

TECHNICAL MEMORANDUM

To:	Grant Evenson, Nevada Division of Environmental Protection
From:	Ranajit Sahu (BRC)
cc:	John J. Dodge, PG, CHG (CA) (DBS&A)
Date:	February 15, 2024
Subject:	Technical Memorandum – 2023 Monitoring Well Sampling Event BMI Common Areas (Eastside with Western Hook and Open Space parcels), Clark County, Nevada

Introduction

BRC developed and submitted a Sampling and Analysis Plan (SAP) dated November 16, 2022 for Shallow Zone groundwater monitoring in the BRC Eastside Area and the adjacent Western Hook and Open Space parcels (Site). As approved by the State of Nevada Division of Environmental Protection (NDEP), field monitoring was completed in June, July, September, and October 2023. A supplementary technical memorandum dated August 22, 2023 was prepared to summarize the field status of wells that could not be accessed and selected replacement wells. The final list of wells is provided as Table 1 and well locations are shown on Figure 1.

Water Level Data

Depth-to-water (DTW) measurements were completed by Converse Consultants, Inc. (Converse) in the selected wells prior to monitoring well sampling. Water level measurements were completed in 26 Layer 1 wells and 43 Layer 2 wells. Layer 1 wells are screened in the Shallow Zone Quaternary alluvium at the Site. Layer 2 wells are screened in the relatively low permeability Shallow Zone Upper Muddy Creek Formation (UMCf). Layer 2 wells may also be screened in the transitional Muddy Creek Formation (xMCF), or screened in Qal with over 1 foot of the screen also set in the UMCf and/or xMCF.

DTW in Layer 1 wells ranged from 2.91 to 64.74 feet below top-of-well casing (ft btoc). DTW in Layer 2 wells ranged from 7.18 to 74.74 ft btoc (Table 2). Groundwater elevations in Layer 1 wells ranged from approximately 1,429 to 1,724 feet above nominal mean sea level (ft MSL) (North American Vertical Datum of 1988 [NAVD88]). Groundwater elevations in Layer 2 wells ranged from approximately 1,481 to 1,764 ft MSL.

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Figure 2 presents the groundwater elevation contours (groundwater flow map) for Layer 1 and Figure 3 presents the groundwater flow map for Layer 2. Groundwater elevations in the UMCf are largely greater than elevations in the Qal (upwards groundwater flow gradient).

Groundwater flow in the Qal is largely north-northeasterly across the Eastside area. Groundwater flow in the UMCf is oriented north-northwesterly in the southern Eastside area before flow changes to largely northerly (in the west-central and northern Eastside area) then north-northeasterly near the Las Vegas wash.

Analyte List

Selected wells were sampled by Converse for the following parameters:

- Arsenic by EPA Method 200.8 LL
- Beta-Hexachlorocyclohexane (beta-BHC) by EPA Method 8081B
- Chloroform (volatile organic compounds) by EPA Method 8260B
- Radium 226+228 by EPA Methods 903.0/904.0

Analytical Results

ERM, Inc. completed a data validation summary report (DVSR) dated January 23, 2024 (Attachment A) for the 2023 sampling event. As discussed in the DVSR, based on the evaluation of the dataset, some of the results were qualified as estimated, however, 100 percent of the data obtained during the field investigation are valid and acceptable for their intended use.

Detected arsenic concentrations ranged from 2.4 to 160 micrograms per liter ($\mu g/L$) (Table 3). The highest concentrations in Qal wells (Layer 1) are located in the southeastern Eastside area extending north- northeast from well POU3 (120 $\mu g/L$) to well ES-39 (72 $\mu g/L$). Relatively elevated concentrations were also detected in wells to the north of the Eastside area (Figure 4). The highest concentrations in UMCf wells (Layer 2) are also located in the southeastern Eastside area and primarily in wells to the northeast and northwest. The 2023 data are broadly similar to previous results from earlier sampling events except for well DBMW-13 where arsenic was

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previously detected at 1,800 μ g/L (Figure 5). Arsenic was detected at a lower concentration of 44 μ g/L in well DBMW-13 in the 2023 sampling event.

Beta-BHC was detected in well APX-2-P101 at 0.20 μ g/L and in well PC-80 at 0.14 μ g/L. Beta-BHC was not detected in the remaining 6 wells that were sampled (Table 4). Both PC-80 and APX-2-P101 are located in the Western Hook area (Figure 6).

Detected chloroform concentrations ranged from 3.7 to 1,200 μ g/L (Table 5). The highest concentrations in Qal wells were detected in well POU3 (380 μ g/L) and well MW-4 (150 μ g/L). Both detections in the 2023 sampling event are lower than previous results in these wells. Chloroform was detected at 1,300 μ g/L in well POU3 and at 520 μ g/L in MW-4 in prior sampling events (Figure 7). The highest chloroform detections in Layer 2 (UMCf) wells were detected in well ES-4 (1,200 μ g/L) near POU3 in the southwestern Eastside area. Other relatively elevated chloroform detections were reported in wells ES-32 (140 μ g/L), DBMW-08R (160 μ g/L), MCF-06CR (240 μ g/L), and DBMW-11 (300 μ g/L). The reported concentration in well DBMW-11 is lower than the previous result of 600 μ g/L (Figure 8).

Radium 226+228 was detected in relatively elevated levels in Qal wells POD2-R (5.288 picoCuries per liter [pCi/L) and in well MW-4 (6.24 pCi/L) (Table 6). Well POD2-R is located in the western Eastside area and well MW-4 is northeast of the Eastside area near the Las Vegas wash (Figure 9). Radium 226+228 was also detected in relatively elevated levels along the northern boundary of the Eastside area in Layer 2 wells DBMW-03 (4.754 pCi/L), MCF-06BR (4.02 pCi/L), MCF-06CR (5.14 pCi/L), and well DBMW-09 (2.038 pCi/L) (Figure 10). The reported Radium 226+228 levels are lower in the 2023 event for wells sampled previously except where 4.59 pCi/L was previously detected in well MW-4.

Tables



Table 1. Well Sampling Summary2023 Groundwater Sampling Event

		Field Sampling				Sampling/Analysis				
			Event	2023			Plan 2023			
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		Ö.		28		Ŭ.		28		
		0F	<u> </u>	2+		Ъ	_ ⊔	42		
		SR	ä	26	U	Ř	ä	26	U	
Field Controling Data	Maritania - Mall	Ĩ	SSI	4 2	Ť	구	SSI	2 4 2	Ť	Furlantin
Field Sampling Date	Monitoring well	Ū	Ā	2	PE	Ū	Ā	2	Эq	Explanation
7/13/2023	AA-08		Х		Х		Х		Х	
7/7/2022	AA 00	v	v	v		v	v	v		
1/1/2023	AA-09	~	~	~		~	Χ.	~		
7/12/2023	AA-11R	Х				х				
7/11/2023	AA-13R	Х	Х			Х	Х			
7 (7 (2022)	AA 20D	V	v	v		v	V	v		
1/1/2023	AA-20R	~	~	~		~	Χ.	~		
7/13/2023	AA-21		Х		Х		Х		Х	
7/11/2023	AA-26	Х				Х				
7/10/2022	۸۸-27		v				v			
1/10/2023	AA-21		~				~			
7/11/2023	AA-30	Х				х				
7/12/2023	AA-UW1		Х				Х			
7/10/2023	ΔΔ-I I\M/2	-	X			11	Х			
7/10/2023	AA-0W2		~				~			
//11/2023	AA-UW4		Х			Ц	Х			
7/10/2023	AA-UW5		х				Х			
7/6/2023			х	1	1	11	х	1		
0/20/2022			~		~	_	~		~	
9/29/2023	APX-2-P101		Х	ļ	Х	μ	Х	ļ	X	
7/6/2023	BEC-6	Х	х	I –	_	х	Х	_		
7/12/2023	DBMW-03	Х	Х	Х	1	Х	Х	Х		
7/12/2023	DDIAN OID	X	X	~		×	X	~		
7/12/2023	DBMW-04R	X	X			X	X			
7/12/2023	DBMW-05R		Х				Х			
7/6/2023	DBMW-08R	Х	Х	Х		Х	Х	Х		
7/5/2022	DRMM/ 00	v	v	v		v	v	v		
7/3/2023	DBIVIW-09	^	^	^		^	^	^		
7/5/2023	DBMW-10	Х	Х			х	Х	Х		
9/29/2023	DBMW-10			Х		Х	Х	Х		
7/5/2023	DBMW-11	Y	x	Y		x	X	x		
1,5,2025		~	~	~		~	~	~		
7/6/2023	DBMW-13	Х	Х	Х		Х	Х	Х		
7/6/2023	DBMW-14		Х	Х			Х	Х		
7/6/2023	DBMW-15		X				X			
7/0/2023	DDIAW 10	V	×			v	х У			
7/6/2023	DBMW-16R	X	X			X	X			
7/13/2023	DBMW-19		Х		Х		Х		Х	
7/11/2023	DBMW-20	Х	Х			Х	Х			
7/11/2022	DRMM/ 33	v	v			v	v			
7/11/2023	DBIVIVV-22	Χ.	~			~	~			
7/10/2023	DM-1R	Х	Х			х	Х			
7/10/2023	ES-3	Х				Х	Х			
10/2/2022	EC 0		v	t –	1	v	v	1		
10/2/2023	E3-3		^			^	^			
7/7/2023	ES-30	Х				Х				
7/7/2023	ES-32	Х				Х				
9/29/2023	EC-30		¥	1		11	x			
5/25/2025	23-35		^				~			
7/10/2023	ES-4	Х				Х	Х			ES-4 buried/destroyed between dates. Sampled ES-3 for As instead.
7/7/2023	ES-5	х				Х				
7/12/2023	MCF-01R	х	х	1		X	х			
10/2/2022		×	~			, v	× ×			Extra able of forms and a calle start for lab MC/MCD
10/2/2023	MCF-01B	X	ļ	ļ	ļ	X	X	ļ		Extra chiorororm sample collected for lab MS/MSD.
7/11/2023	MCF-03B		Х				Х			
7/14/2023	MCF-06BR		Х	Х			Х	Х		
7/14/2022	MCE_OCCD	v	v	v		v	v	v		
//14/2023	IVICF-UOCR	^	^	^		H ^	^	^		
7/6/2023	MCF-12B	Х	Х			Х	Х			
7/7/2023	MCF-16C	Х	Х			Х	Х	Х		
10/2/2023	MCF-16C			Y		Y	x	Y		
7/14/2020	IVICI - 18C			~		<u> </u>	~	~		
//11/2023	MW-4	Х	Х	х		Х	Х	Х		
Not sampled	MW-S					11	Х		Х	No Access to MW-S. Well APX-2-P101 sampled instead.
9/29/2023	PC-62		x	1	х	11	х		х	
7/12/2022	10-02		× ×		×	_	× ×		, ,	
//13/2023	PC-80		X	ļ	X	Ц	X	ļ	X	
7/7/2023	POD2-R	[Х	Х		11	Х	Х		
7/10/2023	POD-8R	Х	х	1	Х	Х	Х	1	Х	
7/10/2022	100-01	~	~				~			
//10/2023	POU3	Х	Х			Х	Х			

Note:

Blank cells = Well not specfied for indicated parameter. Shaded cells = Parameter not sampled per plan (see Explanation).



