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Mead Custodial Trust

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Suite 212
Olympia, WA 98501
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RECEIVED

July 11, 2016

JUL 14 2016

Ecology W2R-Ind

Guy Barrett
Department of Ecology
P.O. Box 47706
Olympia, WA 98504-7706

SUBJECT: 2nd Quarter Groundwater and Surface Water Reports

Dear Guy:

Enclosed are the 2nd quarter 2016 Groundwater and Surface Water Reports for Kaiser Mead.

Please let me know if you have any questions about these reports.

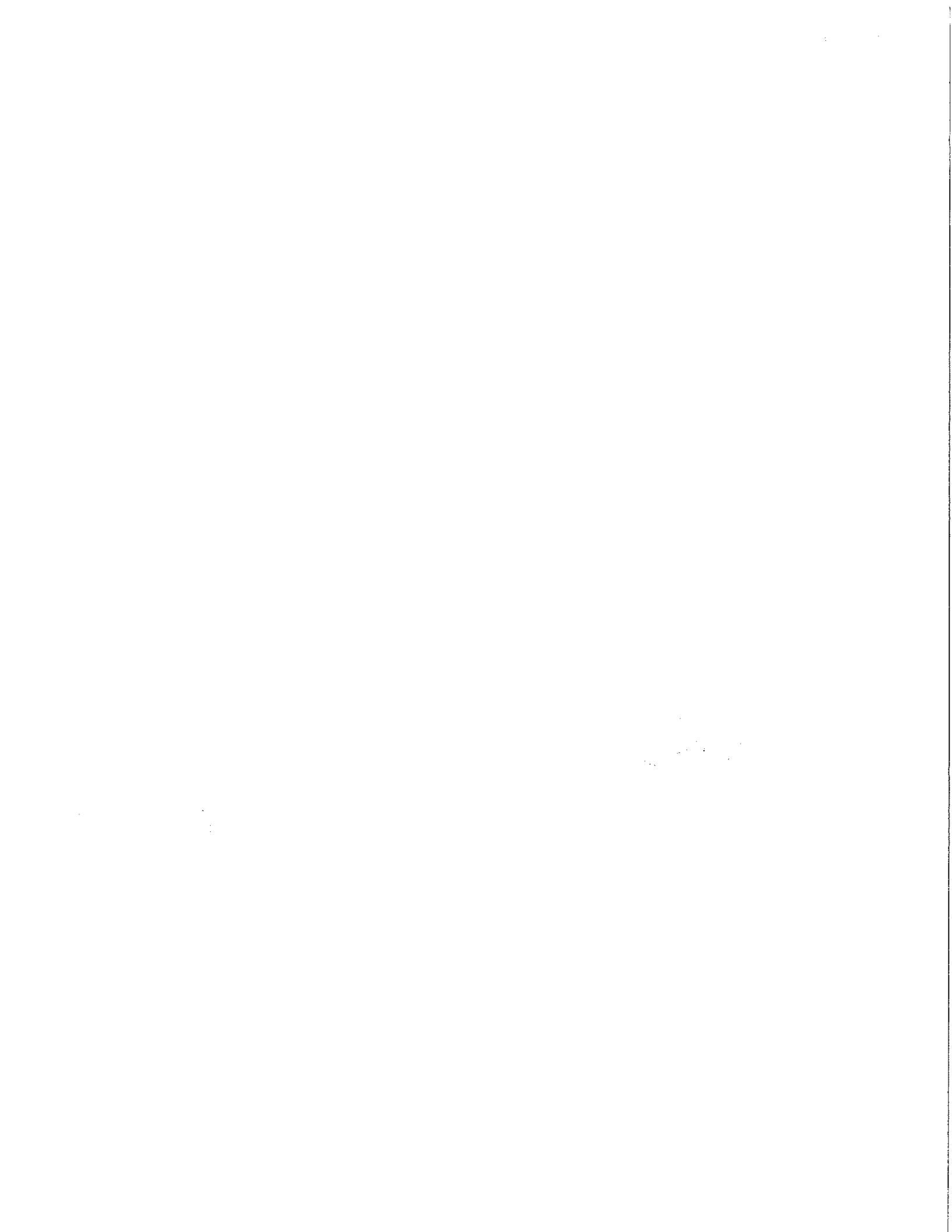
Sincerely,



Dan Silver
Trustee

Enclosures

Facility: <i>CDC Mead</i>	
Year: <i>16</i> Left Right	
Air	Corr
Water	<u>Reports</u>
NPDES	Permit
WET-TOX	Enf
DW/RCRA	Eng
<u>Cleanup</u>	Sub
SW	
HWP2	
<i>Ground water & Surface Water Mon. Reports</i>	





Hydrometrics, Inc.
consulting scientists and engineers

2736 White Pines Drive
Coeur d'Alene ID 83815
(208) 660-8548
Fax: (208) 765-5286
www.hydrometrics.com

July 7, 2016

VIA EMAIL

Mr. Daniel J. Silver, Custodial Trustee
Mead Custodial Trust
606 Columbia Street NW, Ste. 212
Olympia, WA 98501

**Subject: Kaiser Mead NPL Site - Submittal of Letter Report for 2nd Quarter 2016
Groundwater Monitoring Activities**

Dear Mr. Silver:

This letter report documents the monitoring activity as stipulated in the Consent Decree dated October 7, 2004 between Kaiser Aluminum and Chemical Corporation, the U.S. Environmental Protection Agency, the Washington State Department of Ecology, and AIG Insurance Company. The requirement for groundwater monitoring activity is identified in the Remedial Action Plan (Exhibit A to the Scope of Work) as Task 2 Groundwater Monitoring Program. The following paragraphs describe the groundwater monitoring activities conducted by Hydrometrics, Inc. (Hydrometrics) for the 2nd Quarter of 2016.

By letter dated November 1, 2006 the Washington Department of Ecology approved the discontinuance of monitoring for fluoride and cyanide in the A-zone for the following wells, KMCP-1, KMCP-2, KMCP-3, KMCP-4 and KMCP-5. The weather during sampling was cool and dry (temperatures in the fifties and sixties).

Prior to each sampling event, the field equipment was calibrated using standard buffers and conductivity solutions. The equipment used for measuring field parameters was an Oakton multiparameter-meter.

All wells targeted for sampling are outfitted with dedicated bladder pumps. The pumps are operated with an oil-less air compressor powered by a portable gas-powered generator. Samples were collected using low-flow methods. For this quarter KMCP-4B was sampled with an electric pump as collection coincided with a bulk sample for an ongoing ex situ wetland pilot test. Well KM-4 was sampled with a disposable bailer.

pH, conductivity, and temperature were monitored during purging and a sample was collected when parameters appeared to stabilize.

Pre cleaned sample bottles were obtained from the analytical laboratory, SVL Analytical (SVL). The Total, free and weak acid dissociable (WAD) Cyanide bottles were 250 milliliter (ml) polyethylene with sodium hydroxide (NaOH) added as a preservative following sample collection. The Fluoride sample

bottles were 250 ml and contained no preservative. Following sampling, the labels were attached and the bottles were placed into the SVL coolers.

Once all samples had been obtained, the Chain of Custody form was completed and the sample bottles were secured in the cooler with ice packs. The samples were delivered by hand to the laboratory.

Three (3) wells reported results outside of their historic ranges. The total cyanide results for KM-2 and KM-6 were reported as new lows. The free cyanide result for KMCP-1B was also a new low. All other results reported for all wells were within their respective historic ranges.

All QC tests (for all parameters) were within acceptable guidelines.

The field measurements and the laboratory analyses are summarized in the following tables. Field sampling logs, the Chain of Custody forms, and the laboratory data package follow.

Sincerely,
HYDROMETRICS, INC.

A handwritten signature in black ink, appearing to read 'A. Chavez', with a long horizontal flourish extending to the right.

Antonio Chavez, P.E.
Senior Engineer

Encl.

