxplots of Upgradient Wells

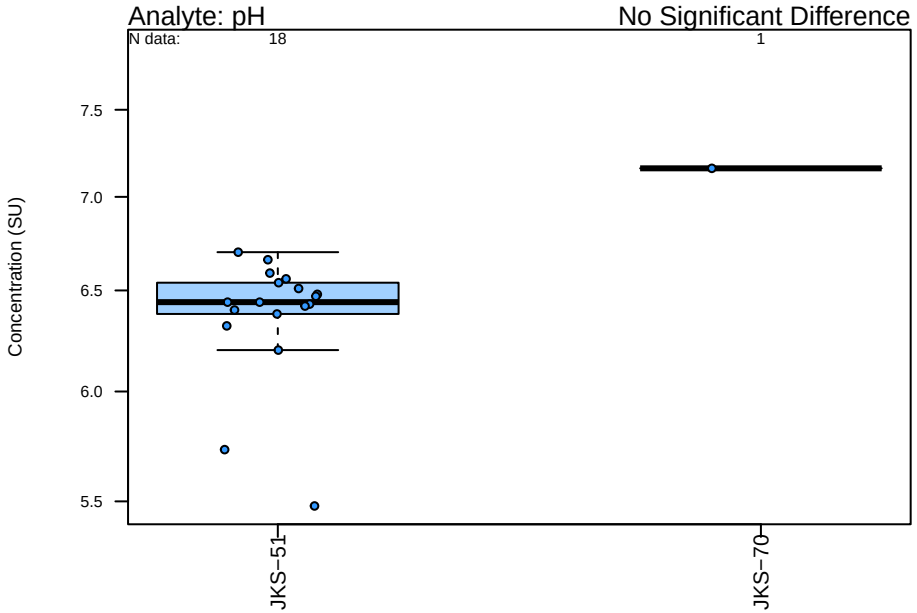


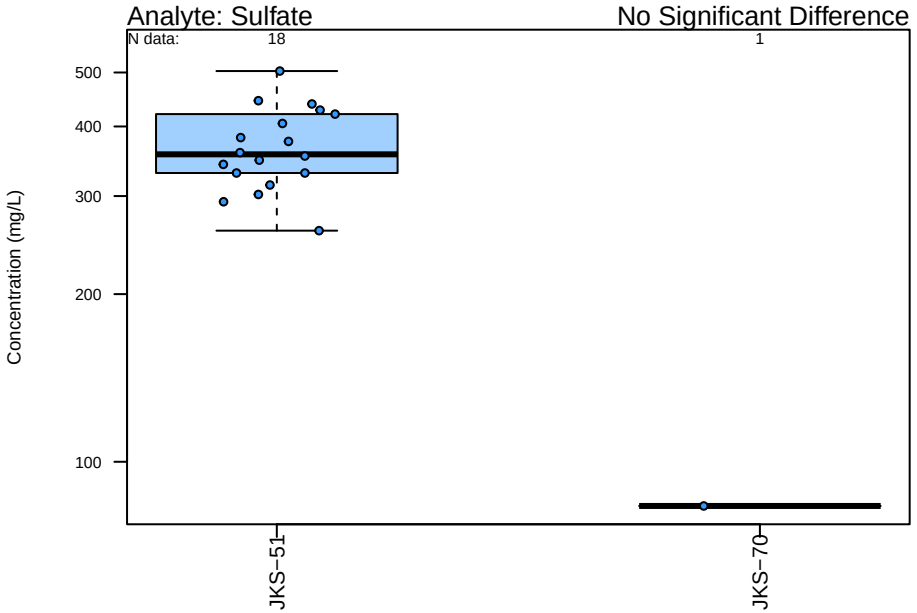


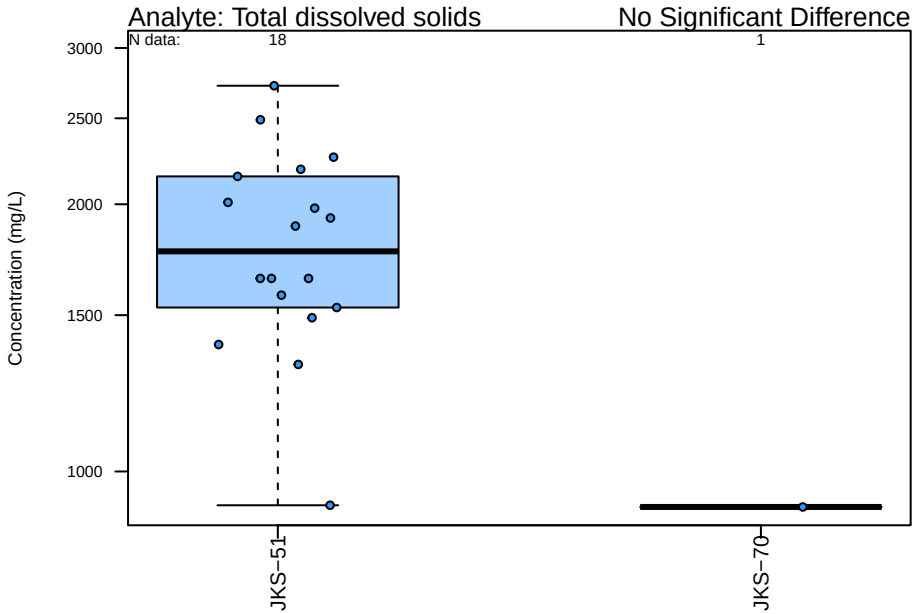




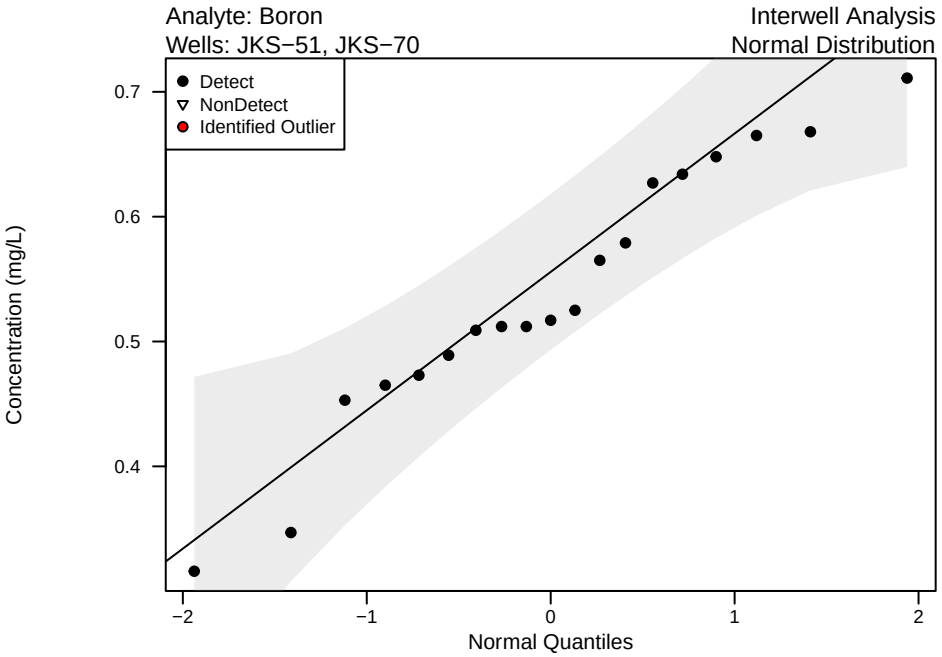
Appendix B − Figure 1
Unit: SRH Pond
Boxplots of Upgradient Wells







