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TECHNICAL MEMORANDUM

DATE: May 23, 2011

TO: Rod Lentz – U.S. Forest Service

FROM: Dustin G. Wasley, PE – Cascade Earth Sciences
Phillip Moyle, LG, – Cascade Earth Sciences

SUBJECT: Results of Static (Modified Acid Base Accounting) and Kinetic (Humidity Cell) Tests - Supplement to Interim Report - 2010 Gap Investigation Monte Cristo Mining Area Removal Action - Mt. Baker-Snoqualmie National Forest, Snohomish County, Washington

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INTRODUCTION

In response to a request from the U.S. Department of Agriculture, Forest Service (Forest Service), Cascade Earth Sciences (CES) is pleased to submit this technical memorandum that summarizes the accompanying report on the results of humidity cell tests (HCT) and associated acid base accounting (Modified ABA) tests conducted by McClelland Laboratories, Inc. (McClelland) on four samples collected from mines and facilities in the Monte Cristo Mining Area (MCMA) in support of the ongoing Removal Action (RA; MLI, 2011). Kinetic testing, such as HCT, of selected mine waste materials was identified as a data gap in the Engineering Evaluation / Cost Analysis (EECA; CES, 2010a) *"to better quantify the projected long-term behavior - acid generation characteristics and neutralization potential (e.g., addition of lime) - of material planned for placement in MCMA repository."* The test results of samples subjected to a laboratory-simulation of natural weathering conditions can thus be applied to optimize the repository design.

Of the 12 mines and prospects and 5 facilities investigated to-date in the MCMA, 4 constitute the bulk of the volume of waste rock, stockpiled rock/ore, tailings, and contaminated materials currently planned for removal and placement in an onsite repository. Thus the Rainy and Pride of the Woods Mines, the Ore Collector, and the Concentrator, which are also representative of the range of solid waste materials present in the MCMA, were selected for collection of samples which were submitted for HCT analyses.

The MCMA is located in the Mt. Baker-Snoqualmie National Forest in Snohomish County, Washington, near the west-center margin of the Henry M. Jackson Wilderness Area, and approximately 28 air-miles east-southeast of Granite Falls, Washington, which is about 9.5 miles east of Marysville, Washington. For additional background information and details on the mines and facilities in the MCMA, please refer to the "Interim Report - 2010 Data Gap Investigation and Aquatic Monitoring" (Interim Report) on the MCMA completed by CES (2011) and submitted to the Forest Service in January 2011.

BULK SAMPLING FOR KINETIC TESTING

Four composite bulk samples (> 7 pounds); one each from the waste rock at the Pride of the Woods Mine and the Rainy Mine, stockpiled rock/ore at the Ore Collector, and tailings below the Concentrator; were

collected during the 2010 fall field event. The composite sampling method, combining materials from two or more select samples collected from different representative locations in the same body of waste, was utilized in order to provide a more representative bulk sample of the variable types of contaminated solids present. Sampling collection protocols are described in the body of the Interim Report (CES, 2011). The field identification numbers and field weights of the four HCT bulk samples are:

Name	Weight (pounds)	Sample ID
Pride of the Woods Mine	10.7	MCRA2-WR-PW-01-H
Rainy Mine	11.4	MCRA2-WR-RY-01-H
Ore Collector	11.4	MCRA2-WR-COL-01-H
Concentrator	7.3	MCRA2-WR-CN-01-H

As outlined in the 2010 Data Gap Investigation Work Plan – Fall Event (CES, 2010b), these samples were placed on ice and shipped directly to McClelland in Sparks, Nevada. The samples were prepared and crushed (-1/4 inch with 80% -10 mesh), and a 4-ounce split was sent to Pace Analytical (Pace) for feed analysis of the 10-total metals (antimony, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, and zinc), pH, Modified ABA, and sulfur speciation. The 20-week-long HCT was performed on the remaining bulk sample materials. McClelland collected weekly, filtered (4.5 micron) leachate samples from each cell and performed pH, Eh, EC, sulfate, acidity, alkalinity, and irons analyses. A filtered extract split was collected for eight of the weeks (weeks 0, 1, 2, 4, 8, 12, 16, and 20) and shipped to Pace for the 10 total metals suite. A split of the final solids residue was also sent to Pace for residue analysis of the 10 total metals, pH, Modified ABA, and sulfur speciation. All analyses were performed in accordance with USEPA Level II protocol. Additional details of the overall procedure are described in the McClelland report (MLI, 2011; attached).

SUMMARY CONCLUSION

The following test results and conclusions are summarized from the McClelland report (MLI, 2011). Modified ABA test results, a static test for determination of acid rock drainage (ARD) potential, indicate that the solids feeds of each of the four samples exhibit a significantly greater potential to generate acid than to neutralize acid in a natural environment. The feeds contained sulfide sulfur with no neutralizing component. Specific findings from the Modified ABA procedure results are that the tested materials exhibit the following characteristics:

- Paste pH was acidic.
- Sulfide sulfur contents of the samples ranged from 0.242 to 1.18 weight percent resulting in acid generation potential (AGP) values from 7.6 to 36.9 tons calcium carbonate ($CaCO_3$) equivalents per 1,000 tons of solids.
- Acid neutralization potential (ANP) values were all <0.05 tons $CaCO_3$ equivalents per 1,000 tons of solids.
- Net neutralization potential (NNP) values were all negative, and ANP/AGP rations were all <0.1.

It is noteworthy that Modified ABA results for the HCT residues of all four samples remained acid producing after the 20-week procedure and that the AGP for two of the residues, from the Collector and the Concentrator tailings, were actually higher than for the respective feeds.

The results of humidity cell kinetic ARD tests “show that all four samples would produce acid in a natural weathering and oxidizing environment.” There appeared to be no relevant decrease in acid generation

and metals mobilization over the 20-week life of the test. Specific findings from the HCT procedure results are that the tested materials exhibit the following characteristics:

- Extract pH was less than pH 4.0 for the duration of the tests.
- Redox potential showed strong oxidizing conditions.
- Conductivity was low to moderate (~0.5 to 2 microSiemans per centimeter).
- Mobilization of iron (Fe) and sulfate (SO_4) was moderate.
- Acid concentrations were generally high.
- Alkalinity was not detected in any extract.

RECOMMENDATIONS

Results of the humidity cell testing on the four samples supports CES' recommendation in the EECA (2010a): *"CES considered two different repository configurations: 1) a minimum design without a bottom liner, and 2) a far more conservative lined repository with multiple membrane bedding layers in the liner and cap, and a thicker soil cover. For this EECA, CES recommends the conservative lined design that offers full encapsulation of waste materials because of the high precipitation in the area and the acid generating potential of the waste rock/soils."*

Due to the persistently high acid generation behavior and mobilization of metals displayed by the four bulk samples of waste rock, stockpiled rock/ore, and tailings present in the MCMA, CES continues to recommend that the onsite repository be designed to include full encapsulation of the waste solids.

REFERENCES

CES, 2010a. Engineering Evaluation / Cost Analysis, Monte Cristo Mining Area, Mt. Baker-Snoqualmie National Forest, Snohomish County, Washington. Cascade Earth Sciences, 297 p.

CES, 2010b. 2010 Data Gap Investigation Work Plan - Fall Event (September), Monte Cristo Mining Area Removal Action, Mt. Baker-Snoqualmie National Forest, Snohomish County, Washington. Cascade Earth Sciences, 59 p.

CES, 2011. Interim Report - 2010 Data Gap Investigation & Aquatic Monitoring, Monte Cristo Mining Area Removal Action, Mt. Baker-Snoqualmie National Forest Snohomish County, Washington. Cascade Earth Sciences, 2011, 96 p.

MLI, 2011. Kinetic ARD Potential Evaluation - 4 Monte Cristo Samples - Final Report, MLI Job No. 3484. McClelland Laboratories, Inc., Sparks, NV, 167 p.

Att: Kinetic ARD Potential Evaluation - 4 Monte Cristo Samples - Final Report
PN: 2010230020
Doc: 2010230020 MCMA DGI 2010 HCT Analysis Report.docx

McCLELLAND LABORATORIES, INC.

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E-MAIL mli@mettest.com

May 6, 2011

Mr. Phillip Moyle
Cascade Earth Sciences
12720 E. Nora Ave., Suite A
Spokane, WA 99216

Dear Phillip:

Enclosed is our report concerning results from humidity cell (HC) kinetic ARD potential tests conducted on four Monte Cristo samples.

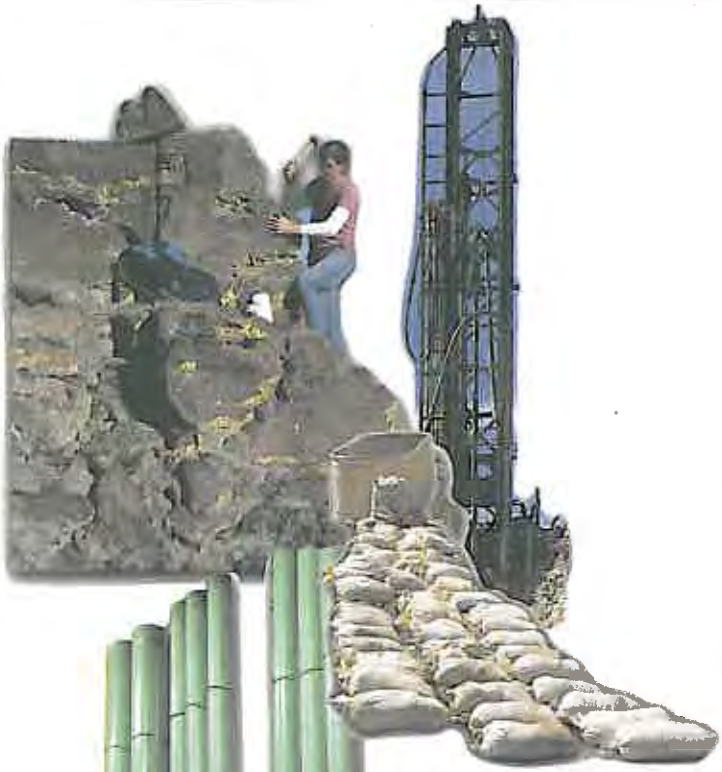
Enclosed also is our invoice (MLI Job No. 3484 / 8489) for reporting costs not previously invoiced.

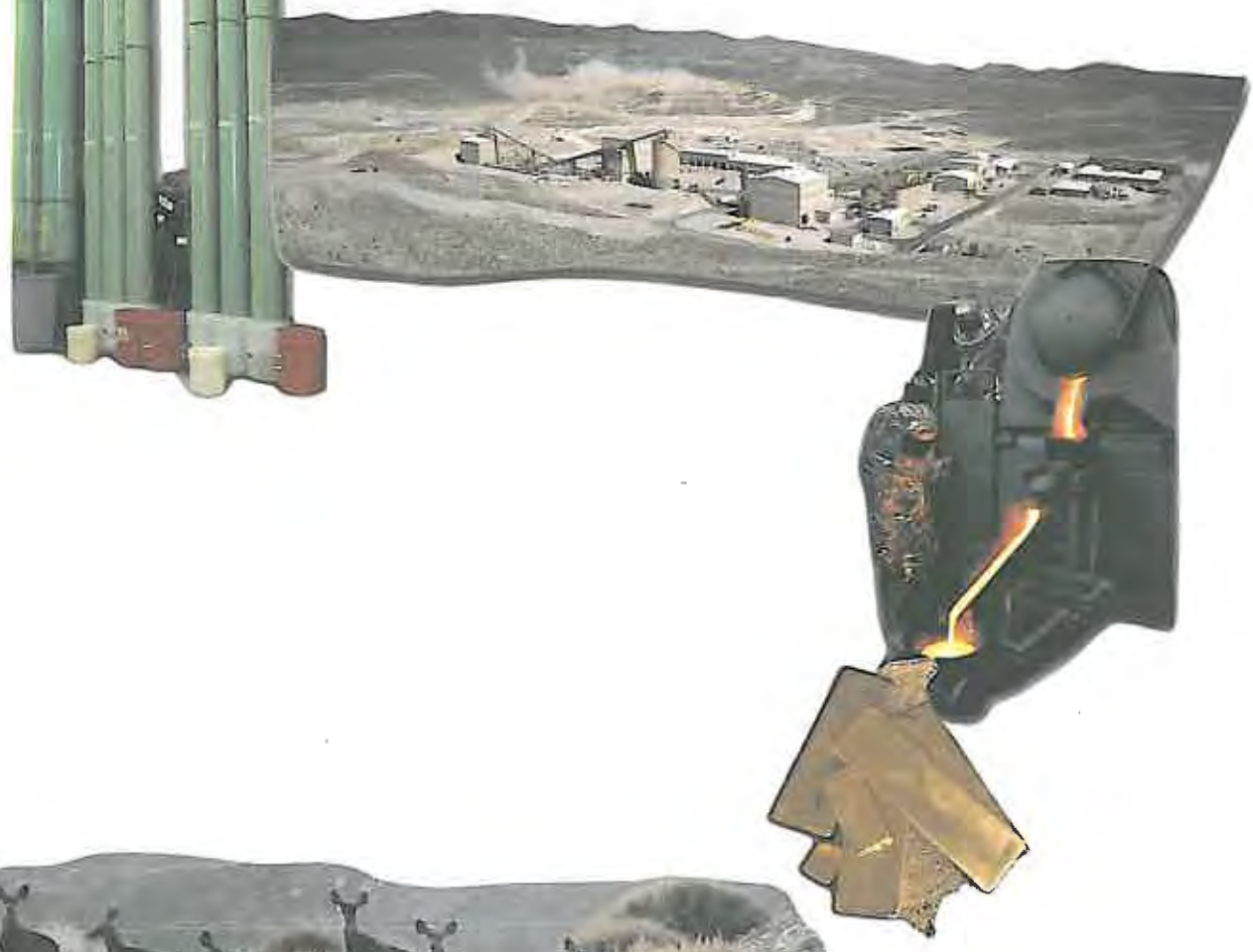
It was a pleasure serving you on this project and we look forward to a lasting association.

Sincerely,

Gene E. McClelland
Metallurgist/President

GEM:mh
Enclosure





McCLELLAND LABORATORIES

Report
on
Kinetic ARD Potential Evaluation - 4 Monte Cristo Samples
MLI Job No. 3484
May 6, 2011

for

Mr. Phillip Moyle
Cascade Earth Sciences
12720 E. Nora Ave., Suite A
Spokane, WA 99216

In association with H.J. Heinen

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Report
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Kinetic ARD Potential Evaluation - 4
Monte Cristo Samples
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Report
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Kinetic ARD Potential Evaluation - 4 Monte Cristo Samples
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May 6, 2011

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EXECUTIVE SUMMARY

Monte Cristo samples PW-01-H (waste rock), RY-01-H (waste rock), COL-01-H (ore stockpile) and CN-01-H (tailings) were received for acid rock drainage (ARD) potential evaluation to assess potential of the solids to generate or neutralize acid in a natural weathering and oxidizing environment. Static and kinetic ARD potential tests and analyses were conducted on each sample.

Modified acid/base accounting (Mod ABA) static ARD potential test results show that all four samples displayed a greater potential to produce acid than to neutralize acid in a natural environment. Sulfide contents ranged from 0.242 to 1.18 weight percent, resulting in AGP values ranging from 7.6 to 36.9 tons $CaCO_3$ equivalents per 1000 tons of solids. None of the samples contained a detectable quantity of neutralizing component, and all ANP values were <0.50 tons $CaCO_3$ equivalents/1000 tons.

HC kinetic ARD potential test results show that all four samples would produce acid in a natural weathering and oxidizing environment. HC test results are summarized, in general, as follows.

- Extract pH was less than pH 4.0 the duration of the tests
- Redox potential showed strong oxidizing conditions
- Conductivity was low to moderate (~ 0.5 to 2 mS/cm)
- Iron and SO_4 mobility (dissolution) was moderate
- Acidity concentrations were generally high
- Alkalinity was not detected in any extract

SAMPLE PREPARATION AND FEED ANALYSES

The Monte Cristo samples (PW-01-H, RY-01-H, COL-01-H, CN-01-H) weighed from ~ 3 to 5 kg and were moist upon receipt. Each sample was air dried and moisture contents were calculated. Samples were crushed in entirety to 100%-1/4" (~ P_{80} 10 mesh) in size and were blended and split to obtain 2.0 kg for HC tests and 250 grams for feed analyses. Feed analysis splits were pulverized (ring & puck) to -150 mesh, then shipped to Pace Analytical for Mod ABA static ARD potential tests and ICP metals (10 metal suite) analyses.

HC test residues were also submitted to Pace for the same analyses.

Mod ABA results for feeds and HC test residues are provided in Tables 1 and 2, respectively.

Table 1. - Modified Acid/Base Accounting (Mod ABA) Static ARD Potential Test Results, Monte Cristo Sample Feeds

Sample I.D.	Paste pH	Sulfur, Weight Percent (as S) Total	SO_4	$S^=$	HCl, SO_4	Non-Ext.	AGP[1]	ANP	NNP	Ratio
PW-01-H	3.9	1.18	0.552	0.322	0.284	<0.050	10.1	<0.50	-10.1	<0.05
RY-01-H	4.0	0.884	0.324	0.446	0.113	<0.050	13.9	<0.50	-13.9	<0.04
COL-01-H	3.2	2.85	1.32	1.18	0.0744	0.277	36.9	<0.50	-36.9	<0.01
CN-01-H	3.9	0.715	0.377	0.242	0.0618	<0.050	7.6	<0.50	-7.6	<0.06

1) AGP based on Pyritic S= content (%S= x 31.25). AGP, ANP and NNP in units of tons CaCO3 equivalents per 1000 tons of solids

Table 2. - Modified Acid/Base Accounting (Mod ABA) Static Acid Rock Drainage (ARD) Test Results, Monte Cristo Sample HCT Residues

Sample I.D.	Paste pH	Sulfur, Weight Percent (as S) Total	SO_4	$S^=$	HCl, SO_4	Non-Ext.	AGP[1]	ANP	NNP	Ratio
PW-01-H	3.2	0.893	0.291	0.275	0.308	<0.050	8.6	<0.50	-8.6	<0.06
RY-01-H	3.5	0.665	0.227	0.346	0.0816	<0.050	10.8	<0.50	-10.8	<0.05
COL-01-H	2.7	2.83	1.14	1.71	<0.050	<0.050	53.4	<0.50	-53.4	<0.01
CN-01-H	3.7	0.646	0.266	0.311	0.0523	<0.050	9.7	<0.50	-9.7	<0.05

1) AGP based on Pyritic S= content (%S= x 31.25). AGP, ANP and NNP in units of tons CaCO3 equivalents per 1000 tons of solids

Mod ABA results show that each sample displays a significantly greater potential to generate than to neutralize acid because sulfide sulfur was contained in the feeds, but no neutralizing component was contained. Static ARD potential test data are summarized below.

- Paste pH was acidic
- Sulfide sulfur contents ranged from 0.242 to 1.18 wt. % and resulted in AGP values from 7.6 to 36.9 tons $CaCO_3$ equivalents per 1000 tons of solids
- ANP values were all <0.50 tons $CaCO_3$ equivalents/1000 tons
- NNP values were all negative and ratios (ANP ÷ AGP) were all <0.1

Mod ABA results for HCT residues show that residues remained acid producing, again because $S^=$ was present but a neutralizing component was not. AGP values for two of the residues were higher than for respective feeds.

ICP metals analysis results for Monte Cristo sample feeds and HCT residues are provided in Table 3. Pace Analytical reports for Mod ABA tests and ICP metals analyses are provided in Section 1 of the Appendix to this report.

Table 3. - ICP Metals Analysis Results, Monte Cristo Feed Solids and HCT Residues

	Sample							
	PW-01-H		RY-01-H		COL-01-H		CN-01-H	
Metal, mg/kg	Feed	Residue	Feed	Residue	Feed	Residue	Feed	Residue
Sb	782	700	21.4	29.7	2,050	2,440	4,680	3,540
As	17,900	15,100	23,600	22,700	25,300	23,700	16,300	15,600
Cd	2.1	18.4	0.47	0.60	28.2	28.2	6.4	5.8
Cr	2.4	2.6	22.5	28.7	1.3	1.3	5.2	10.7
Cu	229	274	103	88.8	1,020	1,030	361	387
Fe	58,100	55,500	62,400	73,800	66,600	75,700	66,600	63,200
Pb	2,630	2,540	480	619	13,400	14,700	5,900	6,720
Mn	41.8	35.9	618	402	261	79.2	235	245
Zn	408	2,480	104	96.6	5,080	4,010	858	765
Hg	2.1	1.3	0.51	0.44	4.5	2.4	2.4	1.6

ICP metals analysis results show that all 10 metals were of sufficient content to be potentially mobilized if acid producing conditions are established in a natural environment. Some metal contents were higher in HCT residues than for respective feeds.