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, bioc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KM-1	A	4/8/2015	145.17	1930.02	1764.85	9.3	7130	11.8	45.5	0.502	0.780	77.7
		7/8/2015	144.80	1930.02	1785.22	10.2	9410	18.2	68.3	3.470	1.960	96.8
		10/7/2015	145.45	1930.02	1784.57	10	8340	12.3	51.2	0.175	0.168	78.2
		2/29/2016	145.81	1930.02	1784.21	10.0	7500	11.3	46.0	0.332	0.586	73.6
		6/15/2016	145.25	1930.02	1784.77	9.3	7250	13.9	42.6	0.770	0.499	65.4
KM-2	A	4/7/2015	143.32	1929.23	1785.91	10.2	4650	14.20	82.5	4.81	2.80	42.9
		7/7/2015	143.09	1929.23	1786.14	10.1	4360	15.90	67	7.54	4.35	35.7
		10/7/2015	143.80	1929.23	1785.43	10	4540	13.20	75.1	0.87	0.87	29.1
		2/29/2016	144.13	1929.23	1785.10	10.1	5170	11.80	97.1	4.18	1.73	15.5
		6/15/2016	143.51	1929.23	1785.72	9.9	3950	14.10	44.2	1.39	1.35	33.5
KM-3	A	4/7/2015	154.76	1944.34	1789.58	7.90	703	11.80	< 0.0100	< 0.0100	< 0.0100	< 0.10
		7/7/2015	154.70	1944.34	1789.64	7.90	702	17.00	< 0.0100	< 0.0100	< 0.0100	0.208
		10/7/2015	155.83	1944.34	1788.51	8.10	629	15.60	< 0.0100	< 0.0100	< 0.0100	< 0.100
		2/29/2016	155.91	1944.34	1788.43	7.90	702	11.40	< 0.0100	< 0.0100	< 0.0100	< 0.100
		6/15/2016	154.88	1944.34	1789.46	7.90	759	12.90	< 0.0100	< 0.0100	< 0.0100	0.233
KM-4	A	4/8/2015	146.98	1925.19	1778.21	8.3	709	10.40	0.0170	< 0.0100	< 0.0100	< 0.100
		7/8/2015	146.81	1925.19	1778.38	8.3	724	13.70	8.3	0.0100	< 0.0100	< 0.100
		10/8/2015	147.03	1925.19	1778.16	8.2	712	12.20	< 0.0100	< 0.0100	< 0.0100	< 0.100
		3/2/2016	147.21	1925.19	1777.98	8.2	701	11.10	< 0.0100	< 0.0100	< 0.0100	< 0.100
		6/15/2016	147.09	1925.19	1778.10	8.1	756	11.80	< 0.0100	< 0.0100	< 0.0100	0.268
KM-5	A	4/8/2015	145.05	1927.63	1782.58	10.30	5600	11.1	78.1	1.200	1.410	56.9
		7/8/2015	144.75	1927.63	1782.88	10.40	4260	14.9	54.2	5.270	2.350	35.7
		10/7/2015	145.20	1927.63	1782.43	10.10	5680	12.4	89.3	0.402	0.392	50.1
		2/29/2016	145.51	1927.63	1782.12	10.20	6320	10.6	83.7	1.020	0.490	59.7
		6/15/2016	145.12	1927.63	1782.51	9.80	5820	13	59.1	1.620	1.350	55.3
KM-6	A	4/7/2015	138.16	1922.99	1783.63	10.1	5300	12.2	89.9	1.380	1.11	88.0
		7/7/2015	138.91	1922.99	1784.08	10.1	5480	13.8	98.7	5.970	2.590	63.7
		10/7/2015	139.42	1922.99	1783.57	10.1	5110	12.3	87.3	0.826	0.381	61.3
		2/29/2016	139.88	1922.99	1783.11	10.0	5050	10.7	97.8	1.580	0.565	52.8
		6/15/2016	139.42	1922.99	1783.57	9.8	5170	11.9	74.7	1.820	0.866	53.8
KM-7	B	4/7/2015	150.33	1921.96	1771.63	--	--	--	--	--	--	--
		7/7/2015	150.68	1921.96	1771.28	--	--	--	--	--	--	--
		10/7/2015	150.43	1921.96	1771.53	--	--	--	--	--	--	--
		2/29/2016	151.54	1921.96	1770.42	--	--	--	--	--	--	--
		6/15/2016	151.46	1921.96	1770.50	--	--	--	--	--	--	--
KMCP-1A	A	4/7/2015	156.43	1934.43	1777.95	--	--	--	--	--	--	--
		7/7/2015	156.42	1934.43	1778.01	--	--	--	--	--	--	--
		10/6/2015	156.87	1934.43	1777.56	--	--	--	--	--	--	--
		2/29/2016	157.02	1934.43	1777.41	--	--	--	--	--	--	--
		6/15/2016	156.60	1934.43	1777.83	--	--	--	--	--	--	--
KMCP-1B	B	4/7/2015	162.81	1934.43	1771.62	8.30	492	11.40	0.249	0.0440	0.0310	0.712
		7/7/2015	163.50	1934.43	1770.93	8.20	502	13.80	0.175	0.0770	0.0590	0.623
		10/6/2015	164.64	1934.43	1769.79	8.40	526	13.00	0.237	0.0370	0.0280	0.623
		2/29/2016	164.00	1934.43	1770.43	8.10	508	10.70	0.197	0.0210	0.0170	0.670
		6/15/2016	162.91	1934.43	1771.52	8.20	517	11.80	0.124	0.0200	0.0160	0.739
KMCP-2A	A	4/7/2015	130.23	1926.70	1796.47	--	--	--	--	--	--	--
		7/7/2015	130.26	1926.70	1796.44	--	--	--	--	--	--	--
		10/6/2015	130.31	1926.70	1796.39	--	--	--	--	--	--	--
		2/29/2016	130.38	1926.70	1796.32	--	--	--	--	--	--	--
		6/15/2016	130.29	1926.70	1796.41	--	--	--	--	--	--	--

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, ftoc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KMCP-2B	B	4/7/2015	156.82	1926.25	1769.43	8.3	391	11.5	0.0250	< 0.0100	< 0.0100	0.311
		7/7/2015	156.82	1926.25	1769.43	8.2	397	15.7	0.0180	0.0110	< 0.0100	0.219
		10/6/2015	159.28	1926.25	1767.97	8.5	472	13.3	0.1680	0.0410	0.0330	0.417
		2/29/2016	157.92	1926.25	1768.33	8.3	412	9.9	0.0680	0.0120	< 0.0100	0.452
KMCP-3A	A	4/7/2015	156.36	1926.25	1769.39	8.3	399	11.3	< 0.0100	< 0.0100	< 0.0100	0.214
		7/7/2015	106.53	1918.61	1812.08	--	--	--	--	--	--	--
		10/6/2015	106.37	1918.61	1812.24	--	--	--	--	--	--	--
		2/29/2016	106.28	1918.61	1812.33	--	--	--	--	--	--	--
KMCP-3B	B	4/7/2015	150.54	1918.61	1812.13	--	--	--	--	--	--	--
		7/7/2015	150.54	1918.61	1812.21	--	--	--	--	--	--	--
		10/6/2015	150.54	1919.07	1768.53	10.1	3,530	12.4	3,530	3.70	2.51	33.9
		2/29/2016	151.87	1919.07	1768.60	10.2	3,490	16.1	3,490	8.42	4.84	27.9
KMCP-4A	A	4/7/2015	151.61	1919.07	1767.20	10.1	3,590	13.6	67.9	1.60	1.76	28.2
		7/7/2015	150.54	1919.07	1767.46	10.0	3,590	11.5	60.7	2.05	1.59	30.0
		10/6/2015	150.54	1919.07	1768.53	10.0	3,500	14.5	44.1	3.16	3.01	27.3
		2/29/2016	99.29	1912.51	1813.22	--	--	--	--	--	--	--
KMCP-4B	B	7/7/2015	99.27	1912.51	1813.24	--	--	--	--	--	--	--
		10/7/2015	96.19	1912.51	1813.32	--	--	--	--	--	--	--
		2/29/2016	96.31	1912.51	1813.20	--	--	--	--	--	--	--
		6/9/2016	98.24	1912.51	1813.27	--	--	--	--	--	--	--
KMCP-5A	A	4/7/2015	145.53	1912.52	1766.99	9.30	1,957	10.8	27.2	0.98	0.73	18.9
		7/7/2015	145.42	1912.52	1767.10	9.30	1,885	15.6	25.0	4.93	3.06	15.2
		10/7/2015	146.32	1912.52	1765.70	9.20	1,779	11.8	33.2	0.566	0.499	14.8
		2/29/2016	146.59	1912.52	1765.93	9.20	1,916	11.3	29.3	1.280	1.150	15.5
KMCP-5B	B	6/9/2016	145.65	1912.52	1766.87	9.10	1,868	17.1	18.3	0.952	0.926	15.6
		4/7/2015	94.90	1908.89	1813.99	--	--	--	--	--	--	--
		7/7/2015	94.91	1908.89	1813.98	--	--	--	--	--	--	--
		10/6/2015	94.91	1908.89	1813.98	--	--	--	--	--	--	--
KMCP-5B	B	2/29/2016	94.97	1908.89	1813.92	--	--	--	--	--	--	--
		6/15/2016	94.90	1908.89	1813.99	--	--	--	--	--	--	--
		4/7/2015	142.27	1908.80	1766.53	8.3	423	10.4	423	0.1960	0.0250	0.207
		7/7/2015	142.09	1908.80	1766.71	8.2	456	16.1	456	0.0550	0.0290	0.146
KMCP-5B	B	10/6/2015	143.33	1908.80	1765.47	8.6	407	11.3	0.0840	0.0230	0.0150	0.173
		2/29/2016	143.23	1908.80	1765.57	8.3	446	8.5	446	0.1320	0.0170	0.134
		6/15/2016	142.26	1908.80	1766.54	8.3	413	12.6	413	0.0660	0.0200	0.114