Appendix B − Figure 2
Unit: SRH Pond
QQ Plots of Upgradient Wells



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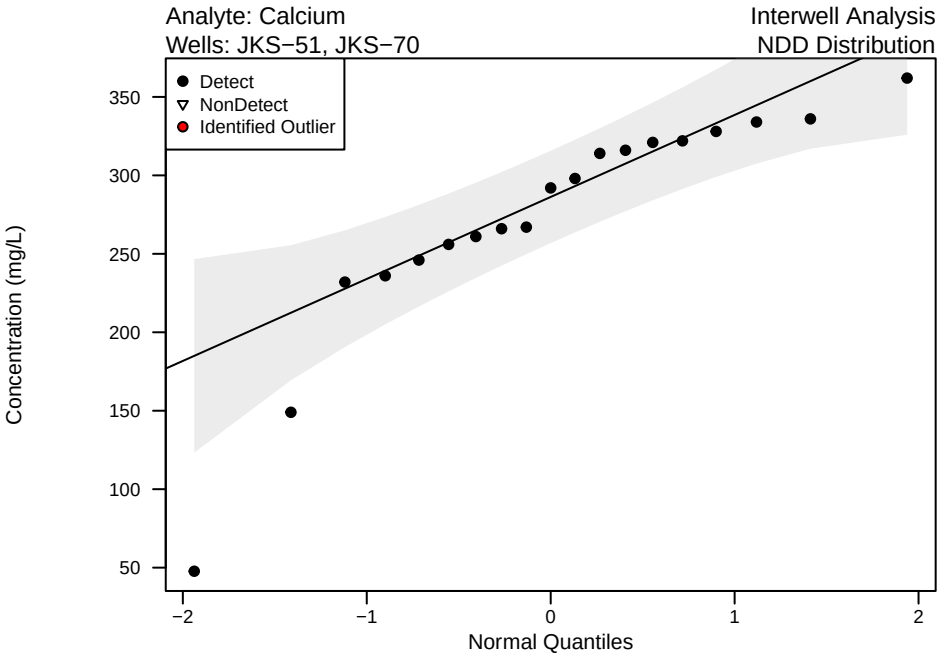
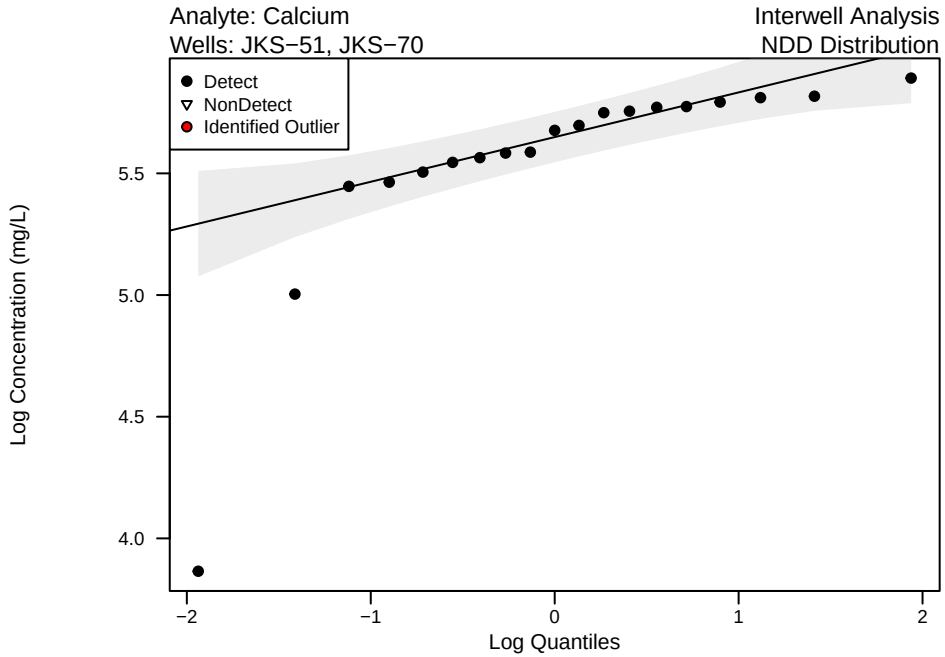
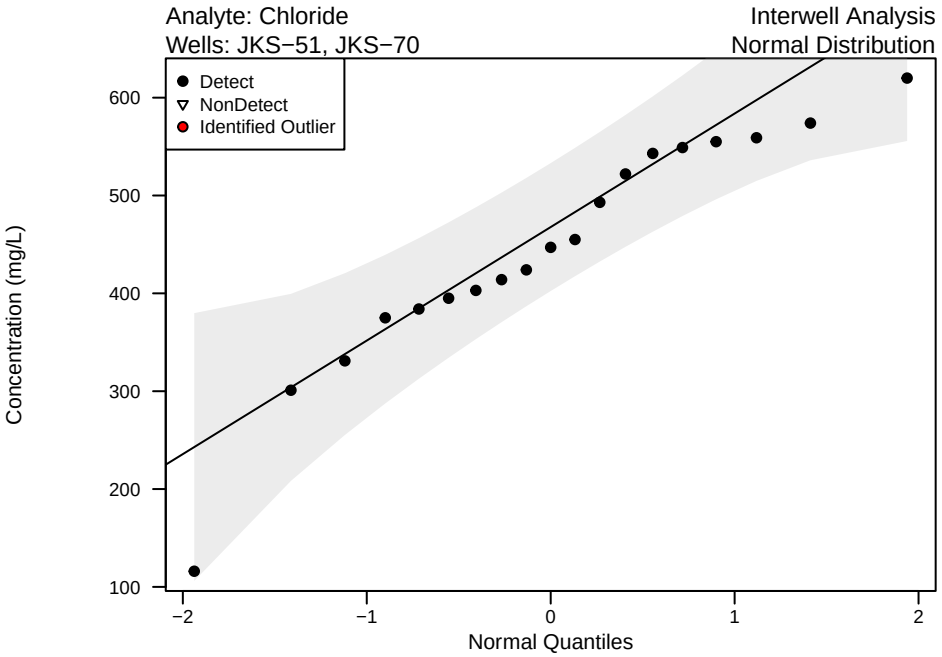




Appendix B − Figure 2
Unit: SRH Pond
QQ Plots of Upgradient Wells



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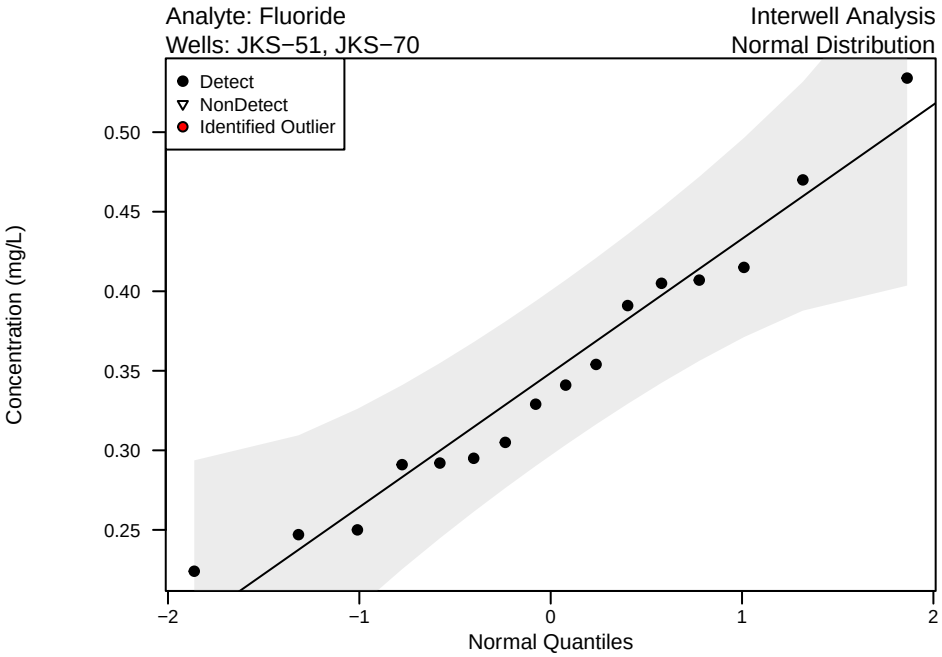

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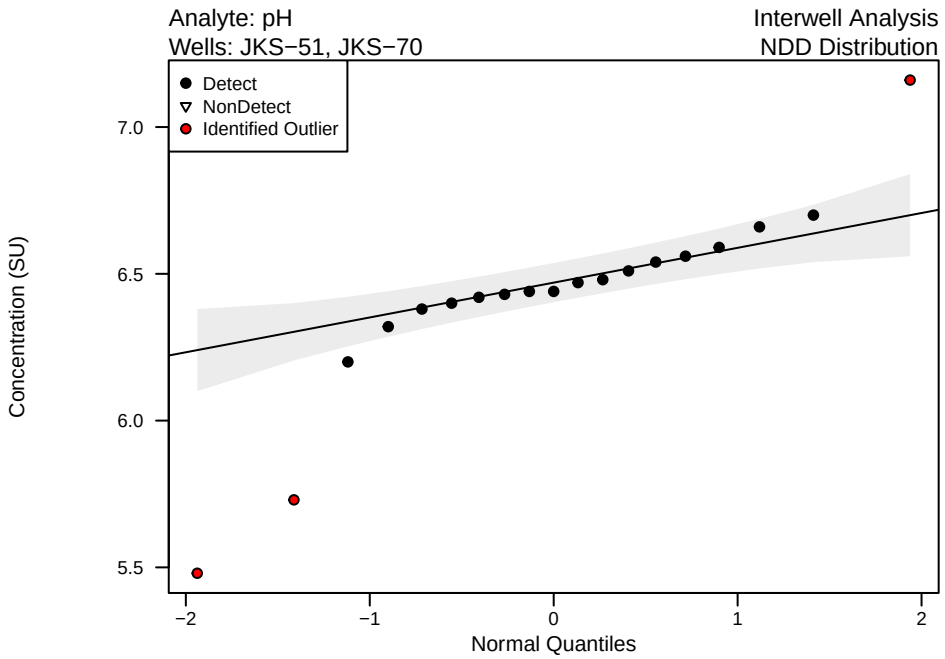
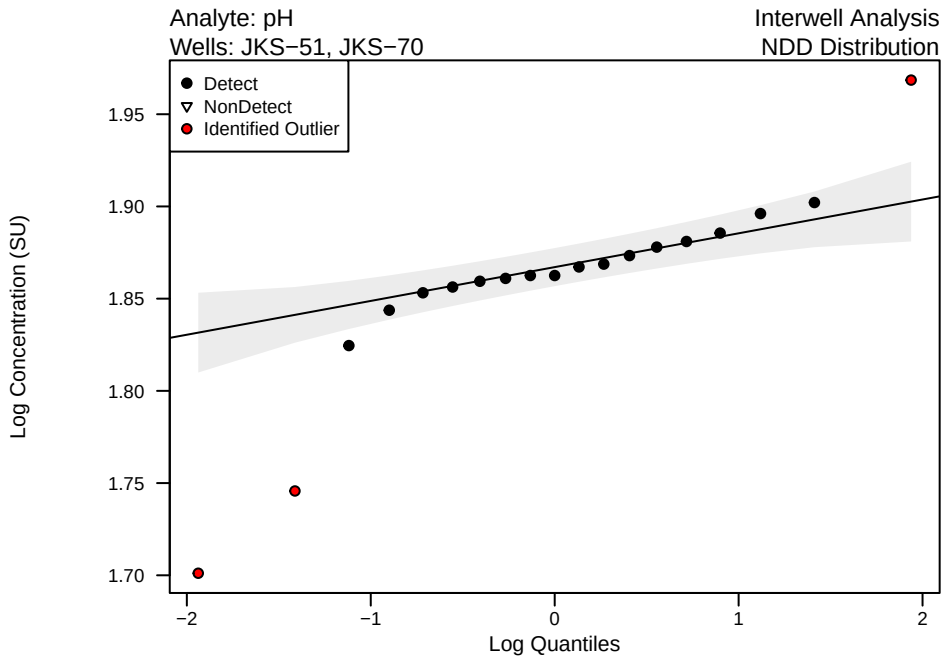
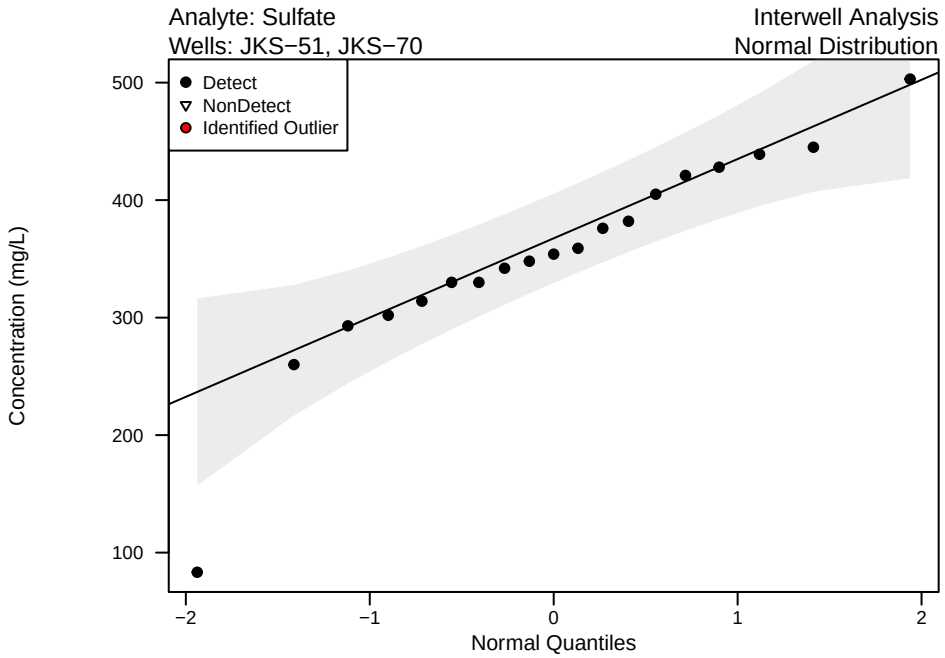
Appendix B − Figure 2
Unit: SRH Pond
QQ Plots of Upgradient Wells