HC KINETIC ARD POTENTIAL TEST PROCEDURES AND RESULTS

HC kinetic ARD potential tests were conducted on 2 kg charges of each Monte Cristo sample at a 100%-1/4" (~ P_{80} 10 mesh) feed size to assess potential of the solids to generate or neutralize acid in an aggressive and accelerated weathering and oxidizing environment. ASTM standard procedure (D5744-07, Option A) was employed the duration of the 20 week (21 weeks with week 0 saturation) kinetic tests.

HC tests were conducted for 21 weeks, in seven day cycles. After initial saturation (week 0), dry, filtered compressed air was passed upwards through the solids charges the first three days of the cycle. Humidified air, generated by sparging filtered compressed air into deionized water (DI H_2O) contained in a temperature controlled (30° C) vessel, was passed upwards through the solids the next three days of the cycle. On the seventh day, charges were saturated (flooded) with DI H_2O and allowed to soak for one hour. After soaking, effluent was allowed to percolate through and drain freely from the solids charges. Effluent was collected in sealed containers and volume was measured by weighing (1 L/week applied - 1.5 L applied for week 0). Unfiltered, unpreserved effluent samples were analyzed immediately for redox potential (Ag/AgCl reference), pH, EC, $SO_4^{=}$, acidity and alkalinity. Separate effluent samples (50 mL) were filtered through a 0.45µm filter to produce extract. Those extracts were analyzed immediately for Fe_t, Fe^{2+} and Fe^{3+} (by difference). Remaining weekly effluents were filtered (0.45 µm), appropriately preserved and shipped to Pace Analytical (Billings, MT) for a suite of 10 metals analyses. Weeks 0, 1, 2, 4, 8, 12, 16 and 20 extracts (not composites) were submitted for analysis. Other weekly extracts (weeks 3, 5, 6, 7, 9, 10, 11, etc.) were stored frozen (filtered and preserved) should

subsequent analyses be required. HCT residues were removed from the cells, air dried, pulverized and shipped to Pace Analytical for Mod ABA static tests and ICP metals (10 metal suites) analyses.

HC test data for Monte Cristo samples are provided in Tables 2 though 7. Figures 1 through 4 (a and b) are on the same respective data table page. Figures a and b depict graphically, on a weekly (a figures) and cumulative (b figures) mass basis, analytical data for pH, $SO_4^=$, acidity and alkalinity.

Table 4 . - Humidity Cell Analytical Results, PW-01-H (waste rock) 2.0035 kg

					Total Fe					SO_4=			Acidity, $CaCO_3$ Equivalents			Alkalinity, $CaCO_3$ Equivalents		
Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCl)	Conductivity mS/cm	mg/l	mg/kg	Cum. mg/kg	Fe^{2}+ mg/l	Fe^{3}+ mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	1 015	3 53	426	0 20	2 24	1 135	1 135	1 83	0 41	38 0	19.25	19 25	28	14 19	14 19	0	0 00	0 00
1	1 058	3 62	380	0 33	36 40	19 222	20.357	34.40	2 00	110 0	58 09	77 34	102	53 86	68 05	0	0 00	0 00
2	1 018	3 11	492	0 37	2.29	1 164	21 521	0 21	2 08	61 0	30 99	108 33	84	42 68	110 73	0	0 00	0 00
3	0 936	3 11	532	0.53	1.77	0 827	22 348	0 06	1 71	140.0	65.41	173 74	98	45 78	156 51	0	0 00	0 00
4	0 993	2.82	559	0 64	3 17	1 571	23.919	0 07	3 10	160 0	79 30	253 04	138	68 40	224 91	0	0 00	0 00
5	0 991	3 04	577	0 76	4.18	2 068	25 987	0 13	4 05	200.0	98.93	351 97	178	88 05	312 96	0	0 00	0 00
6	0 963	2.78	564	0.85	5 30	2 547	28 534	0 21	5 09	230 0	110 55	462 52	286	137 47	450 42	0	0.00	0 00
7	1 010	2 64	548	0 88	6 45	3 252	31 786	0.23	6 22	220 0	110 91	573 43	210	105 87	556 29	0	0 00	0 00
8	0.997	2 68	468	0.86	12 80	6 370	38 156	1 33	11 47	200 0	99.53	672 96	198	98 53	654 82	0	0 00	0 00
9	0 972	2.79	487	0 81	10 50	5 094	43 250	1 15	9.35	180 0	87 33	760 29	186	90 24	745 06	0	0 00	0 00
10	0.972	2 73	484	0 77	9.60	4 657	47 907	1 38	8 22	170 0	82.48	842 77	174	84 42	829 47	0	0 00	0 00
11	1 008	2 81	483	0.76	10 60	5 333	53 240	1 26	9.34	150 0	75.47	918 24	162	81 51	910 98	0	0 00	0 00
12	1 003	2.85	498	0 65	7 65	3.830	57 070	0 74	6.91	130 0	65 08	983 32	146	73 09	984 07	0	0 00	0.00
13	0.998	2 82	522	0.69	6.00	2.989	60 059	0 56	5 44	130 0	64.76	1048.08	142	70 73	1054 80	0	0 00	0 00
14	0 966	2 76	564	0.77	5 30	2 555	62 614	0 20	5.10	160 0	77.14	1125 22	156	75 22	1130.02	0	0 00	0 00
15	0 987	2 74	516	0 73	7.10	3.498	66 112	0 55	6 55	130 0	64 04	1189 26	148	72 91	1202 93	0	0.00	0.00
16	0 980	2 80	500	0 84	9 70	4 745	70 857	0 93	8 77	150 0	73 37	1262.63	130	63 59	1266.52	0	0 00	0 00
17	0 997	2 76	447	0 66	12 25	6 096	76 953	2.73	9.52	160 0	79 62	1342 25	144	71 66	1338 18	0	0 00	0.00
18	1 018	2 70	481	0 66	10.00	5.081	82 034	4 10	5 90	110 0	55 89	1398 14	128	65 04	1403 22	0	0.00	0.00
19	0 956	2 69	553	0 67	4 25	2 028	84 062	0 15	4.10	130 0	62 03	1460 17	122	58 21	1461.43	0	0 00	0 00
20	0 978	2.71	457	0 67	3 90	1 904	85.966	2 92	0.98	130 0	63 46	1523 63	142	69 32	1530 75	0	0 00	0.00

Figure 1a.- Weekly Humidity Cell Analytical Results
PW-01-H (waste rock)

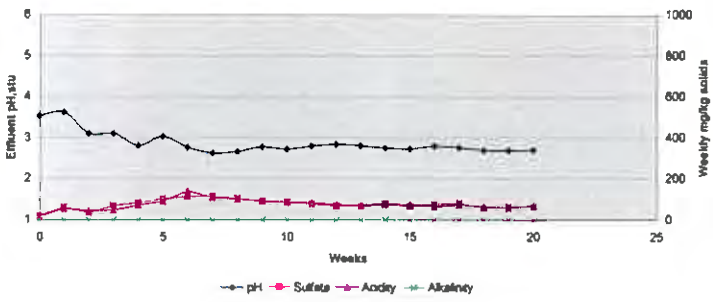


Figure 1b.- Cumulative Humidity Cell Analytical Results
PW-01-H (waste rock)

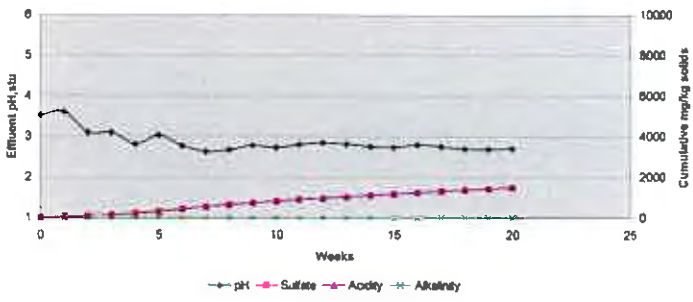


Table 5. - Humidity Cell Analytical Results, RY-01-H (waste rock) 2.0023 kg

Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCl)	Conductivity mS/cm	Total Fe			Fe^{3+}	Fe^{3+}	SO_4=			Acidity, $CaCO_3$ Equivalents			Alkalinity, $CaCO_3$ Equivalents		
					mg/l	mg/kg	Cum. mg/kg	mg/l	mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	1 025	3 88	349	0 40	3 88	1.986	1 986	3 48	0.40	180 0	92 14	92 14	46	23 55	23 55	0	0 00	0 00
1	0 974	3 79	367	0.67	32.60	15 858	17 844	31 60	1 00	340 0	165 39	257 53	112	54 48	78 03	0	0 00	0 00
2	0 989	3 30	379	0 70	42 60	21 042	38 886	41 25	1 35	320 0	158 06	415.59	148	73 10	151 13	0	0.00	0 00
3	0 982	3.51	397	0 68	38 25	18 759	57 645	37 50	0 75	310 0	152 04	567 63	146	71 60	222 74	0	0 00	0 00
4	0 990	3 23	409	0 58	31 00	15 327	72 972	29 00	2 00	230 0	113 72	681 35	126	62 30	285 03	0	0.00	0 00
5	0 990	3 45	416	0 62	37 25	18 418	91 390	33 00	4 25	270 0	133 50	814 85	142	70 21	355 24	0	0 00	0 00
6	0 998	3 26	424	0 59	33 50	16 697	108 087	30 25	3 25	240 0	119 62	934 47	212	105 67	460 91	0	0 00	0 00
7	0 992	3 13	388	0 59	36 75	18.207	126 294	26 25	10 50	230.0	113 95	1048 42	146	72 33	533 24	0	0 00	0 00
8	0 955	3 16	396	0 54	27 75	13.235	139 529	25 75	2.00	200 0	95 39	1143.81	126	60 10	593 34	0	0 00	0 00
9	0 994	3 20	405	0 56	28 50	14 148	153 677	26.25	2 25	200.0	99.29	1243 10	134	66 52	659 86	0	0 00	0.00
10	0.955	3 19	405	0.60	40 60	19.364	173.041	6 85	33 75	230 0	109 70	1352.80	156	74 40	734 26	0	0 00	0 00
11	0 967	3 25	417	0 57	37 20	17.966	191 007	32.00	5 20	200 0	96.59	1449.39	148	71 48	805 74	0	0 00	0 00
12	0 971	3.26	403	0.54	35 40	17 167	208.174	28 50	6 90	200 0	96 99	1546 38	134	64.98	870 72	0	0 00	0 00
13	0 966	3 20	419	0.54	32 40	15 631	223 805	26 00	6.40	180 0	86 84	1633 22	140	67 54	938 26	0	0 00	0 00
14	0 999	3 19	426	0 50	28 80	14 369	238 174	25 50	3.30	170 0	84 82	1718 04	130	64.86	1003 12	0	0 00	0 00
15	0 995	3.13	426	0 52	31 20	15 504	253 678	27 50	3 70	160 0	79 51	1797 55	138	68 58	1071 70	0	0 00	0 00
16	0 985	3 22	429	0 52	40 60	19 973	273 651	36 25	4 35	190 0	93 47	1891 02	146	71 82	1143 52	0	0.00	0 00
17	0 975	3 07	442	0 47	28 60	13 926	287 577	24 50	4 10	150.0	73 04	1964 06	128	62 33	1205 85	0	0 00	0 00
18	0 998	3 08	406	0 50	34 80	17 345	304 922	22 00	12 80	170.0	84 73	2048 79	134	66 79	1272 64	0	0.00	0 00
19	0 984	3 08	405	0 54	31.80	15.628	320 550	28 60	3 20	180 0	88.46	2137 25	131	64 38	1337 02	0	0 00	0 00
20	0 980	3 06	408	0.50	30 60	14 977	335 527	28 40	2 20	150.0	73 42	2210 67	125	61 18	1398 20	0	0 00	0 00

Figure 2a.- Weekly Humidity Cell Analytical Results
RY-01-H (waste rock)

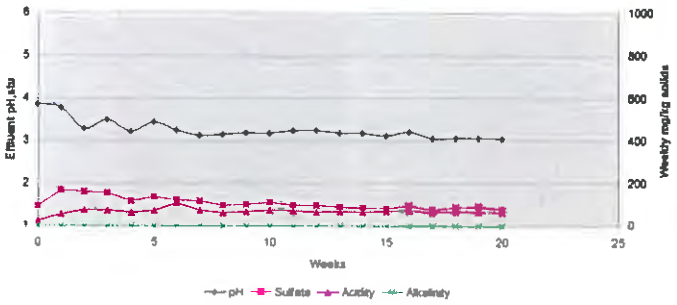
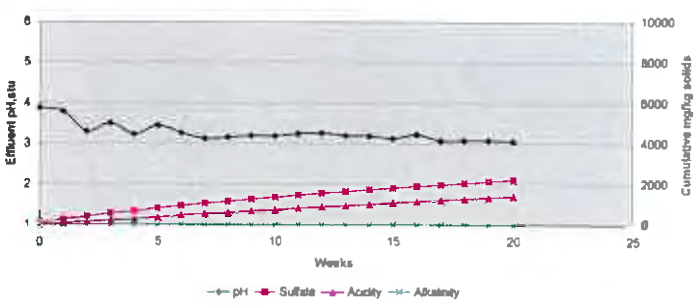


Figure 2b.- Cumulative Humidity Cell Analytical Results
RY-01-H (waste rock)



Section 1

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3484 Feeds
Mod ABA + ICP Metals

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November 10, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484
Pace Project No.: 10141486

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2010. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences

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CERTIFICATIONS

Project: Monte Cristo 3484
Pace Project No.: 10141486

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Montana Certification IDs
602 South 25th Street, Billings, MT 59101
EPA Region 8 Certification #: 8TMS-Q
Idaho Certification #: MT00012
Montana Certification #: MT CERT0040
NVLAP Certification #: 101292-0
Minnesota Dept of Health Certification #: 030-999-442

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SAMPLE SUMMARY

Project: Monte Cristo 3484
Pace Project No.: 10141486

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10141486001	PW-01-H	Solid	10/21/10 07:00	10/26/10 08:45
10141486002	RY-01-H	Solid	10/21/10 07:00	10/26/10 08:45
10141486003	COL-01-H	Solid	10/21/10 07:00	10/26/10 08:45
10141486004	CN-01-H	Solid	10/21/10 07:00	10/26/10 08:45

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484
Pace Project No.: 10141486

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10141486001	PW-01-H	EPA 6020	RJS	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 7	NT1	1
		Modified Sobek 7	NT1	5
		Modified Sobek 7	NT1	2
10141486002	RY-01-H	EPA 6020	RJS	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 7	NT1	1
		Modified Sobek 7	NT1	5
		Modified Sobek 7	NT1	2
10141486003	COL-01-H	EPA 6020	RJS	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 7	NT1	1
		Modified Sobek 7	NT1	5
		Modified Sobek 7	NT1	2
10141486004	CN-01-H	EPA 6020	RJS	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 7	NT1	1
		Modified Sobek 7	NT1	5
		Modified Sobek 7	NT1	2

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141486

Sample: PW-01-H **Lab ID: 10141486001** Collected: 10/21/10 07:00 Received: 10/26/10 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**782**	mg/kg	3.4	200	10/29/10 08:38	11/04/10 10:51	7440-36-0	
Arsenic	**17900**	mg/kg	33.8	2000	10/29/10 08:38	11/04/10 14:24	7440-38-2	
Cadmium	**2.1**	mg/kg	0.054	20	10/29/10 08:38	11/04/10 10:46	7440-43-9	
Chromium	**2.4**	mg/kg	0.34	20	10/29/10 08:38	11/04/10 10:46	7440-47-3	
Copper	**229**	mg/kg	0.34	20	10/29/10 08:38	11/04/10 10:46	7440-50-8	
Iron	**58100**	mg/kg	338	200	10/29/10 08:38	11/04/10 10:51	7439-89-6	
Lead	**2630**	mg/kg	3.4	200	10/29/10 08:38	11/04/10 10:51	7439-92-1	
Manganese	**41.8**	mg/kg	0.34	20	10/29/10 08:38	11/04/10 10:46	7439-96-5	
Zinc	**408**	mg/kg	33.8	200	10/29/10 08:38	11/04/10 10:51	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**2.1**	mg/kg	0.10	5	10/28/10 12:36	10/29/10 09:52	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.9**	Std. Units	0.10	1		11/04/10 16:40		H1
Sobek Acid Base Potential	Analytical Method: Modified Sobek 7							
Neutralization Potential	**0**	tons/1000	0.50	1		11/03/10 14:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 7							
Sulfur, HCl Extractable	**0.284**	% (w/w)	0.050	1		10/28/10 20:02		
Sulfur, HNO3 Extractable	**0.322**	% (w/w)	0.050	1		10/28/10 20:02		
Sulfur, Hot Water Extractable	**0.552**	% (w/w)	0.050	1		10/28/10 20:02		
Sulfur, Residual	ND	% (w/w)	0.050	1		10/28/10 20:02		
Total Sulfur	**1.18**	% (w/w)	0.050	1		10/28/10 20:02		
Sobek Calculations	Analytical Method: Modified Sobek 7							
Acid/Base Potential	**-17**	tons/1000	0.0	1		11/09/10 13:00		
Acid Potential	**17**	tons/1000	0.50	1		11/09/10 13:00		

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141486

Sample: RY-01-H **Lab ID: 10141486002** Collected: 10/21/10 07:00 Received: 10/26/10 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**21.4**	mg/kg	0.50	20	10/29/10 08:38	11/04/10 10:55	7440-36-0	
Arsenic	**23600**	mg/kg	49.5	2000	10/29/10 08:38	11/04/10 14:28	7440-38-2	
Cadmium	**0.47**	mg/kg	0.079	20	10/29/10 08:38	11/04/10 10:55	7440-43-9	
Chromium	**22.5**	mg/kg	0.50	20	10/29/10 08:38	11/04/10 10:55	7440-47-3	
Copper	**103**	mg/kg	0.50	20	10/29/10 08:38	11/04/10 10:55	7440-50-8	
Iron	**62400**	mg/kg	495	200	10/29/10 08:38	11/04/10 11:00	7439-89-6	
Lead	**480**	mg/kg	5.0	200	10/29/10 08:38	11/04/10 11:00	7439-92-1	
Manganese	**618**	mg/kg	5.0	200	10/29/10 08:38	11/04/10 11:00	7439-96-5	
Zinc	**104**	mg/kg	5.0	20	10/29/10 08:38	11/04/10 10:55	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.51**	mg/kg	0.017	1	10/28/10 12:36	10/29/10 09:41	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**4.0**	Std. Units	0.10	1		11/04/10 16:40		H1
Sobek Acid Base Potential	Analytical Method: Modified Sobek 7							
Neutralization Potential	**0**	tons/1000	0.50	1		11/03/10 14:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 7							
Sulfur, HCl Extractable	**0.113**	% (w/w)	0.050	1		10/28/10 20:15		
Sulfur, HNO3 Extractable	**0.446**	% (w/w)	0.050	1		10/28/10 20:15		
Sulfur, Hot Water Extractable	**0.324**	% (w/w)	0.050	1		10/28/10 20:15		
Sulfur, Residual	ND	% (w/w)	0.050	1		10/28/10 20:15		
Total Sulfur	**0.884**	% (w/w)	0.050	1		10/28/10 20:15		
Sobek Calculations	Analytical Method: Modified Sobek 7							
Acid/Base Potential	**-17**	tons/1000	0.0	1		11/09/10 13:00		
Acid Potential	**17**	tons/1000	0.50	1		11/09/10 13:00		

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141486

Sample: COL-01-H **Lab ID: 10141486003** Collected: 10/21/10 07:00 Received: 10/26/10 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**2050**	mg/kg	43.5	2000	10/29/10 08:38	11/04/10 14:56	7440-36-0	
Arsenic	**25300**	mg/kg	43.5	2000	10/29/10 08:38	11/04/10 14:56	7440-38-2	
Cadmium	**28.2**	mg/kg	0.070	20	10/29/10 08:38	11/04/10 14:51	7440-43-9	
Chromium	**1.3**	mg/kg	0.43	20	10/29/10 08:38	11/04/10 14:51	7440-47-3	
Copper	**1020**	mg/kg	43.5	2000	10/29/10 08:38	11/04/10 14:56	7440-50-8	
Iron	**66600**	mg/kg	4350	2000	10/29/10 08:38	11/04/10 14:56	7439-89-6	
Lead	**13400**	mg/kg	43.5	2000	10/29/10 08:38	11/04/10 14:56	7439-92-1	
Manganese	**261**	mg/kg	0.43	20	10/29/10 08:38	11/04/10 14:51	7439-96-5	
Zinc	**5080**	mg/kg	435	2000	10/29/10 08:38	11/04/10 14:56	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**4.5**	mg/kg	0.17	10	10/28/10 12:36	10/29/10 09:53	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.2**	Std. Units	0.10	1		11/04/10 16:40		H1
Sobek Acid Base Potential	Analytical Method: Modified Sobek 7							
Neutralization Potential	**0**	tons/1000	0.50	1		11/03/10 14:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 7							
Sulfur, HCl Extractable	**0.0744**	% (w/w)	0.050	1		10/28/10 20:36		
Sulfur, HNO3 Extractable	**1.18**	% (w/w)	0.050	1		10/28/10 20:36		
Sulfur, Hot Water Extractable	**1.32**	% (w/w)	0.050	1		10/28/10 20:36		
Sulfur, Residual	**0.277**	% (w/w)	0.050	1		10/28/10 20:36		
Total Sulfur	**2.85**	% (w/w)	0.050	1		10/28/10 20:36		
Sobek Calculations	Analytical Method: Modified Sobek 7							
Acid/Base Potential	**-47**	tons/1000	0.0	1		11/09/10 13:00		
Acid Potential	**47**	tons/1000	0.50	1		11/09/10 13:00		