Notes:
 < = chemical was not detected at or above the method reporting limit
 CN = cyanide
 WAD = weak acid dissociable
 F = fluoride
 mg/L = milligrams per liter
 All elevations are above mean sea level
 broc = below top of casing
 * - Sample was re-analyzed outside of holding time.
 J - Analyte concentration detected at a value between the minimum detection limit and the practical quantization limit.
 -- = sample or data not collected

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): CHAVEZ
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KM-1
 Sample Date: 6/15/16
 Sample Time: 1440 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring - other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 64 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 162.94
 SWL (ft): 145.25
 Casing Diameter (I.D.): 4
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
1458			9.8	8890	1.0	14.9	Yellow
1500			9.8	9600	0.25	13.0	LT yellow
1505			9.8	8520	0.50	14.3	" "
1509			9.8	7810	0.25	14.1	Very Light tan
1511			9.8	7480	0.25	13.9	" " "
1517			9.8	7250	0.25	13.9	

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	9.8	
SC (µmhos/cm)	7250	
Turbidity (ntu)		
H ₂ O Temp. (°C)		
Color	light tan	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: TDS

Sample Team Member Signature: _____

Page 1 of 1

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 024
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KM-2
 Sample Date: 6/15/16
 Sample Time: 1237 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring - other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 64 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2)$ 25 Comments
 TD (ft): 157.13
 SWL (ft): 143.51
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
<u>1250</u>			<u>9.6</u>	<u>5080</u>	<u>0.25</u>	<u>15.8</u>	<u>yellow</u>
<u>1254</u>			<u>9.9</u>	<u>4180</u>	<u>0.25</u>	<u>14.1</u>	<u>"</u>
<u>1258</u>			<u>9.9</u>	<u>3940</u>	<u>0.25</u>	<u>14.2</u>	<u>LT "</u>
<u>1303</u>			<u>9.9</u>	<u>3950</u>	<u>0.25</u>	<u>14.1</u>	<u>" "</u>

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfill.	Preservative	Parameter	Additional Notes
<u>1</u>	<u>250 ml</u>	<u>F or UF</u>	<u>NaOH</u>	<u>Total/WAD/Free CN</u>	
<u>1</u>	<u>250 ml</u>	<u>F or UF</u>	<u>Raw</u>	<u>Fluoride</u>	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: FD 5859

Sample Team Member Signature: _____

Page 1 of 1

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 024
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KM-3
 Sample Date: 8/15/16
 Sample Time: 7:35 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring- other: _____
 Weather Conditions: calm breeze windy
 no precp. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 49 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 171.06
 SWL (ft): 154.88
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
<u>754</u>			<u>8.2</u>	<u>736</u>	<u>0.25</u>	<u>13.9</u>	<u>clear</u>
<u>757</u>			<u>7.9</u>	<u>762</u>	<u>0.25</u>	<u>13.1</u>	<u>"</u>
<u>801</u>			<u>7.9</u>	<u>755</u>	<u>0.25</u>	<u>12.9</u>	<u>"</u>
<u>806</u>			<u>7.9</u>	<u>759</u>	<u>0.25</u>	<u>12.9</u>	<u>"</u>

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.9</u>	
SC (µmhos/cm)	<u>759</u>	
Turbidity (ntu)		
H ₂ O Temp. (°C)	<u>12.9</u>	
Color	<u>NONE</u>	
Other:		

Bottles Collected

Quantity	Size	Filler or Unfilt.	Preservative	Parameter	Additional Notes
<u>1</u>	<u>250 ml</u>	<u>F or UF</u>	<u>NaOH</u>	<u>Total/WAD/Free CN</u>	
<u>1</u>	<u>250 ml</u>	<u>F or UF</u>	<u>Raw</u>	<u>Fluoride</u>	
	<u>ml</u>	<u>F or UF</u>			
	<u>ml</u>	<u>F or UF</u>			
	<u>VOA</u>	<u>F or UF</u>			
	<u>ml</u>	<u>F or UF</u>			
	<u>ml</u>	<u>F or UF</u>			
	<u>ml</u>	<u>F or UF</u>			
	<u>ml</u>	<u>F or UF</u>			

Comments: ID 82

Sample Team Member Signature: _____

Page 1 of 1

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation: _____
Sample Code Number: KM-4
Sample Date: 6/16/16
Sample Time: 936 (military)

For Groundwater Samples

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #: _____
Duplicate Sample Time: _____

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments

TD (ft): 153.29
SWL (ft): 147.09
Casing Diameter (I.D.): 2
Water Volume (V) (gal): _____
x 3=(gal.) _____
Actual Vol. Removed (gal.) _____
Water Level Recovery: slow moderate rapid

Site Conditions

New Site: Yes No Photo taken: Yes No
Site Type: DRY surface water process water
monitoring well domestic well adit seep
spring- other: _____
Weather Conditions: calm breeze windy
no precip. rain snow
clear cloudy overcast
Air Temperature: _____ °C 55 °F

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description: _____
Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
951			8.3	771	0.3	12.6	slight cloudy
1000			8.2	764	0.25	11.6	" "
1005			8.2	762	0.3	11.4	" "
1010			8.1	756	0.25	11.3	" "

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
(describe) disposable baller

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.1	
SC (µmhos/cm)	756	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	11.8	
Color	slight tan	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: _____

Sample Team Member Signature: 

Page (of)

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KM-5
 Sample Date: 6/15/16
 Sample Time: 1318 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring- other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 64 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 153.29
 SWL (ft): 145.12
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
<u>1328</u>			<u>10.0</u>	<u>6900</u>	<u>0.25</u>	<u>13.6</u>	<u>yellow</u>
<u>1333</u>			<u>10.1</u>	<u>6800</u>	<u>0.25</u>	<u>12.4</u>	<u>"</u>
<u>1338</u>			<u>9.9</u>	<u>5900</u>	<u>0.25</u>	<u>12.2</u>	<u>Lt. "</u>
<u>1342</u>			<u>10.1</u>	<u>5790</u>	<u>0.25</u>	<u>13.2</u>	<u>" "</u>
<u>1346</u>			<u>9.8</u>	<u>5820</u>	<u>0.25</u>	<u>13.0</u>	<u>" "</u>

Turbidity: clear moderate slight very Sample Method: grab composite pump bailer other (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>9.8</u>	
SC (µmhos/cm)	<u>5820</u>	
Turbidity (ntu)		
H ₂ O Temp. (°C)	<u>13.0</u>	
Color	<u>Lt. yellow</u>	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 60

Sample Team Member Signature: _____

Page 1 of 1

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KM-6
 Sample Date: 6/15/16
 Sample Time: 1400 (military)