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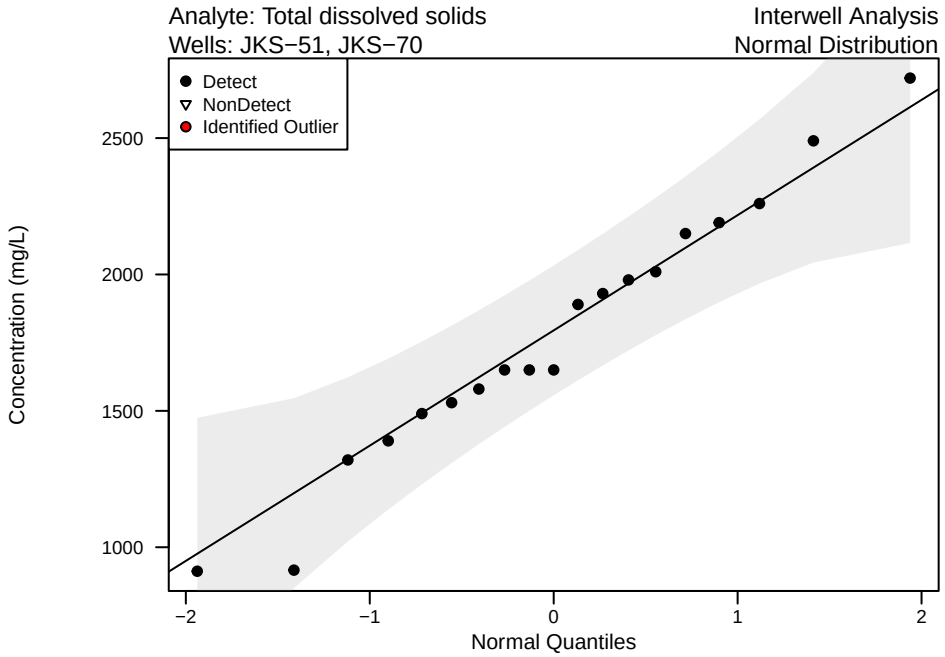
Appendix B − Figure 2
Unit: SRH Pond
QQ Plots of Upgradient Wells



