

ABBREVIATED PRELIMINARY ASSESSMENT

***Sidney Mine
in the
Monte Cristo Mining District***



Cover Photo: Portal of the Sidney Mine adit.

Mount Baker-Snoqualmie National Forest
Darrington Ranger District
Snohomish County, WA

September, 2006

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EXECUTIVE SUMMARY

The Forest Service performed an Abbreviated Preliminary Assessment for the Sidney Mine to determine the need for further site characterization. The Sidney Mine is located approximately 40 miles east of Everett, WA on federal lands within the Henry M. Jackson Wilderness on the Mount Baker-Snoqualmie National Forest, Darrington Ranger District. The mine falls within the 76 Creek drainage which along with Glacier Creek forms the South Fork Sauk River at their confluence near the town site of Monte Cristo. Numerous cabins and seasonal residences are located within the town site and immediately downstream. The Sidney Mine is located immediately adjacent to 76 Creek at an elevation of approximately 3,300 feet above mean sea level (MSL). The mine was visited and sampled on August 3, 2006. The South Fork Sauk River and lower reaches of 76 Creek are known to contain threatened and endangered populations of Bull Trout/Dolly Varden, Steelhead, Pink Salmon, Coho Salmon, and/or Chinook Salmon.

Two composite soil samples from the mine waste rock dump were collected in the field, prepared for bench testing, and analyzed in the lab using a Niton X-Ray Fluorescence (XRF) analyzer in accordance with EPA Method 6200. Arsenic (7,654-40,781 mg/kg) and chromium (1,010-2,480 mg/kg) concentrations in both samples and iron (65,300-149,900 mg/kg) concentrations in one sample exceeded Washington's Model Toxics Control Act (MTCA) Method A cleanup levels and/or EPA Region IX Preliminary Remediation Goals (PRGs) for industrial properties. Arsenic, chromium, and lead (243-518 mg/kg) in both samples and tin (175-282 mg/kg) in one sample exceeded soil concentrations established under MTCA to be protective of terrestrial ecological receptors at most industrial/commercial sites. However, exceedance of ecological receptor values does not necessarily trigger cleanup actions. 76 Creek has eroded and will continue to erode waste rock from the toe of the dump.

Two water quality samples were collected along 76 Creek above and below the Sidney Mine. Mine effluent discharging from the mine adit was also sampled. All three samples were analyzed for hardness and total antimony, arsenic, cadmium, copper, lead, nickel, and zinc. The two samples taken along 76 Creek were analyzed for sulfate. The sample of mine effluent discharging from the Sidney Mine adit met Washington State chronic surface water quality standards for protection of aquatic species. The adit sample did exceed drinking water criteria and human health criteria for water+organism and organism only for arsenic. Antimony, arsenic, copper, lead, nickel, and zinc were detected in the sample taken from 76 Creek above the Sidney Mine. Lead was the only analyte to exceed Washington State aquatic chronic criteria for surface waters in the upstream sample. All analytes met drinking water standards but not the human health standard for water+organism and/or organism only for arsenic. Sulfate levels were very low in the upstream sample at 1.6 mg/L. Antimony, copper, lead, nickel, and zinc were detected in the sample from 76 Creek below the Sidney Mine, arsenic and cadmium were below detection limits. Only lead and sulfate concentrations increased slightly from the upstream sample to the downstream. Antimony, arsenic, copper, nickel, and zinc all decreased in concentration downstream. As in the upstream sample, lead was the only analyte in the downstream sample to exceed Washington State aquatic chronic criteria for surface waters. All analytes in the downstream sample met drinking water standards and appear to have met human health standards (arsenic detection limit was above applicable human health standards). Sulfate levels remained very low at 1.8 mg/L in the downstream sample.

Based on the analytical results for soil and water samples; proximity to cabins and seasonal residences downstream at the town site of Monte Cristo; known populations of threatened and endangered Bull Trout/Dolly Varden, Steelhead, and Salmon populations in the lower reaches of 76 Creek and the South Fork Sauk River; accessibility of the Site to the public; and EPA's APA Checklist (Appendix A); it is recommended that a Site Inspection (SI) be performed for the Sidney Mine.

1.0 INTRODUCTION

An Abbreviated Preliminary Assessment (APA) was performed by the US Forest Service in accordance with the EPA "Guidance for Performing Preliminary Assessments Under CERCLA", EPA "Improving Site Assessment: Abbreviated Preliminary Assessments" of 1999, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the National Contingency Plan as outlined in 40 CFR Parts 300.410(c)(1)(i-v).

The purpose of this assessment was to determine whether or not there is a release or potential for a release of contaminants to the environment and/or to human health and to document whether further site characterization is warranted.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

The Sidney Mine is located approximately 40 miles east of Everett, WA within the Henry M. Jackson Wilderness of the Mount Baker-Snoqualmie National Forest, Darrington Ranger District. The mine falls within the 76 Creek drainage which along with Glacier Creek forms the South Fork Sauk River at their confluence near the town site of Monte Cristo. Numerous cabins and seasonal residences are located within the town site and immediately downstream. The Sidney Mine is located immediately adjacent to 76 Creek at an elevation of approximately 3,300 feet above mean sea level (MSL). The mine was visited and sampled on August 3, 2006. The South Fork Sauk River and lower reaches of 76 Creek are known to contain threatened and endangered populations of Bull Trout/Dolly Varden, Steelhead, Pink Salmon, Coho Salmon, and/or Chinook Salmon.

Access to the Site can be accomplished from either Darrington or Granite Falls via Highway 20, the Mountain Loop Highway, to Barlow Pass. Snohomish County owns and maintains the 5-mile long road (FS road 4710) from Barlow Pass to the town site of Monte Cristo. The road is gated at Barlow Pass. From the town site of Monte Cristo, the Sidney Mine can be reached by an approximately $\frac{3}{4}$ mile cross-country hike along the northeast side of 76 Creek.

Location information for the Sidney Mine:

Legal: Willamette Meridian, T 29 N, R 11 E, Section 27

Lat./Long.: N 47° 58' 38" W 121° 23' 9"

USGS quadrangle: Monte Cristo

According to Church and others (1983) and Johnson and others (1985), the first claims in the Monte Cristo mining district were staked on sulfide-bearing quartz veins in 1889. By 1891, a road up the Sauk River valley was under construction and in 1893, the Everett-Monte Cristo Railroad was completed, vastly improving access to the mining district. By 1894 a 300-ton-per-day concentrator and aerial tramways between the mill and the Mystery and Pride of Mountains

mines were in place and operating. The mines produced high-grade ore that was trammed to the mill and the mill produced concentrates for shipment to the Everett Smelter until 1897, when flooding along the Sauk River destroyed much of the railroad. The mines were basically shut down until 1899 when John D. Rockefeller gained a controlling interest in the mines and related companies. Railroad service was restored in 1900 and mining resumed in the District. In response to an unfavorable 1901 USGS report on the mineral deposits in the District indicating grade decreased with depth, Rockefeller began selling his holdings. Subsequently, the Guggenheim Smelter Trust, later known as ASARCO, acquired the Monte Cristo Mines and Everett Smelter. Their main interest was the smelter and consequently, the mines were shut down in 1903. The mines were sold in 1905 to the Wilmans brothers who in turn sold to mining speculator Samuel Silverman in 1906 (Wolff and others, 2003). Silverman intended to install a roasting plant at Monte Cristo to produce arsenic trioxide, a pesticide, but the company went into receivership in 1907 (Wolff and others, 2003). Limited production resumed in 1906 only to end again the following year (Johnson and others, 1985). Some mining occurred in 1920 but the District has been generally idle since that time (Johnson and others, 1985).