**If Duplicate Sample Collected,
 Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring- other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 65 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.)^2$ 25 Comments
 TD (ft): 155.4
 SWL (ft): 139.42
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
1412			9.6	5150	0.25	14.1	yellow
1414			9.6	5700	0.25	12.5	lt yellow
1417			9.8	5830	0.25	12.8	" "
1420			9.9	5480	0.25	12.2	very lt yellow
1423			9.9	5160	0.25	12.5	Very lt yellow
			9.8	5170	0.25	11.9	" "

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature: 

Page 1 of 1

KM-7 (Depth to water)

151.46

6/16/2016

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KMCP-1B
 Sample Date: 6/15/16
 Sample Time: 1010 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring- other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 60 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 181.55
 SWL (ft): 182.91
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
1024			8.2	524	0.25	13.6	clear
1027			8.1	530	0.25	12.3	"
1029			8.2	516	0.25	12.0	"
1032			8.2	517	0.25	11.8	"

Turbidity: clear moderate slight very
 Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.2	
SC (µmhos/cm)	517	
Turbidity (ntu)		
H ₂ O Temp. (°C)	11.8	
Color	LOWE	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: IDSS

Sample Team Member Signature: _____

Page 1 of 1

KMCP-1A (DTW)

156.60

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KMCP-2B
 Sample Date: 6/15/16
 Sample Time: 835 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
monitoring well domestic well adit seep
 spring- other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 55 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 171.29
 SWL (ft): 156.86
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
<u>852</u>			<u>8.2</u>	<u>427</u>	<u>0.25</u>	<u>13.4</u>	<u>clear</u>
<u>855</u>			<u>8.1</u>	<u>422</u>	<u>0.25</u>	<u>11.3</u>	<u>"</u>
<u>901</u>			<u>8.3</u>	<u>400</u>	<u>0.25</u>	<u>11.4</u>	<u>"</u>
<u>906</u>			<u>8.3</u>	<u>399</u>	<u>0.25</u>	<u>11.3</u>	

Turbidity: (circle) clear slight moderate very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>8.3</u>	
SC (µmhos/cm)	<u>399</u>	
Turbidity (ntu)		
H ₂ O Temp. (°C)	<u>11.3</u>	
Color	<u>Clear</u>	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: FD 57

Sample Team Member Signature: _____

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KMCP-2A (DTW)

130.28

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KMCP-3B
 Sample Date: 6/15/16
 Sample Time: 1100 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring - other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C _____ °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 161.53
 SWL (ft): 150.54
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBlaney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
1115			9.7	3630	0.25	16.0	yellow
1121			10.0	3530	0.25	14.7	"
1127			10.0	3510	0.25	13.9	"
1133			10.0	3500	0.25	14.5	"

Turbidity: (circle) clear moderate slight very
 Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature: _____

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KMCP-3A (DTW)

106.90

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): A Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KMCP-4B
 Sample Date: 6/9/16
 Sample Time: _____ (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring - other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 64 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 160.59
 SWL (ft): 148.65
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.): 170
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBimby Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
1030			9.1	1868	115	17.1	

Turbidity: (circle) clear slight moderate very

Sample Method: grab composite pump bailer other
 (describe) Low-flow sampling - dedicated bladder pump electric 5' spm

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfill	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
1	250 ml	F or UF	Raw	Fluoride	Dissolved
1	250 ml	F or UF	Nitric	Iron	
1	250 ml	F or UF	Nitric	Iron	Dissolved
1	250 ml	F or UF	H ₂ SO ₄	COD	
1	250 ml	F or UF	Raw	TSS	
	ml	F or UF			
	ml	F or UF			

Comments: Bulk sample collected for ex-situ pilot test

Sample Team Member Signature: _____

(Handwritten Signature)

Page 1 of 1

KMCP-4A (DTW)

99.24

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 002
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: KMCP-5B
 Sample Date: 6/15/16
 Sample Time: 9:25 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring - other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 60 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (Dia.^2)$ 25 Comments
 TD (ft): 152.39
 SWL (ft): 192.26
 Casing Diameter (I.D.): 2
 Water Volume (V) (gal): _____
 x 3=(gal.) _____
 Actual Vol. Removed (gal.) _____
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____
 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters Notes
<u>9:39</u>			<u>8.3</u>	<u>443</u>	<u>0.25</u>	<u>13.3</u>	<u>Clear</u>
<u>9:44</u>			<u>8.3</u>	<u>414</u>	<u>0.25</u>	<u>12.4</u>	<u>1</u>
<u>9:49</u>			<u>8.3</u>	<u>406</u>	<u>0.25</u>	<u>12.5</u>	<u>1</u>
<u>9:53</u>			<u>8.3</u>	<u>413</u>	<u>0.25</u>	<u>12.6</u>	<u>1</u>

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>8.3</u>	
SC (µmhos/cm)	<u>413</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>12.6</u>	
Color	<u>1000</u>	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	UF	NaOH	Total/WAD/Free CN	
1	250 ml	UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ISS

Sample Team Member Signature: _____

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KMCP-5A (DTW)

94.90



CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 764-1258 • FAX: (208) 783-0891



TEMP on Receipt: 6°C

Table 1. - Matrix Type

- 1 = Surface Water, 2 = Ground Water
- 3 = Soil/Sediment, 4 = Rinseate, 5 = Oil
- 6 = Waste, 7 = Other

Report to Company: Hydrometrics Inc
 Contact: Rony Chaver
 Address: _____
 Phone Number: 208 660-8548
 FAX Number: _____
 E-mail: achaver@hydrometrics.com

Invoice Sent To: SAME
 Contact: _____
 Address: _____
 Phone Number: _____
 FAX Number: _____

Project Name: Kaiser Mead
 Sampler's Signature: [Signature]

Indicate State of sample origination: KIA

Sample ID	Collection	Misc.	Preservative(s)	Analyses Required	Comments	
1	Date: 6-15-16 1517 AC 2	Matrix Type (From Table 1)	Unpreserved	Total, W/A, F, Fe, Cu, Fluoride		
2	Time: 1303	No. of Containers	HNO ₃ Unfiltered			
3	Time: 759		HNO ₃ Filtered			
4	Date: 6-16-16 1010		H ₂ SO ₄			
5	Date: 6-15-16 1346		HCl			
6	Time: 1053		NaOH			
7	Time: 906		Other (Specify)			
8	Time: 1133					
9	Time: 953					
10						

Date: 6-17-16 Time: 0835
 Date: 6-16-16 Time: 1500
 Date: 6-17-16 Time: 9:30

Received by: [Signature]
 Received by: [Signature]

* Sample Subject: Return Dispose Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY



CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Page 1 of 1

W6F0253

FOR SVL USE ONLY
SVL JOB # _____

TEMP on Receipt: 14°C

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinseate, 5 = Oil
6 = Waste, 7 = Other _____

Report to Company: Hydrobetas, Inc.
Contract: Tony Chau
Address: _____
Phone Number: 208 660 9143
FAX Number: _____
E-mail: echau@hydrobetas.com PO#: _____

Invoice Sent To: STME
Contact: _____
Address: _____
Phone Number: _____
FAX Number: _____

Project Name: Kaiser Steel
Sampler's Signature: [Signature]

Indicate State of sample origination: WA

Sample ID	Collection	Misc.	Preservative(s)	Other (Specify)	Analyses Required	Rush Instructions (Days)	Comments
1 2 3 4 5 6 7 8 9 10	Date: <u>6-9-16</u> Time: <u>10:30 AC</u> Collected by: (Init.) _____	No. of Containers _____ Matrix Type (From Table 1) _____	Unpreserved _____ HNO ₃ Filtered _____ HNO ₃ Unfiltered _____ HCl _____ H ₂ SO ₄ _____ NaOH _____	Fluoride Fluoride TSS Iron Dissolved Iron COD Total, WAD Free Cl			

Relinquished by: [Signature] Date: 6/9/16 Time: 1340
Retrieved by: [Signature] Date: 6/10/16 Time: 10:00

* Sample Reject: Return Dispose Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 9/95



www.svl.net

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Hydrometrics Inc. - CDA
2736 White Pine Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0253
Reported: 24-Jun-16 16:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KMCP - 4B	W6F0253-01	Ground Water	09-Jun-16 10:30	AC	09-Jun-2016	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).