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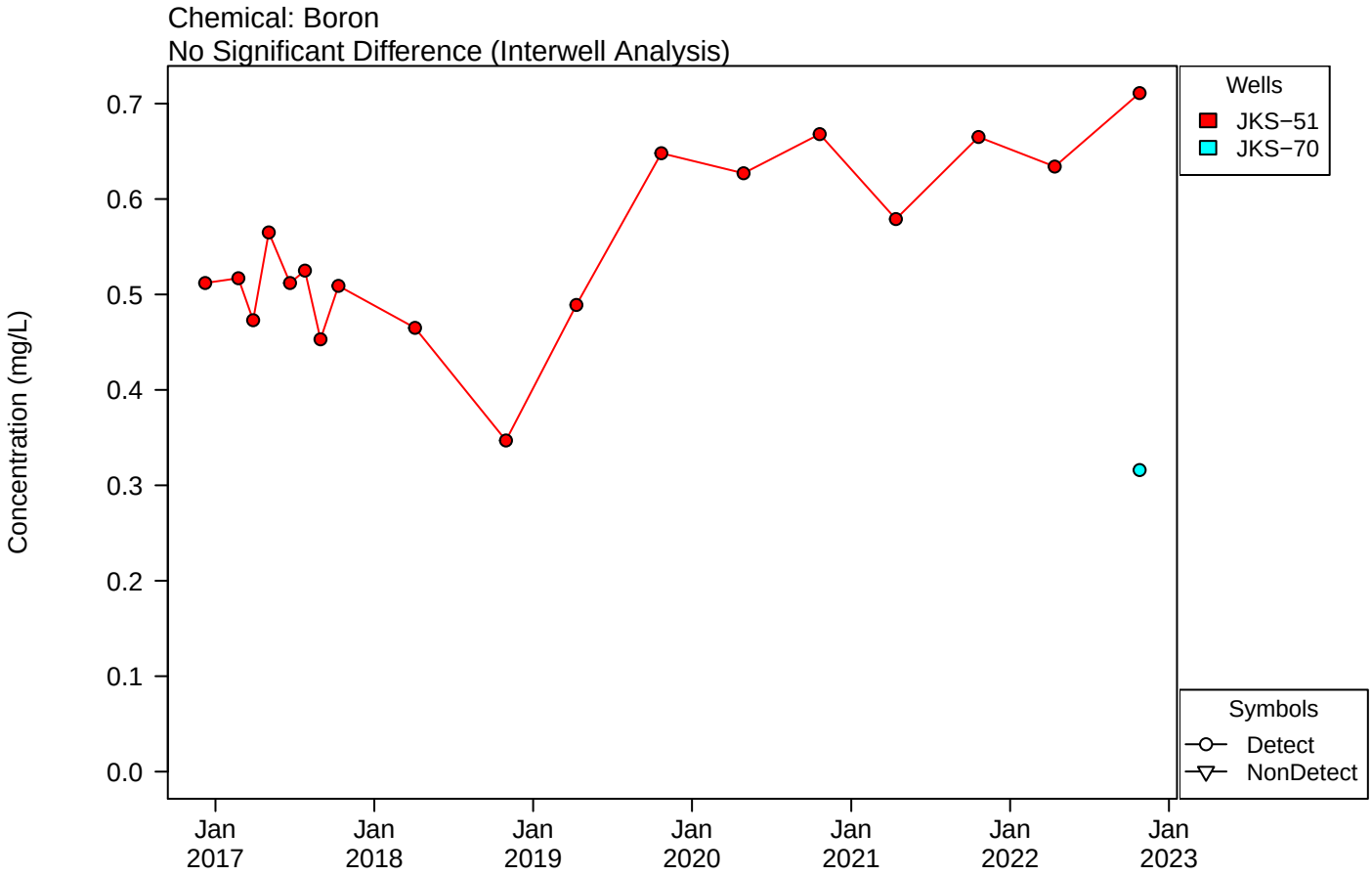
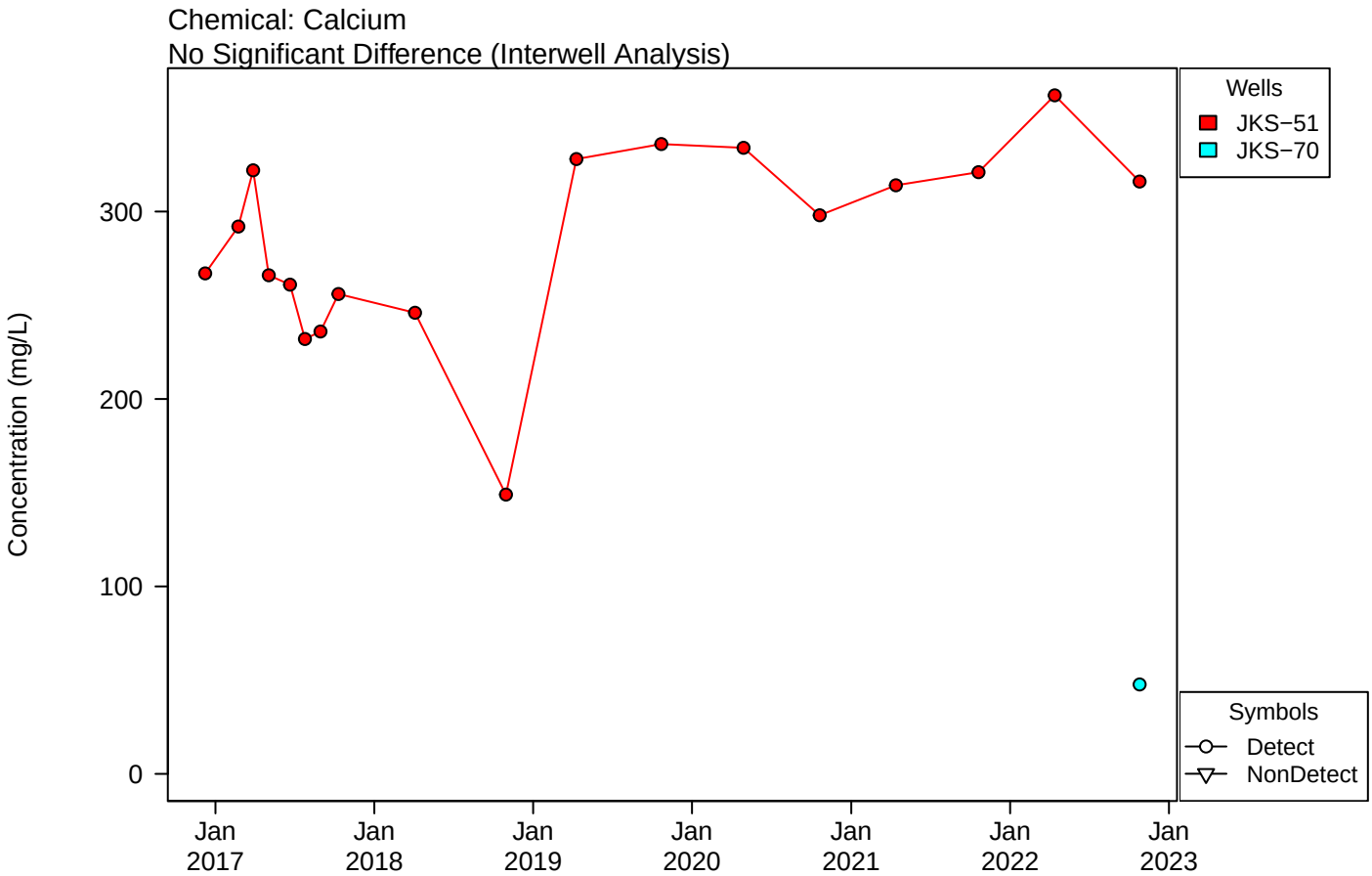
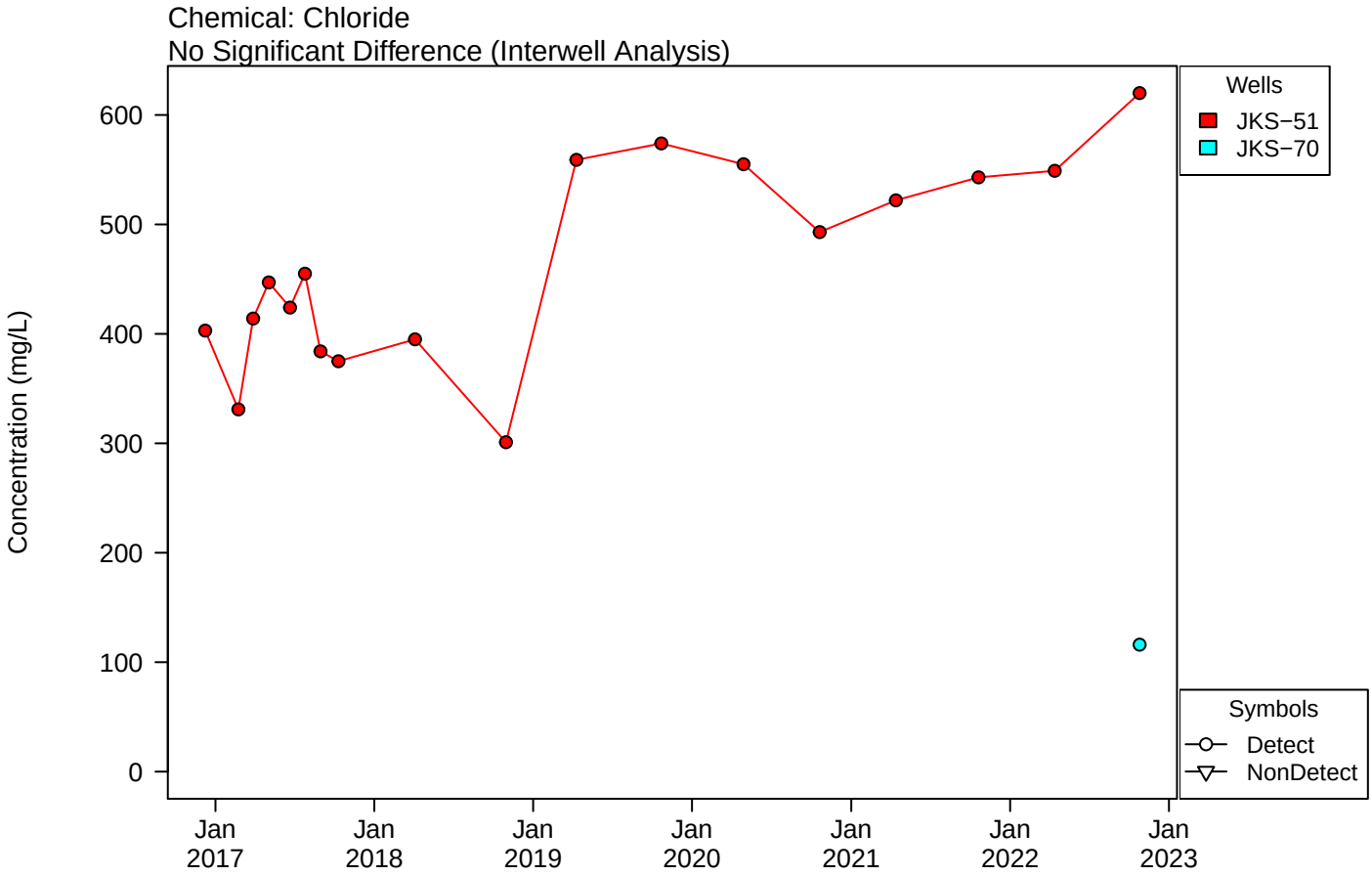
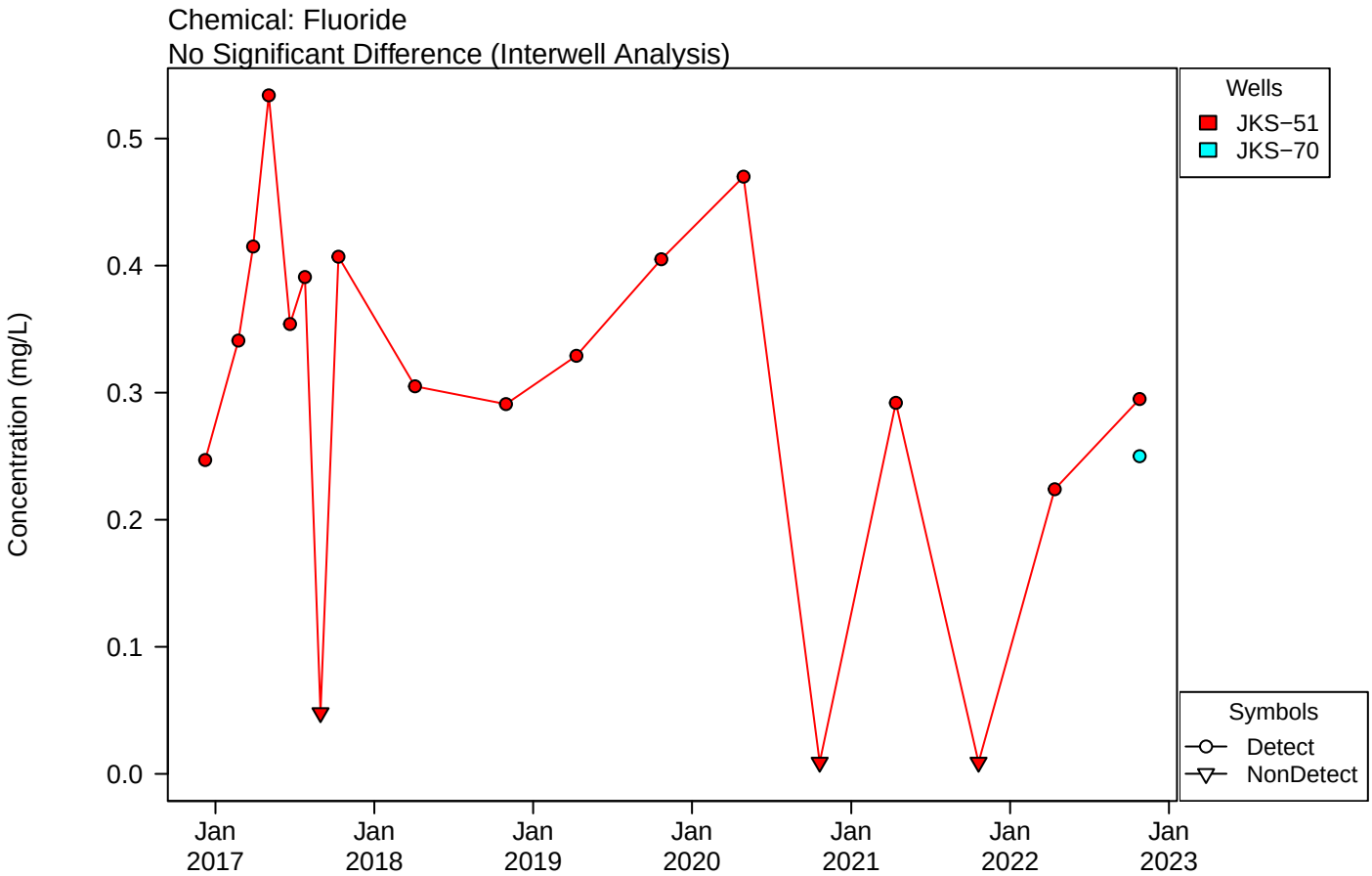
Appendix B − Figure 3
Unit: SRH Pond
Timeseries of Upgradient Wells