Table 2. Water Level Data 2023 Groundwater Sampling Event

Weil Weil Weil Develop Develop <thdevelop< th=""> <thdevelop< <="" th=""><th></th><th></th><th></th><th></th><th>Top of</th><th></th><th></th><th>Groundwater</th></thdevelop<></thdevelop<>					Top of			Groundwater
No. Weil Exercise stature ratio RAULS. (RAV089) (B Value) Unit (INV089) (INV089) <th></th> <th></th> <th>Well C</th> <th>oordinates</th> <th>Casing Elevation</th> <th>Depth</th> <th>Data</th> <th>Elevation</th>			Well C	oordinates	Casing Elevation	Depth	Data	Elevation
Los Los <thlos< th=""> <thlos< th=""> <thlos< th=""></thlos<></thlos<></thlos<>	No.	Well	Easting	Northing	(NAVD88) (ft MSL)	(ft btoc)	Date	(NAVD88) (ft MSL)
1 AA.08 827805.16500 2873275.0000 1989.23 95.41 6978-17623 1978.25 2 AA.09 85104 85000 217243 690-17623 1658.32 3 AA.118 63039-21000 2872271.86000 1660.05 21.73 697-17623 1659.32 4 AA.518 63039-21000 28724271.9500 1986.27 2029.17623 1659.21 1572.53 7 AA.20 64032 24734271.95301 1986.67 41.64 6927.17623 1572.34 1572.34 1572.34 1572.34 1572.35 1572.34 1572.35 1572.34 1572.34 1553.34 1583.14 <t< th=""><th></th><th></th><th></th><th></th><th>(</th><th>(</th><th></th><th>(</th></t<>					(((
2 AA-09 89101.166700 2272341.00000 1668.23 39.61 6226-7523 1658.32 4 AA-117 8030721000 2272305.00500 1660.40 47.25 6026-7523 1658.32 5 AA-27 823162.25300 2272305.05500 1162.40 47.25 6026-7523 1157.97 7 AA-28 840176.45300 22733341.4000 1564.20 8.23 1622-7523 11754.65 9 AA-30 836122.51200 22733491.4000 1583.34 1681 6226-7523 11764.66 10 AA-100 836122.51200 2273566.4000 11763.38 46.21 6226-7523 11784.66 11 AA-104 839442.23000 2273566.4000 11765.81 42.63 1028-7523 11784.5 12 AA-104 839442.2300 2273566.41000 1176.53 45.85 1028-7523 11784.5 13 AA-104 83944.2300 2273426.43000 11775.51 45.25 1178.43 1168.14 1178.14.14 1177.143 <td>1</td> <td>AA-08</td> <td>827805.16500</td> <td>26733275.04000</td> <td>1581.19</td> <td>2.91</td> <td>6/29-7/5/23</td> <td>1578.28</td>	1	AA-08	827805.16500	26733275.04000	1581.19	2.91	6/29-7/5/23	1578.28
	2	AA-09	831041.58700	26723441.40000	1696.23	39.61	6/29-7/5/23	1656.62
S AA.20R ES1962.2580 267/2006.86920 1658.46 27.25 622-7703 1107.87 7 AA.26 640176.49500 2673349.14900 1564.20 8.23 622-77033 1157.97 7 AA.26 640176.49500 2673349.14900 1564.20 1624 622-7523 1714.66 9 AA.30 636125.91200 2673369.17000 1513.34 16.81 622-7523 1714.63 10 AA.UW1 81427.20409 2271692.4000 1776.38 64.17 622-7523 1716.47 11 AA.UW2 8328445.8400 2277295.2016.87000 1776.53 622-7523 1758.12 12 AA.UW6 85384.48600 2277292.2337 1607.44 35.57 622-7523 1768.12 13 BEC.6 85374.448600 2277292.2337 1607.46 35.57 622-7523 178.3 14 DBM-11 83567.34264 2277292.2337 1607.46 35.57 622-7523 1605.23 15 DBM-16 83567.34	3	AA-11R	830397.21000	26725271.88000	1660.05	21.73	6/29-7/5/23	1638.32
6 AA-21 B281440,08000 22734078,78300 19584.20 B233 1022-7523 11575.07 7 AA-27 B32471,54100 28713901,55500 1168.3 168.1 622-7523 11525.03 8 AA-27 B32471,54100 28713901,55500 1153.34 16.81 622-7523 11516.53 10 AA-LW1 B31427,20490 28719924,88827 1174.43 56.04 622-7523 11761.47 11 AA-LW4 B3565,84000 2872018,87000 11708.81 44.16 622-7523 11751.47 12 AA-LW4 B3565,84000 2872018,27000 11708.81 44.17 622-7523 11761.47 13 AA-LW4 B3565,45000 2872719.22890 1060.11 1075.52 7.18 622-7523 1076.17 14 DBMW-10 B8365,45000 2872719.22800 1067.46 35.57 1022-7523 1078.32 15 DBMW-10 B8365,45000 2872719.22800 1067.46 35.57 1022-7523 1055.13 <tr< td=""><td>5</td><td>AA-1310 AA-20R</td><td>831962 23380</td><td>26728006 66260</td><td>1628 49</td><td>27.25</td><td>6/29-7/5/23</td><td>1601.24</td></tr<>	5	AA-1310 AA-20R	831962 23380	26728006 66260	1628 49	27.25	6/29-7/5/23	1601.24
7 AA-26 840176 42800 2273340 14000 1566 67 41 64 602-77623 11825 03 8 AA-30 836123 91200 2273361 7000 1533 34 16.81 602-77623 11784 66 9 AA-30 836123 91200 2273361 7000 1533 34 16.81 662-77623 1518 153 10 AA-WW1 83742 24400 2271624 36827 1718 453 56.04 629-77623 1718 453 11 AA-WW2 83240 2300 2772458 41000 1778 53 52.83 6629-77623 10793 20 15 BEC-6 83574 88800 2272719 38400 1063 36 54.85 6029-77623 1083 32 16 DBMW-10 33567 33204 2272792 322100 1667 46 35.57 629-77623 1665 23 17 DBMW-11 33578 54893 2272792 32200 1664 36 34.73 629-77623 1665 23 18 DBMW-13 33587 32304 2272780 22700 1663 34 74.723 1665 23 20 DBMW-14	6	AA-21	826148.08000	26734078.78300	1584.20	8.23	6/29-7/5/23	1575.97
6 AA-27 632471.34100 26713001.05500 1778.38 64.72 6692-7/623 1724.66 9 AA-30 868125.91200 2673661.20000 1573.33 16.81 629-7/623 1781.67 10 AA-UW1 831427.20400 2671602.48827 1774.63 660.4 629-7/623 1781.47 11 AA-UW2 83268.8400 2672016.87000 1788.83 40.8 692.97/623 1781.47 12 AA-UW4 83568.8400 2672016.87000 1785.83 40.8 692.97/623 1783.47 14 AA-UW6 83544.8500 26727416.84000 1785.83 40.8 692.97/623 1783.43 15 DEMW-10 83696.37000 2672749.28370 1667.46 1678.79 45.53 692.97/623 1693.21 16 DEMW-13 83567.33204 26221602.20000 1684.30 31.07 622.77623 1653.23 17 DEMW-13 83569.37000 267231382.2000 1683.40 26.4 622.77623 1652.31	7	AA-26	840176.49300	26733349.14900	1566.67	41.64	6/29-7/5/23	1525.03
9 AA-30 886125 91200 28736817,7000 1533.34 16.81 6629-7/623 1718 59 11 AA-UW2 832810,5457 2671602,39827 1774.43 56.04 629-7/623 1718 147 12 AA-UW4 8302810,5457 2671611,11023 1821,38 60.91 62.9-7/623 1718 147 13 AA-UW4 830584,02300 26725584,01000 1712,52 7.16 62.9-7/623 11693.02 15 BEC-6 83574,0230 16673,000 1725,52 7.16 62.9-7/623 11631.89 16 DBMW-11 83567,32304 2272794,861600 1727,53 62.9-7/623 11650.23 20 DBMW-13 83857,32304 2272784,86160 1678,79 45.5 62.9-7/623 11650.23 21 DBMW-14 83896,99000 2272802,32700 1683.40 22.0 62.9-7/623 1655.23 22 DBMW-18 831362,0000 2723430,517.00 1583.40 26.04 62.9-7/623 1656.23 23 DBMW-18	8	AA-27	832471.34100	26719301.65500	1789.38	64.72	6/29-7/5/23	1724.66
10 AA-UM2 83142/2049 247186434862 1714.83 69.14 06.49 06.49 1783.7 12 AA-UM2 83285867 0271811 1100 189.83 69.97 1783.7 1783.7 13 AA-UM6 833952.0100 27228950.0100 1785.51 49.19 62927623 1783.3<	9	AA-30	836125.91200	26733691.70000	1533.34	16.81	6/29-7/5/23	1516.53
12 AA.UWG 828658.8400 2627201.82700 1790.88 91.76 92.7423 1793.12 13 AA.UWG 83992.1000 2272280.1000 1746.83 52.83 622.74623 1793.83 14 AA.UWG 83993.45889 2272794.84900 1762.82 7.18 622.77623 1693.92 15 BEC-6 83579.48890 2272794.82430 1667.46 35.57 622.77623 1693.93 16 DBMW-11 33867.33204 2272748.2437.01 1667.46 35.57 622.77623 1633.28 19 DBMW-13 33867.33204 2272746.033.00 1664.46 34.73 622.77623 1655.23 20 DBMW-16-R 3404.7100 22733.00.51.700 1583.40 22.0 622.77623 1637.36 21 DBMW-28 831468.7100 27733.00.51.700 1583.40 22.9 622.77623 1638.73 22 DBMW-48 83245.85000 227284.83.000 1605.61 24.6 622.77623 1638.73 23	10	AA-UW1	831427.20490	26719624.98827	1/74.63	56.04	6/29-7/5/23	1/18.59
13 AA-LWG 83782 01000 2023288 01000 1788 51 46 19 629-75/23 1722 32 14 AA-LWG 839744 5800 2072566 4100 1745 83 526 31 6/29-75/23 1718 34 15 BEK-6 835744 5800 2072719 23400 1663 96 54 485 6/29-75/23 1718 34 16 DBMW-11 83573 43580 2072719 23400 1663 96 54 485 6/29-75/23 1653 23 17 DBMW-14 838093 3700 2072719 207201 6000 1663 20 3777 6/29-75/23 1655 23 20 DBMW-14 838093 3700 20728062 10000 1693 20 3777 6/29-75/23 1655 23 21 DBMW-19 83140 4740 2073138 2000 1693 40 160 44 6/29-75/23 1600 23 22 DBMW-48 8302 26000 2072914 0000 1605 81 2.3 6/29-75/23 1600 26 23 DBMW-48 83240 26000 2072913 4000 1605 81 2.3 6/29-75/23 1608 45 24 </td <td>12</td> <td>AA-UW2 AA-UW4</td> <td>836558 84000</td> <td>26720018 87000</td> <td>1799.88</td> <td>41 76</td> <td>6/29-7/5/23</td> <td>1758.12</td>	12	AA-UW2 AA-UW4	836558 84000	26720018 87000	1799.88	41 76	6/29-7/5/23	1758.12
14 AA-UW6 839440 (2000) 20725666 (1000) 174583 52.83 62/27/523 11833.20 15 BEC-6 83574 85600 2072519 (2000) 1163.36 54.85 62/27/523 117.134.1 16 DBMW-11 83573 (22.97 / 142.32 1163.36 54.85 62/27 / 152.3 1163.326 19 DBMW-13 838573 (22.94 2072792.23000 1684.96 34.73 62/27 / 152.3 11653.23 20 DBMW-14 83899.37000 2072803.25000 1683.20 37.97 62/27 / 152.3 1655.23 21 DBMW-16-R 84/407.66000 2072803.2000 1683.40 26.04 62/27 / 152.3 1557.36 22 DBMW-28 83140.27600 2073303.67700 1553.44 26.04 62/27 / 152.3 1569.73 23 DBMW-48 83103.27600 20729705.2000 1605.81 15.28 62/27 / 152.3 1680.74 24 DBMW-48 83462.80000 26729716.4000 1602.65 44.07 62/27 / 152.3 1606.77	13	AA-UW5	837992.01000	26722899.01000	1768.51	46.19	6/29-7/5/23	1722.32
15 BEC-6 835794.85800 2272101.92490 163.96 54.65 822-7/52.23 1600.11 17 DBMW-10 836963.45688 2672719.29490 1663.96 54.65 822-7/52.23 1600.11 17 DBMW-11 835774.54829 26727948.28370 1667.46 35.57 622-7/52.23 1653.22 18 DBMW-14 838699.37000 2672806.10000 1683.20 37.97 6/24-7/52.23 1655.23 20 DBMW-16 83464.666000 2672806.10000 1693.40 2.61.4 7.47.44 6/22-7/52.23 1619.40 22 DBMV-18 83464.0100 2672806.10000 1633.61 2.8.67 6/22-7/52.23 1630.63 24 DBMV-48 83452.8000 2672914.9000 1620.56 1.2.8.64 6/22-7/52.23 1630.63 27 DBMV-48 83452.80000 2672914.8000 172.21 4.040 6/22-7/52.23 1636.74 28 DBMV-48 83452.80000 2672714.86100 172.21 4.040 6/22-7/52.23	14	AA-UW6	839440.23000	26725565.41000	1745.83	52.63	6/29-7/5/23	1693.20
16 DBMW-10 857545429 267270422370 1663.96 54.85 6729-7/5/23 1663.160 17 DBMW-11 8357545429 26727042.66160 1677.97 45.53 6729-7/5/23 1663.26 19 DBMW-14 838673.3204 26727042.622000 1663.49 34.73 6729-7/5/23 1663.26 20 DBMW-16 840470.69000 26728032.2000 1683.40 26.4 6729-7/5/23 1619.40 22 DBMW-19 81488.7700 26733030.51700 1635.61 26.8 6729-7/5/23 1606.74 23 DBMW-28 831402.7100 26733030.51700 1635.61 12.8 6729-7/5/23 1608.74 24 DBMW-48 832428.30000 26721703.4000 1605.84 12.28 6729-7/5/23 1603.74 25 DBMW-48 832428.0000 26727134.48000 1605.84 12.28 6729-7/5/23 1603.74 26 DBMW-48 83224.0000 26727144.48010 1605.84 12.29 6729-7/5/23 1608.44	15	BEC-6	835794.85800	26724104.56000	1725.52	7.18	6/29-7/5/23	1718.34
17. DBMW-13 83/6/4.348/29 26/7/98/2.83/0 166/7.49 35.57 6/29-7/6/23 163.36 19 DBMW-14 838993.7000 26778032.25000 1684.49 34.73 6/29-7/6/23 1653.26 20 DBMW-15 838993.87000 26778002.20000 1683.20 37.97 6/29-7/6/23 1657.36 21 DBMW-16 839496.96000 26778002.10000 1683.40 26.04 6/29-7/5/23 1619.40 22 DBMW-18 831407.74100 26731383.22900 1638.41 12.4 0.4 6/29-7/5/23 1160.74 23 DBMW-28 83340.87000 2672161.49000 1605.61 15.28 6/29-7/5/23 1160.74 24 DBMW-24 83278.40000 2672161.49000 1602.63 46.07 6/29-7/5/23 1168.71 25 DBMW-24 83278.40000 267214.482000 17221 40.04 6/29-7/5/23 1168.44 26 DMM-24 83278.40000 26724.482000 17221 40.04 6/29-7/5/23 1168.64<	16	DBMW-10	836936.45689	26727919.92490	1663.96	54.85	6/29-7/5/23	1609.11
19 DBMW-16 83907.3.5244 207.2490.00100 100.67.9 43.53 6229.712/23 100.240 20 DBMW-16 839463.6000 20772802.2000 1694.190 37.97 6729.712/23 1665.23 21 DBMW-16-R 840470.65000 26772800.30000 1694.14 74.74 6729.712/23 1161.40 22 DBMW-16-R 80477.6500.0 267330.030.7100 1553.61 226.87 6729.712/23 1160.72 23 DBMW-3 831032.81000 267730.030.7100 1653.61 224.82 6729.715/23 1160.61 24 DBMW-4 831032.81000 26729170.84000 1605.81 15.28 6729.715/23 1160.36 25 DBMW-4 83220.39000 2672914.8600 172721 400.46 6729.715/23 1160.54 29 DMM-8 833406.8000 277214.486100 1665.45 227.80 6729.715/23 1605.44 29 DMM-8 833406.8000 2672441.8000 1722.41 40.46 6729.715/23 1664.71 <td>1/</td> <td>DBMW-11</td> <td>83/5/4.54829</td> <td>26727982.28370</td> <td>1667.46</td> <td>35.57</td> <td>6/29-7/5/23</td> <td>1631.89</td>	1/	DBMW-11	83/5/4.54829	26727982.28370	1667.46	35.57	6/29-7/5/23	1631.89
20 DBMM-16 839468 80000 26728003 3000 1693 20 37 97 6/29.7/6/3 1695 23 21 DBMM-16 840470 69000 26728003 3000 1693 40 20.0 6/29.7/6/3 1694 40 22 DBMM-28 831408 7000 26733030 21700 1535 61 26.8 6/29.7/6/3 1690 53 24 DBMW-38 831032 61000 26723703 59000 1605 81 15.28 6/29.7/6/3 1690 53 25 DBMW-4.R 833426 8000 26722764 49000 1605 81 28.96 6/29.7/6/3 1690 53 26 DBMW-5.R 833462 8000 26722764 49000 1853 05 48.07 6/29.7/6/3 1693 491 27 DBMW-5.R 833426 8000 26722143 48000 1722 41 40.04 6/29.7/6/3 1695 41 30 E.S-3 831208 6100 26722143 48000 1724 46 37.00 6/29.7/6/3 1696 471 31 E.S-30 831483 1000 2672164 39000 1697 451 4527 6/29.7/6/3 1696 71	10	DBMW-13	838999 37000	26728032 25000	1684.96	45.55	6/29-7/5/23	1650.23
21 DBMW-16.R 840470 89000 2872860.38000 1684.14 74.7.4 629-7/623 1657.36 22 DBMW-22 839140.71400 2873303.61700 1535.861 26.67 629-7/623 1557.36 23 DBMW-3.R 83102.81000 2872703.59000 1662.68 23.23 629-7/623 1590.73 26 DBMW-4.R 832526.9000 28727164.9000 1603.65 28.8 629-7/623 1590.70 27 DBMW-4.R 835462.80000 28727164.9000 1633.05 48.07 629-7/623 1580.70 28 DBMW-9.R 835220.9010.2872744.8610 1722.11 40.04 629-7/623 1687.17 30 ES-3 83702.58000 2872164.9000 167.45 52.72 629-7/623 1684.71 31 ES-3 83168.9000 2872164.9000 1687.91 49.20 629-7/623 1687.70 32 ES-3 83168.9000 2872164.9000 1687.21 41.80 629-7/623 1687.10 33 ES-4	20	DBMW-15	839456.96000	26728062.10000	1693.20	37.97	6/29-7/5/23	1655.23
22 DBMW-12 83148 3700 2873138 22900 1883.40 28.0 629-7/623 1557.36 23 DBMW-3 83102 81000 26732030.51700 1635.61 26.87 629-7/623 1509.74 24 DBMW-4.R 833452 80000 26727161.40000 1606.81 15.28 629-7/623 1590.53 26 DBMW-4.R 833452 80000 26727161.40000 1606.81 163.20 48.07 629-7/623 1593.98 27 DBMW-4.R 833628 90103 26727164.49000 1722.21 40.04 629-7/623 1687.1 29 DM-1R 8327238 40000 26727148.48000 1727.21 40.04 629-7/623 1687.41 31 ES-30 831683 0500 2672468.49000 1687.45 52.72 6/29-7/623 1647.73 32 ES-32 831093 61000 26724168.4000 1682.31 37.23 6/23-7/623 1647.73 33 ES-4 631128 8100 26724169.4000 1682.31 37.23 6/23-7/623 1644.73 <t< td=""><td>21</td><td>DBMW-16-R</td><td>840470.69000</td><td>26728600.38000</td><td>1694.14</td><td>74.74</td><td>6/29-7/5/23</td><td>1619.40</td></t<>	21	DBMW-16-R	840470.69000	26728600.38000	1694.14	74.74	6/29-7/5/23	1619.40
23 DBMW-32 839140,74100 26733030.51700 1535.61 26.87 622-7/523 1508.74 24 DBMW-4.R 832250.30000 2672161.7900 1625.86 23.23 622-7/523 1590.73 25 DBMW-4.R 832452.80000 26727161.40000 1605.61 155.23 1590.73 27 DBMW-9.R 835406.87000 26727164.92000 1632.05 48.07 622-7/523 1605.44 28 DBMW-9 83273.80000 26727164.9000 1727.21 40.04 622-7/523 1687.17 30 ES-3 837072.56000 26727564.0000 1677.45 52.72 622-7/523 1648.71 31 ES-30 83703.80000 2672750775000 1728.79 41.69 622-7/523 1648.71 33 ES-4 83128.81000 26727169.000 1692.31 37.23 622-7/523 1648.71 34 ES-5 831093.61000 26727169.000 1693.18 55.31 711423 1577.87 36 MCF-06ER	22	DBMW-19	831488.73700	26731383.22900	1583.40	26.04	6/29-7/5/23	1557.36
24 DBMW-3 831032 81000 28728150 (7500) 1825.86 23.23 6728-75623 1802.63 25 DBMW-4-R 833452 86000 28729761 40000 1605.81 15.28 6728-75623 1580.70 27 DBMW-8-R 833408 87000 28729761 40000 1632.05 48.07 6728-75623 1580.70 28 DBMW-9 836208 87000 28727794 48610 1659.92 54.48 6629-75723 1687.17 30 ES-3 830702 56000 2872164 35000 1727.21 40.04 6629-75723 1684.71 31 ES-30 831883 05000 28723507 75000 1697.91 49.20 6728-75723 1684.71 33 ES-4 831208 81000 28723507 75000 1697.91 49.20 6728-75723 1685.08 34 ES-5 831098 01000 28723507 75000 1697.91 49.20 6728-75723 1687.10 34 ES-4 831228 81000 28723401 69000 1785.72 1447.3 1577.573 1695.08	23	DBMW-22	839140.74100	26733030.51700	1535.61	26.87	6/29-7/5/23	1508.74
226 DbMW-5-R 632/250/35000 267/2714/2000 1600.81 15.2 0/62-7/5/23 1980.33 277 DBMW-4-R 833462.86000 267/27164/2000 1803.05 28.95 6/22-7/5/23 1860.70 287 DBMW-4-R 833402.86000 267/27144.8610 1859.92 54.44 6/22-7/5/23 1860.544 29 DM-1R 83270.85000 2872143.85000 1727.21 40.04 6/22-7/5/23 1868.68 30 ES-3 83070.256000 2872164.03000 1724.66 37.80 6/22-7/5/23 1868.66 31 ES-3 831083.05000 28721564.03000 1728.79 44.16 6/22-7/5/23 1868.71 33 ES-4 8312493.20000 2872167.746000 1763.14 169 6/22-7/5/23 1865.08 34 ES-5 831983.17000 2872166.60100 1785.72 41.47 6/22-7/5/23 1865.08 35 MCF-06ER 83493.92000 2873917.46000 1633.12 57.89 77144.23 1575.23	24	DBMW-3	831032.81000	26728150.17900	1625.86	23.23	6/29-7/5/23	1602.63
27 DBMW-8-R 633408.67000 26729164.92000 1632.05 48.07 622-7/5/23 1563.98 28 DBMW-9-R 630220.90103 22672744.49610 1658.92 64.40 622-7/5/23 1605.44 29 DM-1R 832736.40000 2272144.385000 1727.21 40.04 6622-7/5/23 1686.71 30 ES-3 831070.266000 22723607.75000 1897.91 49.20 6/22-7/5/23 1684.71 33 ES-4 831228.81000 22723507.75000 1897.91 49.20 6/22-7/5/23 1687.10 34 ES-5 831098.81000 28723491.99000 1983.31 37.23 6/22-7/5/23 1687.10 35 MCF-0308 83493.902000 2872107.46000 1633.18 55.31 7/14/23 1577.87 36 MCF-160C 834945.84000 2872107.44000 174.88 47.86 6/22-7/5/23 1661.40 40 MW-4 83666.49000 2872395.65000 1673.45 16.24 6/22-7/5/23 1657.21	25	DBMW-5-R	832250.36000	26729703.59000	1609.65	15.28	6/29-7/5/23	1590.53
28 DBM/-9 382229 90103 28727794.48610 1669.92 54.48 672-7/5/23 1605.44 29 DM-IR 832738.40000 26722143.85000 1724.66 37.80 6/29-7/5/23 1687.17 30 ES-3 830702.56000 2672341.87000 1667.45 37.80 6/29-7/5/23 1684.71 32 ES-4 831293.0000 26723507.75000 1697.91 49.20 6/29-7/5/23 1684.71 33 ES-4 831293.0000 26723400 1602.31 37.23 1694.71 34 ES-5 831093.61000 26723491.99000 1683.18 55.31 77.47.23 1575.67 35 MCF-086R 834945.84000 26727107.46000 1633.12 57.89 77.14.23 1577.87 36 MCF-128 940058.24000 26727344.64000 1633.12 57.89 77.14.23 1577.87 37 MCF-06CR 834945.84000 26724346.64000 1573.45 16.24 6/29-7/5/23 1644.00 40 MV-4	20	DBMW-8-R	835406.87000	26729164.92000	1632.05	48.07	6/29-7/5/23	1583.98
29 DM-1R 632738.40000 26722143.85000 1727.21 40.04 6629-7/5/23 1667.17 30 ES-3 830702.55000 26721564.03000 1724.466 37.80 6629-7/5/23 1668.66 31 ES-32 832493.20000 2672507.75000 1697.91 49.20 6/29-7/5/23 1648.71 33 ES-4 831228.1000 26721583.57000 1728.79 41.69 6/29-7/5/23 1648.71 34 ES-5 831093.61000 26721583.57000 1728.79 41.67 6/29-7/5/23 1648.71 35 MCF-03B 834945.84000 2672107.46000 1633.18 55.31 7/14/23 1577.62.3 36 MCF-06CR 834945.84000 26727374.14000 1714.88 54.75 6/29-7/5/23 1644.00 37 MCF-16C 835666.49000 2672304.646000 1526.35 21.98 7/11/23 1507.23 38 MCF-12B 440002 2672425.11000 1691.46 6.29-7/5/23 1616.43 6/29-7/5/23 1616.43 <td>28</td> <td>DBMW-9</td> <td>836220.90103</td> <td>26727794.48610</td> <td>1659.92</td> <td>54.48</td> <td>6/29-7/5/23</td> <td>1605.44</td>	28	DBMW-9	836220.90103	26727794.48610	1659.92	54.48	6/29-7/5/23	1605.44
30 ES-3 830702.56000 26721654.03000 1724.66 37.80 6/29-7/5/23 1688.86 31 ES-30 831683.05000 26723607.75000 1667.45 52.7 6/29-7/5/23 1648.71 33 ES-4 831228.81000 26721583.57000 1728.79 41.69 6/29-7/5/23 1685.08 34 ES-5 831093.61000 26721493.57000 1785.72 41.47 6/29-7/5/23 1744.25 36 MCCF-08B 834930.2000 2672107.46000 1633.12 55.31 7/14/23 1577.87 37 MCF-06R 834945.84000 26729107.46000 1633.12 57.39 7/14/23 1577.87 38 MCF-12B 840058.24000 2672903.17800 1691.98 47.98 6/29-7/5/23 1660.13 40 MW4 83666.49000 26732426.6000 1573.45 16.24 6/29-7/5/23 1657.21 41 PC-80 829823.55000 26732425.6000 1673.45 16.24 6/29-7/5/23 1611.66 43	29	DM-1R	832738.40000	26722143.85000	1727.21	40.04	6/29-7/5/23	1687.17
31 ES-30 831883.05000 26724013.0700 1607.45 52.72 6129-7/523 1614.73 32 ES-32 832493.2000 26721583.57000 1728.79 41.69 6129-7/523 1687.10 34 ES-5 831093.61000 267214963.67000 1728.79 41.49 6129-7/523 1764.71 34 ES-4 831093.61000 26721905.660100 1785.72 41.47 6129-7/523 1774.423 1575.23 36 MCF-08BR 834945.84000 2672107.6000 16633.12 57.89 7/14/23 1575.23 37 MCF-06CR 834945.84000 2672374.14000 1714.88 54.75 6129-7/5/23 1664.01 40 MW-4 836666.49000 26733446.64000 1573.45 16.24 6129-7/5/23 1574.21 41 PC-80 R83582.2000 2672425.40000 1673.40 61.74 6/29-7/5/23 1574.05 42 POD-8R 833582.2000 2672425.40000 1673.40 61.74 6/29-7/5/23 1567.23	30	ES-3	830702.56000	26721654.03000	1724.66	37.80	6/29-7/5/23	1686.86