Among the principal mineral deposits in the Monte Cristo District was a northeast-trending, northwest-dipping shear zone in tonalite host rock exposed for 5,800 feet along strike and ranging from 1 to over 20 feet in width (Johnson and others, 1985). This shear zone contains quartz veins and lenses that pinch and swell horizontally and vertically along the vein. The veins and lenses contain pyrite, pyrrhotite, arsenopyrite, sphalerite, galena, chalcopyrite, stibnite, and lesser amounts of azurite, malachite, boulangerite, realgar, and orpiment (Johnson and others, 1985). This deposit was developed by the Justice, Golden Chord, Mystery, Pride of Woods, New Discovery, and Pride of Mountains mines (Church and others, 1983; Johnson and others, 1985). The principal commodities produced from these mines were gold, silver, copper, lead, and zinc (Broughton, 1942; Derkey and others, 1990). Production records for the District are incomplete but total production is estimated at 280,000 tons of polymetallic ore, mainly produced by the Justice, Golden Chord, Mystery, Pride of Woods, New Discovery, Pride of Mountains, Comet, and Rainy mines (Church and others, 1983; Johnson and others, 1985).

Compared to the main producers in the Monte Cristo mining district, relatively little is reported for the Sidney mine. According to Johnson and others (1985), the Sidney prospect was a gold and silver prospect that explored a northeast-trending, sulfide-bearing quartz vein in sheared andesite host rock. Hunting (1956) reported that the ore minerals were pyrite and chalcopyrite. The prospect consists of one adit 750 feet long that is reported to be caved approximately 205 feet from the portal (Johnson and others, 1985). There has been no recorded production from the mine. Assays from several hundred tons of waste rock material in the dump at the Sidney have average values of 0.08 ounces per ton gold, 0.3 ounces per ton silver, and 1.35% arsenic (Johnson and others, 1985). Current observations for the Sidney Mine include the following:

- The mine adit is open at the portal and located immediately adjacent to 76 Creek on the northeast side of the creek (Appendix E-1, Photo1).
- Mine effluent discharges from the adit at approximately 2-3 gallons per minute into 76 Creek (Appendix E-1, Photo 2). The drainage is clear and there is no discoloration of the discharge path substrate.

- Waste rock was brought out of the mine on rails and side cast on steep side slopes immediately adjacent to 76 Creek (Appendix E-2, Photos 3 and 4).
- The waste rock dump is fairly well vegetated with shrubs and small trees and is roughly estimated at approximately 200 LCY (Appendix E-2, photos 3 and 4).
- The majority of the waste rock dump at depth comprises ferricrete which forms when waste material has been cemented by iron oxides (Appendix E-3, Photo 5).
- 76 Creek has eroded and will continue to erode waste rock from the toe of the dump (Appendix E-2, Photo 4).
- A significant amount of rails and other mining-related equipment has accumulated in 76 Creek just downstream from the mine (Appendix E-3, Photo 6).

The Henry M. Jackson Wilderness is closed to entry and appropriation under the U.S. Mining laws and there are no mining claims with valid existing rights in the area (BLM LR2000 database, accessed 7/13/2006).

3.0 SITE SAMPLING AND TEST RESULTS

3.1 Previous Investigations

One previous investigation looked at possible human health and environmental impacts stemming from historic mining in the 76 Creek drainage. Crofoot and O'Brien (2004) performed rather extensive soil and water sampling in both the Glacier Creek and 76 Creek drainages in September of 2003 as part of a Site Hazard Assessment (SHA) performed under MTCA (Appendix B-1). At the Sidney mine, soil samples were analyzed in-situ with a XRF analyzer. Surface water samples from along 76 Creek at or near and above the mine were analyzed for priority pollutant metals. The results of their investigation for the 76 Creek drainage were as follows:

- In-situ XRF analysis of the waste rock dump material revealed elevated arsenic, lead, and mercury concentrations that exceeded MTCA Method A and/or B cleanup goals for unrestricted land use (Appendices B-2 and B-3).
- A surface water sample from the headwaters of 76 Creek only had detections for lead, copper, and antimony (Appendix B-4). Lead was the only metal to exceed Washington State chronic surface water criteria for protection of aquatic species (Appendix B-4). The sample met drinking water standards and appeared to meet the human health standards but arsenic detection limit was above human health criteria.
- A surface water sample from 76 Creek at or near the Sidney mine dump had detections for arsenic, lead, copper, and antimony (Appendix B-4). All four metals increased in concentration downstream but lead was the only metal to exceed Washington State chronic surface water criteria for protection of aquatic species (Appendix B-4). The sample met drinking water standards but exceeded the human health criteria for organism only and organism+water for arsenic.

3.2 Soil Samples

Two composite soil samples were collected from the Sidney mine waste rock dump to assess the material for potential contamination (Appendix C-1). Surface soils were removed to approximately 4 to 6 inches below grade in order to get below highly oxidized surface layers. Samples were collected using stainless steel scoops and placed in Low Density Polyethylene (LDPE) bags for subsequent bench testing. Samples were prepared and analyzed with a Niton XRF, Model XL-722S in accordance with EPA Method 6200. The analytical results from this effort are provided in Appendix C and summarized below. It is important to note that detection limits for certain elements were higher than the cleanup goals or standards to which they were compared (Appendix C). As a result, there may be additional exceedances of cleanup goals or standards not detectable using this reconnaissance analytical technique.

Arsenic (7,654-40,781 mg/kg) and chromium (1,010-2,480 mg/kg) concentrations in both samples and iron (65,300-149,900 mg/kg) in one sample exceeded Washington's Model Toxics Control Act (MTCA) Method A cleanup levels and/or EPA Region IX Preliminary Remediation Goals (PRGs) for industrial properties (Appendices C-2 to C-3). Arsenic, chromium, and lead (243-518 mg/kg) in both samples and tin (175-282 mg/kg) in one sample also exceeded soil concentrations established under MTCA to be protective of terrestrial ecological receptors at most industrial/commercial sites (Appendices C-2 to C-3). However, exceedance of ecological receptor values does not necessarily trigger cleanup actions.

3.3 Water Samples

Water quality sampling at the Sidney Mine and along 76 Creek was performed on August 3, 2006. Two water quality samples were collected along 76 Creek above and below the Sidney Mine (Appendix D-1). One sample of adit discharge was collected from the only adit at the Sidney (Appendix D-1). Unfiltered water samples for metals were collected as grab samples and were collected in pre-cleaned, 250-mL High Density Polyethylene (HDPE) bottles and preserved to pH<2 with nitric acid. Metals samples were analyzed for total antimony, arsenic, cadmium, copper, lead, nickel, and zinc by Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) following EPA method SW6020. Unfiltered samples for hardness as CaCO₃ were collected in pre-cleaned 250-mL HDPE bottles and preserved with nitric acid. Samples for hardness were analyzed following EPA method 130.2. Unfiltered samples for sulfate were collected in pre-cleaned 250-mL HDPE bottles and left unpreserved. Samples for sulfate were analyzed by ion chromatography using EPA method 300.0. Field parameters were obtained using a Horiba U-22 meter.

All samples were double-bagged in polyethylene and placed on ice for overnight shipment via FedEx to Severn Trent Laboratories, Inc. in Tacoma, Washington. Chain of custody for the samples was maintained. Sample analysis was performed within laboratory holding times. A complete report of the quality assurance/quality control (QA/QC) procedures and results is included in the laboratory analytical report dated August 21, 2006 (Appendix F).

Field parameters for sample sites are available in Appendix D-2. Analytical results and applicable comparison criteria are in Appendix D-3. The results of the sampling are as follows:

- Antimony, arsenic, copper, lead, nickel, and zinc were detected in sample MC-76-1 taken from 76 Creek above the Sidney Mine; cadmium was under detection limits (Appendices D-1 and D-3). Lead was the only analyte to exceed Washington State aquatic chronic criteria for surface waters (Appendix D-3). All analytes met drinking water standards but not the human health standard for water+organism and/or organism only for arsenic (Appendix D-3). Sulfate levels were very low at 1.6 mg/L (Appendix D-3).
- One sample of mine effluent discharging from the Sidney Mine adit was collected (MC-76-2). The sample met Washington State chronic surface water quality standards for protection of aquatic species (Appendix D-3). The sample exceeded drinking water criteria and human health criteria for organism only and water+organism for arsenic (Appendix D-3).
- Antimony, copper, lead, nickel, and zinc were detected in sample MC-76-3 taken from 76 Creek below Sidney Mine (Appendices D-1 and D-3). Only lead and sulfate concentrations increased slightly downstream; antimony, arsenic, copper, nickel, and zinc all decreased in concentration downstream; and arsenic and cadmium were below detection limits (Appendix D-3). As in the upstream sample, lead was the only analyte to exceed Washington State aquatic chronic criteria for surface waters (Appendix D-3). All analytes met drinking water and appear to have met human health standards but the detection limit for arsenic was above human health criteria for arsenic (Appendix D-3). Sulfate levels remained very low at 1.8 mg/L (Appendix D-3).