The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 14.0°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W6F0253-01 A	Filtered Raw HDPE	KMCP - 4B	W6F0253-01 B	Raw HDPE	KMCP - 4B
W6F0253-01 C	Raw HDPE	KMCP - 4B	W6F0253-01 D	Sulfuric HDPE	KMCP - 4B
W6F0253-01 E	Filtered nitric HDPE	KMCP - 4B	W6F0253-01 F	Nitric HDPE	KMCP - 4B
W6F0253-01 G	NaOH HDPE	KMCP - 4B			

Case Narrative: W6F0253

SVL is not accredited in the State of WA for WAD CN in non-potable water.



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Hydrometrics Inc. - CDA
2736 White Pine Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0253
Reported: 24-Jun-16 16:11

Client Sample ID: **KMCP - 4B**

SVL Sample ID: **W6F0253-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 09-Jun-16 10:30
Received: 09-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Iron	7.30	mg/L	0.060	0.020		W624390	AS	06/24/16 13:06	
Metals (Dissolved)										
EPA 200.7	Iron	7.17	mg/L	0.060	0.039		W624386	AS	06/24/16 12:27	
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.926	mg/L	0.0500	0.0160	10	W625112	APH	06/16/16 12:41	D2
EPA 335.4	Cyanide (total)	18.3	mg/L	2.50	0.475	250	W625109	APH	06/15/16 13:21	D2
EPA 410.4	Chemical Oxygen Demand	19.7	mg/L	5.0	2.0		W625038	SM	06/15/16 09:28	
SM 2540 D	Total Susp. Solids	< 5.0	mg/L	5.0			W625090	RS	06/14/16 14:20	
SM 4500-CN-1	Cyanide (WAD)	0.952	mg/L	0.0500	0.0130	5	W625235	APH	06/17/16 12:53	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	15.6	mg/L	0.500	0.090	5	W626191	DT	06/22/16 21:00	D2
Filtered Anions by Ion Chromatography										
EPA 300.0	Fluoride	15.6	mg/L	0.500	0.090	5	W626132	DT	06/22/16 20:50	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director



Hydrometrics Inc. - CDA
 2736 White Pine Drive
 Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0253
Reported: 24-Jun-16 16:11

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)								
EPA 200.7	Iron	mg/L	<0.060	0.020	0.060	W624390	24-Jun-16	
Metals (Dissolved)								
EPA 200.7	Iron	mg/L	<0.060	0.039	0.060	W624386	24-Jun-16	
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0016	0.0100	W625112	16-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0019	0.0100	W625109	15-Jun-16	
EPA 410.4	Chemical Oxygen Demand	mg/L	<5.0	2.0	5.0	W625038	15-Jun-16	
SM 2540 D	Total Susp. Solids	mg/L	<5.0		5.0	W625090	14-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W625235	17-Jun-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.018	0.100	W626191	22-Jun-16	
Filtered Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.018	0.100	W626132	22-Jun-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)									
EPA 200.7	Iron	mg/L	10.0	10.0	100	85 - 115	W624390	24-Jun-16	
Metals (Dissolved)									
EPA 200.7	Iron	mg/L	9.73	10.0	97.3	85 - 115	W624386	24-Jun-16	
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.150	0.150	100	90 - 110	W625112	16-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.144	0.150	96.0	90 - 110	W625109	15-Jun-16	
EPA 410.4	Chemical Oxygen Demand	mg/L	114	112	102	90 - 110	W625038	15-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.139	0.150	92.7	90 - 110	W625235	17-Jun-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	1.95	2.00	97.4	90 - 110	W626191	22-Jun-16	
Filtered Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	2.08	2.00	104	90 - 110	W626132	22-Jun-16	



Hydrometrics Inc. - CDA 2736 White Pine Drive Coeur d Alene, ID 83815	Project Name: Kaiser Work Order: W6F0253 Reported: 24-Jun-16 16:11
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Quality Control - DUPLICATE Data									
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes

Classical Chemistry Parameters									
SM 2540 D	Total Susp. Solids	mg/L	<5.0	<5.0	<RL	10	W625090	14-Jun-16	

Quality Control - MATRIX SPIKE Data										
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes

Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Iron	mg/L	10.1	0.094	10.0	100	70 - 130	W624390	24-Jun-16	
EPA 200.7	Iron	mg/L	9.92	<0.060	10.0	99.2	70 - 130	W624390	24-Jun-16	

Metals (Dissolved)										
EPA 200.7	Iron	mg/L	9.92	<0.060	10.0	99.2	70 - 130	W624386	24-Jun-16	
EPA 200.7	Iron	mg/L	10.8	<0.060	10.0	108	70 - 130	W624386	24-Jun-16	

Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.0990	<0.0100	0.100	99.0	79 - 121	W625112	16-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.0970	<0.0100	0.100	97.0	90 - 110	W625109	15-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.0950	<0.0100	0.100	95.0	90 - 110	W625109	15-Jun-16	
EPA 410.4	Chemical Oxygen Demand	mg/L	52.6	<5.0	50.0	97.7	90 - 110	W625038	15-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.0900	<0.0100	0.100	90.0	75 - 125	W625235	17-Jun-16	

Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.35	0.417	2.00	96.4	90 - 110	W626191	22-Jun-16	

Filtered Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	3.12	1.01	2.00	106	90 - 110	W626132	22-Jun-16	

Quality Control - MATRIX SPIKE DUPLICATE Data											
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes

Metals (Total Recoverable--reportable as Total per 40 CFR 136)											
EPA 200.7	Iron	mg/L	10.2	10.1	10.0	101	1.1	20	W624390	24-Jun-16	

Metals (Dissolved)											
EPA 200.7	Iron	mg/L	10.8	9.92	10.0	108	8.1	20	W624386	24-Jun-16	

Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.100	0.0990	0.100	100	1.0	11	W625112	16-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.0980	0.0970	0.100	98.0	1.0	20	W625109	15-Jun-16	
EPA 410.4	Chemical Oxygen Demand	mg/L	49.0	52.6	50.0	90.4	7.2	20	W625038	15-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.0900	0.0900	0.100	90.0	0.0	20	W625235	17-Jun-16	

Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	2.40	2.35	2.00	99.4	2.5	20	W626191	22-Jun-16	



Hydrometrics Inc. - CDA
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Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0253
Reported: 24-Jun-16 16:11

Quality Control - MATRIX SPIKE DUPLICATE Data (Continued)

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
EPA 300.0	Fluoride	mg/L	3.12	3.12	2.00	105	0.1	20	W626132	22-Jun-16	

Notes and Definitions

- D2 Sample required dilution due to high concentration of target analyte.
- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KM-1	W6F0445-01	Ground Water	15-Jun-16 15:17	AC	16-Jun-2016	
KM-2	W6F0445-02	Ground Water	15-Jun-16 13:03	AC	16-Jun-2016	
KM-3	W6F0445-03	Ground Water	15-Jun-16 07:59	AC	16-Jun-2016	
KM-4	W6F0445-04	Ground Water	16-Jun-16 10:10	AC	16-Jun-2016	
KM-5	W6F0445-05	Ground Water	15-Jun-16 13:46	AC	16-Jun-2016	
KM-6	W6F0445-06	Ground Water	15-Jun-16 14:23	AC	16-Jun-2016	
KMCP-1B	W6F0445-07	Ground Water	15-Jun-16 10:32	AC	16-Jun-2016	
KMCP-2B	W6F0445-08	Ground Water	15-Jun-16 09:06	AC	16-Jun-2016	
KMCP-3B	W6F0445-09	Ground Water	15-Jun-16 11:33	AC	16-Jun-2016	
KMCP-5B	W6F0445-10	Ground Water	15-Jun-16 09:53	AC	16-Jun-2016	
W-24	W6F0445-11	Ground Water	16-Jun-16 11:11	AC	16-Jun-2016	
W-2326	W6F0445-12	Ground Water	16-Jun-16 11:26	AC	16-Jun-2016	
W-195	W6F0445-13	Ground Water	16-Jun-16 11:45	AC	16-Jun-2016	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative: W6F0445

SVL is not accredited in the State of WA for WAD CN in non-potable water.