33 E3-32 632493_2000 2672307,7300 1037.31 49.20 6/297/5/23 1687.10 34 ES-4 831228.80100 26723491.09000 1692.31 37.23 6/29-7/5/23 1687.10 35 MCF-03B 836813.17000 26721066.60100 1785.72 41.47 6/29-7/5/23 1744.25 36 MCF-06BR 834930.92000 2672107.46000 1633.18 55.31 7/14/23 1577.87 37 MCF-06BR 834945.84000 26727374.14000 1714.88 54.75 6/29-7/5/23 1660.13 39 MCF-12B 840068.24000 267273374.14000 1714.88 54.75 6/29-7/5/23 1660.13 40 MW-4 83666.4900 26724825.4000 1673.45 16.24 6/29-7/5/23 1557.21 41 PC-0.8 829823.55000 26724825.40000 1673.40 617.4 6/29-7/5/23 1633.25 44 AA-07 83155.5000 26724825.40000 1673.40 617.4 6/29-7/5/23 1683.25	31	ES-30	831683.05000	26725401.87000	1667.45	52.72	6/29-7/5/23	1614.73
34 ES-5 831093.61000 26723491.09000 1692.31 37.23 6/29-7/5/23 1744.25 35 MCF-03B 8346813.17000 26721066.60100 1785.72 41.47 6/29-7/5/23 1744.25 36 MCF-03B 834930.2000 26729107.46000 1633.18 55.31 7/14/23 1577.87 37 MCF-06CR 834945.84000 26729109.46000 1633.12 57.89 7/14/23 1575.23 38 MCF-12B 840058.24000 2672030.17800 1691.98 47.96 6/29-7/5/23 1664.00 40 MW-4 836666.43000 2673246.64000 1573.45 16.24 6/29-7/5/23 1657.21 41 PC-80 829823.5500 2672482.40000 1673.40 61.74 6/29-7/5/23 1653.25 42 POD-8R 833528.2000 26724725.1000 1691.16 57.91 6/29-7/5/23 1633.25 44 AA-07 83710.042300 2672447.09700 1642.32 43.41 6/29-7/5/23 1651.70	33	E3-32 FS-4	831228 81000	26721583 57000	1728 79	49.20	6/29-7/5/23	1687 10
35 MCF-038 836813.17000 2672106.66100 1785.72 41.47 6/29-7/5/23 1744.25 36 MCF-06BR 834930.92000 26729107.46000 1633.18 55.31 7/14/23 1577.87 37 MCF-16CR 834945.84000 26723734.14000 1714.88 54.75 6/29-7/5/23 1660.13 39 MCF-16C 835846.37900 2672303.17800 1691.98 47.98 6/29-7/5/23 1644.00 40 MW-4 83666.49000 2672305.66000 1573.45 16.24 6/29-7/5/23 1557.21 41 PC-80 829823.55000 26724825.40000 1673.40 61.74 6/29-7/5/23 1633.25 42 POD2-R 833528.22000 26724825.40000 1691.16 57.91 6/29-7/5/23 1674.05 44 A-07 837100.42300 26724805.40000 1701.05 57.78 6/29-7/5/23 1643.27 45 AA.16 83155.5000 2672406.33800 1669.00 47.76 6/29-7/5/23 1657.0	34	ES-5	831093.61000	26723491.09000	1692.31	37.23	6/29-7/5/23	1655.08
36 MCF-08BR 834930.92000 26729107.46000 1633.18 55.31 71/14/23 1577.87 37 MCF-06CR 834945.84000 26727374.14000 1714.88 54.75 6/29-7/5/23 1660.13 39 MCF-16C 835846.37900 2672374.14000 1714.88 54.75 6/29-7/5/23 1644.00 40 MW-4 83666.49000 2673346.64000 1526.35 21.98 7/11/23 1504.37 41 PC-80 829823.55000 26734256.46000 1673.40 61.74 6/29-7/5/23 1657.21 42 POD2-R 831955.5000 26724725.11000 1681.16 57.91 6/29-7/5/23 1633.25 44 AA-07 83710.42300 28724505.52200 1612.63 38.58 6/29-7/5/23 1643.27 45 AA-14R 833660.87000 26724604.23100 1658.13 42.43 6/29-7/5/23 1657.10 47 AA-18 836690.87000 26727402.9700 1642.32 43.41 6/29-7/5/23 1652.13	35	MCF-03B	836813.17000	26721066.60100	1785.72	41.47	6/29-7/5/23	1744.25
37 MCF-06CR 834945.84000 2672374.14000 1714.82 57.89 7714/23 1575.23 38 MCF-12B 840058.24000 26727374.14000 1714.88 54.75 6/29-7/5/23 1660.13 40 MW-4 836666.49000 2673326.06000 1573.45 21.98 7711/23 1504.37 41 PC-80 829823.55000 2673250.66000 1573.45 16.24 6/29-7/5/23 1657.21 42 POD-R 831955.50000 26724251.1000 1691.16 57.91 6/29-7/5/23 1633.25 44 AA-07 837100.42300 26729559.52200 1612.63 38.58 6/29-7/5/23 1633.25 45 AA-14R 833545.05000 26724725.11000 170.15 57.78 6/29-7/5/23 1615.70 46 AA-15 831755.369600 26727474.09700 1685.13 42.43 6/29-7/5/23 1621.24 47 AA-18 836690.87000 26727474.09700 1642.32 43.41 6/29-7/5/23 1622.13	36	MCF-06BR	834930.92000	26729107.46000	1633.18	55.31	7/14/23	1577.87
38 MCF-12B 840058,24000 2672/3/4,14000 1/14.88 54,75 6/29-7/5/23 1660.13 39 MCF-16C 835846,37900 26726030,17800 1691.98 47,98 6/29-7/5/23 1644.00 40 MW-4 836666,49000 26733250,66000 1573.45 16.24 6/29-7/5/23 1657.21 41 PC-80 829823,55000 26724252,40000 1673.40 61.74 6/29-7/5/23 1613.25 42 POD2-R 833528,22000 26724252,5000 1612.63 38.58 6/29-7/5/23 1633.25 44 AA-07 837100,42300 26724402,8000 1701.05 57.78 6/29-7/5/23 1643.27 46 AA-15 831753.69600 26727603,8300 1669.00 47.76 6/29-7/5/23 1641.24 48 AA-19 835251.43500 26727447.09700 1642.32 43.41 6/29-7/5/23 1652.13 50 AA-UW 835047.85800 26727623.50000 1651.33 29.40 6/29-7/5/23 1652.13	37	MCF-06CR	834945.84000	26729109.48000	1633.12	57.89	7/14/23	1575.23
35 Incl. 100 203040.2012000.17600 1058.35 21.86 7/11/23 1024703 40 MW-4 836666.49000 2673346.64000 1526.35 21.98 7/11/23 1504.37 41 PC.80 829823.55000 26733250.66000 1673.45 16.24 6/29-7/5/23 1557.21 42 POD2-R 831955.50000 26724825.40000 1673.40 61.74 6/29-7/5/23 1633.25 44 AA-07 833700.42300 26724825.40000 1701.65 57.78 6/29-7/5/23 1543.27 46 AA-14R 833545.05000 26727604.23100 1651.3 42.43 6/29-7/5/23 1615.70 47 AA-18 83669.87000 2672766.33300 1669.00 47.76 6/29-7/5/23 1621.24 48 AA-19 833521.43500 26727447.09700 1642.32 43.41 6/29-7/5/23 1552.13 50 AA-UW3 835097.85500 26731586.01200 1681.34 28.94 6/29-7/5/23 1662.40 51 <td< td=""><td>38</td><td>MCF-12B</td><td>840058.24000</td><td>26727374.14000</td><td>1/14.88</td><td>54.75</td><td>6/29-7/5/23</td><td>1660.13</td></td<>	38	MCF-12B	840058.24000	26727374.14000	1/14.88	54.75	6/29-7/5/23	1660.13
41 PC-80 829823.55000 26733250.66000 1573.45 16.24 6/29-7/5/23 1557.21 42 POD-8R 831955.50000 26724825.40000 1673.40 61.74 6/29-7/5/23 1611.66 43 POD-8R 833582.2000 2672425.11000 1691.16 57.91 6/29-7/5/23 1633.25 44 AA-07 837100.42300 26729559.52200 1612.63 38.58 6/29-7/5/23 1643.27 45 AA-14R 833545.05000 26724140.82000 1701.05 57.78 6/29-7/5/23 1615.70 46 AA-18 836690.87000 26727656.38300 1669.00 47.76 6/29-7/5/23 1621.24 48 AA-19 832521.43500 26727447.09700 1842.32 43.41 6/29-7/5/23 1552.13 50 AA-1W3 835097.85800 26771848.01200 1573.49 49.39 6/29-7/5/23 1562.40 51 BEC-10 83578.55800 2677243.50000 1681.33 28.94 6/29-7/5/23 1662.40	40	MW-4	836666.49000	26733446.64000	1526.35	21.98	7/11/23	1504.37
42 POD2-R 831955.50000 26724825.40000 1673.40 61.74 6/29-7/5/23 1611.66 43 POD-8R 833528.22000 26724725.11000 1681.16 57.91 6/29-7/5/23 1673.405 44 AA-07 837100.42300 2672955.52200 1612.63 38.58 6/29-7/5/23 1633.25 45 AA-14R 833645.05000 26724004.23100 1658.13 42.43 6/29-7/5/23 1643.27 46 AA-15 831753.69600 26727656.38300 1669.00 47.76 6/29-7/5/23 1621.24 48 AA-19 832521.43500 26727647.09700 1642.32 43.41 6/29-7/5/23 1552.13 50 AA.UW3 835097.85524 26718183.94289 1831.60 66.63 6/29-7/5/23 1764.97 51 BEC-10 835778.55800 26727623.50000 1567.39 49.39 6/29-7/5/23 1652.40 53 COH-1A 83289.10000 2672492.7000 1681.34 28.94 6/29-7/5/23 1562.40 <tr< td=""><td>41</td><td>PC-80</td><td>829823.55000</td><td>26733250.66000</td><td>1573.45</td><td>16.24</td><td>6/29-7/5/23</td><td>1557.21</td></tr<>	41	PC-80	829823.55000	26733250.66000	1573.45	16.24	6/29-7/5/23	1557.21
43 POD-8R 833528.22000 26724725.11000 1691.16 57.91 6/29-7/5/23 1633.25 44 AA-07 837100.42300 26729559.52200 1612.63 38.58 6/29-7/5/23 1574.05 45 AA-14R 833545.05000 26724140.82000 1701.05 57.78 6/29-7/5/23 1643.27 46 AA-15 831753.69600 2672656.3800 1669.00 47.76 6/29-7/5/23 1621.24 47 AA-18 836690.87000 26727656.3800 1669.00 47.76 6/29-7/5/23 1582.13 49 AA-22 833425.58700 26731586.01200 1581.53 29.40 6/29-7/5/23 1552.13 50 AA-1W3 835097.85242 26718183.94289 1831.60 66.63 6/29-7/5/23 1680.00 52 BEC-10 83578.55800 26723946.7200 1681.34 28.94 6/29-7/5/23 1682.40 53 COH-1A 832839.10000 26723946.7200 1681.34 28.94 6/29-7/5/23 1696.15	42	POD2-R	831955.50000	26724825.40000	1673.40	61.74	6/29-7/5/23	1611.66
44 AA-07 837100.42300 26729559.52200 1612.63 38.58 6/29-7/5/23 1574.05 45 AA-14R 833545.05000 26724140.82000 1701.05 57.78 6/29-7/5/23 1643.27 46 AA-15 831753.69600 26727600.423100 1658.13 42.43 6/29-7/5/23 1615.70 47 AA-18 836690.87000 26727447.09700 1642.32 43.41 6/29-7/5/23 159.14 48 AA-19 832521.43500 26737447.09700 1642.32 43.41 6/29-7/5/23 1552.13 50 AA-UW3 835097.85824 26718183.94289 1831.60 66.63 6/29-7/5/23 1660.00 52 BEC-4 830699.32900 2672799.23946.72000 1681.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 2672799.28800 1626.46 29.36 6/29-7/5/23 1557.10 54 DBMW-17R 840719.96000 26727761.27000 1717.15 50.46 6/29-7/5/23 1582.67	43	POD-8R	833528.22000	26724725.11000	1691.16	57.91	6/29-7/5/23	1633.25
45 AA-14R 83345.05000 26724140.82000 1701.05 57.78 6/29-7/5/23 1643.27 46 AA-15 831753.69600 26726004.23100 1658.13 42.43 6/29-7/5/23 1615.70 47 AA-18 836690.87000 26727656.38300 1669.00 47.76 6/29-7/5/23 1598.91 48 AA-19 832521.43500 2672747.09700 1643.32 43.41 6/29-7/5/23 1552.13 50 AA-22 833425.58700 26727423.2000 1581.53 29.40 6/29-7/5/23 1552.13 51 BEC-10 835778.55800 26727623.50000 1681.34 28.94 6/29-7/5/23 1662.40 52 BEC-4 830699.32900 26723946.72000 1681.34 28.94 6/29-7/5/23 1552.87 54 DBMW-1 83049.900 26727799.28800 1626.46 29.36 6/29-7/5/23 1557.10 55 DBMW-17R 840719.96000 26727761.27000 1717.15 50.46 6/29-7/5/23 1582.26	44	AA-07	837100.42300	26729559.52200	1612.63	38.58	6/29-7/5/23	1574.05
47 AA-18 63690.87000 2072064.3300 1650.13 42.73 6129-715/23 1613.74 48 AA-19 832521.43500 26727656.38300 1669.00 47.76 6129-715/23 1552.3 49 AA-22 833425.58700 26731586.01200 1581.53 29.40 6129-715/23 1552.13 50 AA-UW3 835097.85824 26718183.94289 1831.60 66.63 61/29-715/23 1662.40.97 51 BEC-10 835778.55800 26727623.50000 1657.39 49.39 61/29-715/23 1662.40 52 BEC-4 830699.32900 26723946.72000 1681.34 28.94 61/29-715/23 1662.40 53 COH-1A 832839.10000 2672492.2800 1626.46 29.36 61/29-715/23 1662.40 54 DBMW-1 830469.54900 26727992.28000 1626.46 29.36 61/29-715/23 1660.15 56 DBMW-18 840605.10000 2672902.776000 1717.15 50.46 61/29-715/23 1582.26	45	AA-14R	833545.05000	26724140.82000	1/01.05	57.78	6/29-7/5/23	1643.27
48 AA-19 832521.43500 26727447.09700 1642.32 43.41 6/29-7/5/23 1598.91 49 AA-22 833425.58700 26731586.01200 1581.53 29.40 6/29-7/5/23 1552.13 50 AA-UW3 835097.85824 26718183.94289 1831.60 66.63 6/29-7/5/23 1764.97 51 BEC-10 835778.55800 26727623.50000 1687.39 49.39 6/29-7/5/23 1665.40 52 BEC-4 830699.32900 26723946.72000 1681.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 26727999.2800 1526.46 29.36 6/29-7/5/23 1597.10 54 DBMW-1 830469.54900 26727992.2800 1717.15 50.46 6/29-7/5/23 1666.69 57 DBMW-18 840605.10000 2672790.27.76000 1717.15 50.46 6/29-7/5/23 1582.26 58 HMW-08 833966.43895 26733456.8772 1545.31 15.72 7/11/23 1529.59	40	AA-13 AA-18	836690.87000	26727656.38300	1669.00	47.76	6/29-7/5/23	1621.24
49 AA-22 833425.58700 26731586.01200 1581.53 29.40 6/29-7/5/23 1552.13 50 AA-UW3 835097.85824 26718183.94289 1831.60 66.63 6/29-7/5/23 1764.97 51 BEC-10 835778.55800 26727623.50000 1687.39 49.39 6/29-7/5/23 1662.40 52 BEC-4 830699.32900 26729467.2000 1881.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 267243455.0000 1549.43 23.56 7/11/23 1525.87 54 DBMW-1 830469.54900 267279199.2800 1626.46 29.36 6/29-7/5/23 1660.15 56 DBMW-1R 840605.10000 26727902.77600 1717.15 50.46 6/29-7/5/23 1666.69 57 DBMW-6R 834409.61000 26729027.76000 1632.63 50.37 6/29-7/5/23 1582.26 58 HMW-08 833965.43895 26733456.68772 1545.31 15.72 7/11/23 1529.59	48	AA-19	832521.43500	26727447.09700	1642.32	43.41	6/29-7/5/23	1598.91
50 AA-UW3 835097.85824 26718183.94289 1831.60 66.63 6/29-7/5/23 1764.97 51 BEC-10 835778.55800 26727623.50000 1657.39 49.39 6/29-7/5/23 1608.00 52 BEC-4 830699.32900 26723946.72000 1681.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 26734355.0000 1549.43 23.56 7/11/23 1525.87 54 DBMW-1 830469.54900 26727999.28800 1626.46 29.36 6/29-7/5/23 1597.10 55 DBMW-17R 840719.96000 26727761.27000 1717.15 50.46 6/29-7/5/23 1666.69 57 DBMW-6R 834409.61000 26729027.76000 1632.63 50.37 6/29-7/5/23 1652.26 58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1522.59 59 HMW-09 833045.86663 26733362.31783 1543.63 11.04 7/11/23 1525.59	49	AA-22	833425.58700	26731586.01200	1581.53	29.40	6/29-7/5/23	1552.13
b1 BEC-10 835778.55800 26727623.5000 1657.39 49.39 6/29-7/5/23 1608.00 52 BEC-4 830699.32900 26723946.72000 1681.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 26734355.00000 1549.43 23.56 7/11/23 1525.87 54 DBMW-1 830469.54900 26727999.28800 1626.46 29.36 6/29-7/5/23 1597.10 55 DBMW-17R 840719.96000 26727761.27000 1717.15 50.46 6/29-7/5/23 1666.15 56 DBMW-6R 834409.61000 26727761.27000 1731.5 50.46 6/29-7/5/23 1682.26 58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1525.59 59 HMW-09 833045.86663 2673332.31783 1543.63 11.04 7/11/23 1525.59 60 MCF-01B 830888.59400 26720256.83100 1529.86 34.70 7/11/23 1495.16	50	AA-UW3	835097.85824	26718183.94289	1831.60	66.63	6/29-7/5/23	1764.97
bz bc:-4 630099.32900 2073940.72000 1681.34 28.94 6/29-7/5/23 1652.40 53 COH-1A 832839.10000 26734355.0000 1549.43 23.56 7/11/23 1525.87 54 DBMW-1 830469.54900 2672799.28800 1626.46 29.36 6/29-7/5/23 1597.10 55 DBMW-17R 840719.96000 26727761.27000 1717.15 50.46 6/29-7/5/23 1666.69 57 DBMW-6R 834409.61000 26723456.68772 1545.31 15.72 7/11/23 1582.26 58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1582.29 60 MCF-01B 830888.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 2673446.39900 1690.92 53.46 6/29-7/5/23 1679.52 <t< td=""><td>51</td><td>BEC-10</td><td>835778.55800</td><td>26727623.50000</td><td>1657.39</td><td>49.39</td><td>6/29-7/5/23</td><td>1608.00</td></t<>	51	BEC-10	835778.55800	26727623.50000	1657.39	49.39	6/29-7/5/23	1608.00
53 CONTA 632639,10000 20734333,00000 1349,43 23.30 1/11/23 1323,37 54 DBMW-1 830469,54900 2672799,28800 1626,46 29.36 6/29-7/5/23 1597,10 55 DBMW-17R 840719,96000 2672799,28800 1712,38 52.23 6/29-7/5/23 1660,15 56 DBMW-8R 840605,10000 26727761,27000 1717,15 50.46 6/29-7/5/23 1666,69 57 DBMW-6R 834409,61000 26723027,76000 1632,63 50.37 6/29-7/5/23 1582,26 58 HMW-09 833956,43895 26733456,68772 1543,63 11.04 7/11/23 1532,59 60 MCF-01B 830888,59400 26720256,83100 1756,28 50.98 6/29-7/5/23 1705,30 61 MW-13 838307,11000 26734739,94000 1529,86 34,70 7/11/23 1495,16 62 PC-108 828526,51000 26734461,39900 1690,92 53,46 6/29-7/5/23 1579,52	52	BEC-4	830699.32900	26723946.72000	1681.34	28.94	6/29-7/5/23	1652.40
55 DBMW-17R 840719.96000 26728124.74000 1712.38 52.23 6/29-7/5/23 1660.15 56 DBMW-18R 840605.10000 26728124.74000 1712.38 52.23 6/29-7/5/23 1660.15 56 DBMW-6R 834409.61000 26729027.76000 1632.63 50.37 6/29-7/5/23 1582.26 58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1522.59 60 MCF-01B 83045.86663 2673362.31783 1543.63 11.04 7/11/23 1532.59 60 MCF-01B 83088.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828282.61000 26724196.90000 1690.92 53.46 6/29-7/5/23 157.52 63 POD-7 832881.20000 267345451.39900 1438.22 8.68 6/29-7/5/23 1429.54	54	DBMW-1	830469 54900	26727999 28800	1626.46	29.36	6/29-7/5/23	1597 10
56 DBMW-18R 840605.10000 26727761.27000 1717.15 50.46 6/29-7/5/23 1666.69 57 DBMW-6R 834409.61000 26729027.76000 1632.63 50.37 6/29-7/5/23 1582.26 58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1529.59 59 HMW-09 833045.86663 26733362.31783 1543.63 11.04 7/11/23 1532.59 60 MCF-01B 830888.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 26724196.90000 1690.92 53.46 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26734545.62800 1513.08 31.92 7/11/23 1449.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1449.16	55	DBMW-17R	840719.96000	26728124.74000	1712.38	52.23	6/29-7/5/23	1660.15
57 DBMW-6R 834409.61000 26729027.76000 1632.63 50.37 6/29-7/5/23 1582.26 58 HMW-08 833965.43895 26733456.68772 1545.31 15.72 7/11/23 1529.59 59 HMW-09 833045.86663 26733362.31783 1543.63 11.04 7/11/23 1529.59 60 MCF-01B 830888.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 26724196.90000 1687.97 8.45 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26734451.99000 1438.22 8.68 6/29-7/5/23 1437.46 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1429.54 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42	56	DBMW-18R	840605.10000	26727761.27000	1717.15	50.46	6/29-7/5/23	1666.69
58 HMW-08 833956.43895 26733456.68772 1545.31 15.72 7/11/23 1529.59 59 HMW-09 833045.86663 26733362.31783 1543.63 11.04 7/11/23 1532.59 60 MCF-01B 830888.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 26734913.27000 1587.97 8.45 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26724196.9000 1690.92 53.46 6/29-7/5/23 1637.46 64 WMW5.58SS 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.06 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42	57	DBMW-6R	834409.61000	26729027.76000	1632.63	50.37	6/29-7/5/23	1582.26
by HMW-U9 833045.86663 26733362.31783 1543.63 11.04 7/11/23 1532.59 60 MCF-01B 830888.59400 26720256.83100 1756.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 26731913.27000 1587.97 8.45 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26734651.39900 1438.22 8.68 6/29-7/5/23 1637.46 64 WMW5.58S 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26732028.47300 1757.13 Dry <49	58	HMW-08	833956.43895	26733456.68772	1545.31	15.72	7/11/23	1529.59
00 INUCTUTE 0300000.059400 2072/0200.03100 1705.28 50.98 6/29-7/5/23 1705.30 61 MW-13 838307.11000 26734739.94000 1529.86 34.70 7/11/23 1495.16 62 PC-108 828526.51000 26734739.94000 1587.97 8.45 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26724196.90000 1690.92 53.46 6/29-7/5/23 1637.46 64 WMW5.58SS 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 267235454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 2672338.47300 1755.5 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 2672721.50000 1757.13 Dry <49	59	HMW-09	833045.86663	26/33362.31783	1543.63	11.04	6/20 7/5/22	1532.59
62 PC-108 828526.51000 26731913.27000 1587.97 8.45 6/29-7/5/23 1579.52 63 POD-7 832881.20000 26731913.27000 1587.97 8.45 6/29-7/5/23 1579.52 64 WMW5.58SS 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26723382.06000 1755.5 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	61	MW-13	838307 11000	26734739 94000	1/00.20	34 70	7/11/23	1495 16
63 POD-7 832881.20000 26724196.90000 1690.92 53.46 6/29-7/5/23 1637.46 64 WMW5.58SS 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26723382.06000 1755.55 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	62	PC-108	828526.51000	26731913.27000	1587.97	8.45	6/29-7/5/23	1579.52
64 WMW5.58SS 835065.42700 26734651.39900 1438.22 8.68 6/29-7/5/23 1429.54 65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26723382.06000 1725.55 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	63	POD-7	832881.20000	26724196.90000	1690.92	53.46	6/29-7/5/23	1637.46
65 MW-03 (CoH) 840597.93500 26735454.62800 1513.08 31.92 7/11/23 1481.16 66 HMWWT-6 837455.79219 26722112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26723382.06000 1725.55 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	64	WMW5.58SS	835065.42700	26734651.39900	1438.22	8.68	6/29-7/5/23	1429.54
bb HMWWV1-b 83/455./9219 26/22112.82262 1774.04 41.62 6/29-7/5/23 1732.42 67 POU2-R 834507.79000 26723382.06000 1725.55 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	65	MW-03 (CoH)	840597.93500	26735454.62800	1513.08	31.92	7/11/23	1481.16
or FOGE-IN 634307.19000 20723302.00000 1/25.55 55.87 6/29-7/5/23 1669.68 68 AA-01 830921.12100 26720238.47300 1757.13 Dry <49	66	HMWWT-6	83/455.79219	26/22112.82262	1//4.04	41.62	6/29-7/5/23	1/32.42
69 BEC-9 833049.52100 26727221.50000 1617.74 Dry <59 6/29-7/5/23 Dry<158.74	68	AA-01	830921 12100	26720238 47300	1720.00	Dry <49	6/29-7/5/23	Dry<1708 13
	69	BEC-9	833049.52100	26727221.50000	1617.74	Dry <59	6/29-7/5/23	Dry<1558.74