4.0 REMOVAL ACTION JUSTIFICATION

The NCP states that an appropriate removal action may be conducted at a site when a threat to human health or welfare or the environment is identified.

- The removal action is undertaken to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or the threat of a release at a site.
- Section 300.415(b)(2)(i-viii) of the NCP outlines eight factors to be considered when determining the appropriateness of a removal action.
- The applicable factors are outlined below and provide justification for completing the removal action, if required.

<i>Factor</i>	<i>Site Condition</i>	<i>Justification</i>
1) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants	Elevated arsenic, chromium, and lead concentrations in waste rock dump (Appendix C).	Yes
2) Actual or potential contamination of drinking water supplies or sensitive ecosystems	Cabins and seasonal residences in Monte Cristo. 76 Creek and South Fork Sauk River.	Yes
3) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.	None located at the site.	No

4) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate	Elevated arsenic, chromium, and lead concentrations in waste rock dump (Appendix C).	Yes
5) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released	Heavy rain or rain on snow events. Erosion of waste rock dump by 76 Creek.	Yes
6) Threat of fire or other explosion	None	No
7) The availability of other appropriate federal or state response mechanisms to respond to the release	N/A	No
8) Other situations or factors that may pose threats to public health or welfare of the United States or the environment	None	No

5.0 SUMMARY

Two composite soil samples from the Sidney mine waste rock dump were collected in the field, prepared for bench testing in the lab, and analyzed with a Niton X-Ray Fluorescence (XRF) analyzer in accordance with EPA Method 6200. Arsenic (7,654-40,781 mg/kg) and chromium (1,010-2,480 mg/kg) concentrations in both samples and iron (65,300-149,900 mg/kg) concentrations in one sample exceeded Washington's Model Toxics Control Act (MTCA) Method A cleanup levels and/or EPA Region IX Preliminary Remediation Goals (PRGs) for industrial properties. Arsenic, chromium, and lead (243-518 mg/kg) in both samples and tin (175-282 mg/kg) in one sample exceeded soil concentrations established under MTCA to be protective of terrestrial ecological receptors at most industrial/commercial sites. However, exceedance of ecological receptor values does not necessarily trigger cleanup actions.

Two water quality samples were collected along 76 Creek above and below the Sidney Mine. Mine effluent discharging from the mine adit was also sampled. All three samples were analyzed for hardness and total antimony, arsenic, cadmium, copper, lead, nickel, and zinc. The two samples taken along 76 Creek were analyzed for sulfate. The sample of mine effluent discharging from the Sidney Mine adit met Washington State chronic surface water quality standards for protection of aquatic species. The adit sample did exceed drinking water criteria and human health criteria for water+organism and organism only for arsenic. Antimony, arsenic, copper, lead, nickel, and zinc were detected in the sample taken from 76 Creek above the Sidney Mine. Lead was the only analyte to exceed Washington State aquatic chronic criteria for surface waters in the upstream sample. All analytes met drinking water standards but not the human health standard for water+organism and/or organism only for arsenic. Sulfate levels were very low in the upstream sample at 1.6 mg/L. Antimony, copper, lead, nickel, and zinc were detected in the sample from 76 Creek below the Sidney Mine, arsenic and cadmium were below detection limits. Only lead and sulfate concentrations increased slightly from the upstream sample to the downstream. Antimony, arsenic, copper, nickel, and zinc all decreased in concentration downstream. As in the upstream sample, lead was the only analyte in the downstream sample to exceed Washington State aquatic chronic criteria for surface waters. All analytes in the downstream sample met drinking water standards and appear to have met human health

standards (arsenic detection limit was above applicable human health standards). Sulfate levels remained very low at 1.8 mg/L in the downstream sample.

6.0 **RECOMMENDATION**

Based on the analytical results for soil and water samples; proximity to cabins and seasonal residences downstream at the town site of Monte Cristo; known populations of threatened and endangered Bull Trout/Dolly Varden, Steelhead, and Salmon populations in the lower reaches of 76 Creek and the South Fork Sauk River; accessibility of the Site to the public; and EPA's APA Checklist (Appendix A); it is recommended that a Site Inspection (SI) be performed for the Sidney Mine.

Abandoned or inactive mine workings should be closed to limit potential liability associated with the general public recreating at the Site.

7.0 **DISCLAIMER**

This abandoned mine/mill site was created under the General Mining Law of 1872 and is located solely on National Forest System (NFS) lands administered by the Forest Service. The United States has taken the position and courts have held that the United States is not liable as an "owner" under CERCLA Section 107 for mine contamination left behind on NFS lands by miners operating under the 1872 Mining Law. Therefore, Forest Service believes that this site should not be considered a "federal facility" within the meaning of CERCLA Section 120 and should not be listed on the Federal Agency Hazardous Waste Compliance Docket. Instead, this site should be included on EPA's CERCLIS database. Consistent with the June 24, 2003 OECA/FFEO "Policy on Listing Mixed Ownership Mine or Mill Sites Created as a Result of the General Mining Law of 1872 on the Federal Agency Hazardous Waste Compliance Docket," we respectfully request that the EPA Regional Docket Coordinator consult with the Forest Service and EPA Headquarters before making a determination to include this site on the Federal Agency Hazardous Waste Compliance Docket.

REFERENCES

- Broughton, W.A., 1942, Inventory of mineral properties in Snohomish County, Washington: Washington Division of Geology Report of Investigations No. 6, 64 p.
- Church, S.E., Tabor, R.W., and Johnson, F.L., 1983, Mineral resource potential of the Glacier Peak Roadless Area: U.S. Geological Survey Miscellaneous Field Studies Map MF-1380-C.
- Crofoot, G.W., and O'Brien, M.S., 2004, Monte Cristo mine area Site Hazard Assessment: Snohomish Health District and Washington Department of Ecology, Toxics Cleanup Program.
- Derkey, R.E., Joseph, N.L., and Lasmanis, R., 1990, Metal mines of Washington-preliminary report: Washington Department of Natural Resources, Division of Geology and Earth Resources Open File Report 90-18. 577 p.
- Hunting, M.T., 1955, Inventory of Washington minerals, Part II, Metallic Minerals: Washington Division of Mines and Geology Bulletin No. 7, 428 p.
- Johnson, F.L., Denton, D.K., Iverson, S.R., McCulloch, R.B., Stebbins, S.A., and Stotelmeyer, R.B., 1985, Mines and prospects map of the Glacier Peak Roadless Area, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1380-E.
- Wolff, F.E., McKay, D.T., and Norman, D.K., 2003, Inactive and abandoned mine lands- Mystery and Justice Mines, Monte Cristo mining district, Snohomish County, Washington: Washington Division of Geology and Earth Sciences Open File Report 2003-07.

Appendix A

ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

This checklist can be used to help the site investigator determine if an Abbreviated Preliminary Assessment (APA) is warranted. This checklist should document the rationale for the decision on whether further steps in the site assessment process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: Greg Graham, Geologist September 28, 2006
 (Name/Title) (Date)
USFS, 215 Melody Lane, Wenatchee, WA 98801 509-664-9262
 (Address) (Phone)
ggraham@fs.fed.us
 (E-Mail Address)

Site Name: Sidney Mine

Previous Names (if any): N/A

Site Location: Near the town site of Monte Cristo, approximately 40 miles east of Everett, WA

Legal Description: Willamette Meridian, T 29 N, R 11 E, Section 27

Describe the release (or potential release) and its probable nature: Arsenic and chromium, and to a lesser degree iron, concentrations in soil samples from the Sidney Mine waste rock dump exceeded Washington's Model Toxics Control Act (MTCA) Method A cleanup levels and/or EPA Region IX Preliminary Remediation Goals (PRGs) for industrial properties. Arsenic, chromium, and lead, and to a lesser degree tin, exceeded soil concentrations established under MTCA to be protective of terrestrial ecological receptors at most industrial/commercial sites. The waste rock dump is located immediately adjacent to 76 Creek and the toe of the dump is being eroded into by the creek. Mine effluent discharging from the Sidney Mine adit met Washington State chronic surface water quality standards for protection of aquatic species but did exceed drinking water criteria and human health criteria for organism only and water+organism for arsenic. Samples from 76 Creek above and below the mine indicated that only lead and sulfate concentrations increased slightly downstream; antimony, arsenic, copper, nickel, and zinc all decreased in concentration downstream. Lead, in both the upstream and downstream sample, was the only analyte to exceed Washington State aquatic chronic criteria for surface waters. All analytes in the downstream sample met drinking water and appear to meet human health standards but the detection limit was above human health criteria for arsenic.