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KM-1**

SVL Sample ID: **W6F0445-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 15:17
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.499	mg/L	0.0100	0.0016		W625311	APH	06/21/16 09:43	
EPA 335.4	Cyanide (total)	42.6	mg/L	5.00	0.950	500	W626307	APH	06/28/16 10:45	D2
SM 4500-CN-I	Cyanide (WAD)	0.770	mg/L	0.100	0.0260	10	W626309	DG	06/27/16 15:39	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	65.4	mg/L	5.00	0.900	50	W626211	DT	07/06/16 01:28	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA 2736 White Pines Drive Coeur d'Alene, ID 83815	Project Name: Kaiser Work Order: W6F0445 Reported: 06-Jul-16 12:27
--	--

Client Sample ID: **KM-2**

SVL Sample ID: **W6F0445-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 13:03
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	1.35	mg/L	0.0250	0.0080	5	W625311	APH	06/21/16 10:15	D2
EPA 335.4	Cyanide (total)	44.2	mg/L	5.00	0.950	500	W626307	APH	06/28/16 10:47	D2
SM 4500-CN-I	Cyanide (WAD)	1.89	mg/L	0.250	0.0650	25	W626309	DG	06/27/16 15:41	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	33.6	mg/L	5.00	0.900	50	W626211	DT	07/06/16 02:12	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KM-3**

SVL Sample ID: **W6F0445-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 07:59
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0016		W625311	APH	06/21/16 09:47	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0019		W626307	APH	06/28/16 10:49	
SM 4500-CN-I	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W626309	DG	06/27/16 14:48	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.233	mg/L	0.100	0.018		W626211	DJB	06/30/16 15:08	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KM-4**

SVL Sample ID: **W6F0445-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 16-Jun-16 10:10
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	<0.0100	mg/L	0.0100	0.0016		W625311	APH	06/21/16 09:49	
EPA 335.4	Cyanide (total)	<0.0100	mg/L	0.0100	0.0019		W626307	APH	06/28/16 10:51	
SM 4500-CN-1	Cyanide (WAD)	<0.0100	mg/L	0.0100	0.0026		W626309	DG	06/27/16 14:50	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.268	mg/L	0.100	0.018		W626211	DJB	06/30/16 15:23	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: KM-5

SVL Sample ID: W6F0445-05 (Ground Water)

Sample Report Page 1 of 1

Sampled: 15-Jun-16 13:46
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	1.35	mg/L	0.0250	0.0080	5	W625311	APH	06/21/16 10:49	D2
EPA 335.4	Cyanide (total)	59.1	mg/L	5.00	0.950	500	W626307	APH	06/28/16 10:53	D2
SM 4500-CN-1	Cyanide (WAD)	1.62	mg/L	0.250	0.0650	25	W626309	DG	06/27/16 15:43	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	55.3	mg/L	5.00	0.900	50	W626211	DT	07/06/16 02:27	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA 2736 White Pines Drive Coeur d Alene, ID 83815	Project Name: Kaiser Work Order: W6F0445 Reported: 06-Jul-16 12:27
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Client Sample ID: **KM-6**

SVL Sample ID: **W6F0445-06 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 14:23
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.866	mg/L	0.0100	0.0032	2	W625311	APH	06/21/16 10:51	D2
EPA 335.4	Cyanide (total)	74.7	mg/L	5.00	0.950	500	W626307	APH	06/28/16 11:01	D2
SM 4500-CN-I	Cyanide (WAD)	1.82	mg/L	0.250	0.0650	25	W626309	DG	06/27/16 15:45	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	53.8	mg/L	5.00	0.900	50	W626211	DT	07/06/16 02:42	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KMCP-1B**

SVL Sample ID: **W6F0445-07 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 10:32
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.0160	mg/L	0.0100	0.0016		W625311	APH	06/21/16 09:55	
EPA 335.4	Cyanide (total)	0.124	mg/L	0.0100	0.0019		W626307	APH	06/28/16 11:03	
SM 4500-CN-1	Cyanide (WAD)	0.0200	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:02	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.739	mg/L	0.100	0.018		W626211	DJB	06/30/16 16:37	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



Hydrometrics Inc. - CDA 2736 White Pines Drive Coeur d Alene, ID 83815	Project Name: Kaiser Work Order: W6F0445 Reported: 06-Jul-16 12:27
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Client Sample ID: **KMCP-2B**

SVL Sample ID: **W6F0445-08 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 09:06
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0016		W625311	APH	06/21/16 09:57	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0019		W626307	APH	06/28/16 11:05	
SM 4500-CN-1	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:04	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.214	mg/L	0.100	0.018		W626211	DJB	06/30/16 17:07	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KMCP-3B**

SVL Sample ID: **W6F0445-09 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 11:33
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	3.01	mg/L	0.0500	0.0160	10	W625311	APH	06/21/16 10:53	D2
EPA 335.4	Cyanide (total)	44.1	mg/L	5.00	0.950	500	W626307	APH	06/28/16 11:07	D2
SM 4500-CN-I	Cyanide (WAD)	3.16	mg/L	0.250	0.0650	25	W626309	DG	06/27/16 15:06	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	27.3	mg/L	0.500	0.090	5	W626211	DJB	06/30/16 17:22	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



www.svl.net

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **KMCP-5B**

SVL Sample ID: **W6F0445-10 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Jun-16 09:53
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.0130	mg/L	0.0100	0.0016		W625311	APH	06/21/16 10:01	
EPA 335.4	Cyanide (total)	0.0960	mg/L	0.0100	0.0019		W626307	APH	06/28/16 11:09	
SM 4500-CN-I	Cyanide (WAD)	0.0200	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:08	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.114	mg/L	0.100	0.018		W626211	DT	07/06/16 02:57	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0016	0.0100	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0019	0.0100	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W626309	27-Jun-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.018	0.100	W626211	30-Jun-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.153	0.150	102	90 - 110	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.152	0.150	101	90 - 110	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.151	0.150	101	90 - 110	W626309	27-Jun-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	2.07	2.00	104	90 - 110	W626211	30-Jun-16	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.105	<0.0100	0.100	105	79 - 121	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.101	<0.0100	0.100	99.0	90 - 110	W626307	28-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.103	<0.0100	0.100	101	90 - 110	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.106	<0.0100	0.100	103	75 - 125	W626309	27-Jun-16	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	66.9	65.4	2.00	R > 4S	90 - 110	W626211	06-Jul-16	D2,M3
EPA 300.0	Fluoride	mg/L	2.73	0.739	2.00	99.7	90 - 110	W626211	30-Jun-16	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.106	0.105	0.100	106	0.9	11	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.103	0.101	0.100	101	2.0	20	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.103	0.106	0.100	100	2.9	20	W626309	27-Jun-16	
Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	66.2	66.9	2.00	R > 4S	1.1	20	W626211	06-Jul-16	D2,M3



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Notes and Definitions

- D1 Sample required dilution due to matrix.
 - D2 Sample required dilution due to high concentration of target analyte.
 - M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
 - LCS Laboratory Control Sample (Blank Spike)
 - RPD Relative Percent Difference
 - UDL A result is less than the detection limit
 - R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
 - <RL A result is less than the reporting limit
 - MRL Method Reporting Limit
 - MDL Method Detection Limit
 - N/A Not Applicable
-



Hydrometrics, Inc.
consulting scientists and engineers

2736 White Pines Drive
Coeur d'Alene ID 83815
(208) 660-8548
Fax: (208) 765-5286
www.hydrometrics.com

July 7, 2016

VIA EMAIL

Mr. Daniel J. Silver, Custodial Trustee
Mead Custodial Trust
606 Columbia Street NW, Ste. 212
Olympia, WA 98501

Subject: Kaiser Mead NPL Site - Submittal of Letter Report for 2nd Quarter 2016 Surface Water Monitoring Activity

Dear Mr. Silver:

This letter report documents the monitoring activity as stipulated in the Consent Decree dated October 7, 2004 between Kaiser Aluminum and Chemical Corporation, the U.S. Environmental Protection Agency, the Washington State Department of Ecology, and AIG Insurance Company. The requirement for surface water monitoring activity is identified in the Remedial Action Plan (Exhibit A to the Scope of Work) as Task 3 Little Spokane River Monitoring Program. The following paragraphs describe the monitoring activities conducted by Hydrometrics, Inc. on June 16, 2016.