ft btoc = feet below top of casing. ft MSL = feet above nominal sea level. NAVD88 = North American Vertical Datum of 1988. NAD83 = North American Datum of 1988.



Table 3. Analytical Results of Groundwater Sampling Arsenic

Well	Result
DBMW-15	160
DBMW-14	150
AA-UW6	150
DBMW-05R	140
AA-UW1	130
AA-UW1 DUP GW-20230712	130
POU3	120
DBMW-03	120
PC-80	100
AA-09	94
AA-21	87
AA-UW4	85
DBMW-04B	83
MCF-12B	74
POD2-R	74
MW-4	72
FS_39	72
ES-39 DLIP GW-20230929	72
MCE-01B	68
	67
DBMW-088	66
	65
	62
	60
PC 62	57
	57
	55
	52
	40
	49
	49
ARX 2 0101	49
	49
	40
	40
	44
DBIVIW-13 DUP GW-20230706	42
	39
ES-3	30 2E
	35
	30
	24
AA-UW5 DUP GW-20230710	23
	23
	13
	0.2
	2.9
AA-08 DUP GW-20230713	2.1
	۷.4
Equipment Blanks	
EB-20230712	0.84
EB-20230713	1.2
EB-20231002	ND<0.50

Notes:

Values in micrograms per liter (ug/L)

Analyses by EPA Method 200.8 LL

ND = Not detected at indicated reporting limit



Table 4. Analytical Results of Groundwater Samplingbeta-BHC

Well	Result
APX-2P101	0.20
PC-80	0.14
POD-8R	ND<0.10
PC-62	ND<0.093
DBMW-19	ND<0.10
AA-08	ND<0.10
AA-21 DUP GW-20230713	ND<0.10
AA-21	ND<0.10
Equipment Blanks	
EB-20230712	ND<0.10
EB-20230713	ND<0.10
EB-20231002	ND<0.10

Notes:

Values in micrograms per liter (ug/L) Analyses by EPA Method 8081B. ND = Not detected at indicated reporting limit



Table 5. Analytical Results of Groundwater SamplingChloroform

Well	Result
ES-4	1200
POU3	380
DBMW-11	300
MCE-06CR	240
DBMW-08R	160
MW-4	150
FS-32	140
DM-18	95
DBMW-04B	82
DBMW-03	63
DBMW-09	62
۵۵-09	55
DBMW-13 DUP GW-20230706	51
DBMW-13	48
AA-11B	49
FS-30	46
44-20B	37
FS-5	291
DBMW-20 DUP GW-20230711	19
DBMW-20	12
DBMW-20	12
DBMW-10	17
MCE 01B	0.9.1
MCF-01B	9.8 5
	7.5
POD-8R	7.5
AA-15K	5.7 ND 22.0
AA-20	ND < 2.0
	ND < 2.0
DRMW 16P	ND < 2.0
	ND < 2.0
LS-5	ND < 2.0
MCF-18C	ND<2.0
Field Blanks	
	4.5
FB-20230712	4.5
FB-20230707	7.0
FB-20230929	ND <2.0
FB-20231002	ND<2.0
Fauinment Blanks	
	ND - 2.0
EB-20230712	
EB-20230713	ND < 2.0
EB-20231002	ND<2.0
Trin Planks	
	ND < 2.0
TP 20220706	
TP 20220707	
TP 20220710	
TR 20220711	
IB-20230/11	
IB-20230/12	ND<2.0
IB-20230/13	ND <2.0
IB-20230/14	
TB-20230929	ND<2.0
TB-20231002	ND<2.0

Notes:

Values in micrograms per liter (ug/L) Analyses by EPA Method 8260B ND = Not detected at indicated reporting limit J = Estimated value due to equipment blank detection



Table 6. Analytical Results of Groundwater SamplingRadium 226+228

Well Sample	Analyte	Result (Ra 226+228)	Resu	ılt	Reporting Limit
· · · · · · · · · · · · · · · · · · ·					
MW-4	Radium-226		4.56		1.00
MW-4	Radium-228	6.24	1.68		1.00
POD2-R	Radium-226		5.03		1.00
POD2-R	Radium-228	5.288	0.258	U	1.00
MCF-06CR	Radium-226		2.91		1.00
MCF-06CR	Radium-228	5.14	2.23		1.00
DBMW-03	Radium-226		3.78		1.00
DBMW-03	Radium-228	4.754	0.974		1.00
MCF-06BR	Radium-226		2.97		1.00
MCF-06BR	Radium-228	4.02	1.05	U	1.00
DBMW-09	Radium-226	2.020	1.39		1.00
DRWM-09	Radium-228	2.038	0.648	U	1.00
DD1 (1)// 42	D 1: 220		0 774	_	1.00
DBMW-13	Radium-226	1.404	0.771		1.00
DBMW-13	Radium-228	1.421	0.65	U	1.00
DBMW-13 DUP GW-20230706	Radium-220	1 002	0.012	_	1.00
DBIVIW-13 DOP GW-20230708	Raululli-220	1.992	1.10		1.00
MCE-16C	Padium-226		0 1/3		1.00
MCF-16C	Radium-228	0.889	0.145	0	1.00
	Radium-220	0.005	0.740		1.00
AA-09	Radium-226		0 585		1.00
AA-09	Radium-228	0.863	0.278	U	1.00
				-	
DBMW-14	Radium-226		0.476		1.00
DBMW-14	Radium-228	0.812	0.336	U	1.00
DBMW-08R	Radium-226		0.844		1.00
DBMW-08R	Radium-228	0.8082	-0.0358	U	1.00
DBMW-11	Radium-226		0.372		1.00
DBMW-11	Radium-228	0.728	0.356	U	1.00
DBMW-10	Radium-226		0.212	U	1.00
DBMW-10	Radium-228	0.714	0.502	U	1.00
AA-20R	Radium-226		0.452		1.00
AA-20R	Radium-228	0.68	0.228	U	1.00
Equipment Blanks	D // 000		0.15.1		1.00
EB-20230/12	Radium-228	0 1770	0.154	U	1.00
EB-20230/12	Kadium-226	0.1776	0.0236	U	1.00
EP 20220712	Padium 220		0.505		1.00
EB 20220712	Padium 226	0.6262	0.395	<u> </u>	1.00
20230/13	ndululii-220	0.0205	0.0313	0	1.00
EB-20231002	Padium-228		0.896	+	1.00
EB-20231002	Radium-226	0 9253	0.090		1.00
	1.001011-220	0.5255	0.0233	5	1.00

Notes:

Values in picoCuries per liter (PiC/L)

Analyses by EPA Methods 903.0/904.0

 U = Not detected at indicated reporting limit

Numerical values summed if analyte not detected

Figures













Explanation

8. Source: https://ndep.nv.gov/resources/risk-assessment-and-toxicology-basic-comparison-levels

Attachment A

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erm.com

BMI Compliance Coordinator Nevada Division of Environmental Protection Bureau of Industrial Site Cleanup 2030 E. Flamingo Road, Suite 230 Las Vegas, NV 89119-0818 DATE 23 January 2024

SUBJECT

Data Validation Summary Report for the Eastside Groundwater Monitoring Event – July through October 2023 (Dataset 77) BMI Common Areas (Eastside) Clark County, Nevada

REFERENCE 0719904.01

Dear BMI Compliance Coordinator:

On behalf of BRC, please find enclosed the *Data Validation Summary Report for the Eastside Groundwater Monitoring Event – July through October 2023 (Dataset 77), BMI Common Areas (Eastside), Clark County Nevada*. If you have any questions or comments, please contact me at (415) 283-5856 or Ranajit Sahu at (626) 382 0001.