Part 1 - Superfund Eligibility Evaluation

If All answers are "no" go on to Part 2, otherwise proceed to Part 3	YES	NO
1. Is the site currently in CERCLIS or an "alias" of another site?		X
2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)?		X
3. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?		X
4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?		X
5. Is there sufficient documentation to demonstrate that no potential for a release that could cause adverse environmental or human health impacts exist (i.e., comprehensive remedial investigation equivalent data showing no release above ARAR's, completed removal action, documentation showing that no hazardous substance release have occurred, or an EPA approved risk assessment completed)?		X

Part 2 - Initial Site Evaluation

For Part 2, if information is not available to make a “yes” or “no” response, further investigation may be needed. In these cases, determine whether an APA is appropriate. Exhibit 1 parallels the questions in Part 2. Use Exhibit 1 to make decisions in Part 3.

If the answer is “no” to any questions 1, 2, or 3, proceed directly to Part 3.	YES	NO
1. Does the site have a release or a potential to release?	X	
2. Does the site have uncontained sources containing CERCLA eligible substances?	X	
3. Does the site have documented on-site, adjacent, or nearby targets?	X	

If the answers to questions 1, 2, and 3 above were all “yes” then answer the questions below before proceeding to Part 3.	YES	NO
4. Does documentation indicate that a target (i.e., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?		X
5. Is there an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site?		X
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but there are nearby targets (i.e., targets within 1 mile)?	X	
7. Is there no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site?		X

Notes:

Potential targets include cabins and seasonal residence at and downstream of Monte Cristo town site, recreational users using the backcountry for hiking and camping, and a sensitive ecological environment in the lower reaches of 76 Creek and South Fork Sauk Creek which contains threatened and endangered Bull Trout/Dolly Varden, Steelhead, Pink Salmon, Coho Salmon, and Chinook Salmon.

EXHIBIT 1
SITE ASSESSMENT DECISION GUIDELINES FOR A SITE

Exhibit 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. You will use Exhibit 1 in determining the need for further action at the site, based on the answers to the questions in Part 2. Please use your professional judgment when evaluating a site. Your judgment may be different from the general recommendations for a site given below.

Suspected/Documented Site Conditions		APA	FULL PA	PA/SI	SI
1. There are no releases or potential to release.		Yes	No	No	No
2. No uncontained sources with CERCLA-eligible substances are present on site.		Yes	No	No	No
3. There are no on-site, adjacent, or nearby targets		Yes	No	No	No
4. There is documentation indicating that a target (i.e., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	Option 1: APA SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	No
5. There is an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site.	Option 1: APA SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	N/A
6. There is an apparent release and no documented on-site targets and no documented immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migrating from the site.		No	Yes	No	No
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.		No	Yes	No	No

Part 3 - EPA Site Assessment Decision

When completing Part 3, use Part 2 and Exhibit 1 to select the appropriate decision. For example, if the answer to question 1 in Part 2 was “no,” then an APA may be performed and the “NFRAP” box below should be checked. Additionally, if the answer to question 4 in Part 2 is “yes,” then you have two options (as indicated in Exhibit 1): Option 1 -- conduct an APA and check the “Lower Priority SI” or “Higher Priority SI” box below; or Option 2 -- proceed with a combined PA/SI assessment.

Check the box that applies based on the conclusions of the APA:

- | | |
|--|--|
| <input type="checkbox"/> NFRAP | <input type="checkbox"/> Refer to Removal Program – further site assessment needed |
| <input checked="" type="checkbox"/> Higher Priority SI | <input type="checkbox"/> Refer to Removal Program – NFRAP |
| <input type="checkbox"/> Lower Priority SI | <input type="checkbox"/> Site is being addressed as part of another CERCLIS site |
| <input type="checkbox"/> Defer to RCRA Subtitle C | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Defer to NRC | |

Regional EPA Reviewer: N/A
Print Name/Signature _____ Date _____

PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION:

Arsenic and chromium, and to a lesser degree iron, concentrations in soil samples from the Sidney Mine waste rock dump exceeded Washington’s Model Toxics Control Act (MTCA) Method A cleanup levels and/or EPA Region IX Preliminary Remediation Goals (PRGs) for industrial properties. Arsenic, chromium, and lead, and to a lesser degree tin, exceeded soil concentrations established under MTCA to be protective of terrestrial ecological receptors at most industrial/commercial sites. The waste rock dump is located immediately adjacent to 76 Creek and the toe of the dump is being eroded into by the creek. Mine effluent discharging from the Sidney Mine adit met Washington State chronic surface water quality standards for protection of aquatic species but did exceed drinking water criteria and human health criteria for organism only and water+organism for arsenic. Samples from 76 Creek above and below the mine indicated that only lead and sulfate concentrations increased slightly downstream; antimony, arsenic, copper, nickel, and zinc all decreased in concentration downstream. Lead, in both the upstream and downstream sample, was the only analyte to exceed Washington State aquatic chronic criteria for surface waters. All analytes in the downstream sample met drinking water and appear to meet human health standards but the detection limit was above human health criteria for arsenic.

NOTES:

Access to the Site can be accomplished from either Darrington or Granite Falls via Highway 20, the Mountain Loop Highway, to Barlow Pass. Snohomish County owns and maintains the 5-mile long road (FS road 4710) from Barlow Pass to the town site of Monte Cristo. The road is gated at Barlow Pass. From the town site of Monte Cristo, the Sidney Mine is accessed via a 3/4 mile cross-country hike along the northeast side of 76 Creek.

Appendix B

SUMMARY OF PREVIOUS ANALYTICAL DATA

(from Crofoot and O'Brien, 2004)