The weather during sampling was clear and warm. The weather in the last 48 hours had been dry and mild (temperatures in the low 60's F).

Prior to each sampling event, the field equipment was calibrated using standard buffers and conductivity solutions. The equipment used for pH was the Oakton multi-parameter meter for pH, conductivity and temperature.

The river sample was taken by dropping a stainless steel bucket into the river approximately 5 feet from the bank downstream of the Dartford Road concrete bridge abutment. The bucket was allowed to sink at least 1 foot below the surface before pulling it out of the water.

Spring samples were obtained directly by dipping the sample bottles into the discharge from the springs. At the Rubright spring the sample was taken from the channel in the middle of the yard. At the Dan Lake spring the sample was taken from the pipe discharge from the spring collection pool in the back yard.

Pre cleaned sample bottles were obtained from the analytical laboratory, SVL Analytical. The Total and weak acid dissociable (WAD) Cyanide bottles were 250 milliliter (ml) polyethylene with the appropriate amount of sodium hydroxide (NaOH) provided for addition following sample collection. The Fluoride sample bottles were 250 ml and contained no preservative. Following sampling, the labels were attached and the bottles were placed into the SVL cooler.

Once all samples had been obtained, the Chain of Custody form was completed and the sample bottles were secured in the cooler with blue ice packs. The samples were hand-delivered to the laboratory.

The seep behind the Dan Lake property reported a new fluoride high at 1.63 mg/L (previous high was 1.38 mg/L). All other results from the three sample locations were within historical ranges. All QC tests (for all parameters) were within acceptable guidelines.

The field measurements and the laboratory analyses are summarized in the following table. Field sampling logs, the Chain of Custody forms, and the laboratory data package follow.

Sincerely,
HYDROMETRICS, INC.

A handwritten signature in black ink, appearing to read 'A. Chavez', with a long horizontal flourish extending to the right.

Antonio Chavez, P.E.
Senior Engineer

Enclosure

Kaiser Mead NPL Surface Water Monitoring

Descriptive Name	Sample Location	Date Sampled	pH Std Units	Conductivity umhos/cm	Temp. Deg. C	Total CN mg/L	WAD CN mg/L	Free CN mg/L	F mg/L
Little Spokane River Samples									
At Dartford Rd Bridge	W-24	6/16/2016	8.60	267	15.3	<0.0100	<0.0100	<0.0100	0.124
Springs									
Bill Rubright	W-2326	6/16/2016	8.43	455	12.6	0.342	0.0310	0.0190	0.167
Dan Lake	W-195	6/16/2016	8.10	772	11.9	1.35	0.0730	0.0610	1.63

Notes:

< = chemical was not detected at or above the method reporting limit

CN = cyanide

WAD = weak acid dissociable

F = fluoride

mg/L = milligrams per liter

nr - no reading recorded

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 004
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: W-24
 Sample Date: 6/16/16
 Sample Time: 1105 (military)

Site Description

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring-other: RIVER
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C 5-7 °F

Sampling Location (ID, Description):
N. Dartford Road Bridge across Little Spokane River-downstream

 Water Body (Describe Type):
Little Spokane River

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____

 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameters

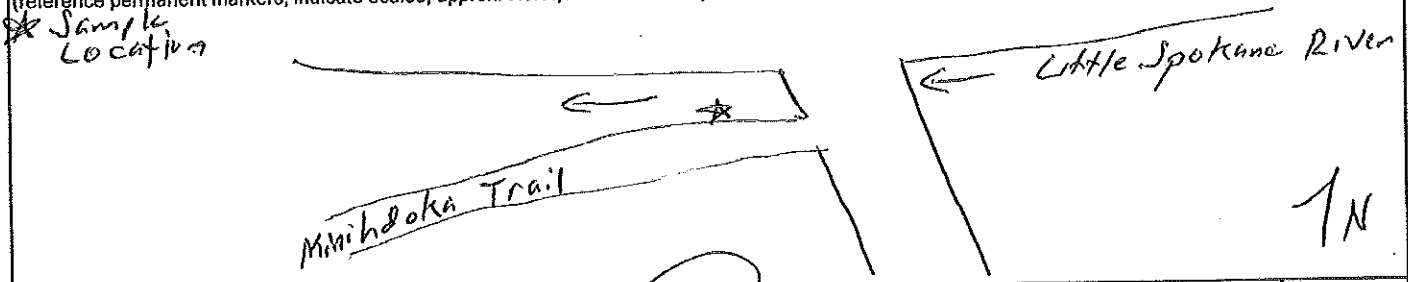
Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (umhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>1111</u>			<u>8.6</u>	<u>267</u>		<u>15.3</u>	<u>Clear</u>

Sampling Inventory

Bottles Collected				Filtered	Preservative	Analysis	Remarks
Date/Time	Sample ID	Container (glass/plastic)	Quantity/ Vol.				
	<u>W-24</u>	<u>plastic</u>	<u>250 ml</u>	<u>no</u>	<u>NaOH</u>	<u>Total,WAD CN, Free</u>	
	<u>W-24</u>	<u>plastic</u>	<u>250 ml</u>	<u>no</u>	<u>None</u>	<u>Fluoride</u>	

Sampling Location Map

(reference permanent markers, indicate scales, approx. North, direction of flow)



Sample Team Member Signature: _____

Page 1 of 1

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 004
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: W-2326
 Sample Date: 6/16/16
 Sample Time: 1126 (military)

Site Description

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring-other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear cloudy overcast
 Air Temperature: _____ °C 57 °F

Sampling Location (ID, Description):
Backyard at 307 W. Koda Ct.

 Water Body (Describe Type):
Flowing spring

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____

 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameters

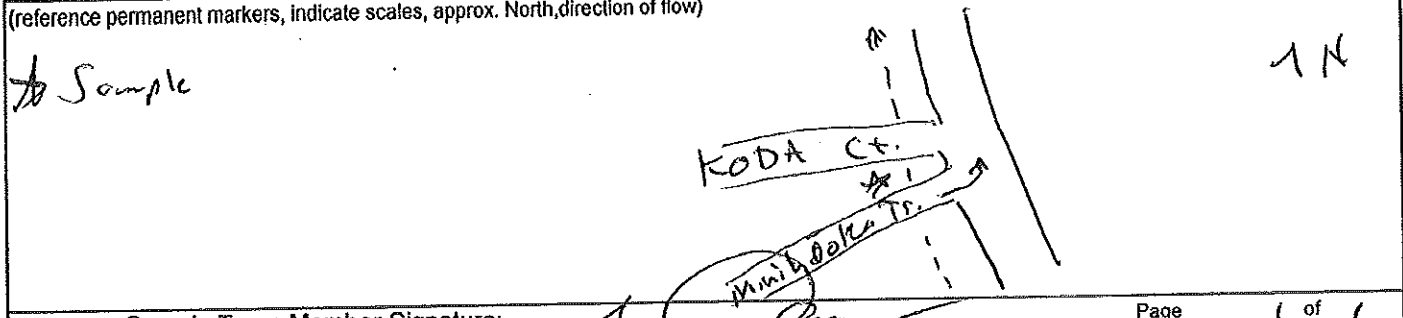
Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>1126</u>			<u>8.43</u>	<u>2155</u>		<u>12.6</u>	<u>Clean</u>

Sampling Inventory

Bottles Collected				Filtered	Preservative	Analysis	Remarks
Date/Time	Sample ID	Container (glass/plastic)	Quantity/ Vol.				
	<u>W-2326</u>	<u>plastic</u>	<u>250 ml</u>	<u>no</u>	<u>NaOH</u>	<u>Total,WAD CN</u>	
	<u>W-2326</u>	<u>plastic</u>	<u>250 ml</u>	<u>no</u>	<u>None</u>	<u>Fluoride</u>	

Sampling Location Map

(reference permanent markers, indicate scales, approx. North, direction of flow)



Sample Team Member Signature: _____

Page (of)

Project Name: Kaiser Mead
 Project Code: 9088.00, Phase 004
 Sample Team Member(s): Chavez
 Laboratory Used: SVL Analytical

Site Designation: _____
 Sample Code Number: W-195
 Sample Date: 6/16/16
 Sample Time: 1745 (military)

Site Description

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____
 Duplicate Sample Time: _____