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141486

Sample: CN-01-H **Lab ID: 10141486004** Collected: 10/21/10 07:00 Received: 10/26/10 08:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**4680**	mg/kg	47.6	2000	10/29/10 08:38	11/04/10 15:05	7440-36-0	
Arsenic	**16300**	mg/kg	47.6	2000	10/29/10 08:38	11/04/10 15:05	7440-38-2	
Cadmium	**6.4**	mg/kg	0.076	20	10/29/10 08:38	11/04/10 15:00	7440-43-9	
Chromium	**5.2**	mg/kg	0.48	20	10/29/10 08:38	11/04/10 15:00	7440-47-3	
Copper	**361**	mg/kg	0.48	20	10/29/10 08:38	11/04/10 15:00	7440-50-8	
Iron	**66600**	mg/kg	4760	2000	10/29/10 08:38	11/04/10 15:05	7439-89-6	
Lead	**5900**	mg/kg	47.6	2000	10/29/10 08:38	11/04/10 15:05	7439-92-1	
Manganese	**235**	mg/kg	0.48	20	10/29/10 08:38	11/04/10 15:00	7439-96-5	
Zinc	**858**	mg/kg	476	2000	10/29/10 08:38	11/04/10 15:05	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**2.4**	mg/kg	0.097	5	10/28/10 12:36	10/29/10 09:54	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.9**	Std. Units	0.10	1		11/04/10 16:40		H1
Sobek Acid Base Potential	Analytical Method: Modified Sobek 7							
Neutralization Potential	**0**	tons/1000	0.50	1		11/03/10 14:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 7							
Sulfur, HCl Extractable	**0.0618**	% (w/w)	0.050	1		10/28/10 20:49		
Sulfur, HNO3 Extractable	**0.242**	% (w/w)	0.050	1		10/28/10 20:49		
Sulfur, Hot Water Extractable	**0.377**	% (w/w)	0.050	1		10/28/10 20:49		
Sulfur, Residual	ND	% (w/w)	0.050	1		10/28/10 20:49		
Total Sulfur	**0.715**	% (w/w)	0.050	1		10/28/10 20:49		
Sobek Calculations	Analytical Method: Modified Sobek 7							
Acid/Base Potential	**-10**	tons/1000	0.0	1		11/09/10 13:00		
Acid Potential	**10**	tons/1000	0.50	1		11/09/10 13:00		

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141486

QC Batch: MPRP/23139 Analysis Method: EPA 6020
QC Batch Method: EPA 3050 Analysis Description: 6020 MET
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

METHOD BLANK: 880420 Matrix: Solid
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/kg	ND	0.50	11/04/10 06:11	
Arsenic	mg/kg	ND	0.50	11/04/10 06:11	
Cadmium	mg/kg	ND	0.079	11/04/10 06:11	
Chromium	mg/kg	ND	0.50	11/04/10 06:11	
Copper	mg/kg	ND	0.50	11/04/10 06:11	
Iron	mg/kg	ND	49.5	11/04/10 06:11	
Lead	mg/kg	ND	0.50	11/04/10 06:11	
Manganese	mg/kg	ND	0.50	11/04/10 06:11	
Zinc	mg/kg	ND	5.0	11/04/10 06:11	

LABORATORY CONTROL SAMPLE: 880421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	19	17.8	93	75-125	
Arsenic	mg/kg	19	17.8	94	75-125	
Cadmium	mg/kg	19	18.3	96	75-125	
Chromium	mg/kg	19	18.1	95	75-125	
Copper	mg/kg	19	18.0	94	75-125	
Iron	mg/kg	238	247	104	75-125	
Lead	mg/kg	19	18.6	97	75-125	
Manganese	mg/kg	19	18.1	95	75-125	
Zinc	mg/kg	19	18.1	95	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 880422 880423

Parameter	Units	20829069 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/kg	ND	21.1	21.6	12.7	13.6	59	62	75-125	7	20	M6
Arsenic	mg/kg	4.4	21.1	21.6	23.7	22.8	91	85	75-125	4	20	
Cadmium	mg/kg	0.025J	21.1	21.6	21.7	22.5	102	104	75-125	4	20	
Chromium	mg/kg	33.1	21.1	21.6	40.7	40.3	36	33	75-125	.9	20	M6
Copper	mg/kg	16.6	21.1	21.6	28.2	27.8	55	52	75-125	1	20	M6
Iron	mg/kg	17400	265	270	11500	9220	-2250	-3050	75-125	22	20	D6,M6
Lead	mg/kg	4.2	21.1	21.6	24.3	24.3	95	93	75-125	.01	20	
Manganese	mg/kg	334	21.1	21.6	202	184	-624	-695	75-125	9	20	M6
Zinc	mg/kg	57.3	21.1	21.6	52.9	50.6	-21	-31	75-125	4	20	M6

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141486

MATRIX SPIKE SAMPLE: 880424

Parameter	Units	20829089 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	ND	18.3	9.4	51	75-125	M6
Arsenic	mg/kg	3.2	18.3	21.0	97	75-125	
Cadmium	mg/kg	0.10	18.3	18.6	101	75-125	
Chromium	mg/kg	14.7	18.3	37.5	125	75-125	
Copper	mg/kg	7.5	18.3	28.3	114	75-125	
Iron	mg/kg	14800	228	16900	922	75-125	M6
Lead	mg/kg	6.4	18.3	25.8	107	75-125	
Manganese	mg/kg	249	18.3	279	166	75-125	M6
Zinc	mg/kg	26.4	18.3	49.8	128	75-125	M6

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141486

QC Batch: MERP/4927 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

METHOD BLANK: 880372 Matrix: Solid
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.019	10/29/10 09:28	

LABORATORY CONTROL SAMPLE: 880373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.47	0.53	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 880374 880375

Parameter	Units	10141600001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.47	.43	0.62	0.52	130	119	80-120	17	20	M1

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141486

QC Batch: MT/5248 Analysis Method: EPA 9045
QC Batch Method: EPA 9045 Analysis Description: 9045 pH
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

LABORATORY CONTROL SAMPLE: 885478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH	Std. Units	5	5.0	99	98-102	

SAMPLE DUPLICATE: 885947

Parameter	Units	10141486004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	3.9	4.0	.8	3	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141486

QC Batch: MT/5139 Analysis Method: Modified Sobek 7
QC Batch Method: Modified Sobek 7 Analysis Description: Sobek Extractable Sulfur
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

METHOD BLANK: 876870 Matrix: Solid
Associated Lab Samples: 10141486001, 10141486002, 10141486003, 10141486004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfur, HCl Extractable	% (w/w)	ND	0.050	10/28/10 10:35	
Sulfur, HNO3 Extractable	% (w/w)	ND	0.050	10/28/10 10:35	
Sulfur, Hot Water Extractable	% (w/w)	ND	0.050	10/28/10 10:35	
Sulfur, Residual	% (w/w)	ND	0.050	10/28/10 10:35	
Total Sulfur	% (w/w)	ND	0.050	10/28/10 10:35	

SAMPLE DUPLICATE: 876872

Parameter	Units	10140782001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfur, HCl Extractable	% (w/w)	<0.050	ND		20	
Sulfur, HNO3 Extractable	% (w/w)	<0.050	ND		20	
Sulfur, Hot Water Extractable	% (w/w)	<0.050	ND		20	
Sulfur, Residual	% (w/w)	<0.050	ND		20	
Total Sulfur	% (w/w)	<0.050	ND			

SAMPLE DUPLICATE: 876873

Parameter	Units	10140782011 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfur, HCl Extractable	% (w/w)	<0.050	ND		20	
Sulfur, HNO3 Extractable	% (w/w)	<0.050	ND		20	
Sulfur, Hot Water Extractable	% (w/w)	<0.050	ND		20	
Sulfur, Residual	% (w/w)	<0.050	ND		20	
Total Sulfur	% (w/w)	<0.050	ND			

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QUALIFIERS

Project: Monte Cristo 3484
Pace Project No.: 10141486

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484
Pace Project No.: 10141486

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10141486001	PW-01-H	EPA 3050	MPRP/23139	EPA 6020	ICPM/9439
10141486002	RY-01-H	EPA 3050	MPRP/23139	EPA 6020	ICPM/9439
10141486003	COL-01-H	EPA 3050	MPRP/23139	EPA 6020	ICPM/9439
10141486004	CN-01-H	EPA 3050	MPRP/23139	EPA 6020	ICPM/9439
10141486001	PW-01-H	EPA 7471	MERP/4927	EPA 7471	MERC/5762
10141486002	RY-01-H	EPA 7471	MERP/4927	EPA 7471	MERC/5762
10141486003	COL-01-H	EPA 7471	MERP/4927	EPA 7471	MERC/5762
10141486004	CN-01-H	EPA 7471	MERP/4927	EPA 7471	MERC/5762
10141486001	PW-01-H	EPA 9045	MT/5248		
10141486002	RY-01-H	EPA 9045	MT/5248		
10141486003	COL-01-H	EPA 9045	MT/5248		
10141486004	CN-01-H	EPA 9045	MT/5248		
10141486001	PW-01-H	Modified Sobek 7	MT/5238		
10141486002	RY-01-H	Modified Sobek 7	MT/5238		
10141486003	COL-01-H	Modified Sobek 7	MT/5238		
10141486004	CN-01-H	Modified Sobek 7	MT/5238		
10141486001	PW-01-H	Modified Sobek 7	MT/5139		
10141486002	RY-01-H	Modified Sobek 7	MT/5139		
10141486003	COL-01-H	Modified Sobek 7	MT/5139		
10141486004	CN-01-H	Modified Sobek 7	MT/5139		
10141486001	PW-01-H	Modified Sobek 7	MT/5204		
10141486002	RY-01-H	Modified Sobek 7	MT/5204		
10141486003	COL-01-H	Modified Sobek 7	MT/5204		
10141486004	CN-01-H	Modified Sobek 7	MT/5204		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences
Spokana, Wa 99216	Sparks, NV 89431 mli@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 3484	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Requested Analysis Filtered (Y/N)

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Mod ABA w/paste pH and sulfur speciation	ICP Metals: (10) to check	antimony,arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	SL		10/21/10	7:00am				1									X	X						10141486 001
2	RY-01-H	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	002
3	COL-01-H																								003
4	CN-01-H																								004
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature] / MLI	10/21/10	9:00am			
	FedEx	10/26/10	0845	Jeff Deane / Pace	10/26/10	0845

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.0	N	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Johnson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/21/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: CASCADE Project # 10141486

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace Other _____

Tracking #: 0866 7723 1500 0008

Custody Seal on Cooler/Box Present: [ ] yes [X] no Seals intact: [ ] yes [X] no

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [X] None [ ] Other _____ Temp Blank: Yes ____ No X

Thermometer Used 13.5 Type of Ice: Wet Blue (None) [ ] Samples on ice, cooling process has begun

Cooler Temperature 14.0 Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and initials of person examining contents: NCT 10/26/10

Chain of Custody Present:	[X]Yes [ ]No [ ]N/A	1.
Chain of Custody Filled Out:	[X]Yes [ ]No [ ]N/A	2.
Chain of Custody Relinquished:	[X]Yes [ ]No [ ]N/A	3.
Sampler Name & Signature on COC:	[X]Yes [ ]No [ ]N/A	4.
Samples Arrived within Hold Time:	[X]Yes [ ]No [ ]N/A	5.
Short Hold Time Analysis (<72hr):	[ ]Yes [X]No [ ]N/A	6.
Rush Turn Around Time Requested:	[ ]Yes [X]No [ ]N/A	7.
Sufficient Volume:	[X]Yes [ ]No [ ]N/A	8.
Correct Containers Used:	[X]Yes [ ]No [ ]N/A	9.
-Pace Containers Used:	[ ]Yes [X]No [ ]N/A	
Containers Intact:	[X]Yes [ ]No [ ]N/A	10.
Filtered volume received for Dissolved tests	[ ]Yes [ ]No [X]N/A	11.
Sample Labels match COC:	[X]Yes [ ]No [ ]N/A	12.
-Includes date/time/ID/Analysis Matrix: SOIL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	[ ]Yes [ ]No [X]N/A	13. [ ] HNO3 [ ] H2SO4 [ ] NaOH [ ] HCl Samp #
All containers needing preservation are found to be in compliance with EPA recommendation.	[ ]Yes [ ]No [X]N/A	
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	[ ]Yes [X]No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	[ ]Yes [ ]No [X]N/A	14.
Headspace in VOA Vials (>6mm):	[ ]Yes [ ]No [X]N/A	15.
Trip Blank Present:	[ ]Yes [ ]No [X]N/A	16.
Trip Blank Custody Seals Present	[ ]Yes [ ]No [X]N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 10/26/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

3484 HCT Residues
Mod ABA and ICP metals

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April 29, 2011

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484
Pace Project No.: 10154741

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2011. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: Monte Cristo 3484
Pace Project No.: 10154741

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Montana Certification IDs
602 South 25th Street, Billings, MT 59101
EPA Region 8 Certification #: 8TMS-Q
Idaho Certification #: MT00012
Montana Certification #: MT CERT0040
NVLAP Certification #: 101292-0
Minnesota Dept of Health Certification #: 030-999-442

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SAMPLE SUMMARY

Project: Monte Cristo 3484
Pace Project No.: 10154741

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10154741001	PW-01-H (HCT RESIDUE)	Solid	04/12/11 09:00	04/18/11 09:00
10154741002	RY-01-H (HCT RESIDUE)	Solid	04/12/11 09:00	04/18/11 09:00
10154741003	COL-01-H (HCT RESIDUE)	Solid	04/12/11 09:00	04/18/11 09:00
10154741004	CN-01-H (HCT RESIDUE)	Solid	04/12/11 09:00	04/18/11 09:00

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484
Pace Project No.: 10154741

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10154741001	PW-01-H (HCT RESIDUE)	EPA 6020	TL1	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 3.2	JH1	1
		Modified Sobek 3.2	JH1	5
		Modified Sobek 3.2	JH1	2
10154741002	RY-01-H (HCT RESIDUE)	EPA 6020	TL1	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 3.2	JH1	1
		Modified Sobek 3.2	JH1	5
		Modified Sobek 3.2	JH1	2
10154741003	COL-01-H (HCT RESIDUE)	EPA 6020	TL1	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 3.2	JH1	1
		Modified Sobek 3.2	JH1	5
		Modified Sobek 3.2	JH1	2
10154741004	CN-01-H (HCT RESIDUE)	EPA 6020	TL1	9
		EPA 7471	TEM	1
		EPA 9045	JH1	1
		Modified Sobek 3.2	JH1	1
		Modified Sobek 3.2	JH1	5
		Modified Sobek 3.2	JH1	2

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10154741

Sample: PW-01-H (HCT RESIDUE) **Lab ID: 10154741001** Collected: 04/12/11 09:00 Received: 04/18/11 09:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**700**	mg/kg	2.3	100	04/20/11 12:22	04/22/11 11:30	7440-36-0	
Arsenic	**15100**	mg/kg	22.9	1000	04/20/11 12:22	04/22/11 11:57	7440-38-2	
Cadmium	**18.4**	mg/kg	0.073	20	04/20/11 12:22	04/21/11 15:21	7440-43-9	
Chromium	**2.6**	mg/kg	0.46	20	04/20/11 12:22	04/21/11 15:21	7440-47-3	
Copper	**274**	mg/kg	0.46	20	04/20/11 12:22	04/21/11 15:21	7440-50-8	
Iron	**55500**	mg/kg	229	100	04/20/11 12:22	04/22/11 11:30	7439-89-6	
Lead	**2540**	mg/kg	4.6	1000	04/20/11 12:22	04/22/11 11:57	7439-92-1	
Manganese	**35.9**	mg/kg	0.46	20	04/20/11 12:22	04/21/11 15:21	7439-96-5	
Zinc	**2480**	mg/kg	229	1000	04/20/11 12:22	04/22/11 11:57	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**1.3**	mg/kg	0.091	5	04/21/11 11:55	04/27/11 08:40	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.2**	Std. Units	0.10	1		04/19/11 14:05		H3
Sobek Acid Base Potential	Analytical Method: Modified Sobek 3.2							
Neutralization Potential	**0**	tons/1000	0.50	1		04/20/11 15:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 3.2							
Sulfur, HCl Extractable	**0.308**	% (w/w)	0.050	1		04/25/11 15:18		
Sulfur, HNO3 Extractable	**0.275**	% (w/w)	0.050	1		04/25/11 15:18		
Sulfur, Hot Water Extractable	**0.291**	% (w/w)	0.050	1		04/25/11 15:18		
Sulfur, Residual	ND	% (w/w)	0.050	1		04/25/11 15:18		
Total Sulfur	**0.893**	% (w/w)	0.050	1		04/25/11 15:18		
Sobek Calculations	Analytical Method: Modified Sobek 3.2							
Acid/Base Potential	**-16**	tons/1000		1		04/20/11 15:30		
Acid Potential	**16**	tons/1000	4.3	1		04/20/11 15:30		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10154741

Sample: RY-01-H (HCT RESIDUE) **Lab ID: 10154741002** Collected: 04/12/11 09:00 Received: 04/18/11 09:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**29.7**	mg/kg	0.50	20	04/20/11 12:22	04/21/11 15:24	7440-36-0	
Arsenic	**22700**	mg/kg	24.8	1000	04/20/11 12:22	04/22/11 13:02	7440-38-2	
Cadmium	**0.60**	mg/kg	0.079	20	04/20/11 12:22	04/21/11 15:24	7440-43-9	
Chromium	**28.7**	mg/kg	0.50	20	04/20/11 12:22	04/21/11 15:24	7440-47-3	
Copper	**88.8**	mg/kg	0.50	20	04/20/11 12:22	04/21/11 15:24	7440-50-8	
Iron	**73800**	mg/kg	248	100	04/20/11 12:22	04/22/11 11:33	7439-89-6	
Lead	**619**	mg/kg	0.50	100	04/20/11 12:22	04/22/11 11:33	7439-92-1	
Manganese	**402**	mg/kg	0.50	20	04/20/11 12:22	04/21/11 15:24	7439-96-5	
Zinc	**96.6**	mg/kg	5.0	20	04/20/11 12:22	04/21/11 15:24	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.44**	mg/kg	0.018	1	04/21/11 11:55	04/27/11 08:47	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.5**	Std. Units	0.10	1		04/19/11 14:08		H3
Sobek Acid Base Potential	Analytical Method: Modified Sobek 3.2							
Neutralization Potential	**0**	tons/1000	0.50	1		04/20/11 15:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 3.2							
Sulfur, HCl Extractable	**0.0816**	% (w/w)	0.050	1		04/25/11 15:53		
Sulfur, HNO3 Extractable	**0.346**	% (w/w)	0.050	1		04/25/11 15:53		
Sulfur, Hot Water Extractable	**0.227**	% (w/w)	0.050	1		04/25/11 15:53		
Sulfur, Residual	ND	% (w/w)	0.050	1		04/25/11 15:53		
Total Sulfur	**0.665**	% (w/w)	0.050	1		04/25/11 15:53		
Sobek Calculations	Analytical Method: Modified Sobek 3.2							
Acid/Base Potential	**-13**	tons/1000		1		04/20/11 15:30		
Acid Potential	**13**	tons/1000	4.3	1		04/20/11 15:30		