Sincerely,

andre Muhan

Sandra Mulhearn Project Manager

cc: James (JD) Dotchin, NDEP Grant Evenson, NDEP Paul Hackenberry, Hackenberry Associates Lee Farris, BRC Ranajit Sahu, BRC

DATA VALIDATION SUMMARY REPORT

EASTSIDE GROUNDWATER MONITORING EVENT – JULY THROUGH OCTOBER 2023 (DATASET 77) BMI COMMON AREAS (EASTSIDE) CLARK COUNTY, NEVADA

Prepared for: Basic Remediation Company (BRC) 875 West Warm Springs Road Henderson, Nevada 89011

Prepared by:

Environmental Resources Management, Inc. 980 9th Street, Suite 750 Sacramento, California 95814

January 2024

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the Nevada Division of Environmental Protection for each constituent and media presented herein.

anoit

January 23, 2024

Dr. Ranajit Sahu, C.E.M. (No. EM-1699, Exp. 10/07/2024) Date BRC Project Manager

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A Laboratory Reports, Data Validation Reports, and Electronic Database

ABBREVIATION AND ACRONYM LIST

BRC	Basic Remediation Company
DQI	data quality indicator
DVSR	Data Validation Summary Report
EDD	electronic data deliverable
EQuIS	Environmental Quality Information System
ERM	Environmental Resources Management, Inc.
LR	laboratory replicate
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MS	matrix spike
MSD	matrix spike duplicate
NDEP	Nevada Division of Environmental Protection
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PQL	Practical Quantitation Limit
QC	quality control
RPD	relative percent difference
SOP	Standard Operating Procedure
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1.0 INTRODUCTION

On behalf of Basic Remediation Company (BRC), Environmental Resources Management, Inc. (ERM) has prepared this *Data Validation Summary Report* (DVSR) that summarizes qualified analytical data generated during the Eastside Groundwater Monitoring Event conducted July through October 2023, at the BMI Common Areas, hereafter referred to as the Site. This report has been prepared to assess the validity (based on data validation) and usability (based on project objectives) of these analytical data for the 2023 Eastside Groundwater Monitoring Event. This DVSR follows a format similar to that prepared for the Nevada Division of Environmental Protection (NDEP) by ERM for previous DVSRs.

Fifty-eight water samples (including six field duplicates) from 49 wells, four field blanks, three equipment blanks and 10 trip blanks were collected during the course of the 2023 Eastside Groundwater Monitoring Event (Table 1-1). The samples were analyzed for arsenic, beta-BHC, radionuclides, and volatile organic compounds (VOCs) using the methods listed in Table 1-2.

TestAmerica, in Phoenix, Arizona, was the primary laboratory used for the chemical analyses. TestAmerica Phoenix was not available to perform selected analyses and therefore enlisted TestAmerica St. Louis to perform radionuclide analyses.

All data were delivered either electronically on compact disc or as hard copy data deliverables and accompanied by electronic data deliverables (EDDs). Electronic deliverables from TestAmerica consisted of complete data packages, including case narrative, sample results, quality control (QC) sample summary tables, and calibration information. Electronic laboratory reports are provided in Appendix A of this report. EDDs received from the laboratories were loaded into EarthSoft's Environmental Quality Information System (EQuIS) Data Management System and used for reporting. All laboratories reported the sample results in the EDD, along with applicable laboratory qualifiers and reported associated field and laboratory QC sample results. An electronic database containing all data results has been provided in Appendix A.

1.1 VALIDATION PROCESS

Sample results were validated in accordance with the following United States Environmental Protection Agency (USEPA) and NDEP guidance documents:

• USEPA SW-846, Third Edition, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, Update 1, July 1992; Update IIA, August 1993; Update II, September 1994;

Update IIB, January 1995; Update III, December 1996; Update IIIA, April 1998; Update IIIB, July 2005; Updates IVA and IVB, January 2008 (USEPA 2008).

- USEPA Contract Laboratory Program *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2020a).
- USEPA Contract Laboratory Program *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2020b).
- NDEP Data Verification and Validation Requirements (NDEP 2018).

All of the data were subject to a Stage 2A review. NDEP authorized a deviation from the existing data validation guidance on March 7, 2017. NDEP now requires all groundwater data to meet Stage 2A validation as stated in the *Data Verification and Validation Requirements* (NDEP 2018). Stage 2A data validation consisted of a review of all parameters related to sample analysis, including holding times, blank contamination, laboratory control sample (LCS), matrix spike (MS)/matrix spike duplicate (MSD), and surrogates. The criteria evaluated as part of the Stage 2A data validation are listed in Table 1-3. ERM conducted all the data validation. The data validation report is provided in Appendix A.

The laboratories submitted a detailed case narrative, with every data package, listing any QC criteria that were not met or any other issue that might affect data quality. In addition to the criteria listed above, each laboratory case narrative was thoroughly reviewed. Results were qualified for any issues that affected data quality listed in the laboratory case narrative.

Based on data validation and review, data qualifiers were placed in the electronic database to signify whether the data were acceptable, acceptable with qualification, or rejected. Definitions of qualifiers and reason codes used to qualify data are presented in Table 1-4. Validation qualifiers and definitions are based on those used by USEPA in the current validation guidelines (USEPA 2004, 2014, 2017, 2020a, 2020b) and summarized in the Standard Operating Procedure (SOP) 40 (BRC, ERM, and MWH 2009). The validated results are contained in the project database and are summarized in the attached tables.

1.2 REPORT ORGANIZATION

Following this introductory section, Section 2.0 summarizes data validation and usability for data collected during the 2023 Eastside Groundwater Monitoring Event. Section 3.0 provides general

conclusions about the usability of the dataset. The references (Section 4.0), tables, and Appendix A follow the conclusions and recommendations at the end of this document.

2.0 DATA VALIDATION SUMMARY

This section describes the data validation findings and usability with regard to the project-specific objectives. Section 2.1 summarizes the data validation findings and Section 2.2 summarizes the evaluation of the following quality indicator parameters: precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS).

2.1 DATA VALIDATION FINDINGS

This section summarizes all items of the validation process and discusses the effects of the findings on data quality.

2.1.1 Holding Times and Sample Condition

Holding time refers to the period of time between sample collection and the preparation and/or analysis of the sample. The accuracy of analytical results may depend upon analysis within specified holding times and sample temperature. In general, a longer holding time is assumed to result in a less accurate measurement due to the potential for loss or degradation of the analyte over time. Sample results were reviewed for compliance with the method-prescribed preparation and analysis holding times. Table 2-1 presents the holding time criteria used to validate the data.

USEPA guidance for validation allows professional judgment to be used in evaluating qualification due to holding time exceedances. Sample results that were generated after the required holding time, but less than two times after the holding time, were qualified as estimated (J- or UJ). If the samples were prepared after two times the holding time was exceeded, non-detect results were qualified as rejected (R). No samples were qualified due to holding time exceedances.

Samples in one data package were received above the required temperature limits. Only the VOCs required qualification due to method requirements. Associated detections were qualified as estimated with a low bias (J-) and non-detects were qualified as estimated (UJ) as shown in Table 2-2.

2.1.2 Analyte Quantitation

Quantitation limits are critical to the proper evaluation of method sensitivity and non-detect data. For this investigation, results were reported as follows:

• Practical Quantitation Limit (PQL) – This limit is defined as the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the

analyte, and includes the predicted effect of sample matrices with typical interfering species. The PQL is the lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are used to estimate or evaluate the minimum concentration at which the laboratory can be expected to reliably measure a specific chemical contaminant during day-to-day analyses of different sample matrices.

2.1.3 Blank Samples

Blanks are artificial samples designed to evaluate the nature and extent of contamination of environmental samples that may be introduced by field or laboratory procedures. Field and laboratory blanks, consisting of contaminant-free water, were prepared and analyzed as part of standard quality assurance/QC procedures to monitor for potential contamination of field equipment, laboratory process reagents, and sample containers. For the 2023 Eastside Groundwater Monitoring Event, two groups of blanks were prepared and analyzed: (1) laboratory blanks (calibration and method blanks); and (2) field QC blanks (field blanks, equipment rinsate blanks, and trip blanks). Each blank type is discussed in Sections 2.1.3.1 and 2.1.3.2. The assignment of validation qualifiers associated with blank contamination is discussed in Section 2.1.3.3.

2.1.3.1 Laboratory Blanks

The laboratory includes one type of laboratory blank in the reports: method blanks. Method blanks were prepared in the laboratory using high-grade, contaminant-free water.

<u>Method Blanks</u> – Method blanks are laboratory QC samples that are prepared and analyzed with each batch of environmental samples. Method blanks are comprised of high-grade, contaminant-free water that is carried through all preparation procedures in batches with field samples (including the addition of all reagents and QC monitoring compounds). Method blanks monitor potential contaminants in laboratory processes, reagents, and containers, and are analyzed for each analytical method used on field samples. Contaminant concentrations in blanks should be less than detection or reporting limits.

No sample results required qualification due to detections in laboratory blanks. The detections reported in the method blank were not associated with any reported sample results.

2.1.3.2 Field Quality Control Blanks

Three types of field QC blanks were collected and analyzed with field samples: trip blanks, equipment rinsate blanks and field blanks. Field QC blanks monitor the potential impact of field and transportation conditions on the collection and integrity of field samples, as discussed in the following paragraph.

Trip Blanks – Trip blanks are a type of field blank prepared at the laboratory by filling a 40-milliliter vial with high-grade, contaminant-free water and sealing it with a Teflon-lined lid. Trip blanks are shipped to the field sampling location with sample containers in the shipping cooler. When samples for VOCs are collected and shipped back to the laboratory for analysis, a trip blank is transported within the shipping container back to the laboratory for analysis of VOCs. Trip blanks monitor for potential contamination of sample containers during shipment to the field, and for potential contamination of VOC samples during collection and transportation back to the laboratory. Ten trip blanks were analyzed.

Equipment Rinsate Blanks – In order to identify any carry-over effect from sampling equipment, equipment blanks are collected during sample collection activities. Three equipment blanks were collected.

<u>Field Blanks</u> – In order to identify any carry-over effect from deionized water, field blanks are collected during sample collection activities. Four field blanks were collected.

2.1.3.3 Qualifications Due to Blank Contamination

The previous subsections describe the types of blanks that were collected and analyzed with field samples during the 2023 Eastside Groundwater Monitoring Event. This subsection discusses the procedure for evaluating blank results and applying qualifiers on field data. Note that not every compound detected in laboratory or field QC blanks results in qualification of data. Qualifiers were applied per National Functional Guidelines (USEPA 2020a,b) and results greater than 5 or 10 times the blank concentration do not require qualification. Data were qualified as estimated (J) per NDEP guidance (NDEP 2018).

No results were qualified as estimated (J) due to laboratory blank contamination (method blanks). Table 2-3 presents the six result that was qualified as estimated (J) due to field blank contamination (equipment or field blanks).

2.1.4 Spike Samples

Spike samples are environmental matrices spiked with a subset of target compounds at known concentrations. These QC samples were analyzed with project samples to measure laboratory accuracy and potential interference from the matrix. Two types of spike samples were analyzed with the project samples to monitor for potential interferences during analysis: MS samples and blank spike samples.

2.1.4.1 Matrix Spike Samples

MS/MSD samples consist of aliquots of environmental samples spiked with a subset of target compounds. MS/MSD samples monitor potential interference from the Site-specific sample matrix and its effect on target compounds.

Typically, at least one MS/MSD sample pair are prepared and analyzed with each batch of environmental samples. Data are qualified in accordance with SOP 40 (BRC, ERM, and MWH 2009). As described in SOP 40, data are not qualified based on a single MS or MSD recovery outlier if the other (MS or MSD) is in control. Additionally, no qualifiers are applied for relative percent differences (RPDs) if the recoveries are within acceptance limits. No data were qualified.

2.1.4.2 Blank Spike Samples

Blank spike samples, also known as LCS, are an aliquot of high-grade, contaminant-free water spiked with a subset of target compounds. The LCS monitors laboratory accuracy without the bias of a sample matrix. In some cases, the LCS was analyzed in duplicate (LCSD).

When MS/MSD pairs could not be analyzed as required by the method, LCS/LCSD pairs were occasionally analyzed to demonstrate laboratory accuracy. Data are qualified in accordance with SOP 40 (BRC, ERM, and MWH 2009). One trip blank result was qualified as estimated (UJ) based upon low LCS/LCSD recoveries as shown on Table 2-4. No data were rejected.

2.1.5 Surrogate Spikes and Carrier Gases

Surrogate spikes were prepared by adding compounds similar to target compounds of interest to sample aliquots and associated QC samples for organic analyses only. Surrogate spike recoveries monitor the efficiency of contaminant extraction from the sample medium into the instrument measuring system, and possible interference from the sample matrix that may affect the data

quality of target compound results. Similarly, carrier gases are added to radionuclide analyses to monitor the extraction and analysis of radionuclides.

Surrogate spikes were added to each of the samples submitted for organic analysis to monitor potential interferences from the matrix. Surrogates were added to the sample aliquot during preparation of the sample for analysis and surrogate recoveries were compared with QC acceptance limits. Surrogate recoveries outside of the acceptable limits indicate interference from the sample matrix for the detection of target compounds. Qualifiers were not required for high surrogate recoveries if the sample results were non-detect. No results were qualified due to surrogate recoveries or carrier gas recoveries.

2.1.6 Duplicate Samples

Duplicate samples involved the preparation and analysis of an additional aliquot of a field sample. Results from duplicate sample analysis measure laboratory precision as well as homogeneity of contaminants in the field matrix. For this investigation, two types of duplicate analyses were conducted: 1) MSDs for all analyses; and 2) laboratory replicates (LR). Six field duplicates were collected during the sampling activities (DBMW-13, AA-UW5, DBMW-20, AA-UW1, AA-08, and ES-39). MSDs and LRs measure laboratory precision and sample homogeneity; while field duplicates are used to evaluate sampling technique precision, laboratory precision, and homogeneity of the sample matrix. No data were qualified based upon field duplicate imprecision.

At least one duplicate analysis (MSD or LR) was performed with each batch of environmental samples processed in the laboratory. The laboratory calculated the RPD between the two detected values for MSD and LR analyses. RPD values within the acceptable limits indicate both laboratory precision and minimal matrix heterogeneity of compounds detected in the samples.

RPDs for MS/MSD pairs and LR pairs calculated by the laboratory were generally within the laboratory's acceptance criteria. Data are not qualified for LR pairs if the results are less than five times the PQL. Data are not qualified based on RPDs if any of the MS/MSD recoveries are within acceptance limits (BRC, ERM, and MWH 2009). No data were qualified.

2.2 EVALUATION OF PRECISION, ACCURACY, REPRESENTATIVENESS, COMPLETENESS, COMPARABILITY, AND SENSITIVITY PARAMETERS

Data quality indicators (DQIs) are used to verify that sampling and analytical systems used in support of project activities are effective and the quality of the data generated for this project is appropriate for making decisions affecting future activities. DQIs address the field and analytical

data quality aspects as they affect uncertainties in the data collected for Site characterization and risk assessment. The DQIs include PARCCS. The BRC *Quality Assurance Project Plan* (BRC and ERM 2009) provides the definitions and specific criteria for assessing DQIs using field and laboratory QC samples and is the basis for determining the overall quality of the dataset. Data validation activities included the evaluation of PARCCS parameters; all data not meeting the established PARCCS criteria were qualified during the validation process using the guidelines presented in the National Functional Guidelines (USEPA 2004, 2014, 2017, 2020a, 2020b).

2.2.1 Precision

Precision is a measure of the degree of agreement between replicate measurements of the same source or sample. Precision is expressed by RPD between replicate measurements. Replicate measurements can be made on the same sample or on two samples from the same source. Precision is generally assessed using a subset of the measurements made.

The laboratory limits for precision, as measured by the RPD between LCS analyses, are the laboratory control limits, based on historical data calculated, as specified in the analytical methods. If these limits are not met, the laboratory follows the actions specified in the analytical method and the laboratory's SOPs.