Appendix B − Figure 3
Unit: SRH Pond
Timeseries of Upgradient Wells





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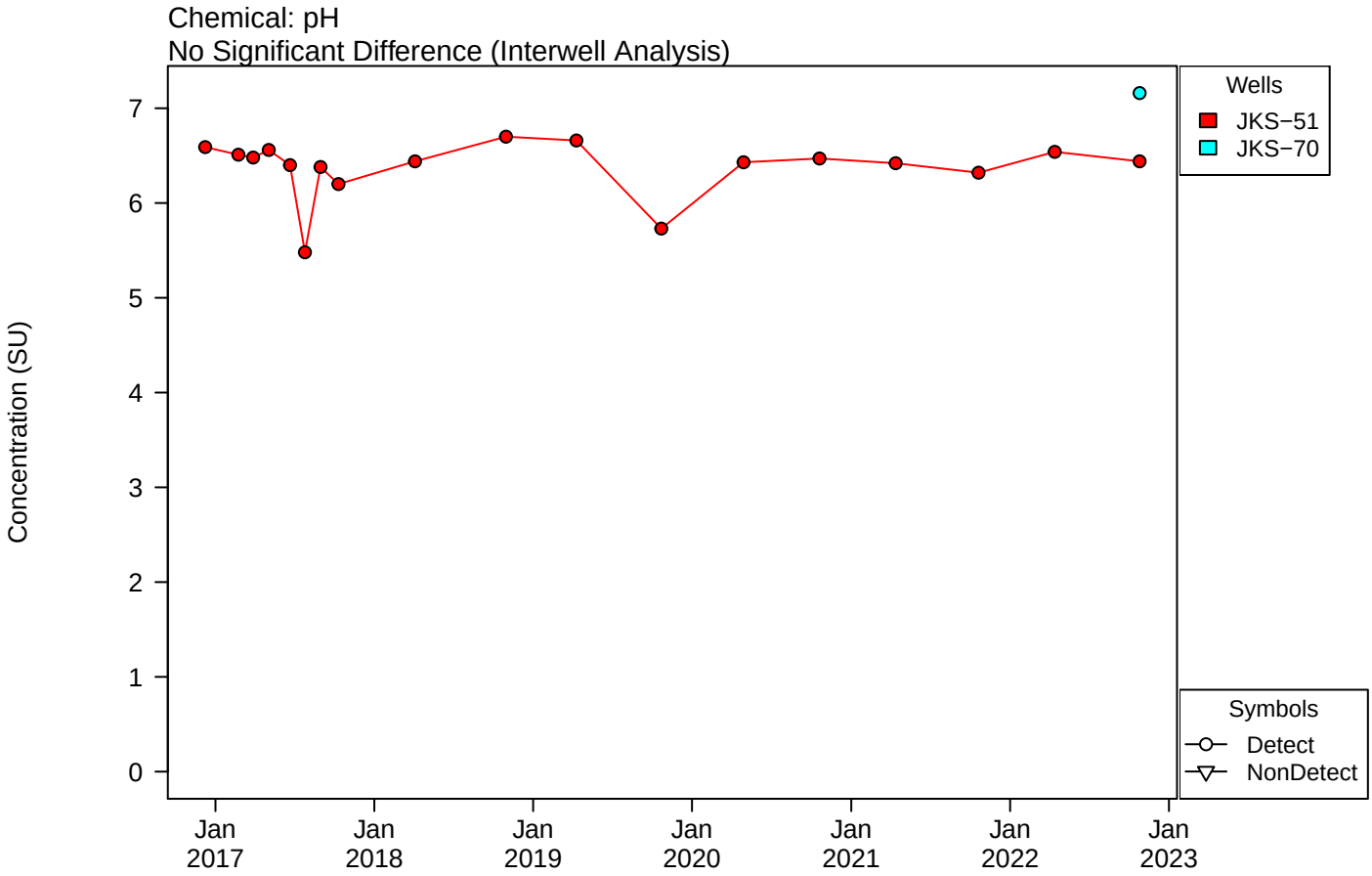
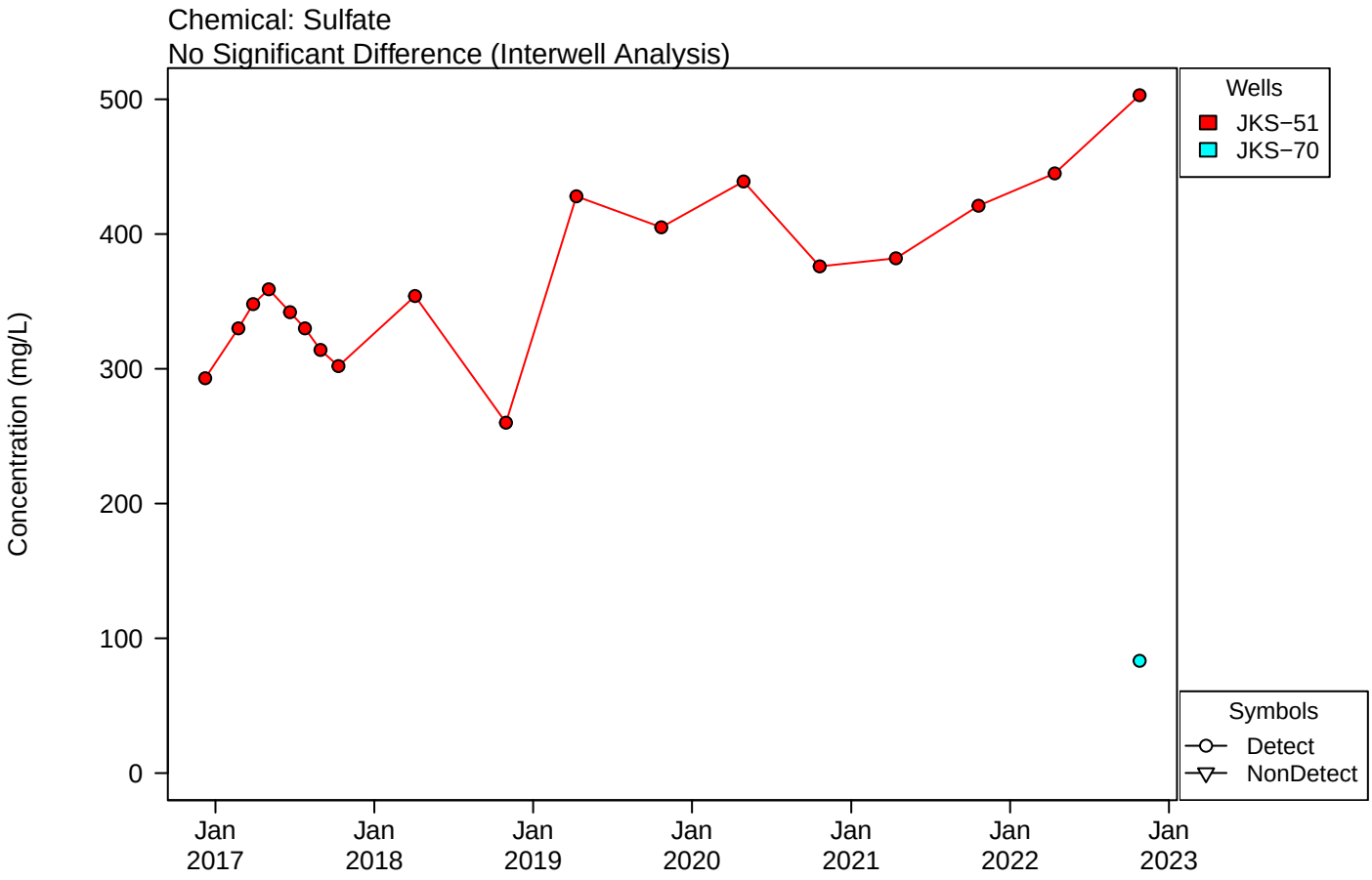
Timeseries of Upgradient Wells