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10154741

Sample: COL-01-H (HCT RESIDUE) **Lab ID: 10154741003** Collected: 04/12/11 09:00 Received: 04/18/11 09:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**2440**	mg/kg	28.7	1250	04/20/11 12:22	04/22/11 13:05	7440-36-0	
Arsenic	**23700**	mg/kg	28.7	1250	04/20/11 12:22	04/22/11 13:05	7440-38-2	
Cadmium	**28.2**	mg/kg	0.073	20	04/20/11 12:22	04/21/11 15:48	7440-43-9	
Chromium	**1.3**	mg/kg	0.46	20	04/20/11 12:22	04/21/11 15:48	7440-47-3	
Copper	**1030**	mg/kg	2.3	100	04/20/11 12:22	04/22/11 11:40	7440-50-8	
Iron	**75700**	mg/kg	229	100	04/20/11 12:22	04/22/11 11:40	7439-89-6	
Lead	**14700**	mg/kg	5.7	1250	04/20/11 12:22	04/22/11 13:05	7439-92-1	
Manganese	**79.2**	mg/kg	0.46	20	04/20/11 12:22	04/21/11 15:48	7439-96-5	
Zinc	**4010**	mg/kg	287	1250	04/20/11 12:22	04/22/11 13:05	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**2.4**	mg/kg	0.10	5	04/21/11 11:55	04/27/11 08:54	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**2.7**	Std. Units	0.10	1		04/19/11 14:09		H3
Sobek Acid Base Potential	Analytical Method: Modified Sobek 3.2							
Neutralization Potential	**0**	tons/1000	0.50	1		04/20/11 15:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 3.2							
Sulfur, HCl Extractable	ND	% (w/w)	0.050	1		04/25/11 16:36		
Sulfur, HNO3 Extractable	**1.71**	% (w/w)	0.050	1		04/25/11 16:36		
Sulfur, Hot Water Extractable	**1.14**	% (w/w)	0.050	1		04/25/11 16:36		
Sulfur, Residual	ND	% (w/w)	0.050	1		04/25/11 16:36		
Total Sulfur	**2.83**	% (w/w)	0.050	1		04/25/11 16:36		
Sobek Calculations	Analytical Method: Modified Sobek 3.2							
Acid/Base Potential	**-54**	tons/1000		1		04/20/11 15:30		
Acid Potential	**54**	tons/1000	4.3	1		04/20/11 15:30		

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10154741

Sample: CN-01-H (HCT RESIDUE) **Lab ID: 10154741004** Collected: 04/12/11 09:00 Received: 04/18/11 09:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3050							
Antimony	**3540**	mg/kg	23.4	1000	04/20/11 12:22	04/22/11 11:50	7440-36-0	
Arsenic	**15600**	mg/kg	23.4	1000	04/20/11 12:22	04/22/11 11:50	7440-38-2	
Cadmium	**5.8**	mg/kg	0.075	20	04/20/11 12:22	04/21/11 15:51	7440-43-9	
Chromium	**10.7**	mg/kg	0.47	20	04/20/11 12:22	04/21/11 15:51	7440-47-3	
Copper	**387**	mg/kg	0.47	20	04/20/11 12:22	04/21/11 15:51	7440-50-8	
Iron	**63200**	mg/kg	234	100	04/20/11 12:22	04/22/11 11:46	7439-89-6	
Lead	**6720**	mg/kg	4.7	1000	04/20/11 12:22	04/22/11 11:50	7439-92-1	
Manganese	**245**	mg/kg	0.47	20	04/20/11 12:22	04/21/11 15:51	7439-96-5	
Zinc	**765**	mg/kg	23.4	100	04/20/11 12:22	04/22/11 11:46	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**1.6**	mg/kg	0.088	5	04/21/11 11:55	04/27/11 09:02	7439-97-6	
9045 pH	Analytical Method: EPA 9045							
pH	**3.7**	Std. Units	0.10	1		04/19/11 14:10		H3
Sobek Acid Base Potential	Analytical Method: Modified Sobek 3.2							
Neutralization Potential	**0**	tons/1000	0.50	1		04/20/11 15:30		
Sobek Extractable Sulfur	Analytical Method: Modified Sobek 3.2							
Sulfur, HCl Extractable	**0.0523**	% (w/w)	0.050	1		04/25/11 16:24		
Sulfur, HNO3 Extractable	**0.311**	% (w/w)	0.050	1		04/25/11 16:24		
Sulfur, Hot Water Extractable	**0.266**	% (w/w)	0.050	1		04/25/11 16:24		
Sulfur, Residual	ND	% (w/w)	0.050	1		04/25/11 16:24		
Total Sulfur	**0.646**	% (w/w)	0.050	1		04/25/11 16:24		
Sobek Calculations	Analytical Method: Modified Sobek 3.2							
Acid/Base Potential	**-11**	tons/1000		1		04/20/11 15:30		
Acid Potential	**11**	tons/1000	4.3	1		04/20/11 15:30		

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

QC Batch: MPRP/25629 Analysis Method: EPA 6020
QC Batch Method: EPA 3050 Analysis Description: 6020 MET
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

METHOD BLANK: 961843 Matrix: Solid
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/kg	ND	0.50	04/21/11 13:27	
Arsenic	mg/kg	ND	0.50	04/21/11 13:27	
Cadmium	mg/kg	ND	0.080	04/21/11 13:27	
Chromium	mg/kg	ND	0.50	04/21/11 13:27	
Copper	mg/kg	ND	0.50	04/21/11 13:27	
Iron	mg/kg	ND	50.0	04/21/11 13:27	
Lead	mg/kg	ND	0.10	04/21/11 13:27	
Manganese	mg/kg	ND	0.50	04/21/11 13:27	
Zinc	mg/kg	ND	5.0	04/21/11 13:27	

LABORATORY CONTROL SAMPLE: 961844

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	18	18.5	103	75-125	
Arsenic	mg/kg	18	20.6	114	75-125	
Cadmium	mg/kg	18	18.5	103	75-125	
Chromium	mg/kg	18	18.7	104	75-125	
Copper	mg/kg	18	19.0	105	75-125	
Iron	mg/kg	225	252	112	75-125	
Lead	mg/kg	18	19.9	110	75-125	
Manganese	mg/kg	18	18.5	103	75-125	
Zinc	mg/kg	18	19.3	107	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 961845 961846

Parameter	Units	20874524 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/kg	<0.25	22.9	24.8	21.1	22.0	91	88	75-125	4	20	
Arsenic	mg/kg	7.6	22.9	24.8	42.0	39.9	150	130	75-125	5	20	M6
Cadmium	mg/kg	0.084	22.9	24.8	23.9	26.2	104	105	75-125	9	20	
Chromium	mg/kg	5.4	22.9	24.8	30.6	32.5	110	109	75-125	6	20	
Copper	mg/kg	5.0	22.9	24.8	30.1	31.6	109	107	75-125	5	20	
Iron	mg/kg	7200	287	311	7400	8670	70	472	75-125	16	20	M6
Lead	mg/kg	14.9	22.9	24.8	36.4	41.9	93	109	75-125	14	20	
Manganese	mg/kg	172	22.9	24.8	138	179	-146	29	75-125	26	20	D6,M6
Zinc	mg/kg	20.6	22.9	24.8	44.9	50.6	106	121	75-125	12	20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

MATRIX SPIKE SAMPLE: 962353

Parameter	Units	257220018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	ND	20.4	16.5	80	75-125	
Arsenic	mg/kg	2.1	20.4	22.2	99	75-125	
Cadmium	mg/kg	ND	20.4	21.4	104	75-125	
Chromium	mg/kg	31.5	20.4	55.4	117	75-125	
Copper	mg/kg	15.0	20.4	35.0	98	75-125	
Iron	mg/kg	18900	256	18700	-77	75-125	M6
Lead	mg/kg	2.5	20.4	24.2	107	75-125	
Manganese	mg/kg	331	20.4	373	206	75-125	M6
Zinc	mg/kg	32.7	20.4	58.1	124	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

QC Batch: MERP/5260 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

METHOD BLANK: 963086 Matrix: Solid
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.018	04/27/11 08:10	

LABORATORY CONTROL SAMPLE: 963087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.48	0.52	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 963088 963089

Parameter	Units	10155073001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.49	.49	0.61	0.60	125	123	80-120	2	20	M1

MATRIX SPIKE SAMPLE: 963090

Parameter	Units	10155105005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	ND	.52	0.61	114	80-120	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

QC Batch: MT/5830 Analysis Method: EPA 9045
QC Batch Method: EPA 9045 Analysis Description: 9045 pH
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

LABORATORY CONTROL SAMPLE: 961275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH	Std. Units	5	5.0	100	98-102	

SAMPLE DUPLICATE: 961276

Parameter	Units	10154741001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	3.2	3.2	.3	3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

QC Batch: MT/5836 Analysis Method: Modified Sobek 3.2
QC Batch Method: Modified Sobek 3.2 Analysis Description: Sobek Acid Base Potential
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

SAMPLE DUPLICATE: 961935

Parameter	Units	10154741001 Result	Dup Result	RPD	Max RPD	Qualifiers
Neutralization Potential	tons/1000	0	0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10154741

QC Batch: MT/5835 Analysis Method: Modified Sobek 3.2
QC Batch Method: Modified Sobek 3.2 Analysis Description: Sobek Extractable Sulfur
Associated Lab Samples: 10154741001, 10154741002, 10154741003, 10154741004

SAMPLE DUPLICATE: 961933

Parameter	Units	10154741001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfur, HCl Extractable	% (w/w)	0.308	0.246		20	
Sulfur, HNO3 Extractable	% (w/w)	0.275	0.298		20	
Sulfur, Hot Water Extractable	% (w/w)	0.291	0.430		20	
Sulfur, Residual	% (w/w)	ND	ND		20	
Total Sulfur	% (w/w)	0.893	0.984			

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QUALIFIERS

Project: Monte Cristo 3484
Pace Project No.: 10154741

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H3	Sample was received outside the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484
Pace Project No.: 10154741

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10154741001	PW-01-H (HCT RESIDUE)	EPA 3050	MPRP/25629	EPA 6020	ICPM/10455
10154741002	RY-01-H (HCT RESIDUE)	EPA 3050	MPRP/25629	EPA 6020	ICPM/10455
10154741003	COL-01-H (HCT RESIDUE)	EPA 3050	MPRP/25629	EPA 6020	ICPM/10455
10154741004	CN-01-H (HCT RESIDUE)	EPA 3050	MPRP/25629	EPA 6020	ICPM/10455
10154741001	PW-01-H (HCT RESIDUE)	EPA 7471	MERP/5260	EPA 7471	MERC/6079
10154741002	RY-01-H (HCT RESIDUE)	EPA 7471	MERP/5260	EPA 7471	MERC/6079
10154741003	COL-01-H (HCT RESIDUE)	EPA 7471	MERP/5260	EPA 7471	MERC/6079
10154741004	CN-01-H (HCT RESIDUE)	EPA 7471	MERP/5260	EPA 7471	MERC/6079
10154741001	PW-01-H (HCT RESIDUE)	EPA 9045	MT/5830		
10154741002	RY-01-H (HCT RESIDUE)	EPA 9045	MT/5830		
10154741003	COL-01-H (HCT RESIDUE)	EPA 9045	MT/5830		
10154741004	CN-01-H (HCT RESIDUE)	EPA 9045	MT/5830		
10154741001	PW-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5836		
10154741002	RY-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5836		
10154741003	COL-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5836		
10154741004	CN-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5836		
10154741001	PW-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5835		
10154741002	RY-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5835		
10154741003	COL-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5835		
10154741004	CN-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5835		
10154741001	PW-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5837		
10154741002	RY-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5837		
10154741003	COL-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5837		
10154741004	CN-01-H (HCT RESIDUE)	Modified Sobek 3.2	MT/5837		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Cascade Earth Sciences
Address:	12720 E. Nora Ave.
	Spokane, WA 99216
Email To:	phillip.moyle@valmont.com
Phone: 509-921-0290	Fax: 509-921-1788
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Cascade Earth Sciences
Copy To:	McClelland Labs 1016 Greg St
	Sparks, NV 89431 mll@mcllest.com
Purchase Order No.:	
Project Name:	Monte Cristo
Project Number:	3484

Section C Invoice Information:

Attention:	Phillip Moyle
Company Name:	Cascade Earth Sciences
Address:	12720 E. Nora Ave. Spokane, WA 992
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	Sample ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Mod ABA w/ paste pH and	Sulphur speciation	ICP Metals (10) to check	antimony,arsenic,cadmium	Chromium,copper,iron,lead	manganese,mercury,zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H HCT residue	SL		4/12/11	9:00am				1									X	X		X	X	X	X		001
2	RY-01-H HCT residue	SL		↓	9:00am				1									X	X		X	X	X	X		002
3	COL-01-H HCT residue	SL			9:00am				1									X	X		X	X	X	X		003
4	CN-01-H HCT residue	SL		↓	9:00am				1									X	X		X	X	X	X		004
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

10154741

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] / MLI	4/12/11	9:00am							
	fedex	4/18/11	0900	Norma C Thurlkill for Denise Jensen	4/18/11	4/18/11	800			
							N/A	NA	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michael Medina

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 4/12/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: CASCADE Project # 10154741

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 9612019086723150000015

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes ____ No X

Thermometer Used 1383045 or 135 Type of Ice: Wet Blue None ☐ Samples on Ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: YCT 4/18/11

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☒No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SOIL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☒N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp #
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☒No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 4/18/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Section 2

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3484 WORK O

November 01, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484
Pace Project No.: 10141090

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on October 20, 2010. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences

Pace Analytical Services, Inc.
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(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484
Pace Project No.: 10141090

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Monte Cristo 3484
Pace Project No.: 10141090

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10141090001	PW-01-H	Water	10/19/10 08:00	10/20/10 09:20
10141090002	RY-01-H	Water	10/19/10 08:00	10/20/10 09:20
10141090003	COL-01-H	Water	10/19/10 08:00	10/20/10 09:20
10141090004	CN-01-H	Water	10/19/10 08:00	10/20/10 09:20

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484
Pace Project No.: 10141090

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10141090001	PW-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10141090002	RY-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10141090003	COL-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10141090004	CN-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141090

Sample: PW-01-H **Lab ID: 10141090001** Collected: 10/19/10 08:00 Received: 10/20/10 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**20.4**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:09	7440-36-0	
Arsenic	**257**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:09	7440-38-2	
Cadmium	**2.0**	ug/L	0.080	1	10/25/10 16:25	10/29/10 18:09	7440-43-9	
Chromium	ND	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:09	7440-47-3	
Copper	**125**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:09	7440-50-8	
Iron	**2250**	ug/L	50.0	1	10/25/10 16:25	10/29/10 18:09	7439-89-6	
Lead	**59.6**	ug/L	0.10	1	10/25/10 16:25	10/29/10 18:09	7439-92-1	
Manganese	**152**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:09	7439-96-5	
Zinc	**248**	ug/L	5.0	1	10/25/10 16:25	10/29/10 18:09	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	10/28/10 16:04	10/29/10 13:00	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141090

Sample: RY-01-H **Lab ID: 10141090002** Collected: 10/19/10 08:00 Received: 10/20/10 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**2.7**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:27	7440-36-0	
Arsenic	**153**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:27	7440-38-2	
Cadmium	**5.8**	ug/L	0.080	1	10/25/10 16:25	10/29/10 18:27	7440-43-9	
Chromium	**0.76**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:27	7440-47-3	
Copper	**91.0**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:27	7440-50-8	
Iron	**3940**	ug/L	50.0	1	10/25/10 16:25	10/29/10 18:27	7439-89-6	
Lead	**16.4**	ug/L	0.10	1	10/25/10 16:25	10/29/10 18:27	7439-92-1	
Manganese	**4080**	ug/L	5.0	10	10/25/10 16:25	10/29/10 18:31	7439-96-5	
Zinc	**989**	ug/L	50.0	10	10/25/10 16:25	10/29/10 18:31	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	10/28/10 16:04	10/29/10 13:05	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141090

Sample: COL-01-H **Lab ID: 10141090003** Collected: 10/19/10 08:00 Received: 10/20/10 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**39.5**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:36	7440-36-0	
Arsenic	**720**	ug/L	5.0	10	10/25/10 16:25	10/29/10 18:40	7440-38-2	
Cadmium	**9.9**	ug/L	0.080	1	10/25/10 16:25	10/29/10 18:36	7440-43-9	
Chromium	**3.8**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:36	7440-47-3	
Copper	**280**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:36	7440-50-8	
Iron	**4810**	ug/L	50.0	1	10/25/10 16:25	10/29/10 18:36	7439-89-6	
Lead	**1640**	ug/L	1.0	10	10/25/10 16:25	10/29/10 18:40	7439-92-1	
Manganese	**1360**	ug/L	5.0	10	10/25/10 16:25	10/29/10 18:40	7439-96-5	
Zinc	**988**	ug/L	50.0	10	10/25/10 16:25	10/29/10 18:40	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	10/28/10 16:04	10/29/10 13:09	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484
Pace Project No.: 10141090

Sample: CN-01-H **Lab ID: 10141090004** Collected: 10/19/10 08:00 Received: 10/20/10 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**73.5**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:58	7440-36-0	
Arsenic	**74.5**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:58	7440-38-2	
Cadmium	**4.7**	ug/L	0.080	1	10/25/10 16:25	10/29/10 18:58	7440-43-9	
Chromium	**0.73**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:58	7440-47-3	
Copper	**103**	ug/L	0.50	1	10/25/10 16:25	10/29/10 18:58	7440-50-8	
Iron	**1680**	ug/L	50.0	1	10/25/10 16:25	10/29/10 18:58	7439-89-6	
Lead	**98.4**	ug/L	0.10	1	10/25/10 16:25	10/29/10 18:58	7439-92-1	
Manganese	**984**	ug/L	2.5	5	10/25/10 16:25	10/29/10 19:03	7439-96-5	
Zinc	**504**	ug/L	25.0	5	10/25/10 16:25	10/29/10 19:03	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	10/28/10 16:04	10/29/10 13:11	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141090

QC Batch: MPRP/23068 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10141090001, 10141090002, 10141090003, 10141090004

METHOD BLANK: 878005 Matrix: Water
Associated Lab Samples: 10141090001, 10141090002, 10141090003, 10141090004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	10/29/10 18:00	
Arsenic	ug/L	ND	0.50	10/29/10 18:00	
Cadmium	ug/L	ND	0.080	10/29/10 18:00	
Chromium	ug/L	ND	0.50	10/29/10 18:00	
Copper	ug/L	ND	0.50	10/29/10 18:00	
Iron	ug/L	ND	50.0	10/29/10 18:00	
Lead	ug/L	ND	0.10	10/29/10 18:00	
Manganese	ug/L	ND	0.50	10/29/10 18:00	
Zinc	ug/L	ND	5.0	10/29/10 18:00	

LABORATORY CONTROL SAMPLE: 878006

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	78.0	98	80-120	
Arsenic	ug/L	80	79.2	99	80-120	
Cadmium	ug/L	80	77.8	97	80-120	
Chromium	ug/L	80	79.5	99	80-120	
Copper	ug/L	80	79.9	100	80-120	
Iron	ug/L	1000	1000	100	80-120	
Lead	ug/L	80	80.6	101	80-120	
Manganese	ug/L	80	79.6	100	80-120	
Zinc	ug/L	80	77.2	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 878007 878008

Parameter	Units	10141090001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	20.4	80	80	98.1	96.8	97	96	75-125	1	20	
Arsenic	ug/L	257	80	80	330	329	92	90	75-125	.4	20	
Cadmium	ug/L	2.0	80	80	80.0	79.3	98	97	75-125	.9	20	
Chromium	ug/L	ND	80	80	80.2	78.8	100	98	75-125	2	20	
Copper	ug/L	125	80	80	205	202	99	96	75-125	1	20	
Iron	ug/L	2250	1000	1000	3270	3210	102	96	75-125	2	20	
Lead	ug/L	59.6	80	80	141	139	102	100	75-125	1	20	
Manganese	ug/L	152	80	80	232	227	100	95	75-125	2	20	
Zinc	ug/L	248	80	80	323	317	93	86	75-125	2	20	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141090

MATRIX SPIKE SAMPLE: 878009

Parameter	Units	9280295007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.67	80	81.6	101	75-125	
Arsenic	ug/L	6.8	80	88.6	102	75-125	
Cadmium	ug/L	ND	80	80.4	100	75-125	
Chromium	ug/L	ND	80	82.0	102	75-125	
Copper	ug/L	ND	80	82.8	103	75-125	
Iron	ug/L	10000	1000	11100	106	75-125	
Lead	ug/L	0.76	80	84.0	104	75-125	
Manganese	ug/L	880	80	949	86	75-125	
Zinc	ug/L	20.3	80	96.8	96	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484
Pace Project No.: 10141090

QC Batch: MERP/4918 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10141090001, 10141090002, 10141090003, 10141090004

METHOD BLANK: 878161 Matrix: Water
Associated Lab Samples: 10141090001, 10141090002, 10141090003, 10141090004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	10/29/10 12:58	

LABORATORY CONTROL SAMPLE: 878162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 878163 878164

Parameter	Units	6087732002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.9	6.5	98	130	80-120	29	20	D6,M1

MATRIX SPIKE SAMPLE: 878165

Parameter	Units	6087732005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.9	98	80-120	

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QUALIFIERS

Project: Monte Cristo 3484
Pace Project No.: 10141090

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484
Pace Project No.: 10141090