Precision of a set of analyses is evaluated by determining the RPDs for MS/MSD samples for organics and duplicate samples for inorganics. Precision is calculated using the following equation, where X_1 and X_2 are duplicate measurements:

$$RPD(\%) = \left[\frac{X_1 - X_2}{\left(\frac{X_1 + X_2}{2}\right)}\right] \times 100$$

As discussed above, the precision of the data was evaluated using several laboratory QC procedures.

2.2.2 Accuracy

Accuracy measures the level of bias that an analytical method or measurement exhibits. To measure accuracy, a standard, or reference material containing a known concentration, is analyzed or measured and the result is compared to the known value. Several QC parameters are used to evaluate the accuracy of reported analytical results:



- Holding times and sample temperatures
- LCS percent recovery
- MS/MSD percent recovery
- Spike sample recovery
- Blank sample results

The results of ERM's analysis of accuracy are presented in Section 2.1 above. The analytes and associated samples impacted by the variances in the sample temperature can be found in Table 2-2. Sample results associated with low recoveries are likely underestimated and have been qualified with the "-" flag, indicating that the results are biased low. Likewise, sample results associated with high recoveries have been qualified with the "+" flag, indicating that the results are biased low. Likewise, sample results are biased high. Data may be qualified as rejected (R) based on National Functional Guidelines because false negatives are a possibility. No data were rejected.

<u>Blanks</u> – Accuracy is also evaluated by comparing results for the analysis of blank samples to results for investigative samples. Blanks are artificial samples designed to evaluate the nature and extent of contamination of environmental samples that may be introduced by field or laboratory procedures. Contaminant concentrations in blanks should be less than detection or reporting limits.

Table 2-3 presents data that were qualified as estimated (J) due to blank contamination (field blanks). The presence of blank contamination results in the potential overestimation of results. Samples were qualified as estimated (J) as discussed in Section 2.1.3.3.

2.2.3 Representativeness

Representativeness is a qualitative parameter and is defined by the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or a process or environmental condition. There is no standard method or formula for evaluating representativeness, which is a qualitative term. Representativeness is achieved through selection of sampling locations that are appropriate relative to the objective of the specific sampling task and by collection of an adequate number of samples from the relevant types of locations. Sample results were evaluated for representativeness by examining items related to sample collection, including chain-of-custody documentation, sample labeling, collection dates, and condition of the samples upon receipt at the laboratory. Laboratory procedures also were examined, including anomalies reported by the laboratory, either upon receipt of the samples at the laboratory or during



analytical processes; adherence to recommended holding times of samples prior to analysis; calibration of laboratory instruments; adherence to analytical methods; and completeness of data package documentation.

2.2.4 Completeness

Completeness is commonly expressed as a percentage of measurements that are valid and usable relative to the total number of total measurements made. Analytical completeness is a measure of the number of overall accepted analytical results, including estimated values, compared to the total number of analytical results requested on samples submitted for analysis after review of the analytical data. The overall completeness for this dataset was calculated at 100 percent. This is above the completeness goal of 90 percent. The completeness was evaluated by method in Table 2-5. The completeness goal was met for all methods.

2.2.5 Comparability

Comparability is a qualitative characteristic expressing the confidence with which one dataset can be compared to another. The desire for comparability is the basis for specifying the analytical methods listed in Table 1-2; these methods are generally consistent with those used in previous investigations of the Site.

The comparability goal is achieved by using standard techniques to collect and analyze representative samples, and reporting analytical results in appropriate units. Only when precision and accuracy are known, can datasets be compared with confidence.

While multiple laboratories were used for this project, each laboratory was subcontracted to perform certain analyses. Therefore, the same laboratory was always responsible for performing the same analyses.

2.2.6 Sensitivity

Sensitivity is the measure of the signal from an instrument that represents an actual deflection or response above instrument noise. Analytical sensitivity is measured by the Method Detection Limit and is reported with the necessary dilution factors, preparation factors, and dry-weight factors of an individual sample as the Sample Quantitation Limit. The sensitivity requirements were based on the laboratory's ability to detect and report consistent and reliable limits.



Dilutions were required for numerous analytes. Whenever the concentration exceeded the linear range of the instrumentation, dilutions were analyzed. Results from sample dilutions were reported, when appropriate, in the electronic database included in Appendix A.



3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the dataset, 100 percent of the data obtained during the field investigation are valid (that is, not rejected) and acceptable for their intended use. The completeness goal was met for the dataset. All data qualified during the review process are summarized in Table 3-1. Data results qualified by the laboratory with only 'U', as a result of being non-detect, are not included in Table 3-1. All data results, including non-detect data, are included in Appendix A of this report. Additionally, electronic versions of all laboratory data reports, as well as data validation reports, are also provided in Appendix A.

All analyses were performed as requested on the chain-of-custody. No assumptions of data quality were made based on information that was not provided. Some data were qualified based on the data review. All data results qualified with 'J', 'U', or 'UJ' are considered valid and acceptable for their intended use. No data results were qualified with 'R' or 'R-CAB&TDS' or considered invalid or rejected for use.

Limitations on data usability for future purposes may arise, but are not addressed in the scope of this document. These limitations will be identified through subsequent data evaluations and mitigated where possible, as appropriate.



4.0 REFERENCES

- Basic Remediation Company (BRC) and Environmental Resources Management (ERM). 2009. BRC *Quality Assurance Project Plan. BMI Common Areas, Clark County, Nevada*. May.
- BRC, ERM, and MWH. 2009. BRC *Field Sampling and Standard Operating Procedures, BMI Common Areas, Clark County, Nevada*. Revision 4. December.
- Nevada Division of Environmental Protection (NDEP). 2009. *Cation-Anion Balance Updated Guidance*. August 2009. August 27.
- NDEP. 2018. NDEP Data Verification and Validation Requirements. July 13.
- USEPA. 2004. National Functional Guidelines for Inorganic Data Review. USEPA 540-R-04-004. OSWER 9240.1-45. October.
- USEPA. 2008. Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), Third Edition. January.
- USEPA. 2014. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. USEPA 540-R-013-001. OSWER 9355.0-131. August.
- USEPA. 2017. National Functional Guidelines for Inorganic Superfund Data Review. USEPA 540-R-2017-001. OLEM 9355.0-135. January.
- USEPA. 2020a. National Functional Guidelines for Organic Superfund Methods Data Review, USEPA 542-R-20-006, OLEM 9240.1-66. November.
- USEPA. 2020b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. USEPA 542-R-20-006. OLEM 9240.1-66. November.



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Lab	LAB SDG	LAB SAMPLE ID	SAMPLE ID	MATRIX	SAMPLE/MATRIX NUMBER	LDC NUMBER	DATA VALIDATION LEVEL	SAMPLE DATE	SAMPLE TIME	VOCs	Chloroform	Arsenic	Radium-226 and 228	beta-BHC
TestAmerica, Phoenix	550-204355-1	550-204355-1	TB_7/5/2023	BW	TB1	ERM-7	2A	07/05/23	8:00	Х				
TestAmerica, Phoenix	550-204355-1	550-204355-2	DBMW-09_7/5/2023	WG	W001	ERM-7	2A	07/05/23	10:05		Х	Х		
TestAmerica, St. Louis	550-204355-1	550-204355-2	DBMW-09_7/5/2023	WG	W001	ERM-7	2A	07/05/23	10:05				Х	
TestAmerica, Phoenix	550-204355-1	550-204355-3	DBMW-10_7/5/2023	WG	W002	ERM-7	2A	07/05/23	11:36		Х	Х		
TestAmerica, Phoenix	550-204355-1	550-204355-4	DBMW-11_7/5/2023	WG	W003	ERM-7	2A	07/05/23	12:25		Х	Х		
TestAmerica, St. Louis	550-204355-1	550-204355-4	DBMW-11_7/5/2023	WG	W003	ERM-7	2A	07/05/23	12:25				Х	
TestAmerica, Phoenix	550-204417-1	550-204417-3	TB_7/6/2023	BW	TB2	ERM-7	2A	07/06/23	7:30	Х				
TestAmerica, Phoenix	550-204417-1	550-204417-1	DBMW-13_7/6/2023	WG	W004	ERM-7	2A	07/06/23	8:15		Х	Х		
TestAmerica, St. Louis	550-204417-1	550-204417-1	DBMW-13_7/6/2023	WG	W004	ERM-7	2A	07/06/23	8:15				Х	
TestAmerica, Phoenix	550-204417-1	550-204417-2	DBMW-13(FD)_7/6/2023	WG	W005	ERM-7	2A	07/06/23	8:15		Х	Х		
TestAmerica, St. Louis	550-204417-1	550-204417-2	DBMW-13(FD)_7/6/2023	WG	W005	ERM-7	2A	07/06/23	8:15				Х	
TestAmerica, Phoenix	550-204417-1	550-204417-4	DBMW-14_7/6/2023	WG	W006	ERM-7	2A	07/06/23	8:56			Х		
TestAmerica, St. Louis	550-204417-1	550-204417-4	DBMW-14_7/6/2023	WG	W006	ERM-7	2A	07/06/23	8:56				Х	
TestAmerica, Phoenix	550-204417-1	550-204417-5	DBMW-15_7/6/2023	WG	W007	ERM-7	2A	07/06/23	9:42			Х		
TestAmerica, Phoenix	550-204417-1	550-204417-6	DBMW-16R_7/6/2023	WG	W008	ERM-7	2A	07/06/23	10:21		Х	Х		
TestAmerica, Phoenix	550-204417-1	550-204417-7	MCF-12B_7/6/2023	WG	W009	ERM-7	2A	07/06/23	11:03		Х	Х		
TestAmerica, Phoenix	550-204417-1	550-204417-8	AA-UW6_7/6/2023	WG	W010	ERM-7	2A	07/06/23	11:44			Х		
TestAmerica, Phoenix	550-204417-1	550-204417-9	DBMW-08R_7/6/2023	WG	W011	ERM-7	2A	07/06/23	12:42			Х		
TestAmerica, St. Louis	550-204417-1	550-204417-9	DBMW-08R_7/6/2023	WG	W011	ERM-7	2A	07/06/23	12:42				Х	
TestAmerica, Phoenix	550-204417-1	550-204417-10	BEC-6_7/6/2023	WG	W012	ERM-7	2A	07/06/23	13:26		Х	Х		
TestAmerica, Phoenix	550-204464-1	550-204464-1	TB_7/7/2023	BW	TB3	ERM-7	2A	07/07/23	7:30	Х				
TestAmerica, Phoenix	550-204464-1	550-204464-2	MCF-16C_7/7/2023	WG	W013	ERM-7	2A	07/07/23	9:14		Х	Х		
TestAmerica, Phoenix	550-204464-1	550-204464-3	AA-09_7/7/2023	WG	W014	ERM-7	2A	07/07/23	10:02		Х	Х		
TestAmerica, St. Louis	550-204464-1	550-204464-3	AA-09_7/7/2023	WG	W014	ERM-7	2A	07/07/23	10:02				Х	
TestAmerica, Phoenix	550-204464-1	550-204464-4	ES-5_7/7/2023	WG	W015	ERM-7	2A	07/07/23	10:40		Х			

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Lab	LAB SDG	LAB SAMPLE ID	SAMPLE ID	MATRIX	SAMPLE/MATRIX NUMBER	LDC NUMBER	DATA VALIDATION LEVEL	SAMPLE DATE	SAMPLE TIME	VOCs	Chloroform	Arsenic	Radium-226 and 228	beta-BHC
TestAmerica, Phoenix	550-204464-1	550-204464-5	ES-30_7/7/2023	WG	W016	ERM-7	2A	07/07/23	11:20		Х			I
TestAmerica, Phoenix	550-204464-1	550-204464-6	FB_7/7/2023	BW	FB1	ERM-7	2A	07/07/23	11:20	Х				<u> </u>
TestAmerica, Phoenix	550-204464-1	550-204464-7	POD2-R_7/7/2023	WG	W017	ERM-7	2A	07/07/23	11:56		Х	Х		I
TestAmerica, St. Louis	550-204464-1	550-204464-7	POD2-R_7/7/2023	WG	W017	ERM-7	2A	07/07/23	11:56				Х	<u> </u>
TestAmerica, Phoenix	550-204464-1	550-204464-8	AA-20R_7/7/2023	WG	W018	ERM-7	2A	07/07/23	12:36		Х	Х		<u> </u>
TestAmerica, St. Louis	550-204464-1	550-204464-8	AA-20R_7/7/2023	WG	W018	ERM-7	2A	07/07/23	12:36				Х	ł
TestAmerica, Phoenix	550-204464-1	550-204464-9	ES-32_7/7/2023	WG	W019	ERM-7	2A	07/07/23	13:14		Х			1
TestAmerica, Phoenix	550-204546-1	550-204546-1	TB_7/10/2023	BW	TB4	ERM-7	2A	07/10/23	7:30	Х				
TestAmerica, Phoenix	550-204546-1	550-204546-2	POD-8R_7/10/2023	WG	W020	ERM-7	2A	07/10/23	8:34		Х	Х		Х
TestAmerica, Phoenix	550-204546-1	550-204546-3	AA-UW5_7/10/2023	WG	W021	ERM-7	2A	07/10/23	9:25			Х		
TestAmerica, Phoenix	550-204546-1	550-204546-4	AA-UW5(FD)_7/10/2023	WG	W022	ERM-7	2A	07/10/23	9:25			Х		
TestAmerica, Phoenix	550-204546-1	550-204546-5	ES-3_7/10/2023	WG	W023	ERM-7	2A	07/10/23	10:04		Х			
TestAmerica, Phoenix	550-204546-1	550-204546-6	ES-4_7/10/2023	WG	W024	ERM-7	2A	07/10/23	10:39		Х			
TestAmerica, Phoenix	550-204546-1	550-204546-7	POU3_7/10/2023	WG	W025	ERM-7	2A	07/10/23	11:09		Х	Х		
TestAmerica, Phoenix	550-204546-1	550-204546-8	DM-1R_7/10/2023	WG	W026	ERM-7	2A	07/10/23	11:42		Х	Х		
TestAmerica, Phoenix	550-204546-1	550-204546-9	AA-UW2_7/10/2023	WG	W027	ERM-7	2A	07/10/23	12:20			Х		
TestAmerica, Phoenix	550-204546-1	550-204546-10	AA-27_7/10/2023	WG	W028	ERM-7	2A	07/10/23	12:57			Х		
TestAmerica, Phoenix	550-204681-1	550-204681-1	TB_7/11/2023	BW	TB5	ERM-7	2A	07/11/23	7:30	Х				
TestAmerica, Phoenix	550-204681-1	550-204681-2	DBMW-20_7/11/2023	WG	W029	ERM-7	2A	07/11/23	8:46		Х	Х		1
TestAmerica, Phoenix	550-204681-1	550-204681-3	DBMW-20(FD)_7/11/2023	WG	W030	ERM-7	2A	07/11/23	8:46		Х	Х		
TestAmerica, Phoenix	550-204681-1	550-204681-4	MW-4_7/11/2023	WG	W031	ERM-7	2A	07/11/23	9:20		Х	Х		1
TestAmerica, St. Louis	550-204681-1	550-204681-4	MW-4_7/11/2023	WG	W031	ERM-7	2A	07/11/23	9:20				Χ	1
TestAmerica, Phoenix	550-204681-1	550-204681-5	AA-26_7/11/2023	WG	W032	ERM-7	2A	07/11/23	10:04		Х			
TestAmerica, Phoenix	550-204681-1	550-204681-6	AA-13R_7/11/2023	WG	W033	ERM-7	2A	07/11/23	10:46		Х	Х		1
TestAmerica, Phoenix	550-204681-1	550-204681-7	MCF-03B_7/11/2023	WG	W034	ERM-7	2A	07/11/23	11:20			Х		

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Lab	LAB SDG	LAB SAMPLE ID	SAMPLE ID	MATRIX	SAMPLE/MATRIX NUMBER	LDC NUMBER	DATA VALIDATION LEVEL	SAMPLE DATE	SAMPLE TIME	VOCs	Chloroform	Arsenic	Radium-226 and 228	beta-BHC
TestAmerica, Phoenix	550-204681-1	550-204681-8	AA-UW4_7/11/2023	WG	W035	ERM-7	2A	07/11/23	11:54			Х		
TestAmerica, Phoenix	550-204681-1	550-204681-9	DBMW-22_7/11/2023	WG	W036	ERM-7	2A	07/11/23	12:43		Х	Х		
TestAmerica, Phoenix	550-204681-1	550-204681-10	AA-30_7/11/2023	WG	W037	ERM-7	2A	07/11/23	13:13		Х			
TestAmerica, Phoenix	550-204748-1	550-204748-1	TB_7/12/2023	BW	TB6	ERM-7	2A	07/12/23	7:30	Х				
TestAmerica, Phoenix	550-204748-1	550-204748-2	AA-UW1_7/12/2023	WG	W038	ERM-7	2A	07/12/23	8:30			Х		
TestAmerica, Phoenix	550-204748-1	550-204748-3	AA-UW1(FD)_7/12/2023	WG	W039	ERM-7	2A	07/12/23	8:30			Х		
TestAmerica, Phoenix	550-204748-1	550-204748-4	FB_7/12/2023	BW	FB2	ERM-7	2A	07/12/23	8:30	Х				
TestAmerica, Phoenix	550-204748-1	550-204748-5	MCF-01B_7/12/2023	WG	W039	ERM-7	2A	07/12/23	9:04		Х	Х		
TestAmerica, Phoenix	550-204748-1	550-204748-6	AA-11R_7/12/2023	WG	W040	ERM-7	2A	07/12/23	9:40		Х			
TestAmerica, Phoenix	550-204748-1	550-204748-7	DBMW-03_7/12/2023	WG	W041	ERM-7	2A	07/12/23	10:13		Х	Х		
TestAmerica, St. Louis	550-204748-1	550-204748-7	DBMW-03_7/12/2023	WG	W041	ERM-7	2A	07/12/23	10:13				Х	
TestAmerica, Phoenix	550-204748-1	550-204748-8	DBMW-04R_7/12/2023	WG	W042	ERM-7	2A	07/12/23	10:50		Х	Х		
TestAmerica, Phoenix	550-204748-1	550-204748-9	DBMW-05R_7/12/2023	WG	W043	ERM-7	2A	07/12/23	11:24			Х		
TestAmerica, Phoenix	550-204748-1	550-204748-10	EB_7/12/2023	BW	EB1	ERM-7	2A	07/12/23	12:05		Х	Х		Х
TestAmerica, St. Louis	550-204748-1	550-204748-10	EB_7/12/2023	BW	EB1	ERM-7	2A	07/12/23	12:05				Х	
TestAmerica, Phoenix	550-204810-1	550-204810-1	TB_7/13/2023	BW	TB7	ERM-7	2A	07/13/23	7:30	Х				
TestAmerica, Phoenix	550-204810-1	550-204810-2	AA-21_7/13/2023	WG	W044	ERM-7	2A	07/13/23	8:29			Х		Х
TestAmerica, Phoenix	550-204810-1	550-204810-3	AA-08_7/13/2023	WG	W045	ERM-7	2A	07/13/23	9:02			Х		Х
TestAmerica, Phoenix	550-204810-1	550-204810-4	AA-08(FD)_7/13/2023	WG	W046	ERM-7	2A	07/13/23	9:02			Х		Х
TestAmerica, Phoenix	550-204810-1	550-204810-5	PC-80_7/13/2023	WG	W047	ERM-7	2A	07/13/23	9:44			Х		Х
TestAmerica, Phoenix	550-204810-1	550-204810-6	DBMW-19_7/13/2023	WG	W048	ERM-7	2A	07/13/23	10:21			Х		Х
TestAmerica, Phoenix	550-204810-1	550-204810-7	EB_7/13/2023	BW	EB2	ERM-7	2A	07/13/23	10:30		Х	Х		Х
TestAmerica, St. Louis	550-204810-1	550-204810-7	EB_7/13/2023	BW	EB2	ERM-7	2A	07/13/23	10:30				Χ	
TestAmerica, Phoenix	550-204886-1	550-204886-1	TB_7/14/2023	BW	TB8	ERM-7	2A	07/14/23	7:30	Х				
TestAmerica, Phoenix	550-204886-1	550-204886-2	MCF-06BR_7/14/2023	WG	W049	ERM-7	2A	07/14/23	8:55			Х		