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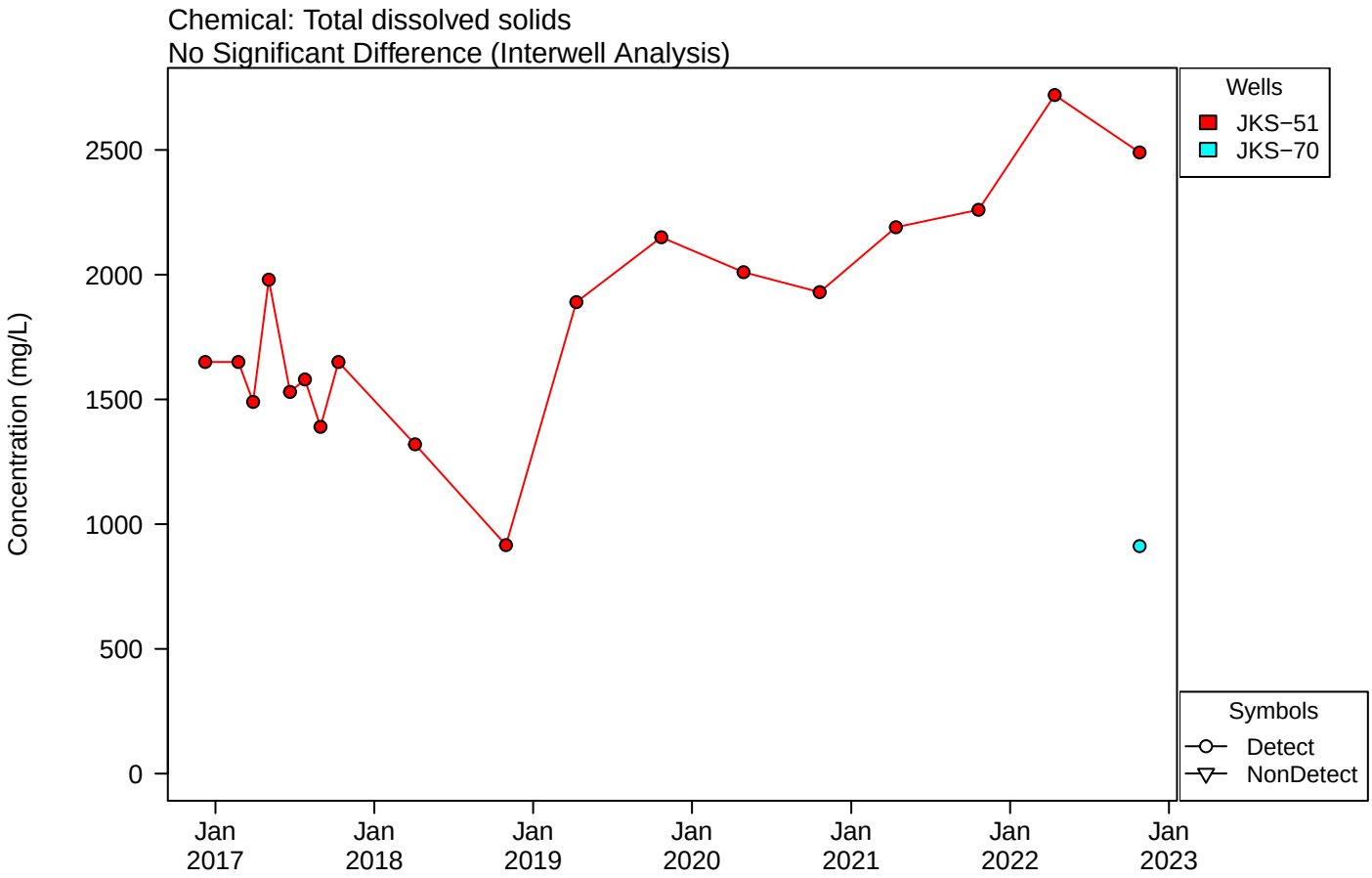
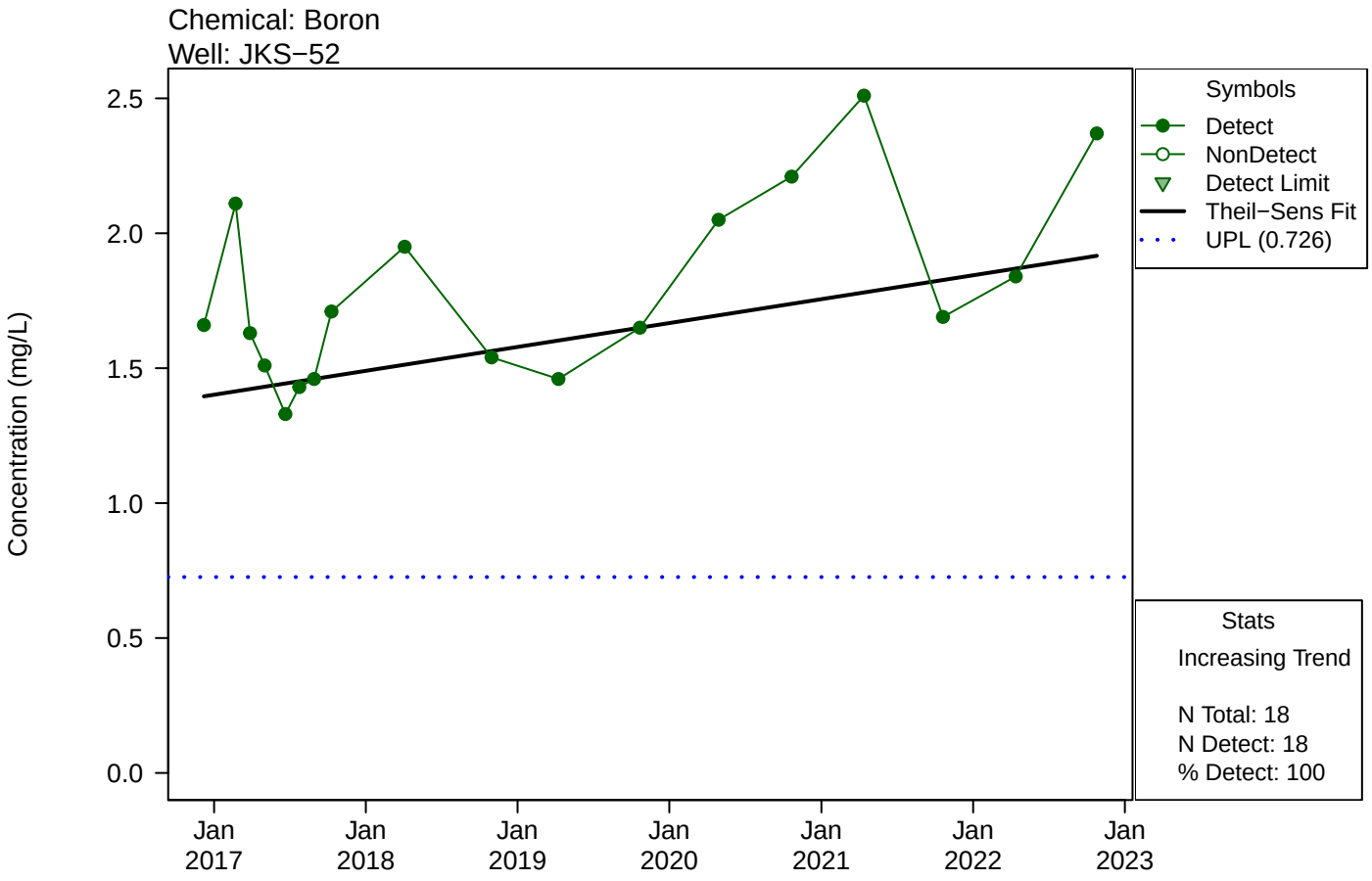
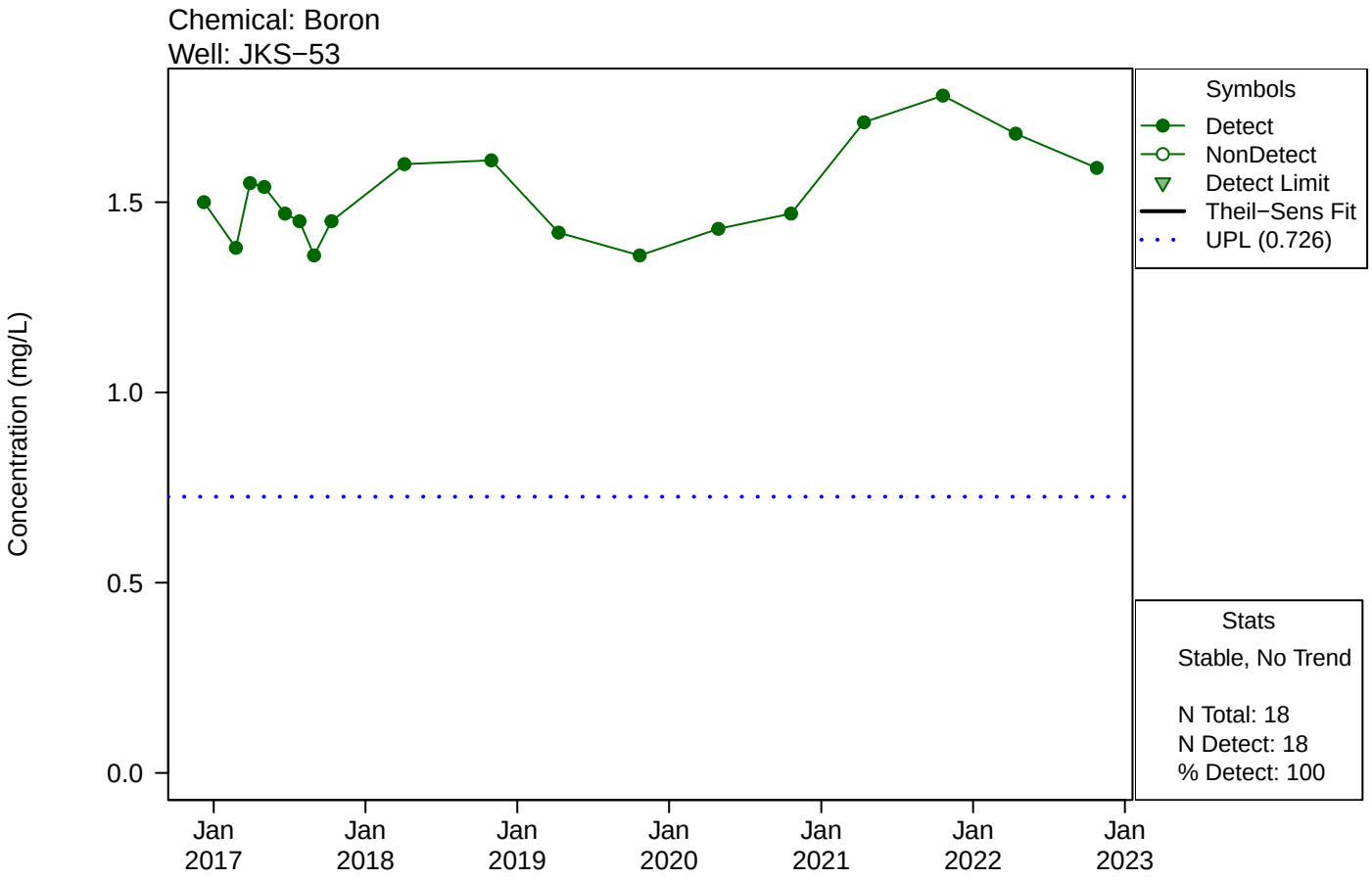
Timeseries of Upgradient Wells