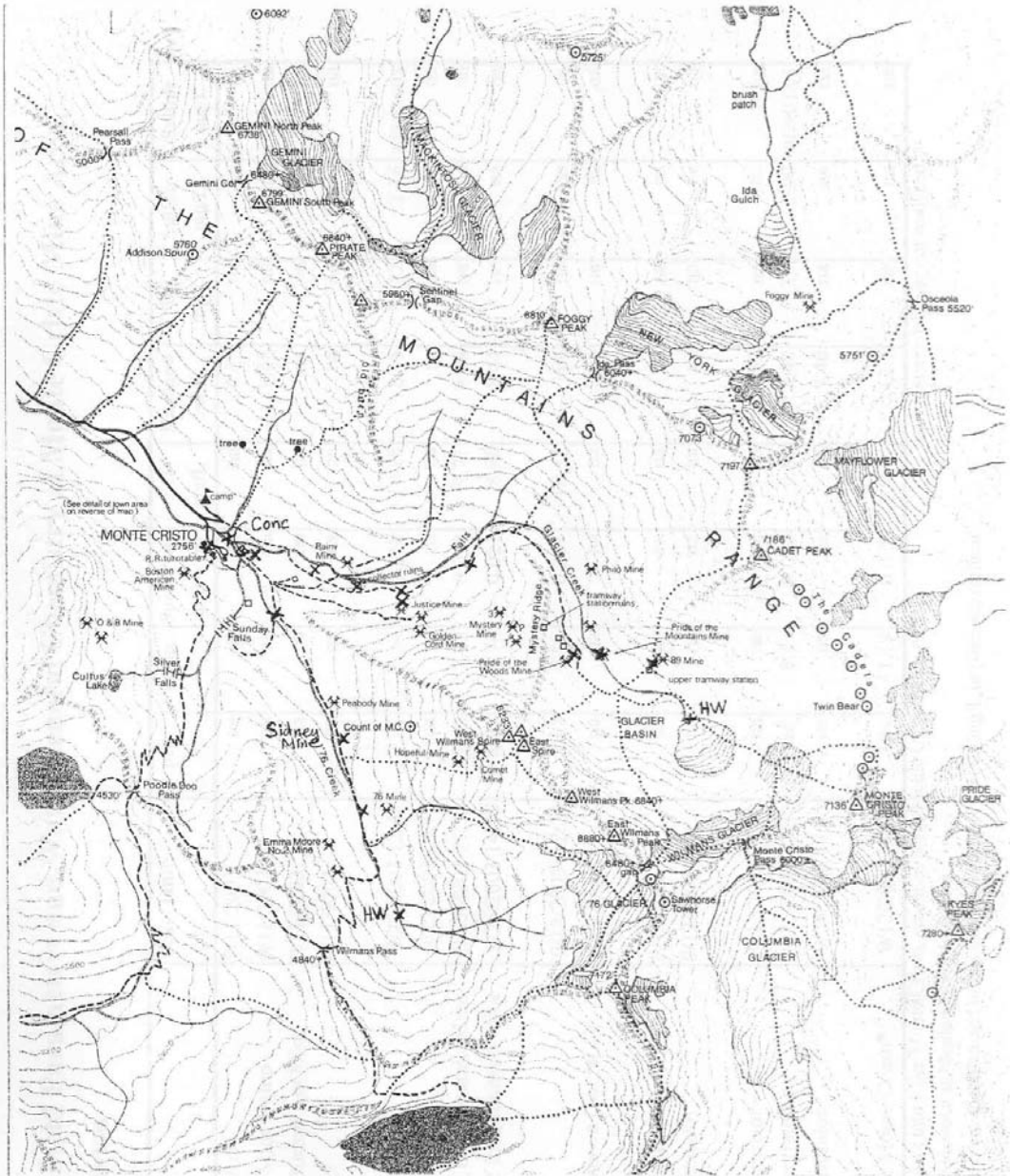


Figure 1. Monte Cristo Mine Area, Snohomish County, Washington
 Figure shows mine locations, sample locations (X), creek headwater locations (HW), concentrator (conc) and general topography. Scale is 1 inch = 1750 feet or 0.3 mile.



X = sample location
 Conc = Concentrator location
 HW = Headwater of creek sample location

Monte Cristo Mine Area Soil Field Results for Metals using X-Ray Fluorescence, mg/kg, continued

Monte Cristo Mine Area Soil Field Results for Metals using X-Ray Fluorescence, mg/kg

Serial #XL700-U35737059LY

No	Location/Creek Basin	Date/Time	Pb	PbErr	As	AsErr	Hg	HgErr	Zn	ZnErr	Cu	CuErr	Fe	FeErr	Mn	MnErr	Cr	CrErr
9	Calibration check-blank	9/14/2003 21:08	<LOD	6.3	<LOD	7.05	<LOD	5.1	<LOD	16.95	27.3	16	1748.8	90.7	<LOD	80.3	<LOD	255
10	Calibration check-low	9/14/2003 21:15	<LOD	7.5	<LOD	8.25	<LOD	6	<LOD	19.65	<LOD	27.8	2209.6	110	<LOD	97.4	<LOD	300
11	Calibration check-medium	9/14/2003 21:22	28.6	6.4	<LOD	9.3	<LOD	5.85	<LOD	18.75	37.6	18.2	1939.2	100	95.6	63	<LOD	285
12	Calibration check-high	9/14/2003 21:28	143.3	11.2	<LOD	14.9	7.8	4.6	43.1	15.3	<LOD	28.8	2169.6	110	<LOD	96.8	<LOD	300
13	76 Creek headwater sediment	9/14/2003 21:36	94.8	11.1	207.2	15.5	12.2	6.8	150.1	22.6	<LOD	40.4	17395	340	1320	180	<LOD	645
14	76 Cr mine talus	9/14/2003 21:44	297.4	16.2	574.8	23.2	13.1	8.3	1590	47.9	115.9	37	17190	320	1490	170	<LOD	600
15	76 Cr Sidney mine dump-N	9/14/2003 21:52	323.4	16.2	518.8	22.1	13.1	7.9	1709	48	116.1	36.1	16000	300	1510	160	<LOD	555
16	76 Cr Sidney mine dump-E	9/14/2003 22:01	102.7	20.3	9984	170	134.2	38.2	<LOD	60.6	101.1	56.4	63590	1200	3338	480	<LOD	1454.4
17	76 Cr down gradient	9/14/2003 22:10	122.6	10.7	588.4	20	16	7.4	232.2	22.1	51.4	24.5	18189	310	1370	160	<LOD	555
18	76 Cr dump-East	9/14/2003 22:18	115.1	20	17997	240	185.8	45.5	<LOD	62.1	389.4	61.6	136909	1899	7456	640	<LOD	1800
19	Concentrator level 1-East	9/14/2003 22:27	4268.8	88.4	10298	160	70.4	36.1	4349	110	997.6	90	50176	860	13696	540	<LOD	1950
20	Concentrator level 1-West	9/14/2003 22:35	5827.2	98.4	2339.2	88.8	60.4	23.1	167.1	35.5	250.8	44.5	18995	430	1050	220	<LOD	765
21	Concentrator level 2-East	9/14/2003 22:44	6438.4	130	27981	400	242	65.6	216.2	57.5	391.8	71	74598	1300	4410	550	<LOD	1650
22	Concentrator level 2-West	9/14/2003 22:52	11494.4	240	17190	350	1140	79.8	2010	140	3878	210	88166	1800	4819	680	<LOD	2400
23	Concentrator level 4-Center	9/14/2003 23:03	916.8	39.9	5440	99.7	881.6	38.6	1779	93.9	3709	150	112947	1500	4730	540	5958	1300
24	Concentrator level 5-East	9/14/2003 23:18	4729.6	120	21888	340	827.2	68.8	466.4	76	1110	110	46899	1000	1850	450	2720	1200
25	Concentrator level 5-West	9/14/2003 23:26	1480	70.4	26099	450	570.8	77.1	266.6	67	<LOD	117	86784	1800	3779	670	<LOD	2100
26	Pride/Mystery Tram Terminal	9/14/2003 23:34	11494.4	240	9977.6	250	545.2	63.7	943.2	99.4	1340	130	77875	1600	2810	620	<LOD	2100
27	Pride/Mystery Tram Terminal	9/14/2003 23:43	9395.2	150	4518.4	130	224	34.9	297.8	47.6	368.8	55.5	37094	700	1970	330	<LOD	1050
28	Comet Mine Bunker-South	9/14/2003 23:51	3209.6	97.6	48486	700	760.8	93.2	205	66.4	122.7	76.8	117965	2000	6726	740	<LOD	2250
29	Comet Mine Bunker-North	37879.00021	1409.6	45	6988.8	110	48.1	26.8	440.8	40.3	81.3	41.4	47078	770	3859	360	<LOD	1125
30	RR Track at Power House	37879.00649	39.6	10.5	275	18.6	15.4	8.4	151.7	27.4	74.9	34.2	26291	510	1640	250	<LOD	795
31	Glacier Creek above Conctrtr	37879.01144	23.1	10.1	105.4	14.4	<LOD	11.7	88.2	27.6	89	37	15693	410	1070	220	<LOD	780
32	Glacier Creek below Conctrtr	37879.01686	38.8	8	148.2	11.9	9.2	5.8	105.8	20.1	80	26.1	19494	340	1350	180	<LOD	600
33	So Fork Sauk River-Lake MC	37879.02396	91.2	8.8	292.8	13.9	<LOD	8.25	115.8	17.2	65.5	21.4	11398	220	670.8	120	<LOD	435

Appendix B-2. In-situ XRF results from Site Hazard Assessment for SHA for Monte Cristo Mine Area, Snohomish County, Washington (from Crofoot and O'Brien, 2004).

Table 5. Comparison of SHA Soil Results with Previous Study and Regional Background Metal Concentration Levels for Monte Cristo Mine Area, Snohomish County, Washington

Results in bold exceed Model Toxics Control Act Cleanup Level or other standard or criterion.