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Lab	LAB SDG	LAB SAMPLE ID	SAMPLE ID	MATRIX	SAMPLE/MATRIX NUMBER	LDC NUMBER	DATA VALIDATION LEVEL	SAMPLE DATE	SAMPLE TIME	VOCs	Chloroform	Arsenic	Radium-226 and 228	beta-BHC
TestAmerica, St. Louis	550-204886-1	550-204886-2	MCF-06BR_7/14/2023	WG	W049	ERM-7	2A	07/14/23	8:55				Х	
TestAmerica, Phoenix	550-204886-1	550-204886-3	MCF-06CR_7/14/2023	WG	W050	ERM-7	2A	07/14/23	9:32		Х	Х		
TestAmerica, St. Louis	550-204886-1	550-204886-3	MCF-06CR_7/14/2023	WG	W050	ERM-7	2A	07/14/23	9:32				Х	
TestAmerica, Phoenix	550-208433-1	550-208433-1	TB_9/29/2023	BW	TB9	ERM-7	2A	09/29/23	7:30	Х				
TestAmerica, Phoenix	550-208433-1	550-208433-2	PC-62_9/29/2023	WG	W051	ERM-7	2A	09/29/23	9:40			Х		Х
TestAmerica, Phoenix	550-208433-1	550-208433-3	APX-2P101_9/29/2023	WG	W052	ERM-7	2A	09/29/23	10:26			Х		Х
TestAmerica, St. Louis	550-208433-1	550-208433-4	DBMW-10_9/29/2023	WG	W053	ERM-7	2A	09/29/23	11:19				Х	
TestAmerica, Phoenix	550-208433-1	550-208433-5	FB_9/29/2023	BW	FB3	ERM-7	2A	09/29/23	11:19	Х				
TestAmerica, Phoenix	550-208433-1	550-208433-6	ES-39_9/29/2023	WG	W054	ERM-7	2A	09/29/23	11:55			Х		
TestAmerica, Phoenix	550-208433-1	550-208433-7	ES-39(FD)_9/29/2023	WG	W055	ERM-7	2A	09/29/23	11:55			Х		
TestAmerica, Phoenix	550-208643-1	550-208643-1	TB_10/2/2023	BW	TB10	ERM-7	2A	10/02/23	7:30	Х				
TestAmerica, Phoenix	550-208643-1	550-208643-2	MCF-01B_10/2/2023	WG	W056	ERM-7	2A	10/02/23	10:01		Х			
TestAmerica, Phoenix	550-208643-1	550-208643-3	ES-3_10/2/2023	WG	W057	ERM-7	2A	10/02/23	10:36			Х		
TestAmerica, Phoenix	550-208643-1	550-208643-4	FB_10/2/2023	BW	FB4	ERM-7	2A	10/02/23	10:36	Х				
TestAmerica, St. Louis	550-208643-1	550-208643-5	MCF-16C_10/2/2023	WG	W058	ERM-7	2A	10/02/23	11:14				Х	
TestAmerica, Phoenix	550-208643-1	550-208643-6	EB_10/2/2023	BW	EB3	ERM-7	2A	10/02/23	11:20		Х	Х		Х
TestAmerica, St. Louis	550-208643-1	550-208643-6	EB_10/2/2023	BW	EB3	ERM-7	2A	10/02/23	11:20				Х	

BW - Blank Water

FD - Duplicate sample

EB - Equipment Blank

FB - Field Blank

TB - Trip Blank

WG - Groundwater

ID - Identification

VOCs - Volatile Organic Compounds

TABLE 1-2 SAMPLE ANALYSIS METHODS JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 1)

Class	Method
Volatile Organic Compounds	USEPA 8260B
beta-BHC	USEPA 8081B
Radium-226	E903.0
Radium-228	E904.0
Metals	E200.8

USEPA - United States Environmental Protection Agency SM - Standard Method

TABLE 1-3 DATA VALIDATION CRITERIA JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 1)

Stage 2A Validation

Chain of Custody

Holding times and sample temperature

Matrix Spike and Matrix Spike Duplicate recoveries and control limits

Laboratory Control Spike and Laboratory Control Spike Duplicate recoveries and control limits

Laboratory Duplicate relative percent differences

Method blanks

Surrogate recoveries

Carrier gas recoveries

Case narrative to discuss anomalies

Calibrations¹

1 - Calibration outliers were detailed in the case narrative. No calibration data were reviewed.

TABLE 1-4 DATA VALIDATION QUALIFIERS AND REASON CODES JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 3)

Laboratory Qualifier	Definition
TT	Organic and inorganic analyses: the analyte was not detected above the level of
0	the reported sample quantitation limit.
	Inorganic analyses: the analyte was detected between the method detection limit
В	and the sample quantitation limit.
	Organic analyses: the analyte was detected in the associated method blank.
т	Organic analyses: the analyte was detected between the method detection limit
J	and the sample quantitation limit.
F	Organic and inorganic analyses: the sample concentration was greater than the
Ľ	calibration's upper limit and should be considered to be an estimated value.
*	Inorganic analyses: the analytical duplicate precision was not within control
	limits.
N	Inorganic analyses: the matrix spike was not within control limits.
D	Organic and inorganic analyses: the sample result was diluted.

Functional Guidelines Validation Qualifier	Definition
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ	The nondetected analyte was qualified as estimated at the sample quantitation limit. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.
R	The sample result is rejected and unusable due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
J+	The result is an estimated quantity, biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
J-	The result is an estimated quantity, biased low. The associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 1-4 DATA VALIDATION QUALIFIERS AND REASON CODES JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 2 of 3)

Project- Specific	
Validation Qualifier	Definition
V ^{##}	The analytical result is not used for reporting because a more accurate and
Λ	precise result is reported in its place.
Z ^{##}	The associated data has not been subjected to the data review/validation process.
	Inorganic analysis: the analytical result is estimated based on failure of Total
J-TDS	Dissolved Solids (TDS) correctness check performed in accordance with
	Standard Methods (see Section 5.1)
	Inorganic analysis: the analytical result is estimated based on failure of cation-
J-CAB	anion balance correctness check performed in accordance with Standard
	Methods
	Inorganic analysis: the analytical result is unreliable based on failure of cation-
R-CAB&TDS	anion balance and TDS correctness checks performed in accordance with
	Standard Methods.

Validation Reason	
Code	Definition
0	The analyte was non-detected based on laboratory analyses and not due to any
0	qualifications of the data.
1	The sample preparation and/or analytical holding time was exceeded.
2 #	The analyte was detected below the report limit but above the method detection
Z	limit.
3	The analyte was detected in an associated laboratory blank sample.
4	The MS/MSD recovery was outside of control limits.
5	The LCS recovery was outside of control limits.
6 ^{##}	The MS/MSD RPD was outside of control limits.
7 ^{##}	The LCS RPD was outside of control limits.
8	The surrogate recovery was outside of control limits.
9 ^{##}	Level IV data validation qualification.
10	The sample chromatogram did not resemble the standard hydrocarbon pattern.
11	The sample concentration was greater than the instrument's calibration range.
12	The calibration criterion of RRF, %D, %R, r ² and/or %RSD was not met.
13	The analyte was detected in field blank, rinsate blank, and/or trip blank sample.
14	The internal standards did not meet control criteria.
15	The serial dilution did not meet control criteria.
16	The difference between columns did not meet control criteria.
17	Field duplicates did not meet the 50% RPD control criterion.
10	Sample receipt temperature exceeded the acceptable range of from 4 to
10	6 degrees Celsius.

TABLE 1-4 DATA VALIDATION QUALIFIERS AND REASON CODES JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 3 of 3)

Validation Reason	
Code	Definition
19	Analytical duplicate precision did not meet control criteria.
20	Headspace in vials containing water samples to be analyzed for volatiles.
21	The tracer yields did not meet control criteria.
	The ratio of the measured TDS value to the mathematically calculated TDS sum
22	was outside the specified error range (the cation-anion balance was within the
	error limits specified in Standard Methods).
	The cation-anion balance was outside the error limits specified in Standard
23	Methods (the ratio of the measured TDS value to the mathematically calculated
	TDS sum was within the specified error range).
	The cation-anion balance was outside the error limits specified in Standard
24	Methods, and the ratio of the measured TDS value to the mathematically
	calculated TDS sum was outside the specified error range.
25	Other

[#] This reason code is applied to data entries with lab qualifiers J (organic) or B (inorganic), as defined above.

^{##} These reason codes were used in the validation of historical data and will not be used in current and future site investigations.

TABLE 2-1 HOLDING TIME REQUIREMENTS JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 1)

		Aqueous Samples					
Method Class	Compound	Method	Holding Time				
Volatile Organic Compounds	See analyte list	USEPA 8260B	14 days				
Organochlorine Pesticides	beta-BHC	USEPA 8081B	7 days to extraction, 40 days to analysis				
Padionuclidas	Radium-226	E903.0	6 months				
Radionucides	Radium-228	E904.0	6 months				
Metals	Arsenic	E200.8	180 days				

NA - not applicable

SM - Standard Method

USEPA - United States Environmental Protection Agency

TABLE 2-2

SUMMARY OF DATA QUALIFIED DUE TO TEMPERATURE EXCEEDANCES

JULY THROUGH OCTOBER 2023

EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77)

CLARK COUNTY, NEVADA

(Page 1 of 3)

Field	Lab									Check	Final
Sample ID	Sample ID	Method	Sample Date	Analyte	Result	Unit	Violation	Limit	PQL	Qualifier	Qualifier
BEC-6_7/6/2023	550-204417-10	SW8260B	7/6/2023	Chloroform	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
DBMW-08R_7/6/2023	550-204417-9	SW8260B	7/6/2023	Chloroform	160	µg/L	9.4°C	<u><</u> 6°C	10	J-	J-
DBMW-13_7/6/2023	550-204417-1	SW8260B	7/6/2023	Chloroform	48	µg/L	9.4°C	<u><</u> 6°C	2.0	J-	J-
DBMW-16R_7/6/2023	550-204417-6	SW8260B	7/6/2023	Chloroform	<2	µg/L	9.4°C	<u>≤</u> 6°C	2.0	UJ	UJ
DBMW-13(FD)_7/6/2023	550-204417-2	SW8260B	7/6/2023	Chloroform	51	µg/L	9.4°C	<u><</u> 6°C	2.0	J-	J-
MCF-12B_7/6/2023	550-204417-7	SW8260B	7/6/2023	Chloroform	9.4	µg/L	9.4°C	<u>≤</u> 6°C	2.0	J-	J-
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	cis-1,2-Dichloroethene	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	cis-1,3-Dichloropropene	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Dibromomethane	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Dichlorobromomethane	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Dichlorodifluoromethane	<5	µg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Methylene Chloride	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Ethylene Dibromide	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Hexachlorobutadiene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Iodomethane	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Isopropylbenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	m-Xylene & p-Xylene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Methyl tert-butyl ether	<1	μg/L	9.4°C	<u><</u> 6°C	1.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chloromethane	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Ethylbenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Xylenes, Total	<10	μg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chloroform	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Vinyl chloride	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Vinyl acetate	<25	μg/L	9.4°C	<u><</u> 6°C	25	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Trichlorofluoromethane	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Trichloroethene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	trans-1,3-Dichloropropene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	trans-1,2-Dichloroethene	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	n-Butylbenzene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Toluene	<5	µg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Tetrachloroethene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	tert-Butylbenzene	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Styrene	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ

TABLE 2-2

SUMMARY OF DATA QUALIFIED DUE TO TEMPERATURE EXCEEDANCES

JULY THROUGH OCTOBER 2023

EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77)

CLARK COUNTY, NEVADA

(Page 2 of 3)

Field	Lab									Check	Final
Sample ID	Sample ID	Method	Sample Date	Analyte	Result	Unit	Violation	Limit	PQL	Qualifier	Qualifier
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	sec-Butylbenzene	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	o-Xylene	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Naphthalene	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	N-Propylbenzene	<2	μg/L	9.4°C	<u>≤</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chloroethane	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chlorobromomethane	<5	μg/L	9.4°C	<u>≤</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,3,5-Trimethylbenzene	<2	μg/L	9.4°C	<u>≤</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2-Dichloropropane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2-Dichloroethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2-Dichlorobenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2-Dibromo-3-Chloropropane	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2,4-Trimethylbenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2,4-Trichlorobenzene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2,3-Trichloropropane	<10	μg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,2,3-Trichlorobenzene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1-Dichloropropene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1-Dichloroethene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1-Dichloroethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1,2-Trichloroethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1,2,2-Tetrachloroethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1,1-Trichloroethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,3-Dichlorobenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chlorodibromomethane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,3-Dichloropropane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	2,2-Dichloropropane	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Chlorobenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Carbon tetrachloride	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Carbon disulfide	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Bromomethane	<10	µg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Bromoform	<5	µg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Bromobenzene	<5	µg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Benzene	<2	µg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	Acetone	<20	µg/L	9.4°C	<u>≤</u> 6°C	20	UJ	UJ

TABLE 2-2 SUMMARY OF DATA QUALIFIED DUE TO TEMPERATURE EXCEEDANCES **JULY THROUGH OCTOBER 2023** EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 3 of 3)

Field	Lab									Check	Final
Sample ID	Sample ID	Method	Sample Date	Analyte	Result	Unit	Violation	Limit	PQL	Qualifier	Qualifier
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	4-Methyl-2-pentanone (MIBK)	<10	μg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	4-Isopropyltoluene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	4-Chlorotoluene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	2-Hexanone	<10	μg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	2-Chlorotoluene	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	2-Butanone (MEK)	<10	μg/L	9.4°C	<u><</u> 6°C	10	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,4-Dichlorobenzene	<2	μg/L	9.4°C	<u><</u> 6°C	2.0	UJ	UJ
TB_7/6/2023	550-204417-3	SW8260B	7/6/2023	1,1,1,2-Tetrachloroethane	<5	μg/L	9.4°C	<u><</u> 6°C	5.0	UJ	UJ

µg/L - microgram per liter

°C - degrees Celsius ID - identification

FD - field duplicate

PQL - practical quantitation limit

J- - Result is biased low.