Appendix B − Figure 4
Unit: SRH Pond
Trend Analysis of Downgradient Wells with Exceedances





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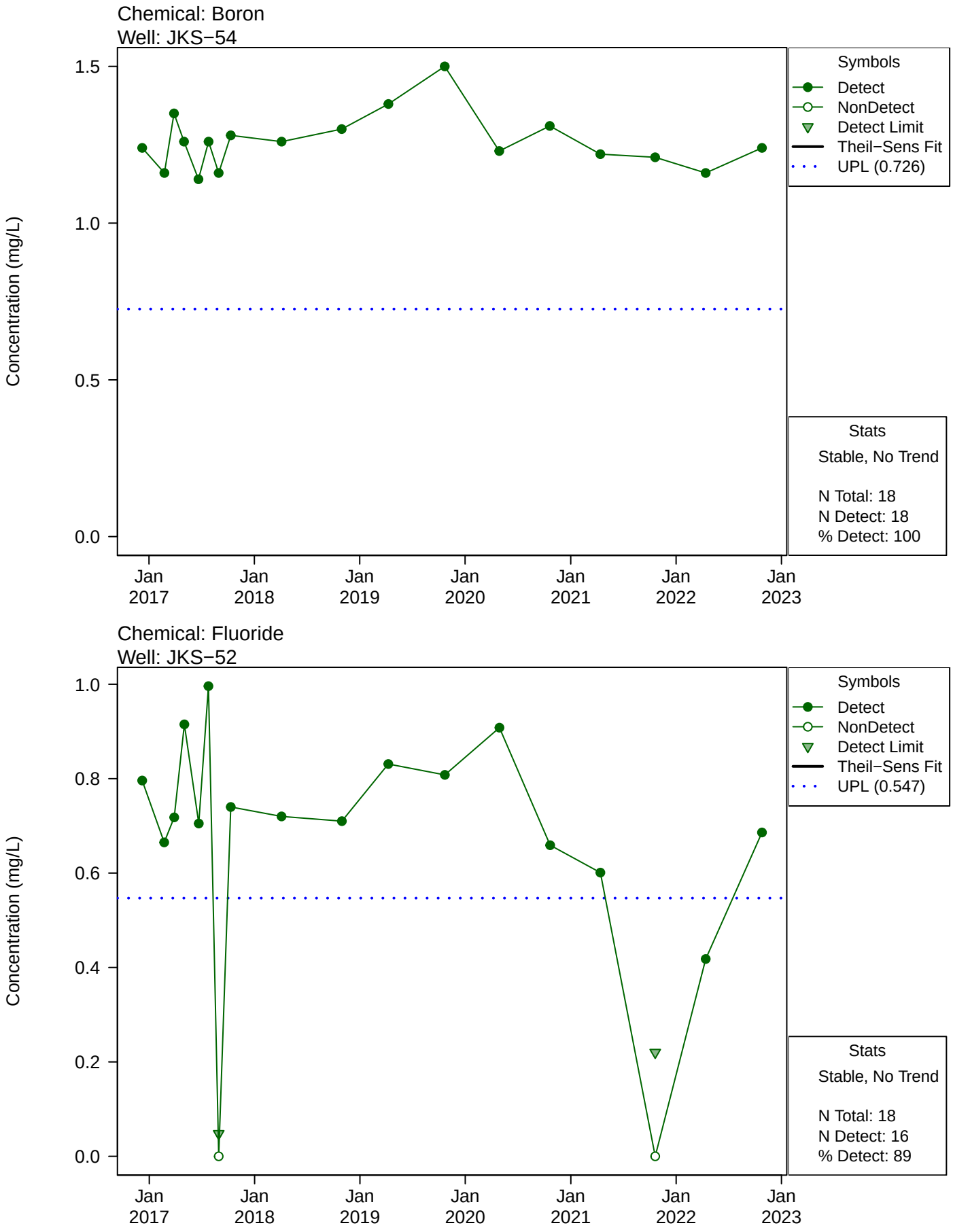

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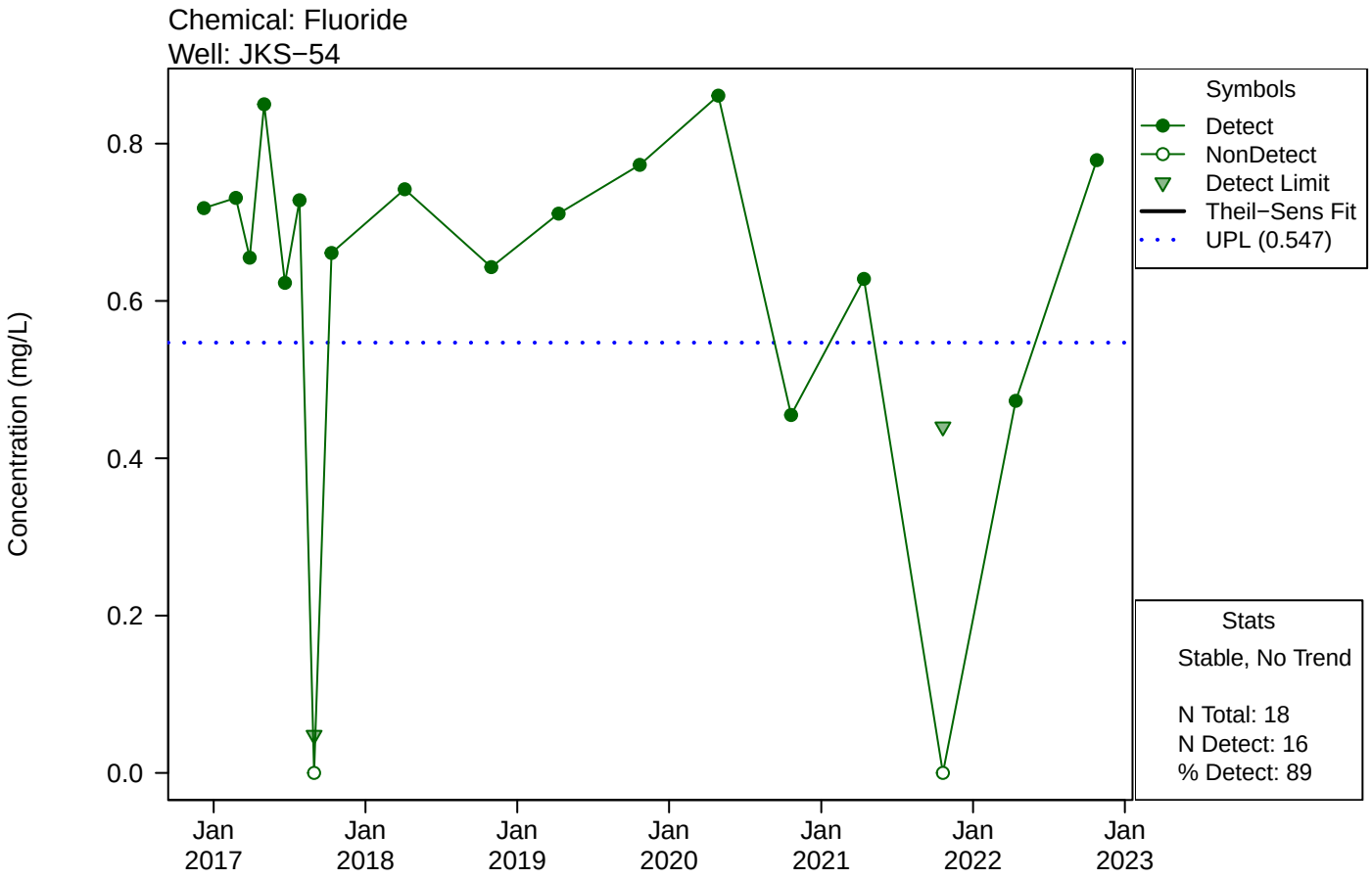

April 2022 Groundwater Sampling Results

Appendix C

ERM

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September 20, 2022

Mr. Michael Malone
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

Reference: 0636109

Subject: April 2022 Groundwater Sampling Event
Calaveras Power Station CCR Units
San Antonio, Texas

Introduction

Title 40 Code of Federal Regulations, Part 257, (40 CFR §257) Subpart D [a.k.a. Coal Combustion Residual (CCR) Rule] was published in the Federal Register in April 2015 and became effective in October 2015. One of the many requirements of the CCR Rule was for CPS Energy to determine if there are impacts to groundwater from the surface impoundments [Evaporation Pond (EP), Bottom Ash Ponds (BAPs), and Sludge Recycling Holding (SRH) Pond] and the landfill [Fly Ash Landfill (FAL)] that contain CCR at the Calaveras Power Station.

In the initial *2017 Annual Groundwater Monitoring and Corrective Action Report* for each CCR unit, the downgradient monitoring well results from the October 2016 sampling event were compared to Upper Prediction Limits (UPLs) and Lower Prediction Limits (LPLs). UPLs and LPLs were calculated in the *Annual Groundwater Monitoring and Corrective Action Reports* for the purpose of determining a potential statistically significant increase (SSI) over background levels. In the subsequent *2018*, *2019, 2020, and 2021 Annual Groundwater Monitoring and Corrective Action Reports* for each CCR unit, the downgradient monitoring well results from the October 2017, October 2018, October 2019, and October 2021 sampling events were compared to updated UPLs and LPLs. These updated UPLs and LPLs were recalculated in the respective *Annual Groundwater Monitoring and Corrective Action Reports* using the additional data collected from the previous year. The April 2022 groundwater sample results were compared to the updated UPLs and LPLs and the evaluations of the sample results indicated a potential SSI for a limited number of constituents from the EP, FAL, and BAPs. No potential SSIs were identified for any constituents from the SRH Pond.