Soil Analytical Results, mg/kg		Arsenic	Cadmium	Chromium	Lead	Mercury	Nickel	Copper	Silver	Zinc	Antimony	Pb:As
No	Location	As	Cd	Cr	Pb	Hg	Ni	Cu	Ag	Zn	Sb	Ratio
3394095	Glacier Creek Headwater Sediment	122	0.65	16.4	26.3	0.874	12.1	21.7	0.18	123	0.43	0.22
3394096	Pride of Mountain Mine Soil	332	1.89	9.71	130	0.528	7.9	48	0.45	328	0.57 J	0.39
3394097	Pride of Woods Mine Soil	41400	2.42	12.1	2760	8.61	ND>5.0	517	49.1	271	416	0.07
10531	Justice Mine Adit Soil	4900	6.75	U>0.232	228	0.61	15.7	93.3	U>0.232	312	12	0.46
3394098	Comet Mine Bunker Soil	31200	9.12	11.0	7340	2.28	11.3	212	17	180	168	0.24
3374087	Comet Mine Bunker South Soil	14700	2.29	11.1	1950	0.368	12.1	78	5.39	435	719	0.13
10532	Comet Mystery Tram Terminal Soil	8450	8.33	U>0.240	20400	4.47	U>0.481	1160	320	882	133	2.4
10529	Concentrator Level 1 West Soil	3460	4.13	2.44	9580	8.5	U>0.469	378	126	149	1365	2.8
10530	Concentrator Level 1 East Soil	34900	11.4	5.74	7000	7.07	0.604	516	115	852	4582	0.2
3374086	Concentrator Level 2 West Soil	14600	1.54	1.5	16300	4.33	3.26	1340	118	471	3990	1.1
3374088	So Fork Sauk River-Lake MC* Sediment	1090	3.9	36.6	278	0.0911	96.5	207	6.94	806	15.7	0.25
Previous Study, mg/kg												Pb:As
Wolff 2003	Mystery Adit 3 Dump	14000	na	na	1700	na	na	500	na	1100	na	0.15
	Pride of Woods Dump	15300	ND>1.11	na	1450	na	na	195	na	113	na	0.09
	Pride of Mountains Adit 1 Dump	17300	7.29	na	7040	na	na	1010	na	941	na	0.40
Natural Background Soil Metal Concentrations** at 90th Percentile Values, mg/kg												Pb:As
	Puget Sound Lowland n=45	22.80	0.77	48.15	16.83	0.07	38.19	36.36	na	85.06	na	0.73
	Western Washington n=86	46.21	1.20	47.40	20.42	0.08	44.20	43.23	na	98.39	na	0.44
	Washington Statewide n=166	41.81	0.99	41.88	17.09	0.07	38.19	36.01	na	85.82	na	0.41
MTCA Cleanup Level, mg/kg												
		Carc/Noncarcinogen		CrIII/CrVI								
	MTCA method A	20	2	2000/19/1	250	2	na	na	na	na	na	
	MTCA method B - Direct Contact	0.667/24.0	40	120,000/240	na	24	1600	2960	400	24000	32	

* South Fork of Sauk River sediment where river flows into Lake Monte Cristo, six miles north of Monte Cristo Mine Area.

na = not available or not analyzed.

ND>0.10 or U>0.10 = Metal not detected above level specified; in this example not above 0.10 mg/kg.

J = metal was positively identified, result is estimated.

** Natural Background Soil Metal Concentrations at 90th Percentile Values in mg/kg from Ecology Publication #94-115, October 1994, page 6-4, table 7.

Appendix B-3. Laboratory analytical results for soils samples from Site Hazard Assessment and applicable comparison criteria. MTCA cleanup levels are listed at the bottom of the table for comparison to the XRF data in Appendix B-2 (from Crofoot and O'Brien, 2004).

Table 6. Comparison of SHA Water Results with Previous Study and Cleanup Levels for Monte Cristo Mine Area, Snohomish County, Washington

Results in bold exceed Model Toxics Control Act Cleanup Level or Washington Water Quality Criterion or other standard.

Water Analytical Results, ug/L		Hardness	Arsenic	Cadmium	Chromium	Lead	Mercury	Nickel	Copper	Silver	Zinc	Antimony	
No	Location		As	Cd	Cr	Pb	Hg	Ni	Cu	Ag	Zn	Sb	
3374080	76 Creek Headwater	5	U>0.50	U>0.10	U>0.50	0.12	U>0.050	U>0.50	0.18	U>0.10	U>5.0	0.48	
3374081	76 Creek Sidney Mine Dump	9	9.64	U>0.10	U>0.50	0.19	U>0.050	U>0.50	0.26	U>0.10	U>5.0	2.22	
3394090	Glacier Creek Headwater	8	1.70	U>0.10	U>0.50	U>0.10	U>0.050	U>0.50	U>0.50	U>0.10	U>5.0	1.8 J	
3394091	Glacier Creek POM Mine	8	3.80	U>0.10	U>0.50	0.14	U>0.050	U>0.50	U>0.50	U>0.10	U>5.0	1.9 J	
3394094	Glacier Creek POM Mine N	8	3.60	U>0.10	U>0.50	0.10	U>0.050	U>0.50	U>0.50	U>0.10	U>5.0	1.9 J	
3374082	Creek at Justice Mine	104	235	0.14	U>0.50	1.26	U>0.050	0.92	4.22	U>0.10	21	11.3	
3374083	Creek below Justice Mine	99	264	0.48	U>0.50	0.74	U>0.050	1.19	2.83	U>0.10	56.8	11.6	
3374084	Glacier Creek below Concentrator+	8	7.89	U>0.10	U>0.50	0.13	U>0.050	U>0.50	0.67	U>0.10	U>5.0	1.3	
3394093	Glacier Creek Below Concentrator+	9	12.2	U>0.10	U>0.50	0.29	U>0.050	U>0.50	0.55	U>0.10	6.2	1.9 J	
3374085	So Fork Sauk River at Lake MC*	12	27.4	U>0.10	U>0.50	0.63	U>0.050	U>0.50	1.41	U>0.10	U>5.0	5.44	
Previous Study, ug/L													
Ecology 02	Glacier Creek Upstream-High Flow	8	0.28	U>0.02	na	U>0.02	0.0042	na	U>0.02	na	0.20	na	
	Glacier Creek Upstream-Low Flow	7	4.52	U>0.02	na	0.03	U>0.002	na	0.26	na	1.80 J	na	
	Glacier Creek Downstream-High Flow	7	7.37	0.04	na	0.02	0.0058	na	0.31	na	5.04	na	
	Glacier Creek Downstream-Low Flow	7	9.24	0.04	na	U>0.02	U>0.002	na	0.27	na	5.75	na	
MTCA Cleanup Level or Other, ug/L													
			Carc/Noncarcinogen		CrIII/CrVI								
	MTCA method B Surface Water (Aug 2001)		0.0982/17.7		20.3	243000/486	na	na	1100	2660	25900	16500	1040
	Wash Water Quality Criteria-Human Health**	8	0.018	na	na	na	0.14	610	na	na	na	14	
	Wash Water Qual Cri -Aquatic Life Acute**	8	360	2.73	435/15	47.43	2.1	1114.65	13.04	2.12	90.1	na	
	Wash Water Qual Cri -Aquatic Life Chronic**	8	190	0.83	141/10	1.85	0.012	123.79	8.92	na	82.27	na	
Some Washington Water Quality Criteria are hardness dependent (Cd, Cu, Pb, Ag, Zn) for criteria for other hardness values see Table 3 page 2, Appendix C or formulae below.													

* South Fork of Sauk River where river flows into Lake Monte Cristo, six miles north of Monte Cristo Mine Area.

na = not available or not analyzed.

U>0.10 = Metal not detected above level specified; in this example not detected above 0.10 ug/L.

J = metal was positively identified, result is estimated.