Site Conditions

New Site: Yes No Photo taken: Yes No
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring-other: _____
 Weather Conditions: calm breeze windy
 no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: _____ °C _____ °F

Sampling Location (ID, Description):
Backyard at 13607 N. Minihdoka Trail

 Water Body (Describe Type):
Flowing spring into small pond

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description: _____

 Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameters

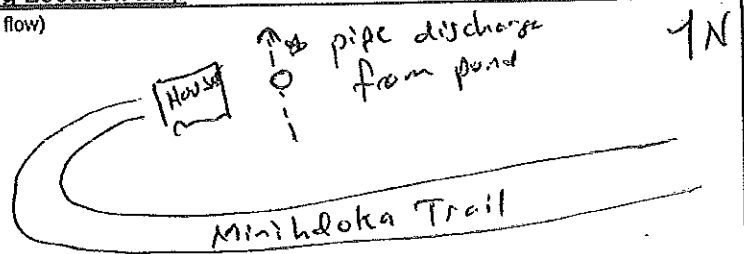
Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
1745			9.1	772		11.9	

Sampling Inventory

Bottles Collected				Filtered	Preservative	Analysis	Remarks
Date/Time	Sample ID	Container (glass/plastic)	Quantity/ Vol.				
	W-195	plastic	250 ml	no	NaOH	Total,WAD CN	
	W-195	plastic	250 ml	no	None	Fluoride	

Sampling Location Map

(reference permanent markers, indicate scales, approx. North, direction of flow)



Sample Team Member Signature: 



CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Page 2 of 2

WGFO445
FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt
6°C

Report to Company: Hydrometrics Inc
 Contact: Tony Chavez
 Address: _____
 Phone Number: 208.660.8548
 FAX Number: _____
 E-mail: chavez@hydrometrics.com

Invoice Sent To: JAME
 Contact: _____
 Address: _____
 Phone Number: _____
 FAX Number: _____
 PO#: _____

Project Name: Kaiser Mead
 Sampler's Signature: [Signature]

Indicate State of sample origination: USA

Sample ID	Collection	Misc.	Preservative(s)	Analyses Required	Rush Instructions (Days)	Comments
1 Please take care to distinguish between: 1 and I 2 and Z 5 and S Ø and O	Date: <u>6-16-16</u> Time: <u>1111 AM</u>	Matrix Type (From Table 1) Collected by: (Init.)	Unpreserved HNO ₃ , Filtered HNO ₃ , Unfiltered HCl H ₂ SO ₄ NaOH Other (Specify)	<u>Total, WAD, Free CN Fluoride</u>		
2 <u>W-24</u>	Date: <u>6-16-16</u> Time: <u>1126 AM</u>	No. of Containers <u>12</u>				
3 <u>W-2326</u>	Date: <u>6-17-16</u> Time: <u>1145 AM</u>					
4 <u>W-195</u>						
5						
6						
7						
8						
9						
10						

Requisitioned by: [Signature] Date: 6/16/16 Time: 3:00 PM
 Received by: Johann Date: 6/17/16 Time: 9:30 AM

* Sample Reject: Return Dispose Store (30 days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC-9/05



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KM-1	W6F0445-01	Ground Water	15-Jun-16 15:17	AC	16-Jun-2016	
KM-2	W6F0445-02	Ground Water	15-Jun-16 13:03	AC	16-Jun-2016	
KM-3	W6F0445-03	Ground Water	15-Jun-16 07:59	AC	16-Jun-2016	
KM-4	W6F0445-04	Ground Water	16-Jun-16 10:10	AC	16-Jun-2016	
KM-5	W6F0445-05	Ground Water	15-Jun-16 13:46	AC	16-Jun-2016	
KM-6	W6F0445-06	Ground Water	15-Jun-16 14:23	AC	16-Jun-2016	
KMCP-1B	W6F0445-07	Ground Water	15-Jun-16 10:32	AC	16-Jun-2016	
KMCP-2B	W6F0445-08	Ground Water	15-Jun-16 09:06	AC	16-Jun-2016	
KMCP-3B	W6F0445-09	Ground Water	15-Jun-16 11:33	AC	16-Jun-2016	
KMCP-5B	W6F0445-10	Ground Water	15-Jun-16 09:53	AC	16-Jun-2016	
W-24	W6F0445-11	Ground Water	16-Jun-16 11:11	AC	16-Jun-2016	
W-2326	W6F0445-12	Ground Water	16-Jun-16 11:26	AC	16-Jun-2016	
W-195	W6F0445-13	Ground Water	16-Jun-16 11:45	AC	16-Jun-2016	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative: W6F0445

SVL is not accredited in the State of WA for WAD CN in non-potable water.



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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: **W-24**

SVL Sample ID: **W6F0445-11 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 16-Jun-16 11:11
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTMD7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0016		W625311	APH	06/21/16 10:09	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0019		W626307	APH	06/28/16 11:11	
SM 4500-CN-I	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:10	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.124	mg/L	0.100	0.018		W626211	DT	07/06/16 03:12	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Kellogg ID 83837-0929

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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: W-2326

SVL Sample ID: W6F0445-12 (Ground Water)

Sample Report Page 1 of 1

Sampled: 16-Jun-16 11:26
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	0.0190	mg/L	0.0100	0.0016		W625311	APH	06/21/16 10:11	
EPA 335.4	Cyanide (total)	0.342	mg/L	0.0500	0.0095	5	W626307	APH	06/28/16 11:13	D2
SM 4500-CN-1	Cyanide (WAD)	0.0310	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:12	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	0.167	mg/L	0.100	0.018		W626211	DT	07/06/16 03:27	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



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Kellogg ID 83837-0929

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Fax (208) 783-0891

Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Client Sample ID: W-195

SVL Sample ID: W6F0445-13 (Ground Water)

Sample Report Page 1 of 1

Sampled: 16-Jun-16 11:45
Received: 16-Jun-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTMD7237	Cyanide (free) @ pH 6	0.0610	mg/L	0.0100	0.0016		W625311	APH	06/21/16 10:13	
EPA 335.4	Cyanide (total)	1.35	mg/L	0.100	0.0190	10	W626307	APH	06/28/16 11:15	D2
SM 4500-CN-I	Cyanide (WAD)	0.0730	mg/L	0.0100	0.0026		W626309	DG	06/27/16 15:14	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	1.63	mg/L	0.500	0.090	5	W626211	DJB	06/30/16 18:22	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: W6F0445
Reported: 06-Jul-16 12:27

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0016	0.0100	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0019	0.0100	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W626309	27-Jun-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.018	0.100	W626211	30-Jun-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.153	0.150	102	90 - 110	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.152	0.150	101	90 - 110	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.151	0.150	101	90 - 110	W626309	27-Jun-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	2.07	2.00	104	90 - 110	W626211	30-Jun-16	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.105	<0.0100	0.100	105	79 - 121	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.101	<0.0100	0.100	99.0	90 - 110	W626307	28-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.103	<0.0100	0.100	101	90 - 110	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.106	<0.0100	0.100	103	75 - 125	W626309	27-Jun-16	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	66.9	65.4	2.00	R > 4S	90 - 110	W626211	06-Jul-16	D2,M3
EPA 300.0	Fluoride	mg/L	2.73	0.739	2.00	99.7	90 - 110	W626211	30-Jun-16	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.106	0.105	0.100	106	0.9	11	W625311	21-Jun-16	
EPA 335.4	Cyanide (total)	mg/L	0.103	0.101	0.100	101	2.0	20	W626307	28-Jun-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.103	0.106	0.100	100	2.9	20	W626309	27-Jun-16	
Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	66.2	66.9	2.00	R > 4S	1.1	20	W626211	06-Jul-16	D2,M3



Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser
Work Order: **W6F0445**
Reported: 06-Jul-16 12:27

Notes and Definitions

- D1 Sample required dilution due to matrix.
 - D2 Sample required dilution due to high concentration of target analyte.
 - M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
 - LCS Laboratory Control Sample (Blank Spike)
 - RPD Relative Percent Difference
 - UDL A result is less than the detection limit
 - R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
 - <RL A result is less than the reporting limit
 - MRL Method Reporting Limit
 - MDL Method Detection Limit
 - N/A Not Applicable
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