According to the CCR Rule [§257.94(e)], if the owner or operator of a CCR unit determines there is a SSI over background levels for one or more Appendix III constituents, the owner or operator may demonstrate that a source other than the CCR unit caused the SSI over background levels or that the SSI resulted from error in sampling, analysis, statistical evaluation or natural variation in groundwater quality. The CCR Rule also indicates that the owner or operator must complete the written demonstration within 90 days of detecting an SSI over the background levels. If a successful demonstration is completed within the 90-day period, the owner or operator may continue with a detection monitoring program.

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Texas Board of Professional Geoscientist Firm 50036
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To address the potential SSIs identified in the previous four *Annual Groundwater Monitoring and Corrective Action Reports*, CPS Energy prepared five *Written Demonstrations – Responses to Potential Statistically Significant Increases*[1] (dated 4 April 2018; 27 February 2019; 27 April 2020; 18 June 2021; and 26 April 2022, respectively). Based on the evidence provided in the *Written/ Alternative Source Demonstrations*, no SSIs over background levels were determined for any of the CPS Energy CCR units (EP, FAL, BAPs, and SRH Pond) and therefore, CPS Energy continued with a detection monitoring program that would include semiannual sampling.

Sampling Events Summary

The first semiannual groundwater sampling event for 2022 was conducted on April 13 through April 14, 2022. The sampling event included the collection of water level measurements and groundwater samples from all the background and downgradient monitoring wells in the CCR monitoring program. Monitoring wells were gauged and then sampled by CPS Energy using low flow sampling techniques during the sampling event. The groundwater samples were analyzed for Appendix III constituents.

For each CCR unit, the downgradient monitoring well results from the April 2022 sampling event were compared to the updated UPLs and LPLs recalculated in their respective *2021 Annual Groundwater Monitoring and Corrective Action Report*. The April 2022 groundwater sample results for the downgradient monitoring wells in each CCR unit are summarized in Attachment 1.

Although the evaluations of the April 2022 groundwater sample results indicate a potential SSI for a limited number of constituents, the constituents associated with the potential SSIs are the same constituents, detected at similar concentrations, which were previously identified in one or all of the *Written/ Alternative Source Demonstrations*. The evaluations of the April 2022 groundwater sample results with potential SSIs are summarized below.

EP – The constituents associated with potential SSIs include boron in JKS-61; fluoride in JKS-36; and pH in JKS-36, JKS-61, and JKS-62. As previously presented in the *Written/ Alternative Source Demonstrations*, the concentrations of boron, fluoride, and pH appear to reflect natural variation in groundwater quality in the vicinity of the CCR unit. The reported April 2022 concentrations were within the range of naturally occurring concentrations identified in the *Written/ Alternative Source Demonstrations*.

FAL – The constituents associated with potential SSIs include pH in JKS-31 and JKS-46. As previously presented in the *Written/ Alternative Source Demonstrations*, the concentrations of pH appear to reflect natural variation in groundwater quality in the vicinity of the CCR unit. The reported April 2022 concentrations were within the range of naturally occurring concentrations identified in the *Written/ Alternative Source Demonstrations*.

BAPs – The constituents associated with potential SSIs include boron in JKS-50R and JKS-56. As previously presented in the *Written/ Alternative Source Demonstrations*, the concentrations of boron appear to reflect natural variation in groundwater quality in the vicinity of the CCR unit. The

[1] The term *'Written Demonstration'* was historically used for a document that provided responses to potential SSIs. Starting with the 26 April 2022 document, the term *'Alternative Source Demonstration'* was used for these types of documents.

reported April 2022 concentrations were within the range of naturally occurring concentrations identified in the *Written/ Alternative Source Demonstrations*.

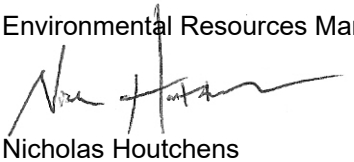
Conclusions

Based on the April 2022 groundwater sample results and the evidence provided in one or all of the *Written/ Alternative Source Demonstrations*, no SSIs over background levels have been determined for any of the CPS Energy CCR units (EP, FAL, BAPs, and SRH Pond) and therefore, CPS Energy should continue with a detection monitoring program. The second semiannual sampling event should be performed in October 2022.

We appreciate the opportunity to work with you on this project. Please contact me if you should have any questions.

Sincerely,

Environmental Resources Management Southwest, Inc.



Nicholas Houtchens
Senior Geologist

ATTACHMENT 1 APRIL 2022 GROUNDWATER SAMPLE RESULTS

April 2022 Groundwater Sample Results
CCR Unit: Evaporation Pond
CPS Energy Calaveras Power Station
San Antonio, TX

			CCR Unit	EP	EP	EP
			Well Designation	Downgradient	Downgradient	Downgradient
			Well ID	JKS-36	JKS-61	JKS-62
			Sample Date	4/13/2022	4/13/2022	4/13/2022
			Sample Type Code	N	N	N
Constituent	Units	2021 LPL - EP	2021 UPL - EP			
Boron	mg/L	--	1.80	0.556	1.83	0.609
Calcium	mg/L	--	1,410	260	144	165
Chloride	mg/L	--	3,320	295	248	313
Fluoride	mg/L	--	0.364	1.71	0.363	0.328
pH, Field	SU	4.58	6.26	6.78	6.83	6.89
Sulfate	mg/L	--	2,120	769	420	199
Total Dissolved Solids	mg/L	--	9,620	2,200	1,410	1,160

NOTES:

Shaded results either exceed of the Upper Prediction Limit (UPL) or are below the Lower Prediction Limit (LPL) for this CCR unit.
Sample Type Code: N - Normal

April 2022 Groundwater Sample Results
CCR Unit: Fly Ash Landfill
CPS Energy Calaveras Power Station
San Antonio, TX

			CCR Unit	FAL	FAL	FAL	FAL	FAL
			Well Designation	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
			Well ID	JKS-31	JKS-33	JKS-46	JKS-46	JKS-60
			Sample Date	4/13/2022	4/13/2022	4/13/2022	4/13/2022	4/13/2022
			Sample Type Code	N	N	N	FD	N
Constituent	Units	2021 LPL - FAL	2021 UPL - FAL					
Boron	mg/L	--	5.77	0.460	1.02	0.736	0.765	0.573
Calcium	mg/L	--	794	339	499	181	196	438
Chloride	mg/L	--	1,850	525	731	14.8	15.2	324
Fluoride	mg/L	--	4.29	0.018 U	0.018 U	2.55	3.09	0.018 U
pH, Field	SU	4.87	6.73	4.04	6.55	3.45	3.45	6.36
Sulfate	mg/L	--	7,810	1,400	1,560	1,370	1,290	1,200
Total Dissolved Solids	mg/L	--	18,800	3,170	3,960	1,870	1,890	2,680

NOTES:

Shaded results either exceed of the Upper Prediction Limit (UPL) or are below the Lower Prediction Limit (LPL) for this CCR unit.
Sample Type Code: N - Normal; FD - Field Duplicate
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

April 2022 Groundwater Sample Results
CCR Unit: Bottom Ash Ponds
CPS Energy Calaveras Power Station
San Antonio, TX

				CCR Unit	BAP	BAP	BAP	BAP	BAP	BAP
				Well Designation	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
				Well ID	JKS-48	JKS-50R	JKS-52	JKS-52	JKS-55	JKS-56
				Sample Date	4/13/2022	4/14/2022	4/13/2022	4/13/2022	4/14/2022	4/13/2022
				Sample Type Code	N	N	N	FD	N	N
Constituent	Units	2021 LPL - BAP	2021 UPL - BAP							
Boron	mg/L	--	2.63	2.23	6.28	1.84	1.81	0.778	3.83	
Calcium	mg/L	--	386	124	128	161	178	131	110	
Chloride	mg/L	--	638	481	70.0	381	378	443	100	
Fluoride	mg/L	--	0.894	0.810	0.284	0.418	0.491	0.557	0.367	
pH, Field	SU	5.48	7.31	6.94	6.66	6.97	6.97	6.84	6.81	
Sulfate	mg/L	--	485	199	189	299	296	178	121	
Total Dissolved Solids	mg/L	--	2,500	1,480	887	1,470	1,520	1,370	838	

NOTES:

Shaded results either exceed of the Upper Prediction Limit (UPL) or are below the Lower Prediction Limit (LPL) for this CCR unit.
Sample Type Code: N - Normal; FD - Field Duplicate

April 2022 Groundwater Sample Results
CCR Unit: SRH Pond
CPS Energy Calaveras Power Station
San Antonio, TX

			CCR Unit	SRH Pond	SRH Pond	SRH Pond	SRH Pond
			Well Designation	Downgradient	Downgradient	Downgradient	Downgradient
			Well ID	JKS-52	JKS-52	JKS-53	JKS-54
			Sample Date	4/13/2022	4/13/2022	4/13/2022	4/13/2022
			Sample Type Code	N	FD	N	N
Constituent	Units	2021 LPL - SRH	2021 UPL - SRH				
Boron	mg/L	--	2.64	1.84	1.81	1.68	1.16
Calcium	mg/L	--	377	161	178	115	149
Chloride	mg/L	--	640	381	378	403	472
Fluoride	mg/L	--	0.894	0.418	0.491	0.263	0.473
pH, Field	SU	5.48	7.31	6.97	6.97	6.82	6.84
Sulfate	mg/L	--	487	299	296	274	446
Total Dissolved Solids	mg/L	--	2,440	1,470	1,520	1,330	1,680

NOTES:

Shaded results either exceed of the Upper Prediction Limit (UPL) or are below the Lower Prediction Limit (LPL) for this CCR unit.
Sample Type Code: N - Normal; FD - Field Duplicate