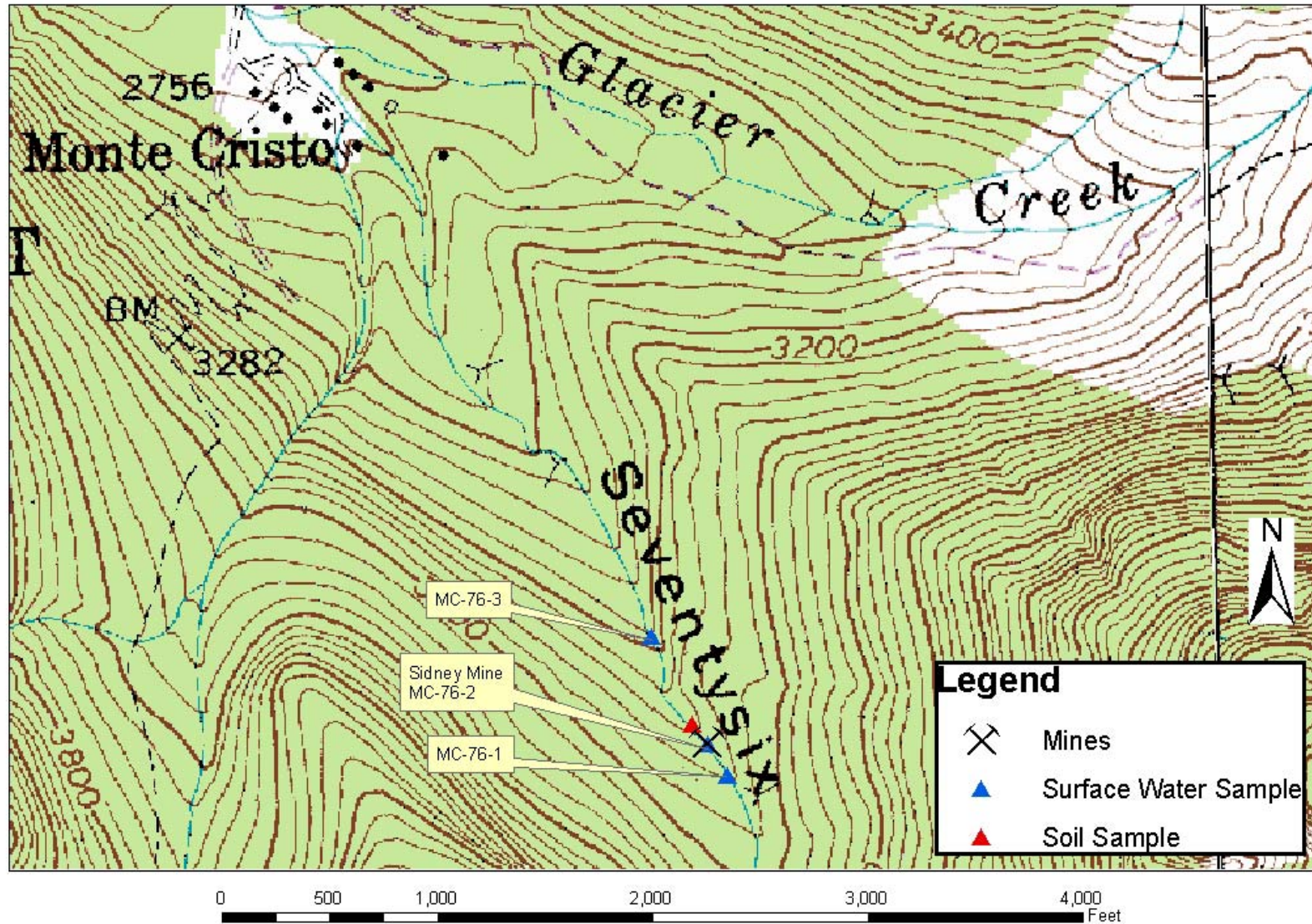
** See Appendix C or formulae are shown in <http://www.ecy.wa.gov/pubs/was17320a.pdf>

Appendix B-4. Comparison of SHA water sample results with previous studies and cleanup levels for Monte Cristo Mine Area, Snohomish County, Washington (from Crofoot and O'Brien, 2004).

Appendix C

NITON XRF ANALYTICAL DATA SUMMARY

Map of Sidney Mine and Associated Sample Sites



Table

Table 1. Analytical results for Sidney Mine waste rock dump; composite sample from northwest half of dump.

Mine: Sidney
Sample Number: MC-76-2A

SAMPLE	ANALYTE	ANALYTICAL RESULT (mg/kg) ¹	MTCA Method A (mg/kg) ²	EPA REGION IX PRG (mg/kg) ³	SIMPLIFIED ECOLOGICAL EVALUATION (mg/kg) ⁴
	Antimony	59.5		410	--
	Total Arsenic	40,780.8	20	1.6	20
	Arsenic III				260
	Arsenic V				
	Cadmium	BDL (42)	2	450	36
	Total Chromium	2,480		450	135
	Chromium VI		19	64	
	Chromium III		2,000	100,000	
	Cobalt	BDL (1,380)		1,900	--
	Copper	471.2		41,000	550
	Iron	149,900		100,000	--
	Lead	518	1,000	800	220
	Manganese	BDL (2,250)		19,000	23,500
	Mercury	BDL (210)	2	310	Inorganic - 9 Organic - .7
	Molybdenum	BDL (8.4)		5,100	71
	Nickel	BDL (420)		20,000	1,850
	Selenium	BDL (78.15)		5,100	.8
	Silver	BDL (165)		5,100	--
	Tin	282.2		100,000	(275)
	Zinc	323.8		100,000	570

¹ BDL-Below Detection Limit; detection limit in mg/kg is indicated in parenthesis (e.g. BDL (450))

² From WAC 173-340-900, Table 745-1, MTCA Method A Cleanup Levels for Industrial Properties.

³ From EPA, Region IX, Preliminary Remediation Goals, October, 2004, available at <http://www.epa.gov/region9/waste/sfund/prg/index.html>.

⁴ From WAC 173-340-900, Table 749-2, Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure. All concentrations are for industrial/commercial sites; if unavailable, unrestricted land use values denoted with parenthesis () were utilized.

Table 2. Analytical results for Sidney Mine waste rock dump; composite sample from southeast half of dump.

Mine: Sidney
Sample Number: MC-GC-2B

SAMPLE	ANALYTE	ANALYTICAL RESULT (mg/kg) ¹	MTCA Method A (mg/kg) ²	EPA REGION IX PRG (mg/kg) ³	SIMPLIFIED ECOLOGICAL EVALUATION (mg/kg) ⁴
	Antimony	80.2		410	--
	Total Arsenic	7,654.4	20	1.6	
	Arsenic III				20
	Arsenic V				260
	Cadmium	BDL (34.35)	2	450	36
	Total Chromium	1,009.6		450	135
	Chromium VI		19	64	
	Chromium III		2,000	100,000	
	Cobalt	566		1,900	--
	Copper	101.8		41,000	550
	Iron	65,300		100,000	--
	Lead	242.6	1,000	800	220
	Manganese	BDL (915)		19,000	23,500
	Mercury	BDL (65.7)	2	310	Inorganic - 9 Organic - .7
	Molybdenum	BDL (6.0)		5,100	71
	Nickel	BDL (195)		20,000	1,850
	Selenium	BDL (26.1)		5,100	.8
	Silver	BDL (137.4)		5,100	--
	Tin	174.5		100,000	(275)
	Zinc	246.6		100,000	570

¹ BDL-Below Detection Limit; detection limit in mg/kg is indicated in parenthesis (e.g. BDL (450))

² From WAC 173-340-900, Table 745-1, MTCA Method A Cleanup Levels for Industrial Properties.

³ From EPA, Region IX, Preliminary Remediation Goals, October, 2004, available at <http://www.epa.gov/region9/waste/sfund/prg/index.html>.

⁴ From WAC 173-340-900, Table 749-2, Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure. All concentrations are for industrial/commercial sites; if unavailable, unrestricted land use values denoted with parenthesis () were utilized.