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10141090001	**PW-01-H**	EPA 3020	MPRP/23068	EPA 6020	ICPM/9417
10141090002	**RY-01-H**	EPA 3020	MPRP/23068	EPA 6020	ICPM/9417
10141090003	**COL-01-H**	EPA 3020	MPRP/23068	EPA 6020	ICPM/9417
10141090004	**CN-01-H**	EPA 3020	MPRP/23068	EPA 6020	ICPM/9417
10141090001	**PW-01-H**	EPA 7470	MERP/4918	EPA 7470	MERC/5766
10141090002	**RY-01-H**	EPA 7470	MERP/4918	EPA 7470	MERC/5766
10141090003	**COL-01-H**	EPA 7470	MERP/4918	EPA 7470	MERC/5766
10141090004	**CN-01-H**	EPA 7470	MERP/4918	EPA 7470	MERC/5766

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 1 of 1

Section A Required Client Information:

Company:	Cascade Earth Sciences
Address:	12720 E. Nora Ave.
	Spokane, WA 99216
Email To:	phillip.moyle@valmont.com
Phone: 509-921-0290	Fax: 509-921-1788
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Cascade Earth Sciences
Copy To:	McClelland Lab 1016 Greg Street Sparks,NV
	89431 mli@mettest.com
Purchase Order No.:	
Project Name:	Monte Cristo
Project Number:	3484

Section C Invoice Information:

Attention:	Phillip Moyle
Company Name:	Cascade Earth Sciences
Address:	Spokane, WA 99216
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: _____

[redacted]

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Antimony	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	WW	G	10/8/10	7:00am	10/8/10	8:00am	21c	1			X						X	X	X	X	X	X	X	X		001
2	RY-01-H																											002
3	COL-01-H																											003
4	CN-01-H																											004
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature] MLI	10/19/10	9:00am				
	Fedex	10/20/10	0920	[signature] Pace MT	10/20/10	0920	
							5.6 / Y / N / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Johnson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/19/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev 08, 12-Oct-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: Cascade Project # 10141090

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] Other _____

Tracking #: 7940 2675 7801

[redacted]

Custody Seal on Cooler/Box Present: [ ] yes [X] no Seals intact: [ ] yes [X] no

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [X] None [ ] Other Temp Blank: Yes No X

Thermometer Used 135 Type of Ice: Wet Blue None [X] Samples on ice, cooling process has begun

Cooler Temperature 5.6 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: SH 10/20/15

Comments:

Chain of Custody Present:	[X] Yes [ ] No [ ] N/A	1.
Chain of Custody Filled Out:	[X] Yes [ ] No [ ] N/A	2.
Chain of Custody Relinquished:	[X] Yes [ ] No [ ] N/A	3.
Sampler Name & Signature on COC:	[X] Yes [ ] No [ ] N/A	4.
Samples Arrived within Hold Time:	[X] Yes [ ] No [ ] N/A	5.
Short Hold Time Analysis (<72hr):	[ ] Yes [X] No [ ] N/A	6.
Rush Turn Around Time Requested:	[ ] Yes [X] No [ ] N/A	7.
Sufficient Volume:	[X] Yes [ ] No [ ] N/A	8.
Correct Containers Used:	[X] Yes [ ] No [ ] N/A	9.
-Pace Containers Used:	[X] Yes [ ] No [ ] N/A	
Containers Intact:	[X] Yes [ ] No [ ] N/A	10.
Filtered volume received for Dissolved tests	[ ] Yes [ ] No [X] N/A	11.
Sample Labels match COC:	[X] Yes [ ] No [ ] N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	[X] Yes [ ] No [ ] N/A	13. [X] HNO3 [ ] H2SO4 [ ] NaOH [ ] HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	[X] Yes [ ] No [ ] N/A	Samp # 20x80x 14 HNO2 4/1
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	[ ] Yes [X] No	Initial when completed SH Lot # of added preservative
Samples checked for dechlorination:	[ ] Yes [ ] No [X] N/A	14.
Headspace in VOA Vials (>6mm):	[ ] Yes [ ] No [X] N/A	15.
Trip Blank Present:	[ ] Yes [ ] No [X] N/A	16.
Trip Blank Custody Seals Present	[ ] Yes [ ] No [X] N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] Date: 10/20/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3484 WK 1

November 12, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on October 27, 2010. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
California Certification #: 09268CA
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
New York Certification #: 11888
North Carolina Certification #: 503
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

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Billings, MT 591014549
(406)254-7226

SAMPLE SUMMARY

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10141623001	PW-01-H	Water	10/26/10 08:00	10/27/10 09:35
10141623002	RY-01-H	Water	10/26/10 08:00	10/27/10 09:35
10141623003	COL-01-H	Water	10/26/10 08:00	10/27/10 09:35
10141623004	CN-01-H	Water	10/26/10 08:00	10/27/10 09:35

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10141623001	PW-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10141623002	RY-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10141623003	COL-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10141623004	CN-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Sample: PW-01-H **Lab ID: 10141623001** Collected: 10/26/10 08:00 Received: 10/27/10 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**29.5**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:12	7440-36-0	
Arsenic	**170**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:12	7440-38-2	
Cadmium	**7.7**	ug/L	0.080	1	10/29/10 12:31	11/03/10 23:12	7440-43-9	
Chromium	**1.7**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:12	7440-47-3	
Copper	**160**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:12	7440-50-8	
Iron	**38100**	ug/L	500	10	10/29/10 12:31	11/04/10 14:06	7439-89-6	
Lead	**12.1**	ug/L	0.10	1	10/29/10 12:31	11/03/10 23:12	7439-92-1	
Manganese	**801**	ug/L	5.0	10	10/29/10 12:31	11/04/10 14:06	7439-96-5	
Zinc	**1310**	ug/L	50.0	10	10/29/10 12:31	11/04/10 14:06	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:37	7439-97-6	

Pace Analytical Services, Inc.
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(406)254-7226

ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Sample: RY-01-H **Lab ID: 10141623002** Collected: 10/26/10 08:00 Received: 10/27/10 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**3.4**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:16	7440-36-0	
Arsenic	**80.0**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:16	7440-38-2	
Cadmium	**7.9**	ug/L	0.080	1	10/29/10 12:31	11/03/10 23:16	7440-43-9	
Chromium	**1.5**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:16	7440-47-3	
Copper	**204**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:16	7440-50-8	
Iron	**33600**	ug/L	1000	20	10/29/10 12:31	11/03/10 23:21	7439-89-6	
Lead	**38.9**	ug/L	0.10	1	10/29/10 12:31	11/03/10 23:16	7439-92-1	
Manganese	**11400**	ug/L	25.0	50	10/29/10 12:31	11/04/10 14:10	7439-96-5	
Zinc	**1550**	ug/L	100	20	10/29/10 12:31	11/03/10 23:21	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:38	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Sample: COL-01-H **Lab ID: 10141623003** Collected: 10/26/10 08:00 Received: 10/27/10 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**42.7**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:25	7440-36-0	
Arsenic	**232**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:25	7440-38-2	
Cadmium	**35.9**	ug/L	0.080	1	10/29/10 12:31	11/03/10 23:25	7440-43-9	
Chromium	**2.5**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:25	7440-47-3	
Copper	**382**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:25	7440-50-8	
Iron	**28000**	ug/L	500	10	10/29/10 12:31	11/03/10 23:30	7439-89-6	
Lead	**76.9**	ug/L	0.10	1	10/29/10 12:31	11/03/10 23:25	7439-92-1	
Manganese	**16700**	ug/L	50.0	100	10/29/10 12:31	11/04/10 14:33	7439-96-5	
Zinc	**5080**	ug/L	500	100	10/29/10 12:31	11/04/10 14:33	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:40	7439-97-6	

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

Sample: CN-01-H **Lab ID: 10141623004** Collected: 10/26/10 08:00 Received: 10/27/10 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**61.0**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:34	7440-36-0	
Arsenic	**51.1**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:34	7440-38-2	
Cadmium	**8.5**	ug/L	0.080	1	10/29/10 12:31	11/03/10 23:34	7440-43-9	
Chromium	ND	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:34	7440-47-3	
Copper	**143**	ug/L	0.50	1	10/29/10 12:31	11/03/10 23:34	7440-50-8	
Iron	**386**	ug/L	50.0	1	10/29/10 12:31	11/03/10 23:34	7439-89-6	
Lead	**77.9**	ug/L	0.10	1	10/29/10 12:31	11/03/10 23:34	7439-92-1	
Manganese	**3050**	ug/L	10.0	20	10/29/10 12:31	11/04/10 14:37	7439-96-5	
Zinc	**872**	ug/L	25.0	5	10/29/10 12:31	11/03/10 23:39	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:44	7439-97-6	

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

QC Batch: MPRP/23163 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10141623001, 10141623002, 10141623003, 10141623004

METHOD BLANK: 881085 Matrix: Water
Associated Lab Samples: 10141623001, 10141623002, 10141623003, 10141623004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	11/04/10 13:02	
Arsenic	ug/L	ND	0.50	11/04/10 13:02	
Cadmium	ug/L	ND	0.080	11/04/10 13:02	
Chromium	ug/L	ND	0.50	11/04/10 13:02	
Copper	ug/L	ND	0.50	11/04/10 13:02	
Lead	ug/L	ND	0.10	11/04/10 13:02	
Zinc	ug/L	ND	5.0	11/04/10 13:02	

LABORATORY CONTROL SAMPLE: 881086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	81.7	102	80-120	
Arsenic	ug/L	80	81.3	102	80-120	
Cadmium	ug/L	80	84.1	105	80-120	
Chromium	ug/L	80	82.4	103	80-120	
Copper	ug/L	80	83.3	104	80-120	
Lead	ug/L	80	84.5	106	80-120	
Zinc	ug/L	80	85.2	106	80-120	

MATRIX SPIKE SAMPLE: 881089

Parameter	Units	10141511001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	80	77.8	97	75-125	
Arsenic	ug/L	0.0052 mg/L	80	88.3	104	75-125	
Cadmium	ug/L	ND	80	84.2	105	75-125	
Chromium	ug/L	0.0026 mg/L	80	83.2	101	75-125	
Copper	ug/L	0.0012 mg/L	80	85.5	105	75-125	
Iron	ug/L			2640			
Lead	ug/L	0.0012 mg/L	80	76.4	94	75-125	
Manganese	ug/L			109			
Zinc	ug/L	0.0070 mg/L	80	89.0	103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 881613 881614

Parameter	Units	20827911 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.37J	80	80	80.8	83.4	101	104	75-125	3	20	
Arsenic	ug/L	5.7	80	80	87.6	88.5	102	104	75-125	1	20	

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK:1
Pace Project No.: 10141623

QC Batch: MERC/2257 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10141623001, 10141623002, 10141623003, 10141623004

METHOD BLANK: 382548 Matrix: Water
Associated Lab Samples: 10141623001, 10141623002, 10141623003, 10141623004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	11/11/10 07:28	

LABORATORY CONTROL SAMPLE: 382549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.7	114	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 382550 382551

Parameter	Units	10141880001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.0	3.0	60	60	85-115	.5	20	M0

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences
Spokana, Wa 99216	Sparks, NV 89431 mli@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 3484 WK: 1	Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	antimony, arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	WW	G	10/26/10	7:00am	10/26/10	8:00am	21c	1			X							X	X	X		001
2	RY-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		002
3	COL-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		003
4	CN-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		004
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

1SH, 4/27

10141623 Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	10/26/10	0900							
	FedEx	10/27/10	0935	[signature]	10/27/10	0935				
							5.3	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michelle Smith

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/26/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Cascade Earth Project # 10141623

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 404135170426

[redacted]

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes X No _____

Thermometer Used 135 Type of Ice: Wet (Blue) None ☒ Samples on ice, cooling process has begun

Cooler Temperature 5.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: JG 10/27/10

Comments:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes ☐No ☐N/A	13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # 1-4 (1/1)
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☒No	Initial when completed JG Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Kelly Hagge Date: 10/27/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3484 WK 2

November 22, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on November 03, 2010. The results relate only to the samples included in this report.

The samples were received outside of required temperature range. Analysis was completed upon client approval.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sherryl Adam for
Sally Heinje
sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
California Certification #: 09268CA
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
New York Certification #: 11888
North Carolina Certification #: 503
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

SAMPLE SUMMARY

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10142197001	PW-01-H	Water	11/02/10 08:00	11/03/10 09:10
10142197002	RY-01-H	Water	11/02/10 08:00	11/03/10 09:10
10142197003	COL-01-H	Water	11/02/10 08:00	11/03/10 09:10
10142197004	CN-01-H	Water	11/02/10 08:00	11/03/10 09:10

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10142197001	PW-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10142197002	RY-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10142197003	COL-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10142197004	CN-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Sample: PW-01-H **Lab ID: 10142197001** Collected: 11/02/10 08:00 Received: 11/03/10 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**27.7**	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:21	7440-36-0	
Arsenic	**70.2**	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:21	7440-38-2	
Cadmium	**34.3**	ug/L	0.080	1	11/10/10 15:18	11/16/10 16:21	7440-43-9	
Chromium	**0.68**	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:21	7440-47-3	
Copper	**730**	ug/L	25.0	50	11/10/10 15:18	11/19/10 17:05	7440-50-8	
Iron	**2190**	ug/L	50.0	1	11/10/10 15:18	11/16/10 16:21	7439-89-6	
Lead	**23.4**	ug/L	0.10	1	11/10/10 15:18	11/16/10 16:21	7439-92-1	
Manganese	**1080**	ug/L	2.5	5	11/10/10 15:18	11/16/10 16:25	7439-96-5	
Zinc	**6800**	ug/L	250	50	11/10/10 15:18	11/19/10 17:05	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:54	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Sample: RY-01-H **Lab ID: 10142197002** Collected: 11/02/10 08:00 Received: 11/03/10 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**4.1**	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:28	7440-36-0	
Arsenic	**127**	ug/L	2.5	5	11/10/10 15:18	11/16/10 16:31	7440-38-2	
Cadmium	**7.8**	ug/L	0.080	1	11/10/10 15:18	11/16/10 16:28	7440-43-9	
Chromium	ND	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:28	7440-47-3	
Copper	**269**	ug/L	2.5	5	11/10/10 15:18	11/16/10 16:31	7440-50-8	
Iron	**44400**	ug/L	250	5	11/10/10 15:18	11/16/10 16:31	7439-89-6	
Lead	**78.0**	ug/L	0.10	1	11/10/10 15:18	11/16/10 16:28	7439-92-1	
Manganese	**10600**	ug/L	25.0	50	11/10/10 15:18	11/19/10 17:09	7439-96-5	
Zinc	**1510**	ug/L	25.0	5	11/10/10 15:18	11/16/10 16:31	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 07:56	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Sample: COL-01-H **Lab ID: 10142197003** Collected: 11/02/10 08:00 Received: 11/03/10 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**43.8**	ug/L	0.50	1	11/10/10 15:18	11/16/10 16:34	7440-36-0	
Arsenic	**313**	ug/L	2.5	5	11/10/10 15:18	11/19/10 16:58	7440-38-2	
Cadmium	**107**	ug/L	0.080	1	11/10/10 15:18	11/16/10 16:34	7440-43-9	
Chromium	ND	ug/L	2.5	5	11/10/10 15:18	11/19/10 16:58	7440-47-3	
Copper	**857**	ug/L	2.5	5	11/10/10 15:18	11/19/10 16:58	7440-50-8	
Iron	**60100**	ug/L	250	5	11/10/10 15:18	11/19/10 16:58	7439-89-6	
Lead	**75.5**	ug/L	0.10	1	11/10/10 15:18	11/16/10 16:34	7439-92-1	
Manganese	**40200**	ug/L	50.0	100	11/10/10 15:18	11/19/10 17:02	7439-96-5	
Zinc	**19300**	ug/L	500	100	11/10/10 15:18	11/19/10 17:02	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 08:00	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Sample: CN-01-H **Lab ID: 10142197004** Collected: 11/02/10 08:00 Received: 11/03/10 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**58.6**	ug/L	0.50	1	11/10/10 15:18	11/19/10 16:52	7440-36-0	
Arsenic	**53.8**	ug/L	0.50	1	11/10/10 15:18	11/19/10 16:52	7440-38-2	
Cadmium	**9.8**	ug/L	0.080	1	11/10/10 15:18	11/19/10 16:52	7440-43-9	
Chromium	ND	ug/L	0.50	1	11/10/10 15:18	11/19/10 16:52	7440-47-3	
Copper	**167**	ug/L	0.50	1	11/10/10 15:18	11/19/10 16:52	7440-50-8	
Iron	**398**	ug/L	50.0	1	11/10/10 15:18	11/19/10 16:52	7439-89-6	
Lead	**85.4**	ug/L	0.10	1	11/10/10 15:18	11/19/10 16:52	7439-92-1	
Manganese	**4400**	ug/L	5.0	10	11/10/10 15:18	11/19/10 16:55	7439-96-5	
Zinc	**1050**	ug/L	50.0	10	11/10/10 15:18	11/19/10 16:55	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/10/10 12:03	11/11/10 08:01	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

QC Batch: MPRP/23296 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10142197001, 10142197002, 10142197003, 10142197004

METHOD BLANK: 884781 Matrix: Water
Associated Lab Samples: 10142197001, 10142197002, 10142197003, 10142197004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	11/16/10 14:12	
Arsenic	ug/L	ND	0.50	11/16/10 14:12	
Cadmium	ug/L	ND	0.080	11/16/10 14:12	
Chromium	ug/L	ND	0.50	11/16/10 14:12	
Copper	ug/L	ND	0.50	11/16/10 14:12	
Iron	ug/L	ND	50.0	11/16/10 14:12	
Lead	ug/L	ND	0.10	11/16/10 14:12	
Manganese	ug/L	ND	0.50	11/16/10 14:12	
Zinc	ug/L	ND	5.0	11/16/10 14:12	

LABORATORY CONTROL SAMPLE: 884782

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	63.8	80	80-120	
Arsenic	ug/L	80	83.2	104	80-120	
Cadmium	ug/L	80	80.5	101	80-120	
Chromium	ug/L	80	80.9	101	80-120	
Copper	ug/L	80	85.4	107	80-120	
Iron	ug/L	1000	999	100	80-120	
Lead	ug/L	80	80.0	100	80-120	
Manganese	ug/L	80	79.6	100	80-120	
Zinc	ug/L	80	86.0	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 884783 884784

Parameter	Units	10142050005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	80	80	59.1	60.2	74	75	75-125	2	20	M1
Arsenic	ug/L	ND	80	80	81.6	80.9	102	101	75-125	.9	20	
Cadmium	ug/L	ND	80	80	77.9	77.4	97	97	75-125	.6	20	
Chromium	ug/L	1.1	80	80	77.9	78.2	96	96	75-125	.4	20	
Copper	ug/L	6.1	80	80	88.9	88.2	103	103	75-125	.7	20	
Iron	ug/L	ND	1000	1000	948	958	94	95	75-125	1	20	
Lead	ug/L	0.30	80	80	75.4	75.8	94	94	75-125	.4	20	
Manganese	ug/L	ND	80	80	75.4	76.4	94	95	75-125	1	20	
Zinc	ug/L	72.5	80	80	153	153	101	100	75-125	.2	20	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

MATRIX SPIKE SAMPLE: 884785

Parameter	Units	10142203006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	80	58.2	73	75-125	M1
Arsenic	ug/L	ND	80	16.7	21	75-125	M1
Cadmium	ug/L	ND	80	78.8	98	75-125	
Chromium	ug/L	ND	80	16.4	20	75-125	M1
Copper	ug/L	ND	80	18.4	23	75-125	M1
Iron	ug/L	ND	1000	215	21	75-125	M1
Lead	ug/L	0.13	80	72.0	90	75-125	
Manganese	ug/L	ND	80	16.5	20	75-125	M1
Zinc	ug/L	12.8	80	19.5	8	75-125	M1

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

QC Batch: MERC/2257 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10142197001, 10142197002, 10142197003, 10142197004

METHOD BLANK: 382548 Matrix: Water
Associated Lab Samples: 10142197001, 10142197002, 10142197003, 10142197004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	11/11/10 07:28	

LABORATORY CONTROL SAMPLE: 382549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.7	114	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 382550 382551

Parameter	Units	10141880001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.0	3.0	60	60	85-115	.5	20	M0

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QUALIFIERS

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK: 2
Pace Project No.: 10142197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10142197001	**PW-01-H**	EPA 3020	MPRP/23296	EPA 6020	ICPM/9541
10142197002	**RY-01-H**	EPA 3020	MPRP/23296	EPA 6020	ICPM/9541
10142197003	**COL-01-H**	EPA 3020	MPRP/23296	EPA 6020	ICPM/9541
10142197004	**CN-01-H**	EPA 3020	MPRP/23296	EPA 6020	ICPM/9541
10142197001	**PW-01-H**	EPA 7470	MERC/2257	EPA 7470	MERC/2249
10142197002	**RY-01-H**	EPA 7470	MERC/2257	EPA 7470	MERC/2249
10142197003	**COL-01-H**	EPA 7470	MERC/2257	EPA 7470	MERC/2249
10142197004	**CN-01-H**	EPA 7470	MERC/2257	EPA 7470	MERC/2249