UJ - non-detect estimated quantitation limit

TABLE 2-3 SUMMARY OF DATA QUALIFIED DUE TO FIELD BLANK CONTAMINATION **JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77)** CLARK COUNTY, NEVADA

(Page 1 of 1)

Field Sample ID	Lab Sample ID	Method	Sample Date	Analyte	Result	Unit	PQL	Reported Concentration	Blank Concentration	Check Qualifier	Final Qualifier
AA-20R_7/7/2023	550-204464-8	SW8260B	7/7/2023	Chloroform	37	μg/L	2	37	7.6	J	J
ES-5_7/7/2023	550-204464-4	SW8260B	7/7/2023	Chloroform	29	μg/L	2	29	7.6	J	J
MCF-01B_7/12/2023	550-204748-5	SW8260B	7/12/2023	Chloroform	9.8	μg/L	2	9.8	4.5	J	J
MCF-16C_10/2/2023	550-208643-5	E904.0	10/2/2023	Radium-228	0.746	pCi/L	1	0.746	0.896	J	J
AA-08_7/13/2023	550-204810-3	E200.8	7/13/2023	Arsenic	2.9	μg/L	0.5	2.9	1.2	J	J
AA-08(FD)_7/13/2023	550-204810-4	E200.8	7/13/2023	Arsenic	2.7	μg/L	0.5	2.7	1.2	J	J

 μ g/L - microgram per liter

pCi/L - picoCurie per liter ID - identification

FD - field duplicate

PQL - practical quantitation limit

J - result is estimated

TABLE 2-4 SUMMARY OF DATA QUALIFIED DUE TO LCS/LCSD RECOVERY EXCEEDANCES JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA

(Page 1 of 1)

Field	Lab		Analysis							Check	Final
Sample ID	Sample ID	Method	Date	Analyte	Result	Unit	% Recovery	Limit	PQL	Qualifier	Qualifier
TB_7/5/2023	550-204355-1	SW8260B	07/14/23	Vinyl chloride	<5	ug/L	78/73	80-120	5	UJ	UJ

ID- Identification

TB - trip blank

PQL - practical quantitation limit

UJ - non-detect estimated quantitation limit

ug/L - microgram per liter

TABLE 2-5 PERCENT COMPLETENESS BY METHOD JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 1)

Method Number of Results Number of Rejected Results Completeness SW8260B 921 100% 0 SW8081B 11 0 100% E903.0 18 0 100% E904.0 18 100% 0 E200.8 51 100% 0 All 1019 0 100%

TABLE 3-1 SUMMARY OF QUALIFIED DATA RESULTS JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 1 of 3)

Field	Lab		Analysis					
Sample ID	Sample ID	Method	Date	Analyte	Result	Unit	PQL	Qualifier
BEC-6_7/6/2023	550-204417-10	SW8260B	07/18/23	Chloroform	<2	μg/L	2	UJ
DBMW-08R_7/6/2023	550-204417-9	SW8260B	07/19/23	Chloroform	160	μg/L	10	J-
DBMW-13_7/6/2023	550-204417-1	SW8260B	07/18/23	Chloroform	48	μg/L	2	J-
DBMW-16R_7/6/2023	550-204417-6	SW8260B	07/18/23	Chloroform	<2	μg/L	2	UJ
DBMW-13(FD)_7/6/2023	550-204417-2	SW8260B	07/18/23	Chloroform	51	μg/L	2	J-
MCF-12B_7/6/2023	550-204417-7	SW8260B	07/18/23	Chloroform	9.4	μg/L	2	J-
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	cis-1,2-Dichloroethene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	cis-1,3-Dichloropropene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Dibromomethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Dichlorobromomethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Dichlorodifluoromethane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Methylene Chloride	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Ethylene Dibromide	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Hexachlorobutadiene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Iodomethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Isopropylbenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	m-Xylene & p-Xylene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Methyl tert-butyl ether	<1	μg/L	1	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chloromethane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Ethylbenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Xylenes, Total	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chloroform	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Vinyl chloride	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Vinyl acetate	<25	μg/L	25	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Trichlorofluoromethane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Trichloroethene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	trans-1,3-Dichloropropene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	$\frac{1}{23}$ trans-1,2-Dichloroethene $\frac{1}{2}$ $\frac{\mu g}{L}$ 2		2	UJ	
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	n-Butylbenzene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Toluene	<5	µg/L	5	UJ

TABLE 3-1 SUMMARY OF QUALIFIED DATA RESULTS JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 2 of 3)

Field	Lab		Analysis					
Sample ID	Sample ID	Method	Date	Analyte	Result	Unit	PQL	Qualifier
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Tetrachloroethene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	tert-Butylbenzene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Styrene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	sec-Butylbenzene	<5 µg/L 5		UJ	
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	o-Xylene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Naphthalene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	N-Propylbenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chloroethane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chlorobromomethane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,3,5-Trimethylbenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2-Dichloropropane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2-Dichloroethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2-Dichlorobenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2-Dibromo-3-Chloropropane	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2,4-Trimethylbenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2,4-Trichlorobenzene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2,3-Trichloropropane	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,2,3-Trichlorobenzene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1-Dichloropropene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1-Dichloroethene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1-Dichloroethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1,2-Trichloroethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1,2,2-Tetrachloroethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1,1-Trichloroethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,3-Dichlorobenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chlorodibromomethane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,3-Dichloropropane	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	$2,2-Dichloropropane \qquad \qquad <2 \qquad \mu g/L \qquad 2$		2	UJ	
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Chlorobenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Carbon tetrachloride	<5	μg/L	5	UJ

TABLE 3-1 SUMMARY OF QUALIFIED DATA RESULTS JULY THROUGH OCTOBER 2023 EASTSIDE GROUNDWATER MONITORING EVENTS (DATASET 77) CLARK COUNTY, NEVADA (Page 3 of 3)

Field	Lab		Analysis					
Sample ID	Sample ID	Method	Date	Analyte	Result	Unit	PQL	Qualifier
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Carbon disulfide	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Bromomethane	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Bromoform	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Bromobenzene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Benzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	Acetone	<20	μg/L	20	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	4-Methyl-2-pentanone (MIBK)	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	4-Isopropyltoluene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	4-Chlorotoluene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	2-Hexanone	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	2-Chlorotoluene	<5	μg/L	5	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	2-Butanone (MEK)	<10	μg/L	10	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,4-Dichlorobenzene	<2	μg/L	2	UJ
TB_7/6/2023	550-204417-3	SW8260B	07/18/23	1,1,1,2-Tetrachloroethane	<5	μg/L	5	UJ
TB_7/5/2023	550-204355-1	SW8260B	07/14/23	Vinyl chloride	<5	ug/L	5	UJ
AA-20R_7/7/2023	550-204464-8	SW8260B	07/18/23	Chloroform	37	μg/L	2	J
ES-5_7/7/2023	550-204464-4	SW8260B	07/18/23	Chloroform	29	μg/L	2	J
MCF-01B_7/12/2023	550-204748-5	SW8260B	07/18/23	Chloroform	9.8	μg/L	2	J
MCF-16C_10/2/2023	550-208643-5	E904.0	10/25/23	Radium-228	0.746	pCi/L	1	J
AA-08_7/13/2023	550-204810-3	E200.8	07/18/23	Arsenic	2.9	μg/L	0.5	J
AA-08(FD)_7/13/2023	550-204810-4	E200.8	07/18/23	Arsenic	2.7	μg/L	0.5	J

ID - identification

PQL - practical quantitation limit

FD - Field Duplicate

EB - equipment blank

µg/L - microgram per liter

pCi/L - picoCuries per liter

J - estimated value

+ Result is biased high

- Result is biased low

UJ - non-detect estimated quantitation limit

APPENDIX A

LABORATORY REPORTS, DATA VALIDATION REPORTS, AND ELECTRONIC DATABASE (on DVD)



980 9th Street Suite 750 Sacramento, CA 95814

erm.com

MEMO

то	Ron Sahu
FROM	Sandra Mulhearn
DATE	23 January 2024
REFERENCE	0719904.01
SUBJECT	Data Review of BRC Eastside 2023 Groundwater Monitoring Samples: Eurofins Phoenix Data Packages 550-204355-1, 550-204417-1, 550- 204464-1, 550-204546-1, 550-204681, 550-204748-1, 550-204810- 1, 550-204886-1, 550-208433-1, and 550-208643-1.

The data quality was assessed, and any necessary qualifiers were applied following the United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020; USEPA *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020; Nevada Division of Environmental Protection (NDEP) *Supplemental Guidance on Data Validation*, March and April 2009; NDEP *Guidance on Qualifying Data due to Blank Contamination for the BRC*, January 2012; and *Standard Operating Procedure 40*, BRC, ERM, and MWH 2009.

CHAIN-OF-CUSTODY DISCREPANCIES

The container label for sample POD-8R did not match the chain-of-custody (COC) in data package 550-204546-1. The lab changed the COC per the client.

PRESERVATION EVALUATION

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6 degrees Celsius (°C) with one exception. Samples in data package 550-204417-1 were received at 9.4°C. Volatile organic compound (VOC) samples were qualified as estimated with a low bias (J-/UJ). The other requested methods do not have temperature requirements and did not require qualification. The affected data are presented in Table 1.

All samples had the correct chemical preservation.

HOLDING TIME EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. No qualifications were necessary.

DATE 23 January 2024 REFERENCE

0719904.01



BLANK EVALUATION

The method, field, equipment and trip blank sample results were non-detected for each of the target analytes with exceptions noted in Table 2. Results within 5 or 10 times the blank concentration were qualified as estimated (J).

CALIBRATION VERIFICATION EVALUATION

The initial calibration verification (ICV) and continuing calibration verification (CCV) recoveries were within the laboratory's limits of acceptance, with two exceptions. Qualifications were not necessary for the high ICV/CCV recoveries as the analytes were not detected in the associated samples. The ICV/CCV outliers are presented in Table 3.

BLANK SPIKE EVALUATION

The laboratory control sample and laboratory control sample duplicate recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with the exceptions presented in Table 4. No data were qualified if an outlier could be verified by another in-control recovery. One sample result was qualified as estimated with a low bias (UJ).

MATRIX SPIKE EVALUATION

The matrix spike and matrix spike duplicate recoveries and RPDs were within the laboratory's limits of acceptance for samples prepared from project samples, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits with two exceptions shown in Table 5. No qualifications were required based on surrogate recoveries. No data were qualified based upon these high recoveries as the analytes were not detected in the sample.

CARRIER GAS EVALUATION

The carrier gas recoveries were within acceptable limits. No qualifications were required based on carrier gas recoveries.

LABORATORY DUPLICATE EVALUATION

The laboratory prepared several project samples as laboratory duplicates. The RPDs for detected analytes were within the control limits. The acceptable RPDs indicate acceptable laboratory precision.



REFERENCE 0719904.01

CALIBRATION RANGE EXCEEDANCES

The laboratory noted that the calibration range was exceeded in samples spiked for matrix spike analyses. Qualifiers are not added to matrix spike samples and the recoveries were within the acceptable range.

FIELD DUPLICATE EVALUATION

Six field duplicate pairs were submitted. The field duplicate results and calculated RPDs are presented in Table 6. Data were compared to a precision limit of 50 percent RPD if the sample results were greater than five times the practical quantitation limit. No data were qualified.

OVERALL ASSESSMENT

No results were rejected. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1Samples with Exceeded Preservation Requirements2024 Annual Groundwater MonitoringEastside GroundwaterHenderson, Nevada

Lab Package	Sample ID	Method	Preservation	Limits	Affected	ERM Qualifier
			Condition		Analyte	
550-204417-1	DBMW-13	8260B	9.4°C	<u><</u> 6°C	Chloroform	J- detects
		Metals (200.8 LL)	9.4°C	none	None for	
					qualification	
		Radium-226	9.4°C	none	None for	
					qualification	
		Radium-228	9.4°C	none	None for	
					qualification	
550-204417-1	GW-20230706	8260B	9.4°C	<u><</u> 6°C	Chloroform	J- detects
		Metals (200.8 LL)	9.4°C	none	None for	
					qualification	
		Radium-226	9.4°C	none	None for	
					qualification	
		Radium-228	9.4°C	none	None for	
					qualification	
550-204417-1	TB-20230706	8260B	9.4°C	<u><</u> 6°C	All	UJ Non-detect
550-204417-1	DBMW-14	Metals (200.8 LL)	9.4°C	none	None for	
					qualification	
		Radium-226	9.4°C	none	None for	
					qualification	
		Radium-228	9.4°C	none	None for	
					qualification	
550-204417-1	DBMW-15	Metals (200.8 LL)	9.4°C	none	None for	
		22625	0.400	600	qualification	
550-20441/-1	DBMW-16R	8260B	9.4°C	<u><</u> 6°C	Chloroform	UJ Non-detect
		Metals (200.8 LL)	9.4°C	none	None for	
					qualification	
550-204417-1	MCF-12B	8260B	9.4°C	<u><</u> 6°C	Chloroform	J- detects
		Metals (200.8 LL)	9.4°C	none	None for	
					qualification	
550-204417-1	AA-UW6	Metals (200.8 LL)	9.4°C	none	None for	
					qualification	

Table 1Samples with Exceeded Preservation Requirements2024 Annual Groundwater MonitoringEastside GroundwaterHenderson, Nevada

Lab Package	Sample ID	Method	Preservation Condition	Limits	Affected Analyte	ERM Qualifier
550-204417-1	DBMW-08R	8260B	9.4°C	<u><</u> 6°C	Chloroform	J- detects
		Metals (200.8 LL)	9.4°C	none	None for qualification	
		Radium-226	9.4°C	none	None for qualification	
		Radium-228	9.4°C	none	None for qualification	
550-204417-1	BEC-6	8260B	9.4°C	<u><</u> 6°C	All	UJ Non-detect
		Metals (200.8 LL)	9.4°C	none	None for qualification	

Notes:

 \leq = less than or equal to

°C = degrees Celsius

J = detected results are estimated

J- = detected results are estimated with a low bias

UJ = non-detected, estimated report limit

Table 2Blank and Associated Suspect Sample Detections2024 Annual Groundwater MonitoringEastside GroundwaterHenderson, Nevada

Lab Package	Blank ID	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
550-204748-1	FB-20230712	Chloroform	4.5	2.0	MCF-01B	9.8	2.0	µg/L	J
	EB-20230712	Arsenic	0.84	0.50	None for qualification, sample result >10x			µg/L	
550-204464-1	FB-20230707	Chloroform	7.6	2.0	ES-5	29	2.0	µg/L	J
					AA-20R	37	2.0	µg/L	J
550-204810-1	EB-20230713	Arsenic	1.2	0.50	AA-08	2.9	0.50	µg/L	J
					GW-20230713	2.7	0.50	µg/L	J
550-208433-1	FB-20230929	4-Methyl-2-Pentanone	1.2	10	None for qualification, sample result ND			µg/L	
		n-Butylbenzene	0.73	5.0	None for qualification, sample result ND			µg/L	
		Naphthalene	2.8	5.0	None for qualification, sample result ND			µg/L	
		4-Isopropyltoluene	0.52	2.0	None for qualification, sample result ND			µg/L	
		tert-Butylbenzene	0.63	5.0	None for qualification, sample result ND			µg/L	
550-208643-1	EB-20231002	Radium-228	0.896	1.0	MCF-16C	0.746	1	pCi/L	J

Notes:

-- = not applicable; associated data not affected

>10x = greater than ten times

 μ g/L = micrograms per liter

pCi/L = picoCuries per liter

EB = equipment blank

FB = field blank

ND = Not detected

J = detected results are estimated

Table 3 Calibration Verification Recoveries Outside of Acceptable Limits 2024 Annual Groundwater Monitoring Eastside Groundwater Henderson, Nevada

Lab Package	ICV or CCV	Analyte	ICV/CCV Recovery	ICV/CCV Limits	Associated Sample	Reported Concentration	Units	ERM Qualifier
550-204417-1	CCV	Vinyl chloride	High	NR	None for qualification,			
					samples ND			
550-204464-1	CCV	Vinyl chloride	High	NR	None for qualification,			
					samples ND			
550-204886-1	ICV	1,1-Dichloroethene	High	NR	None for qualification,			
					samples ND			
		Dichlorodifluoromethane	High	NR	None for qualification,			
					samples ND			

Notes:

- -- = not applicable; associated data not affected
- CCV = continuing calibration verification
- ICV = initial calibration verification

High = recovery above maximum acceptable limit

ND = not detected

NR = not reported

Table 4 Laboratory Control Sample Recoveries Outside of Acceptable Limits 2024 Annual Groundwater Monitoring Eastside Groundwater Henderson, Nevada

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
550-204355-1	LCS/D 550-303917/4	None for qualification, one passing recovery	1,1-Dichloroethene	Pass/77	80-120	Pass	23			
		TB-20230705	Vinyl Chloride	78/73	80-120	Pass	27	ND	ug/L	UJ
550-204417-1/ 550-204464-1	LCS 550-304138/5	None for qualification, one passing recovery	Vinyl Chloride	Pass/123	80-120	Pass	27			
550-204748-1	LCS/D 550-304109/4	None for qualification, one passing recovery	Dichlorodifluoromethane	152/Pass	29-150	Pass	30			
		None for qualification, one passing recovery	Vinyl Chloride	125/Pass	80-120	Pass	27			
550-204810-1	LCS/D 550-304109/4	None for qualification, one passing recovery	Dichlorodifluoromethane	152/Pass	29-150	Pass	30			
		None for qualification, one passing recovery	Vinyl Chloride	125/Pass	80-120	Pass	27			
550-204886-1	LCS/D 550-304196/4	None for qualification, one passing recovery	tert-Butylbenzene	Pass/139	64-139	Pass	20			

Notes:

-- = not applicable; associated data not affected

LCS/LCSD = Laboratory control sample/ laboratory control sample duplicate

ND = Not detected

UJ = non-detected results are estimated

RPD = relative percent difference

Table 5Surrogate Recovery Results out of Acceptable Limits2024 Annual Groundwater MonitoringEastside GroundwaterHenderson, Nevada

Lab Package	Sample ID	Method	Surrogate	Recovery	Limit (%)	Affected Analyte	Dilution	ERM
				(%)			Factor	Qualifier
550-204810-1	AA-08	EPA 8081B	Tetrachloro-m-xylene	300	28-132	None for	1	
						Qualification; all ND		
550-204810-1	GW-20230713	EPA 8081B	Tetrachloro-m-xylene	297	28-132	None for	1	
						Qualification; all ND		

Notes:

-- = not applicable; associated data not affected

ND = not detected

Table 6Field Duplicate Results and Calculated Relative Percent Differences2024 Annual Groundwater MonitoringEastside GroundwaterHenderson, Nevada

Lab	Primary/Duplicate	Analyte	Concentration		Report Limit		Units	RPD	ERM
Package	Sample ID		Sample	Duplicate	Sample	Duplicate		<50%	Qualifier
550-204417-	DBMW-13/GW-20230706	Chloroform	48	51	2.0	2.0	µg/L	6.1	
1		Arsenic	44	42	0.50	0.50	µg/L	4.7	
550-204546-	AA-UW5/GW-20230710	Arsenic	24	23	0.50	0.50	µg/L	4.3	
550-204681-	DBMW-20/GW-20230711	Chloroform	12	19	2.0	2.0	µg/L	45	
1		Arsenic	49	49	0.50	0.50	µg/L	0	
550-204748-	AA-UW1/GW-20230712	Arsenic	130	130	0.50	0.50	µg/L	0	
550-204810-	AA-08/GW-20230713	Arsenic	2.9	2.7	0.50	0.50	µg/L	7.1	
550-208433-	ES-39/GW-20230929	Arsenic	72	72	0.50	0.50	µg/L	0	

Notes:

RPD = Relative percent difference

 $\mu g/L =$ Micrograms per liter