Pace Analytical™

Shipping Tracking #	UPS / Fed Ex	4641 3517 1911
	Client	Cascade
	Due Date	11/16/2010
	Pace WO	10142197

MT/MN Sample Transfer Condition Upon Receipt Form

MINNESOTA ANALYSIS REQUESTED

MT - Method Number & Description	MT-Container Type	MT - # of Bottles	MT-Number of Samples	MT-Preservative Yes__ No__	MN-Verify Arrival Date & Initials
Metals 6020 + 7470	BP3N	4	4	HNO3	

REPORTING REQUIREMENTS/ADDITIONAL COMMENTS

MINNESOTA SAMPLE RECEIPT INFORMATION

Cooler Temperature: 80344042 79425	1.4	Sample Matrix:	WT
Arrived on Ice:	Yes ✓ No__	Filtred volume rec'd for dissolved tests:	Yes__ No__ NA ✓
Custody Seal Present:	Yes ✓ No__	Samples pH have been checked:	Yes ✓ No__ NA__
Short Hold Time Requested < 72 Hours:	Yes__ No ✓	Trip Blank Present:	Yes__ No__ NA ✓
Rush TAT Requested:	Yes__ No ✓	Trip Blank Custody Seals Present:	Yes__ No__ NA ✓
Sufficient Sample Volume:	Yes ✓ No__	Pace Trip Blank Lot #:	
Samples Arrived within Hold Time:	Yes ✓ No__	Sample Composites Required:	Yes__ No__ NA ✓
Containers Intact:	Yes ✓ No__	Report Samples:	Wet Wt.__ Dry Wt.__
		Reporting Units:	

CUSTODY TRANSFER

Relinquished by/Affiliation	Date	Time	Accepted By Affiliation	Date	Time
Norma C. Trimble/Pace MT	11/4/10	1630	DAH/PAC	11/4/10	955

Form C043Rev.01, 16Apr2009

Sample Receipt Form

Pace Analytical Services, Inc.
Minnesota

Pace Analytical
www.pacelabs.com

Sample Acknowledgement Recipients:
[No SAF Recipients]

Bill to:
Cascade Earth Sciences
Dustin Wasley
12720 E. Nora Ave
Suite A
Spokane, WA 99216
Email: dustin.wasley@cascade-earth.com

Final Report Recipients:
Cascade Earth Sciences
Dustin Wasley (Primary)
12720 E. Nora Ave
Suite A
Spokane, WA 99216
Email: dustin.wasley@cascade-earth.com

Cascade Earth Sciences
Phillip Moyle
12720 E. Nora Ave
Suite A
Spokane, WA 99216
Email: phillip.moyle@cascade-earth.com

Line Item Descriptions:
[1] Monte Cristo Mine Leachate

Client P O No:
Phone: (406)254-7226
Project Manager: Sally Heinje
Client Project ID: Monte Cristo 3484 WK: 2

Lab Project No: 10142197
Project Deliverables Type: Standard Report
Project Report Due Date: 11/16/10
Profile: 24296

Lab Smp ID: 10142197001 **Client Smp ID: PW-01-H**
Proj Smp No: 1 Matrix: Water Smp Type: PS Line Item: 1
Collected Date: 11/02/10 07:00
Received Date: 11/03/10 09:10

PARAMETER	METHOD	UNIT PRICE	WR	SPL	%
7470 W - 7470 Mercury	EPA 7470	$25.00			
6020 W - 6020 MET ICPMS	EPA 6020	$72.00			

COMPOUND	PQL	UNITS
Antimony	0.5	ug/L
Arsenic	0.5	ug/L
Cadmium	0.08	ug/L
Chromium	0.5	ug/L
Copper	0.5	ug/L
Iron	50	ug/L
Lead	0.1	ug/L
Manganese	0.5	ug/L
Zinc	5	ug/L

Sub Total - Sample 884327 $97.00

Lab Smp ID: 10142197002 **Client Smp ID: RY-01-H**
Proj Smp No: 2 Matrix: Water Smp Type: PS Line Item: 1
Collected Date: 11/02/10 07:00
Received Date: 11/03/10 09:10

PARAMETER	METHOD	UNIT PRICE	WR	SPL	%
7470 W - 7470 Mercury	EPA 7470	$25.00			
6020 W - 6020 MET ICPMS	EPA 6020	$72.00			

COMPOUND	PQL	UNITS
Antimony	0.5	ug/L
Arsenic	0.5	ug/L

PARAMETER	METHOD	UNIT PRICE	WR	SPL	%

COMPOUND	PQL	UNITS
Cadmium	0.08	ug/L
Chromium	0.5	ug/L
Copper	0.5	ug/L
Iron	50	ug/L
Lead	0.1	ug/L
Manganese	0.5	ug/L
Zinc	5	ug/L

Sub Total - Sample 884328 $97.00

Lab Smp ID: 10142197003 **Client Smp ID: COL-01-H**
Proj Smp No: 3 Matrix: Water Smp Type: PS Line Item: 1
Collected Date: 11/02/10 07:00
Received Date: 11/03/10 09:10

PARAMETER	METHOD	UNIT PRICE	WR	SPL	%
7470 W - 7470 Mercury	EPA 7470	$25.00			
6020 W - 6020 MET ICPMS	EPA 6020	$72.00			

COMPOUND	PQL	UNITS
Antimony	0.5	ug/L
Arsenic	0.5	ug/L
Cadmium	0.08	ug/L
Chromium	0.5	ug/L
Copper	0.5	ug/L
Iron	50	ug/L
Lead	0.1	ug/L
Manganese	0.5	ug/L
Zinc	5	ug/L

Sub Total - Sample 884329 $97.00

Lab Smp ID: 10142197004 **Client Smp ID: CN-01-H**
Proj Smp No: 4 Matrix: Water Smp Type: PS Line Item: 1
Collected Date: 11/02/10 07:00
Received Date: 11/03/10 09:10

PARAMETER	METHOD	UNIT PRICE	WR	SPL	%
7470 W - 7470 Mercury	EPA 7470	$25.00			
6020 W - 6020 MET ICPMS	EPA 6020	$72.00			

COMPOUND	PQL	UNITS
Antimony	0.5	ug/L
Arsenic	0.5	ug/L
Cadmium	0.08	ug/L
Chromium	0.5	ug/L
Copper	0.5	ug/L
Iron	50	ug/L
Lead	0.1	ug/L
Manganese	0.5	ug/L
Zinc	5	ug/L

Sub Total - Sample 884330 $97.00

Grand Total - Project 10142197 $388.00

Unit Pricing above does not reflect associated shipping, bottle, sample disposal and other miscellaneous charges. Prices are subject to change without notice. Contact your Project Manager for further information.

Sample Receipt Form

Pace Analytical Services, Inc.
Minnesota

Containers

Lab ID	Container ID	Type	Location	Preservative	Utilization
10142197001	10142197001 BP3N1/1	BP3N		NA	6020 W,7470 W
10142197002	10142197002 BP3N1/1	BP3N		NA	6020 W,7470 W
10142197003	10142197003 BP3N1/1	BP3N		NA	6020 W,7470 W
10142197004	10142197004 BP3N1/1	BP3N		NA	6020 W,7470 W

Pace Analytical Services, Inc.
602 S 25th Street
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3484 WK 4

December 02, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2010. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Denise Jensen for
Sally Heinje
sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
California Certification #: 09268CA
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
New York Certification #: 11888
North Carolina Certification #: 503
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

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SAMPLE SUMMARY

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10143415001	PW-01-H	Water	11/16/10 08:00	11/17/10 09:40
10143415002	RY-01-H	Water	11/16/10 08:00	11/17/10 09:40
10143415003	COL-01-H	Water	11/16/10 08:00	11/17/10 09:40
10143415004	CN-01-H	Water	11/16/10 08:00	11/17/10 09:40

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10143415001	PW-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10143415002	RY-01-H	EPA 6020	TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10143415003	COL-01-H	EPA 6020	RJS, TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10143415004	CN-01-H	EPA 6020	RJS, TL1	9	PASI-M
		EPA 7470	CMS	1	PASI-G

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Sample: PW-01-H **Lab ID: 10143415001** Collected: 11/16/10 08:00 Received: 11/17/10 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**47.4**	ug/L	0.50	1	11/19/10 12:13	11/27/10 16:30	7440-36-0	
Arsenic	**155**	ug/L	0.50	1	11/19/10 12:13	11/24/10 22:28	7440-38-2	
Cadmium	**107**	ug/L	0.080	1	11/19/10 12:13	11/24/10 22:28	7440-43-9	
Chromium	**1.2**	ug/L	0.50	1	11/19/10 12:13	11/27/10 16:30	7440-47-3	
Copper	**2380**	ug/L	25.0	50	11/19/10 12:13	11/27/10 17:56	7440-50-8	
Iron	**2620**	ug/L	50.0	1	11/19/10 12:13	11/27/10 16:30	7439-89-6	
Lead	**38.8**	ug/L	0.10	1	11/19/10 12:13	11/27/10 16:30	7439-92-1	
Manganese	**1330**	ug/L	25.0	50	11/19/10 12:13	11/27/10 17:56	7439-96-5	
Zinc	**20700**	ug/L	250	50	11/19/10 12:13	11/24/10 22:32	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/29/10 16:35	11/30/10 11:12	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Sample: RY-01-H **Lab ID: 10143415002** Collected: 11/16/10 08:00 Received: 11/17/10 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**3.2**	ug/L	0.50	1	11/19/10 12:13	11/27/10 17:59	7440-36-0	
Arsenic	**167**	ug/L	0.50	1	11/19/10 12:13	11/24/10 22:35	7440-38-2	
Cadmium	**8.7**	ug/L	0.080	1	11/19/10 12:13	11/24/10 22:35	7440-43-9	
Chromium	ND	ug/L	0.50	1	11/19/10 12:13	11/27/10 17:59	7440-47-3	
Copper	**308**	ug/L	0.50	1	11/19/10 12:13	11/27/10 17:59	7440-50-8	
Iron	**32000**	ug/L	2500	50	11/19/10 12:13	11/27/10 18:02	7439-89-6	
Lead	**122**	ug/L	0.10	1	11/19/10 12:13	11/27/10 17:59	7439-92-1	
Manganese	**6190**	ug/L	25.0	50	11/19/10 12:13	11/27/10 18:02	7439-96-5	
Zinc	**1690**	ug/L	25.0	5	11/19/10 12:13	11/24/10 22:39	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/29/10 16:35	11/30/10 11:13	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Sample: COL-01-H **Lab ID: 10143415003** Collected: 11/16/10 08:00 Received: 11/17/10 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**59.2**	ug/L	0.50	1	11/19/10 12:13	11/27/10 18:06	7440-36-0	
Arsenic	**17.5**	ug/L	0.50	1	11/19/10 12:13	11/24/10 23:50	7440-38-2	
Cadmium	**4.1**	ug/L	0.080	1	11/19/10 12:13	11/24/10 23:50	7440-43-9	
Chromium	ND	ug/L	0.50	1	11/19/10 12:13	11/27/10 18:06	7440-47-3	
Copper	**2580**	ug/L	50.0	100	11/19/10 12:13	11/27/10 18:13	7440-50-8	
Iron	**81700**	ug/L	250	5	11/19/10 12:13	11/27/10 18:09	7439-89-6	
Lead	**267**	ug/L	0.10	1	11/19/10 12:13	11/27/10 18:06	7439-92-1	
Manganese	**65500**	ug/L	100	200	11/19/10 12:13	12/01/10 11:16	7439-96-5	
Zinc	**72400**	ug/L	1000	200	11/19/10 12:13	12/01/10 11:16	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/29/10 16:35	11/30/10 11:15	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Sample: CN-01-H **Lab ID: 10143415004** Collected: 11/16/10 08:00 Received: 11/17/10 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**60.3**	ug/L	0.50	1	11/19/10 12:13	11/27/10 18:16	7440-36-0	
Arsenic	**74.9**	ug/L	0.50	1	11/19/10 12:13	11/24/10 23:53	7440-38-2	
Cadmium	**12.3**	ug/L	0.080	1	11/19/10 12:13	11/24/10 23:53	7440-43-9	
Chromium	ND	ug/L	0.50	1	11/19/10 12:13	11/27/10 18:16	7440-47-3	
Copper	**190**	ug/L	0.50	1	11/19/10 12:13	11/27/10 18:16	7440-50-8	
Iron	**570**	ug/L	50.0	1	11/19/10 12:13	11/27/10 18:16	7439-89-6	
Lead	**140**	ug/L	0.10	1	11/19/10 12:13	11/27/10 18:16	7439-92-1	
Manganese	**5920**	ug/L	10.0	20	11/19/10 12:13	12/01/10 11:20	7439-96-5	
Zinc	**1310**	ug/L	50.0	10	11/19/10 12:13	11/24/10 23:56	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	11/29/10 16:35	11/30/10 11:16	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

QC Batch: MPRP/23623 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10143415001, 10143415002, 10143415003, 10143415004

METHOD BLANK: 894900 Matrix: Water
Associated Lab Samples: 10143415001, 10143415002, 10143415003, 10143415004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	11/24/10 13:40	
Arsenic	ug/L	ND	0.50	11/24/10 13:40	
Cadmium	ug/L	ND	0.080	11/24/10 13:40	
Chromium	ug/L	ND	0.50	11/29/10 14:52	
Copper	ug/L	ND	0.50	11/29/10 14:52	
Iron	ug/L	ND	50.0	11/29/10 14:52	
Lead	ug/L	ND	0.10	11/24/10 13:40	
Manganese	ug/L	ND	0.50	11/29/10 14:52	
Zinc	ug/L	ND	5.0	11/24/10 13:40	

LABORATORY CONTROL SAMPLE: 894901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	74.2	93	80-120	
Arsenic	ug/L	80	79.9	100	80-120	
Cadmium	ug/L	80	81.8	102	80-120	
Chromium	ug/L	80	80.6	101	80-120	
Copper	ug/L	80	82.2	103	80-120	
Iron	ug/L	1000	989	99	80-120	
Lead	ug/L	80	83.8	105	80-120	
Manganese	ug/L	80	82.0	102	80-120	
Zinc	ug/L	80	81.6	102	80-120	

MATRIX SPIKE SAMPLE: 894902

Parameter	Units	10143286001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.46J	80	65.2	81	75-125	
Arsenic	ug/L	2.3	80	83.0	101	75-125	
Cadmium	ug/L	0.11	80	79.8	100	75-125	
Chromium	ug/L	0.86	80	80.0	99	75-125	
Copper	ug/L	39.7	80	119	100	75-125	
Iron	ug/L	8250	1000	9000	76	75-125	
Lead	ug/L	1.6	80	83.8	103	75-125	
Manganese	ug/L	115	80	194	99	75-125	
Zinc	ug/L	21.8	80	102	100	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 894903 894904

Parameter	Units	6089326002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	80	80	85.4	86.3	106	107	75-125	1	20	
Arsenic	ug/L	0.0069 mg/L	80	80	90.4	90.0	104	104	75-125	.4	20	
Cadmium	ug/L	0.091	80	80	77.9	78.4	97	98	75-125	.6	20	
Chromium	ug/L	ND	80	80	78.8	78.2	98	98	75-125	.6	20	
Copper	ug/L	1.7	80	80	78.9	78.1	96	95	75-125	1	20	
Iron	ug/L	10.1 mg/L	1000	1000	11500	11400	139	128	75-125	1	20	M1
Lead	ug/L	0.0018 mg/L	80	80	81.0	81.2	99	99	75-125	.2	20	
Manganese	ug/L	1.8 mg/L	80	80	1770	1750	8	-16	75-125	1	20	M1
Zinc	ug/L	8.6	80	80	86.2	87.0	97	98	75-125	.9	20	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

QC Batch: MERC/2285 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10143415001, 10143415002, 10143415003, 10143415004

METHOD BLANK: 389865 Matrix: Water
Associated Lab Samples: 10143415001, 10143415002, 10143415003, 10143415004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	11/30/10 10:49	

LABORATORY CONTROL SAMPLE: 389866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 389867 389868

Parameter	Units	10142380001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	1.4	1.4	28	28	85-115	.8	20	M0

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QUALIFIERS

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK: 4
Pace Project No.: 10143415

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10143415001	**PW-01-H**	EPA 3020	MPRP/23623	EPA 6020	ICPM/9609
10143415002	**RY-01-H**	EPA 3020	MPRP/23623	EPA 6020	ICPM/9609
10143415003	**COL-01-H**	EPA 3020	MPRP/23623	EPA 6020	ICPM/9609
10143415004	**CN-01-H**	EPA 3020	MPRP/23623	EPA 6020	ICPM/9609
10143415001	**PW-01-H**	EPA 7470	MERC/2285	EPA 7470	MERC/2281
10143415002	**RY-01-H**	EPA 7470	MERC/2285	EPA 7470	MERC/2281
10143415003	**COL-01-H**	EPA 7470	MERC/2285	EPA 7470	MERC/2281
10143415004	**CN-01-H**	EPA 7470	MERC/2285	EPA 7470	MERC/2281

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences
Spokana, Wa 99216	Sparks, NV 89431 mli@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 3484 WK: 4	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	antimony,arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	WW	G	11/16/10	7:00am	11/16/10	8:00am	21c	1			X						X	X	X			001
2	RY-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓						↓	↓	↓			002
3	COL-01-H																						003
4	CN-01-H																						004
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		11/16/10	0900				
	Fedex	11/17/10	0940	Norma C Trumble/Pace	11/17/10	0940	

SAMPLER NAME AND SIGNATURE				
PRINT Name of SAMPLER:	Michelle Smith			
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY):	11/16/10	

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
11.1	Y	N	Y

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: CASCADE Project # 10143415

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 7964 5785 2943

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes ____ No X

Thermometer Used 1383045 Type of Ice: Wet (Blue) None ☒ Samples on ice, cooling process has begun

Cooler Temperature 11.7 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: NCT 11/17/10

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A
Sufficient Volume:	☒Yes	☐No	☐N/A
Correct Containers Used:	☒Yes	☐No	☐N/A
-Pace Containers Used:	☒Yes	☐No	☐N/A
Containers Intact:	☒Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A
Sample Labels match COC:	☐Yes	☒No	☐N/A
-Includes date/time/ID/Analysis Matrix: H_2O			
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes	☐No	☐N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes	☒No	
Samples checked for dechlorination:	☐Yes	☐No	☒N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A
Trip Blank Present:	☐Yes	☐No	☒N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A
Pace Trip Blank Lot # (if purchased):			

10. Time sampled on sample containers is 0900, but times recorded on CoC are 0700 & 0800 NCT 11/17/10

11. _____

12. _____

13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # Items #1-#4, HNO3 1/1

Initial when completed: NCT Lot # of added preservative:

14. _____

15. _____

16. _____

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Dustin + Phillip Date/Time: _____

Comments/ Resolution: Samples received over temp. @ 11.7° NCT 11/17/10
Contacted client about temp.
per Dustin - Combine with analysis.

Project Manager Review: [signature] Date: 11/17/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

34184 WK 8

December 28, 2010

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on December 15, 2010. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

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CERTIFICATIONS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
California Certification #: 09268CA
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
New York Certification #: 11888
North Carolina Certification #: 503
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

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SAMPLE SUMMARY

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10145361001	PW-01-H	Water	12/14/10 09:00	12/15/10 12:35
10145361002	RY-01-H	Water	12/14/10 09:00	12/15/10 12:35
10145361003	COL-01-H	Water	12/14/10 09:00	12/15/10 12:35
10145361004	CN-01-H	Water	12/14/10 09:00	12/15/10 12:35

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10145361001	PW-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10145361002	RY-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10145361003	COL-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G
10145361004	CN-01-H	EPA 6020	RJS	9	PASI-M
		EPA 7470	CMS	1	PASI-G

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Sample: PW-01-H **Lab ID: 10145361001** Collected: 12/14/10 09:00 Received: 12/15/10 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**48.2**	ug/L	0.50	1	12/17/10 12:50	12/23/10 12:55	7440-36-0	
Arsenic	**185**	ug/L	0.50	1	12/17/10 12:50	12/23/10 12:55	7440-38-2	
Cadmium	**72.5**	ug/L	0.080	1	12/17/10 12:50	12/23/10 12:55	7440-43-9	
Chromium	**3.6**	ug/L	0.50	1	12/17/10 12:50	12/23/10 12:55	7440-47-3	
Copper	**2480**	ug/L	25.0	50	12/17/10 12:50	12/27/10 11:34	7440-50-8	
Iron	**12500**	ug/L	50.0	1	12/17/10 12:50	12/23/10 12:55	7439-89-6	
Lead	**52.4**	ug/L	0.10	1	12/17/10 12:50	12/23/10 12:55	7439-92-1	
Manganese	**308**	ug/L	0.50	1	12/17/10 12:50	12/23/10 12:55	7439-96-5	
Zinc	**12300**	ug/L	250	50	12/17/10 12:50	12/27/10 11:34	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/20/10 11:20	12/21/10 11:28	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Sample: RY-01-H **Lab ID: 10145361002** Collected: 12/14/10 09:00 Received: 12/15/10 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**2.4**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:04	7440-36-0	
Arsenic	**241**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:04	7440-38-2	
Cadmium	**8.5**	ug/L	0.080	1	12/17/10 12:50	12/23/10 13:04	7440-43-9	
Chromium	**2.0**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:04	7440-47-3	
Copper	**400**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:04	7440-50-8	
Iron	**28600**	ug/L	500	10	12/17/10 12:50	12/23/10 13:09	7439-89-6	
Lead	**121**	ug/L	0.10	1	12/17/10 12:50	12/23/10 13:04	7439-92-1	
Manganese	**3340**	ug/L	5.0	10	12/17/10 12:50	12/23/10 13:09	7439-96-5	
Zinc	**1680**	ug/L	50.0	10	12/17/10 12:50	12/23/10 13:09	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/20/10 11:20	12/21/10 11:30	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Sample: COL-01-H **Lab ID: 10145361003** Collected: 12/14/10 09:00 Received: 12/15/10 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**68.0**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:14	7440-36-0	
Arsenic	**29400**	ug/L	50.0	100	12/17/10 12:50	12/23/10 13:18	7440-38-2	
Cadmium	**893**	ug/L	8.0	100	12/17/10 12:50	12/23/10 13:18	7440-43-9	
Chromium	**14.6**	ug/L	0.50	1	12/17/10 12:50	12/23/10 13:14	7440-47-3	
Copper	**5860**	ug/L	50.0	100	12/17/10 12:50	12/23/10 13:18	7440-50-8	
Iron	**137000**	ug/L	5000	100	12/17/10 12:50	12/23/10 13:18	7439-89-6	
Lead	**342**	ug/L	0.10	1	12/17/10 12:50	12/23/10 13:14	7439-92-1	
Manganese	**39800**	ug/L	50.0	100	12/17/10 12:50	12/23/10 13:18	7439-96-5	
Zinc	**127000**	ug/L	2500	500	12/17/10 12:50	12/23/10 13:23	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/20/10 11:20	12/21/10 11:31	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Sample: CN-01-H **Lab ID: 10145361004** Collected: 12/14/10 09:00 Received: 12/15/10 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**57.3**	ug/L	0.50	1	12/17/10 12:50	12/23/10 14:04	7440-36-0	
Arsenic	**43.5**	ug/L	0.50	1	12/17/10 12:50	12/23/10 14:04	7440-38-2	
Cadmium	**20.5**	ug/L	0.080	1	12/17/10 12:50	12/23/10 14:04	7440-43-9	
Chromium	**0.91**	ug/L	0.50	1	12/17/10 12:50	12/23/10 14:04	7440-47-3	
Copper	**385**	ug/L	0.50	1	12/17/10 12:50	12/23/10 14:04	7440-50-8	
Iron	**256**	ug/L	50.0	1	12/17/10 12:50	12/23/10 14:04	7439-89-6	
Lead	**197**	ug/L	0.10	1	12/17/10 12:50	12/23/10 14:04	7439-92-1	
Manganese	**6660**	ug/L	25.0	50	12/17/10 12:50	12/27/10 11:38	7439-96-5	
Zinc	**2470**	ug/L	50.0	10	12/17/10 12:50	12/23/10 14:08	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/20/10 11:20	12/21/10 11:32	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

QC Batch: MPRP/24020 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10145361001, 10145361002, 10145361003, 10145361004

METHOD BLANK: 906946 Matrix: Water
Associated Lab Samples: 10145361001, 10145361002, 10145361003, 10145361004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	12/23/10 11:30	
Arsenic	ug/L	ND	0.50	12/23/10 11:30	
Cadmium	ug/L	ND	0.080	12/23/10 11:30	
Chromium	ug/L	ND	0.50	12/23/10 11:30	
Copper	ug/L	ND	0.50	12/23/10 11:30	
Iron	ug/L	ND	50.0	12/23/10 11:30	
Lead	ug/L	ND	0.10	12/23/10 11:30	
Manganese	ug/L	ND	0.50	12/23/10 11:30	
Zinc	ug/L	ND	5.0	12/23/10 11:30	

LABORATORY CONTROL SAMPLE: 906947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	77.0	96	80-120	
Arsenic	ug/L	80	82.0	103	80-120	
Cadmium	ug/L	80	81.6	102	80-120	
Chromium	ug/L	80	80.6	101	80-120	
Copper	ug/L	80	84.0	105	80-120	
Iron	ug/L	1000	1020	102	80-120	
Lead	ug/L	80	80.6	101	80-120	
Manganese	ug/L	80	80.6	101	80-120	
Zinc	ug/L	80	83.8	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 906948 906949

Parameter	Units	10145183005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	80	80	91.6	92.0	114	115	75-125	.5	20	
Arsenic	ug/L	2.8	80	80	101	99.5	123	121	75-125	1	20	
Cadmium	ug/L	ND	80	80	96.6	95.0	121	119	75-125	2	20	
Chromium	ug/L	ND	80	80	94.8	93.7	118	117	75-125	1	20	
Copper	ug/L	ND	80	80	95.4	94.6	119	118	75-125	.8	20	
Iron	ug/L	1160	1000	1000	2610	2580	144	142	75-125	1	20	M1
Lead	ug/L	ND	80	80	91.8	91.8	115	115	75-125	0	20	
Manganese	ug/L	230	80	80	380	374	188	180	75-125	2	20	M1
Zinc	ug/L	ND	80	80	98.6	98.0	123	122	75-125	.7	20	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

MATRIX SPIKE SAMPLE: 906086

Parameter	Units	10145382020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	80	76.3	95	75-125	
Arsenic	ug/L	6.6	80	93.7	109	75-125	
Cadmium	ug/L	0.20	80	86.5	108	75-125	
Chromium	ug/L	2.5	80	87.6	106	75-125	
Copper	ug/L	3.5	80	90.1	108	75-125	
Iron	ug/L	15400	1000	18100	262	75-125	M1
Lead	ug/L	1.9	80	80.8	99	75-125	
Manganese	ug/L	376	80	483	133	75-125	M1
Zinc	ug/L	24.0	80	114	113	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

QC Batch: MERC/2320 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10145361001, 10145361002, 10145361003, 10145361004

METHOD BLANK: 397949 Matrix: Water
Associated Lab Samples: 10145361001, 10145361002, 10145361003, 10145361004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/21/10 10:55	

LABORATORY CONTROL SAMPLE: 397950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 397951 397952

Parameter	Units	4040681029 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.20	5	5	5.1	5.1	101	102	85-115	.6	20	

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QUALIFIERS

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK: 8
Pace Project No.: 10145361

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10145361001	PW-01-H	EPA 3020	MPRP/24020	EPA 6020	ICPM/9727
10145361002	RY-01-H	EPA 3020	MPRP/24020	EPA 6020	ICPM/9727
10145361003	COL-01-H	EPA 3020	MPRP/24020	EPA 6020	ICPM/9727
10145361004	CN-01-H	EPA 3020	MPRP/24020	EPA 6020	ICPM/9727
10145361001	PW-01-H	EPA 7470	MERC/2320	EPA 7470	MERC/2316
10145361002	RY-01-H	EPA 7470	MERC/2320	EPA 7470	MERC/2316
10145361003	COL-01-H	EPA 7470	MERC/2320	EPA 7470	MERC/2316
10145361004	CN-01-H	EPA 7470	MERC/2320	EPA 7470	MERC/2316

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle	REGULATORY AGENCY
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences	☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
Spokana, Wa 99216	Sparks, NV 89431 mli@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216	☐ UST ☐ RCRA ☐ OTHER
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:	
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:	Site Location STATE:
Requested Due Date/TAT:	Project Number: 3484 WK: 8	Pace Profile #:	

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: antimony,arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	WW	G	12/14/10	7:00am	12/14/10	8:00am	21c	1			X							X	X	X		10145361 001
2	RY-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		002
3	COL-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		003
4	CN-01-H	↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		004
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

10/12/15

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
		12/14/10	9:00							
	Fedex	12/15/10	1235	Norma C. Trankle/Pace	12/15/10	1235				
							2.8°	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Johnson

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 12/14/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: CASCADE Project #

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Tracking #: 796552355711

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other Temp Blank: Yes ____ No X

Thermometer Used 1389045 Type of Ice: (Wet) Blue None ☒ Samples on Ice, cooling process has begun

Cooler Temperature 2.8° Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: NCT 12/15/10

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A 1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A 2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A 3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A 4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A 5.
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A 6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A 7.
Sufficient Volume:	☒Yes	☐No	☐N/A 8.
Correct Containers Used:	☒Yes	☐No	☐N/A 9.
-Pace Containers Used:	☒Yes	☐No	☐N/A
Containers Intact:	☒Yes	☐No	☐N/A 10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A 11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: H2O	☐Yes	☒No	☐N/A 12. Date/time of collection 0900 on samples, 0700-0800 on COC
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes	☐No	☐N/A 13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # Hems #1-#4, HNO3 1/1
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes	☒No	Initial when completed NCT Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☒N/A 14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A 15.
Trip Blank Present:	☐Yes	☐No	☒N/A 16.
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Sally Hayes Date: 12/15/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3484 WK 12

January 21, 2011

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2011. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970
A2LA cert#

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SAMPLE SUMMARY

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10147122001	PW-01-H	Water	01/11/11 08:00	01/12/11 13:20
10147122002	RY-01-H	Water	01/11/11 08:00	01/12/11 13:20
10147122003	COL-01-H	Water	01/11/11 08:00	01/12/11 13:20
10147122004	CN-01-H	Water	01/11/11 08:00	01/12/11 13:20

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10147122001	PW-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10147122002	RY-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10147122003	COL-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10147122004	CN-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK. 12
Pace Project No.: 10147122

Sample: PW-01-H **Lab ID: 10147122001** Collected: 01/11/11 08:00 Received: 01/12/11 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**43.9**	ug/L	2.5	5	01/14/11 14:03	01/20/11 18:32	7440-36-0	
Arsenic	**135**	ug/L	2.5	5	01/14/11 14:03	01/20/11 18:32	7440-38-2	
Cadmium	**35.7**	ug/L	0.40	5	01/14/11 14:03	01/20/11 18:32	7440-43-9	
Chromium	**3.5**	ug/L	2.5	5	01/14/11 14:03	01/20/11 18:32	7440-47-3	
Copper	**1700**	ug/L	2.5	5	01/14/11 14:03	01/20/11 18:32	7440-50-8	
Iron	**7380**	ug/L	250	5	01/14/11 14:03	01/20/11 18:32	7439-89-6	
Lead	**34.8**	ug/L	0.50	5	01/14/11 14:03	01/20/11 18:32	7439-92-1	
Manganese	**193**	ug/L	2.5	5	01/14/11 14:03	01/20/11 18:32	7439-96-5	
Zinc	**5660**	ug/L	250	50	01/14/11 14:03	01/20/11 18:37	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/19/11 14:49	01/20/11 09:09	7439-97-6	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Sample: RY-01-H **Lab ID: 10147122002** Collected: 01/11/11 08:00 Received: 01/12/11 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**2.1**	ug/L	1.0	2	01/14/11 14:03	01/20/11 18:42	7440-36-0	
Arsenic	**425**	ug/L	1.0	2	01/14/11 14:03	01/20/11 18:42	7440-38-2	
Cadmium	**8.9**	ug/L	0.16	2	01/14/11 14:03	01/20/11 18:42	7440-43-9	
Chromium	**2.1**	ug/L	1.0	2	01/14/11 14:03	01/20/11 18:42	7440-47-3	
Copper	**461**	ug/L	1.0	2	01/14/11 14:03	01/20/11 18:42	7440-50-8	M6
Iron	**33900**	ug/L	100	2	01/14/11 14:03	01/20/11 18:42	7439-89-6	M6
Lead	**108**	ug/L	0.20	2	01/14/11 14:03	01/20/11 18:42	7439-92-1	
Manganese	**2250**	ug/L	10.0	20	01/14/11 14:03	01/20/11 18:56	7439-96-5	
Zinc	**1850**	ug/L	100	20	01/14/11 14:03	01/20/11 18:56	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/19/11 14:49	01/20/11 09:20	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Sample: COL-01-H **Lab ID: 10147122003** Collected: 01/11/11 08:00 Received: 01/12/11 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**76.5**	ug/L	5.0	10	01/14/11 14:03	01/20/11 18:04	7440-36-0	
Arsenic	**88200**	ug/L	250	500	01/14/11 14:03	01/20/11 18:09	7440-38-2	
Cadmium	**1170**	ug/L	0.80	10	01/14/11 14:03	01/20/11 18:04	7440-43-9	
Chromium	**19.0**	ug/L	5.0	10	01/14/11 14:03	01/20/11 18:04	7440-47-3	
Copper	**9180**	ug/L	250	500	01/14/11 14:03	01/20/11 18:09	7440-50-8	
Iron	**143000**	ug/L	500	10	01/14/11 14:03	01/20/11 18:04	7439-89-6	
Lead	**488**	ug/L	1.0	10	01/14/11 14:03	01/20/11 18:04	7439-92-1	
Manganese	**11400**	ug/L	250	500	01/14/11 14:03	01/20/11 18:09	7439-96-5	
Zinc	**183000**	ug/L	2500	500	01/14/11 14:03	01/20/11 18:09	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/19/11 14:49	01/20/11 09:22	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

Sample: CN-01-H **Lab ID: 10147122004** Collected: 01/11/11 08:00 Received: 01/12/11 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**55.8**	ug/L	0.50	1	01/14/11 14:03	01/20/11 17:55	7440-36-0	
Arsenic	**64.1**	ug/L	0.50	1	01/14/11 14:03	01/20/11 17:55	7440-38-2	
Cadmium	**26.5**	ug/L	0.080	1	01/14/11 14:03	01/20/11 17:55	7440-43-9	
Chromium	**0.65**	ug/L	0.50	1	01/14/11 14:03	01/20/11 17:55	7440-47-3	
Copper	**507**	ug/L	10.0	20	01/14/11 14:03	01/20/11 17:59	7440-50-8	
Iron	**307**	ug/L	50.0	1	01/14/11 14:03	01/20/11 17:55	7439-89-6	
Lead	**236**	ug/L	0.10	1	01/14/11 14:03	01/20/11 17:55	7439-92-1	
Manganese	**4480**	ug/L	10.0	20	01/14/11 14:03	01/20/11 17:59	7439-96-5	
Zinc	**3850**	ug/L	100	20	01/14/11 14:03	01/20/11 17:59	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/19/11 14:49	01/20/11 09:24	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

QC Batch: MPRP/24350 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10147122001, 10147122002, 10147122003, 10147122004

METHOD BLANK: 918840 Matrix: Water
Associated Lab Samples: 10147122001, 10147122002, 10147122003, 10147122004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	01/20/11 18:23	
Arsenic	ug/L	ND	0.50	01/20/11 18:23	
Cadmium	ug/L	ND	0.080	01/20/11 18:23	
Chromium	ug/L	ND	0.50	01/20/11 18:23	
Copper	ug/L	ND	0.50	01/20/11 18:23	
Iron	ug/L	ND	50.0	01/20/11 18:23	
Lead	ug/L	ND	0.10	01/20/11 18:23	
Manganese	ug/L	ND	0.50	01/20/11 18:23	
Zinc	ug/L	ND	5.0	01/20/11 18:23	

LABORATORY CONTROL SAMPLE: 918841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	81.0	101	80-120	
Arsenic	ug/L	80	81.6	102	80-120	
Cadmium	ug/L	80	82.0	103	80-120	
Chromium	ug/L	80	79.9	100	80-120	
Copper	ug/L	80	83.1	104	80-120	
Iron	ug/L	1000	1000	100	80-120	
Lead	ug/L	80	79.3	99	80-120	
Manganese	ug/L	80	79.2	99	80-120	
Zinc	ug/L	80	81.5	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 919106 919107

Parameter	Units	10147122002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	2.1	80	80	81.7	82.5	100	101	75-125	1	20	
Arsenic	ug/L	425	80	80	511	523	108	123	75-125	2	20	
Cadmium	ug/L	8.9	80	80	91.2	93.1	103	105	75-125	2	20	
Chromium	ug/L	2.1	80	80	83.6	83.8	102	102	75-125	.2	20	
Copper	ug/L	461	80	80	564	566	128	131	75-125	.4	20	M6
Iron	ug/L	33900	1000	1000	35000	35200	116	131	75-125	.4	20	M6
Lead	ug/L	108	80	80	188	190	100	102	75-125	1	20	
Manganese	ug/L	2250	80	80	2320	2330	88	99	75-125	.4	20	
Zinc	ug/L	1850	80	80	1910	1920	83	93	75-125	.4	20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

QC Batch: MERP/4998 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10147122001, 10147122002, 10147122003, 10147122004

METHOD BLANK: 920567 Matrix: Water
Associated Lab Samples: 10147122001, 10147122002, 10147122003, 10147122004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/20/11 08:59	

LABORATORY CONTROL SAMPLE: 920568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 920569 920570

Parameter	Units	10147122001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.7	4.8	74	96	80-120	25	20	D6,M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
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(406)254-7226

QUALIFIERS

Project: Monte Cristo 3484 WK: 12
Pace Project No.: 10147122

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical
www.pacelabs.com

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK. 12
Pace Project No.: 10147122

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10147122001	PW-01-H	EPA 3020	MPRP/24350	EPA 6020	ICPM/9892
10147122002	RY-01-H	EPA 3020	MPRP/24350	EPA 6020	ICPM/9892
10147122003	COL-01-H	EPA 3020	MPRP/24350	EPA 6020	ICPM/9892
10147122004	CN-01-H	EPA 3020	MPRP/24350	EPA 6020	ICPM/9892
10147122001	PW-01-H	EPA 7470	MERP/4998	EPA 7470	MERC/5823
10147122002	RY-01-H	EPA 7470	MERP/4998	EPA 7470	MERC/5823
10147122003	COL-01-H	EPA 7470	MERP/4998	EPA 7470	MERC/5823
10147122004	CN-01-H	EPA 7470	MERP/4998	EPA 7470	MERC/5823

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical™

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences
Spokana, Wa 99216	Sparks, NV 89431 mll@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 3484 WK: 12	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: antimony,arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H		WW	G	1/11/11	7:00am	1/11/11	8:00am	21c	1			X							X	X	X		10147122 001
2	RY-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		002
3	COL-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		003
4	CN-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		004
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	1/11/11	0900			
	FedEx	1/12/11	1320	Jeff Drane Pace	1/12/11	1320 JG Ya

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.0	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michelle Smith

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/11/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Cascade Earth Sciences Project # 10147122

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 796645901660

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes ____ No X

Thermometer Used 1383045 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 4.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: JG 4/12/17

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes ☐No ☐N/A	13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # 1-4 (1/1) HNO3
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☒No	Initial when completed JG / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Sally Hagen **Date:** 4/12/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3484 WK 16

February 17, 2011

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2011. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

CERTIFICATIONS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970
A2LA cert#

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SAMPLE SUMMARY

Project: Monte Cristo 3484 WK. 16
Pace Project No.: 10149157

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10149157001	PW-01-H	Water	02/08/11 08:00	02/09/11 14:45
10149157002	RY-01-H	Water	02/08/11 08:00	02/09/11 14:45
10149157003	COL-01-H	Water	02/08/11 08:00	02/09/11 14:45
10149157004	CN-01-H	Water	02/08/11 08:00	02/09/11 14:45

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10149157001	PW-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10149157002	RY-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10149157003	COL-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10149157004	CN-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Sample: PW-01-H **Lab ID: 10149157001** Collected: 02/08/11 08:00 Received: 02/09/11 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**48.7**	ug/L	2.5	5	02/14/11 15:53	02/17/11 04:58	7440-36-0	
Arsenic	**138**	ug/L	2.5	5	02/14/11 15:53	02/17/11 04:58	7440-38-2	
Cadmium	**32.7**	ug/L	0.40	5	02/14/11 15:53	02/17/11 04:58	7440-43-9	
Chromium	ND	ug/L	2.5	5	02/14/11 15:53	02/17/11 04:58	7440-47-3	
Copper	**1570**	ug/L	2.5	5	02/14/11 15:53	02/17/11 04:58	7440-50-8	M6
Iron	**9170**	ug/L	250	5	02/14/11 15:53	02/17/11 04:58	7439-89-6	
Lead	**30.3**	ug/L	0.50	5	02/14/11 15:53	02/17/11 04:58	7439-92-1	
Manganese	**169**	ug/L	2.5	5	02/14/11 15:53	02/17/11 04:58	7439-96-5	
Zinc	**5570**	ug/L	250	50	02/14/11 15:53	02/17/11 05:11	7440-66-6	M6
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	02/11/11 16:07	02/14/11 09:55	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Sample: RY-01-H **Lab ID: 10149157002** Collected: 02/08/11 08:00 Received: 02/09/11 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**2.9**	ug/L	1.0	2	02/14/11 15:53	02/17/11 06:14	7440-36-0	
Arsenic	**833**	ug/L	1.0	2	02/14/11 15:53	02/17/11 06:14	7440-38-2	
Cadmium	**6.9**	ug/L	0.16	2	02/14/11 15:53	02/17/11 06:14	7440-43-9	
Chromium	**2.5**	ug/L	1.0	2	02/14/11 15:53	02/17/11 06:14	7440-47-3	
Copper	**368**	ug/L	1.0	2	02/14/11 15:53	02/17/11 06:14	7440-50-8	
Iron	**41100**	ug/L	100	2	02/14/11 15:53	02/17/11 06:14	7439-89-6	
Lead	**88.3**	ug/L	0.20	2	02/14/11 15:53	02/17/11 06:14	7439-92-1	
Manganese	**1490**	ug/L	20.0	40	02/14/11 15:53	02/17/11 06:18	7439-96-5	
Zinc	**1400**	ug/L	200	40	02/14/11 15:53	02/17/11 06:18	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	02/11/11 16:07	02/14/11 09:57	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Sample: COL-01-H **Lab ID: 10149157003** Collected: 02/08/11 08:00 Received: 02/09/11 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**89.1**	ug/L	5.0	10	02/14/11 15:53	02/17/11 06:23	7440-36-0	
Arsenic	**14900**	ug/L	250	500	02/14/11 15:53	02/17/11 06:27	7440-38-2	
Cadmium	**808**	ug/L	0.80	10	02/14/11 15:53	02/17/11 06:23	7440-43-9	
Chromium	**8.5**	ug/L	5.0	10	02/14/11 15:53	02/17/11 06:23	7440-47-3	
Copper	**6020**	ug/L	250	500	02/14/11 15:53	02/17/11 06:27	7440-50-8	
Iron	**148000**	ug/L	500	10	02/14/11 15:53	02/17/11 06:23	7439-89-6	
Lead	**559**	ug/L	1.0	10	02/14/11 15:53	02/17/11 06:23	7439-92-1	
Manganese	**7210**	ug/L	250	500	02/14/11 15:53	02/17/11 06:27	7439-96-5	
Zinc	**120000**	ug/L	2500	500	02/14/11 15:53	02/17/11 06:27	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	02/11/11 16:07	02/14/11 09:59	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Sample: CN-01-H **Lab ID: 10149157004** Collected: 02/08/11 08:00 Received: 02/09/11 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**65.5**	ug/L	0.50	1	02/14/11 15:53	02/17/11 07:03	7440-36-0	
Arsenic	**55.9**	ug/L	0.50	1	02/14/11 15:53	02/17/11 07:03	7440-38-2	
Cadmium	**25.3**	ug/L	0.080	1	02/14/11 15:53	02/17/11 07:03	7440-43-9	
Chromium	**1.6**	ug/L	0.50	1	02/14/11 15:53	02/17/11 07:03	7440-47-3	
Copper	**683**	ug/L	10.0	20	02/14/11 15:53	02/17/11 07:08	7440-50-8	
Iron	**8220**	ug/L	50.0	1	02/14/11 15:53	02/17/11 07:03	7439-89-6	
Lead	**416**	ug/L	0.10	1	02/14/11 15:53	02/17/11 07:03	7439-92-1	
Manganese	**2640**	ug/L	10.0	20	02/14/11 15:53	02/17/11 07:08	7439-96-5	
Zinc	**2950**	ug/L	100	20	02/14/11 15:53	02/17/11 07:08	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	02/11/11 16:07	02/14/11 10:01	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

QC Batch: MPRP/24682 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10149157001, 10149157002, 10149157003, 10149157004

METHOD BLANK: 929557 Matrix: Water
Associated Lab Samples: 10149157001, 10149157002, 10149157003, 10149157004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	02/17/11 04:31	
Arsenic	ug/L	ND	0.50	02/17/11 04:31	
Cadmium	ug/L	ND	0.080	02/17/11 04:31	
Chromium	ug/L	ND	0.50	02/17/11 04:31	
Copper	ug/L	ND	0.50	02/17/11 04:31	
Iron	ug/L	ND	50.0	02/17/11 04:31	
Lead	ug/L	ND	0.10	02/17/11 04:31	
Manganese	ug/L	ND	0.50	02/17/11 04:31	
Zinc	ug/L	ND	5.0	02/17/11 04:31	

LABORATORY CONTROL SAMPLE: 929558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	76.9	96	80-120	
Arsenic	ug/L	80	79.9	100	80-120	
Cadmium	ug/L	80	75.8	95	80-120	
Chromium	ug/L	80	76.9	96	80-120	
Copper	ug/L	80	79.1	99	80-120	
Iron	ug/L	1000	980	98	80-120	
Lead	ug/L	80	77.6	97	80-120	
Manganese	ug/L	80	78.2	98	80-120	
Zinc	ug/L	80	78.4	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 929559 929560

Parameter	Units	10149157001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	48.7	80	80	126	126	97	97	75-125	.08	20	
Arsenic	ug/L	138	80	80	219	216	102	98	75-125	2	20	
Cadmium	ug/L	32.7	80	80	111	110	98	96	75-125	1	20	
Chromium	ug/L	ND	80	80	79.3	79.2	96	96	75-125	.2	20	
Copper	ug/L	1570	80	80	1680	1630	142	82	75-125	3	20	M6
Iron	ug/L	9170	1000	1000	10300	10100	115	95	75-125	2	20	
Lead	ug/L	30.3	80	80	107	107	96	96	75-125	.7	20	
Manganese	ug/L	169	80	80	251	249	103	101	75-125	.6	20	
Zinc	ug/L	5570	80	80	5830	5720	321	194	75-125	2	20	E,M6

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

MATRIX SPIKE SAMPLE: 930907

Parameter	Units	9287415003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	80	75.2	94	75-125	
Arsenic	ug/L	ND	80	79.0	99	75-125	
Cadmium	ug/L	0.040J	80	76.0	95	75-125	
Chromium	ug/L	0.26J	80	75.8	94	75-125	
Copper	ug/L	0.72	80	79.6	99	75-125	
Iron	ug/L	63.2	1000	1040	97	75-125	
Lead	ug/L	0.44	80	76.5	95	75-125	
Manganese	ug/L	190	80	259	87	75-125	
Zinc	ug/L	6.8	80	84.0	97	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

QC Batch: MERP/5054 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10149157001, 10149157002, 10149157003, 10149157004

METHOD BLANK: 929570 Matrix: Water
Associated Lab Samples: 10149157001, 10149157002, 10149157003, 10149157004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	02/14/11 09:49	

LABORATORY CONTROL SAMPLE: 929571

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 929572 929573

Parameter	Units	6093290001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.1	5.2	101	104	80-120	3	20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

QUALIFIERS

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK: 16
Pace Project No.: 10149157

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10149157001	**PW-01-H**	EPA 3020	MPRP/24682	EPA 6020	ICPM/10068
10149157002	**RY-01-H**	EPA 3020	MPRP/24682	EPA 6020	ICPM/10068
10149157003	**COL-01-H**	EPA 3020	MPRP/24682	EPA 6020	ICPM/10068
10149157004	**CN-01-H**	EPA 3020	MPRP/24682	EPA 6020	ICPM/10068
10149157001	**PW-01-H**	EPA 7470	MERP/5054	EPA 7470	MERC/5884
10149157002	**RY-01-H**	EPA 7470	MERP/5054	EPA 7470	MERC/5884
10149157003	**COL-01-H**	EPA 7470	MERP/5054	EPA 7470	MERC/5884
10149157004	**CN-01-H**	EPA 7470	MERP/5054	EPA 7470	MERC/5884

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Cascade Earth Sciences	Report To: Cascade Earth Sciences	Attention: Phillip Moyle
Address: 12720 E. Nora Ave.	Copy To: McClelland Lab 1016 Greg Street	Company Name: Cascade Earth Sciences
Spokana, Wa 99216	Sparks, NV 89431 mli@mettest.com	Address: 12720 E Nova Ave. Spokana, WA 99216
Email To: phillip.moyle@valmont.com	Purchase Order No.:	Pace Quote Reference:
Phone: 509-921-0290 Fax: 509-921-1788	Project Name: Monte Cristo	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 3484 WK: 16	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: antimony,arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H		WW	G	2/8/11	7:00am	2/8/11	8:00am	21c	1			X							X	X	X		10149157 001
2	RY-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		002
3	COL-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		003
4	CN-01-H		↓	↓	↓	↓	↓	↓	↓	↓			↓							↓	↓	↓		004
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Lewis / MLI	02/08/11	9:00am			
	FedEx	2/9/11	1445	Jeff Moore / Pace	2/9/11	1445

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lewis Bergstrom

SIGNATURE of SAMPLER: L. Bergstrom DATE Signed (MM/DD/YY): 2/8/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: Cascade Earth Project # 10149157

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 7967 4145 6638

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes ____ No X

Thermometer Used: 1383045 or 135 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature: 1.1 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: JG 2/9/11

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes ☐No ☐N/A	13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # 1-4 (1/1) HNO_3
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☒No	Initial when completed: JG Lot # of added preservative:
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Sally Hoo Date: 2/9/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
602 S 25th Street
Billings, MT 591014549
(406)254-7226

3184 WK 20

March 18, 2011

Dustin Wasley
Cascade Earth Sciences
12720 E. Nora Ave
Suite A
Spokane, WA 99216

RE: Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Dear Dustin Wasley:
Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2011. The results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sally Heinje

sally.heinje@pacelabs.com
Project Manager

Enclosures

cc: Phillip Moyle, Cascade Earth Sciences
Sara Rodriquez, Cascade Earth Sciences

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CERTIFICATIONS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10151343001	PW-01-H	Water	03/08/11 09:00	03/09/11 09:35
10151343002	RY-01-H	Water	03/08/11 09:00	03/09/11 09:35
10151343003	COL-01-H	Water	03/08/11 09:00	03/09/11 09:35
10151343004	CN-01-H	Water	03/08/11 09:00	03/09/11 09:35

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SAMPLE ANALYTE COUNT

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10151343001	PW-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10151343002	RY-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10151343003	COL-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1
10151343004	CN-01-H	EPA 6020	RJS	9
		EPA 7470	TEM	1

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Sample: PW-01-H **Lab ID: 10151343001** Collected: 03/08/11 09:00 Received: 03/09/11 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**51.4**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:43	7440-36-0	
Arsenic	**104**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:43	7440-38-2	
Cadmium	**23.8**	ug/L	0.16	2	03/15/11 12:25	03/17/11 14:43	7440-43-9	
Chromium	**1.9**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:43	7440-47-3	
Copper	**1020**	ug/L	10.0	20	03/15/11 12:25	03/17/11 14:47	7440-50-8	
Iron	**19500**	ug/L	100	2	03/15/11 12:25	03/17/11 14:43	7439-89-6	
Lead	**21.8**	ug/L	0.20	2	03/15/11 12:25	03/17/11 14:43	7439-92-1	
Manganese	**169**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:43	7439-96-5	
Zinc	**4400**	ug/L	100	20	03/15/11 12:25	03/17/11 14:47	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	03/11/11 11:25	03/14/11 15:07	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Sample: RY-01-H **Lab ID: 10151343002** Collected: 03/08/11 09:00 Received: 03/09/11 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**2.6**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:52	7440-36-0	
Arsenic	**1020**	ug/L	10.0	20	03/15/11 12:25	03/17/11 14:57	7440-38-2	
Cadmium	**6.1**	ug/L	0.16	2	03/15/11 12:25	03/17/11 14:52	7440-43-9	
Chromium	**2.1**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:52	7440-47-3	
Copper	**339**	ug/L	1.0	2	03/15/11 12:25	03/17/11 14:52	7440-50-8	
Iron	**32000**	ug/L	100	2	03/15/11 12:25	03/17/11 14:52	7439-89-6	
Lead	**84.7**	ug/L	0.20	2	03/15/11 12:25	03/17/11 14:52	7439-92-1	
Manganese	**975**	ug/L	10.0	20	03/15/11 12:25	03/17/11 14:57	7439-96-5	
Zinc	**1250**	ug/L	100	20	03/15/11 12:25	03/17/11 14:57	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	03/11/11 11:25	03/14/11 15:13	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Sample: COL-01-H **Lab ID: 10151343003** Collected: 03/08/11 09:00 Received: 03/09/11 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**88.8**	ug/L	2.5	5	03/15/11 12:25	03/17/11 15:01	7440-36-0	
Arsenic	**14500**	ug/L	250	500	03/15/11 12:25	03/17/11 15:06	7440-38-2	
Cadmium	**449**	ug/L	0.40	5	03/15/11 12:25	03/17/11 15:01	7440-43-9	
Chromium	**4.8**	ug/L	2.5	5	03/15/11 12:25	03/17/11 15:01	7440-47-3	
Copper	**3260**	ug/L	250	500	03/15/11 12:25	03/17/11 15:06	7440-50-8	
Iron	**122000**	ug/L	25000	500	03/15/11 12:25	03/17/11 15:06	7439-89-6	
Lead	**464**	ug/L	0.50	5	03/15/11 12:25	03/17/11 15:01	7439-92-1	
Manganese	**4420**	ug/L	250	500	03/15/11 12:25	03/17/11 15:06	7439-96-5	
Zinc	**70900**	ug/L	2500	500	03/15/11 12:25	03/17/11 15:06	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	03/11/11 11:25	03/14/11 15:15	7439-97-6	

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ANALYTICAL RESULTS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Sample: CN-01-H **Lab ID: 10151343004** Collected: 03/08/11 09:00 Received: 03/09/11 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Antimony	**70.0**	ug/L	1.0	2	03/15/11 12:25	03/17/11 02:31	7440-36-0	
Arsenic	**62.2**	ug/L	1.0	2	03/15/11 12:25	03/17/11 02:31	7440-38-2	
Cadmium	**20.1**	ug/L	0.16	2	03/15/11 12:25	03/17/11 02:31	7440-43-9	
Chromium	ND	ug/L	1.0	2	03/15/11 12:25	03/17/11 02:31	7440-47-3	
Copper	**615**	ug/L	1.0	2	03/15/11 12:25	03/17/11 02:31	7440-50-8	
Iron	**25300**	ug/L	100	2	03/15/11 12:25	03/17/11 02:31	7439-89-6	
Lead	**466**	ug/L	0.20	2	03/15/11 12:25	03/17/11 02:31	7439-92-1	
Manganese	**2550**	ug/L	10.0	20	03/15/11 12:25	03/17/11 02:36	7439-96-5	
Zinc	**2190**	ug/L	100	20	03/15/11 12:25	03/17/11 02:36	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	03/11/11 11:25	03/14/11 15:17	7439-97-6	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

QC Batch: MPRP/25079 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10151343001, 10151343002, 10151343003, 10151343004

METHOD BLANK: 943033 Matrix: Water
Associated Lab Samples: 10151343001, 10151343002, 10151343003, 10151343004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	03/17/11 12:58	
Arsenic	ug/L	ND	0.50	03/17/11 12:58	
Cadmium	ug/L	ND	0.080	03/17/11 12:58	
Chromium	ug/L	ND	0.50	03/17/11 12:58	
Copper	ug/L	ND	0.50	03/17/11 12:58	
Iron	ug/L	ND	50.0	03/17/11 12:58	
Lead	ug/L	ND	0.10	03/17/11 12:58	
Manganese	ug/L	ND	0.50	03/17/11 12:58	
Zinc	ug/L	ND	5.0	03/17/11 12:58	

LABORATORY CONTROL SAMPLE: 943034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	80	75.9	95	80-120	
Arsenic	ug/L	80	77.6	97	80-120	
Cadmium	ug/L	80	79.4	99	80-120	
Chromium	ug/L	80	78.8	99	80-120	
Copper	ug/L	80	79.1	99	80-120	
Iron	ug/L	1000	980	98	80-120	
Lead	ug/L	80	80.8	101	80-120	
Manganese	ug/L	80	79.1	99	80-120	
Zinc	ug/L	80	79.8	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 943035 943036

Parameter	Units	9289706001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	80	80	79.6	80.2	99	100	75-125	.8	20	
Arsenic	ug/L	0.062J	80	80	82.4	81.7	103	102	75-125	.8	20	
Cadmium	ug/L	0.083	80	80	79.6	81.6	99	102	75-125	3	20	
Chromium	ug/L	1.7	80	80	81.5	83.6	100	102	75-125	3	20	
Copper	ug/L	ND	80	80	81.4	83.6	102	104	75-125	3	20	
Iron	ug/L	12.0J	1000	1000	1020	1050	101	104	75-125	3	20	
Lead	ug/L	0.034J	80	80	80.2	81.4	100	102	75-125	1	20	
Manganese	ug/L	0.70	80	80	79.6	86.4	99	107	75-125	8	20	
Zinc	ug/L	3.7J	80	80	85.4	95.6	102	115	75-125	11	20	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

MATRIX SPIKE SAMPLE: 943037

Parameter	Units	256905005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	80	78.6	98	75-125	
Arsenic	ug/L	9.3	80	87.4	98	75-125	
Cadmium	ug/L	ND	80	81.1	101	75-125	
Chromium	ug/L	0.62	80	81.3	101	75-125	
Copper	ug/L	1.1	80	81.8	101	75-125	
Iron	ug/L	33100	1000	34200	108	75-125	M1
Lead	ug/L	0.80	80	81.6	101	75-125	
Manganese	ug/L	1830	80	1930	123	75-125	
Zinc	ug/L	21.8	80	102	100	75-125	

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QUALITY CONTROL DATA

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

QC Batch: MERP/5136 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 10151343001, 10151343002, 10151343003, 10151343004

METHOD BLANK: 941705 Matrix: Water
Associated Lab Samples: 10151343001, 10151343002, 10151343003, 10151343004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	03/14/11 15:03	

LABORATORY CONTROL SAMPLE: 941706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 941707 941708

Parameter	Units	10151343001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.4	5.7	108	115	80-120	6	20	

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QUALIFIERS

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Monte Cristo 3484 WK: 20
Pace Project No.: 10151343

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10151343001	**PW-01-H**	EPA 3020	MPRP/25079	EPA 6020	ICPM/10235
10151343002	**RY-01-H**	EPA 3020	MPRP/25079	EPA 6020	ICPM/10235
10151343003	**COL-01-H**	EPA 3020	MPRP/25079	EPA 6020	ICPM/10235
10151343004	**CN-01-H**	EPA 3020	MPRP/25079	EPA 6020	ICPM/10235
10151343001	**PW-01-H**	EPA 7470	MERP/5136	EPA 7470	MERC/5963
10151343002	**RY-01-H**	EPA 7470	MERP/5136	EPA 7470	MERC/5963
10151343003	**COL-01-H**	EPA 7470	MERP/5136	EPA 7470	MERC/5963
10151343004	**CN-01-H**	EPA 7470	MERP/5136	EPA 7470	MERC/5963

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Cascade Earth Sciences
Address:	12720 E. Nora Ave.
	Spokana, Wa 99216
Email To:	phillip.moyle@valmont.com
Phone:	509-921-0290
Fax:	509-921-1788
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Cascade Earth Sciences
Copy To:	McClelland Lab 1016 Greg Street
	Sparks, NV 89431 mll@mettest.com
Purchase Order No.:	
Project Name:	Monte Cristo
Project Number:	3484 WK: 20

Section C Invoice Information:

Attention:	Phillip Moyle
Company Name:	Cascade Earth Sciences
Address:	12720 E Nova Ave. Spokana, WA 99216
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	antimony, arsenic, cadmium	chromium, copper, iron, lead	manganese, mercury, zinc	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PW-01-H	WW	G	3/8/11	7:00am	3/8/11	8:00am	21c	1			X						X	X	X		10151343 001
2	RY-01-H																						002
3	COL-01-H																						003
4	CN-01-H																						004
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature]	3/9/11	0900				
	Fedex	3/9/11	0935	Norma C Frankle	3/9/11	0935	

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.8°	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lewis Bergstrom

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 3/8/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: _____ Project # 10151343

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 1968 4619 7494

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp Blank: Yes ____ No ☒

Thermometer Used 1383045 or 135 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.8° Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: 3/9/11 NCT

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A
Sufficient Volume:	☒Yes	☐No	☐N/A
Correct Containers Used:	☒Yes	☐No	☐N/A
-Pace Containers Used:	☒Yes	☐No	☐N/A
Containers Intact:	☒Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A
Sample Labels match COC:	☒Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: H2O			
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☒Yes	☐No	☐N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes	☒No	
Samples checked for dechlorination:	☐Yes	☐No	☒N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A
Trip Blank Present:	☐Yes	☐No	☒N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A
Pace Trip Blank Lot # (if purchased): _____			

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12. CoC has time collected as 0700 to 0800, Container labels have time collected as 0900
13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp # Items #1 - #4, HNO3 (vi)

Initial when completed NCT | Lot # of added preservative

14.
15.
16.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 3/9/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)