Appendix D

WATER QUALITY ANALYTICAL DATA

Map of Sidney Mine and Associated Sample Sites

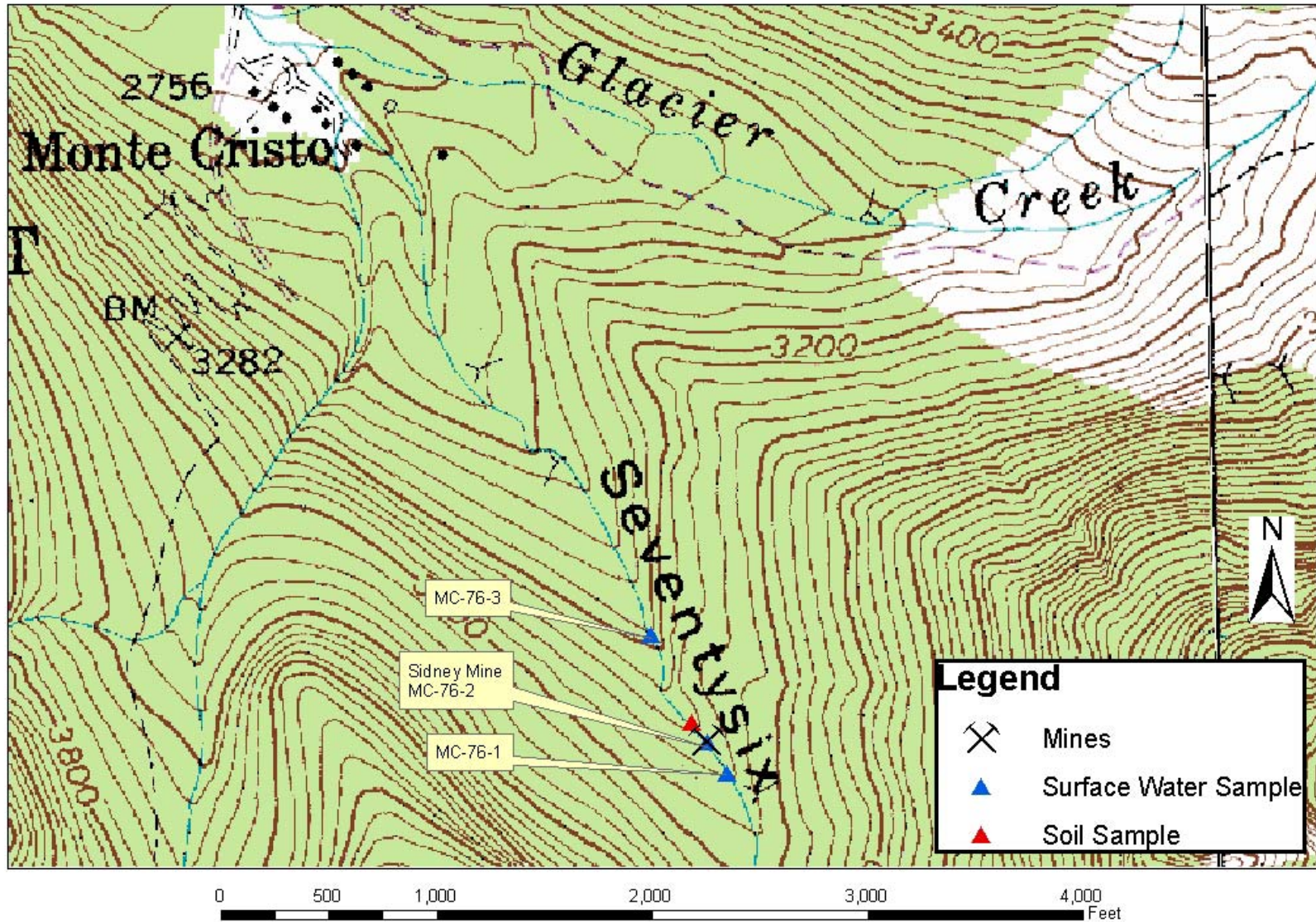


Table D-2. Field parameters for surface water samples along 76 Creek.

Sample I.D.	Location	Date	Temperature (°C)	pH (SU)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (g/L)	Oxidation- Reduction Potential (mV)
MC-76-1	76 Creek above Sidney Mine	8/3/2006	6.4	5.98	0.040	1	11.94	0.03	288
MC-76-2	Sidney Mine effluent	8/3/2006	5.6	6.42	0.054	7	12.24	0.04	263
MC-76-3	76 Creek below Sidney Mine	8/3/2006	7.0	6.37	0.040	1	12.05	0.03	266
POW=Pride of Woods Mine									
ND=New Discovery Mine									
POM=Pride of Mountains Mine									

Table D-3. Summary of surface water analytical data and applicable standards.

Sample I.D.	Location	Date	Hardness as CaCO ₃	Antimony (Sb)	Arsenic (As)	Cadmium (Cd)	Copper (Cu)	Lead (Pb)	Nickel (Ni)	Zinc (Zn)	Sulfate (SO ₄ ²⁻)
			mg/L	Total Recoverable Metals in µg/L							mg/L
MC-76-1	76 Creek above Sidney Mine	8/3/2006	9	3.8	5.8	ND	1.3 J	0.23 J	4.7	7.9	1.6
MC-76-2	Sidney Mine effluent	8/3/2006	9	1.5 J	19	ND	0.74 J	0.1 J	0.32 J	4.9 J	
MC-76-3	76 Creek below Sidney Mine	8/3/2006	8	3.1	ND	ND	0.6 J	0.34 J	0.28 J	5.2	1.8
Applicable State Surface Water Standards											
Washington State Surface Water Quality Standards ¹			8	NS	190	<i>0.16</i>	<i>1.32</i>	<i>0.15</i>	<i>18.55</i>	<i>12.30</i>	NS
Washington State Surface Water Quality Standards ¹			9	NS	190	<i>0.17</i>	<i>1.45</i>	<i>0.17</i>	<i>20.50</i>	<i>13.59</i>	NS
Other Relevant Standards for Reference											
EPA Recommended Water Quality Criteria (Aquatic) ²			8.5	NS	150	<i>0.04</i>	<i>1.09</i>	<i>0.16</i>	<i>6.46</i>	<i>14.63</i>	NS
EPA Recommended Water Quality Criteria (Human Health-Water+Organism) ²				5.6	0.018	NS	1300	NS	610	7400	NS
EPA Recommended Water Quality Criteria (Human Health-Organism only) ²				640	0.14	NS	NS	NS	4600	26000	NS
Washington State Primary/Secondary Drinking Water Standards ³				6	10	5	1300	15	100	5000	250
U=Analyte not detected at or above reported result											
J=Result is less than Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.											
NS=Not Specified											
¹ Washington Administrative Code, Chapter 173-201A WAC, Water Quality Standards for Surface Waters of the State of Washington. Criteria in <i>italics</i> were corrected for associated hardness value.											
² EPA, 2006, National Recommended Water Quality Criteria. Criteria in <i>italics</i> are hardness dependant and were corrected for the average hardness of 76 Creek (8.5 mg/L).											
³ Washington Administrative Code, Chapter 246-290-310, Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs)											

Appendix E

Site Photographs



Photo 1. View along 76 Creek towards the portal of the Sidney Mine. Note mine discharge directly into 76 Creek, view to the southeast (photo by G. Graham, 8/3/2006).



Photo 2. Close-up of mine portal at the Sidney Mine, view to the northeast (photo by G. Graham, 8/3/2006).



Photo 3. Top of waste rock dump at the Sidney Mine. Waste rock was brought out of the mine on rails and side cast into and immediately adjacent to 76 Creek. Note that shrubs and trees are growing fairly well on the dump, view to the northwest (photo by G. Graham, 8/3/2006).



Photo 4. Sidney Mine waste rock dump as viewed from 76 Creek looking towards Photo 3. Note slumping of material as a result of 76 Creek eroding into the toe of the dump, view to the northeast (photo by G. Graham, 8/3/2006).



Photo 5. The majority of the Sidney mine waste dump comprises ferricrete which forms when waste material has been cemented with iron oxides into rock, view to the southeast (photo by G. Graham, 8/3/2006).



Photo 6. Rails and other mining debris from the Sidney Mine located in 76 Creek immediately downstream of the adit and waste rock dump, view to the northwest (photo by G. Graham, 8/3/2006).

Appendix F

Analytical Report from Severn Trent Laboratories

Note: Samples for 3 projects were submitted jointly to the lab for analytical analysis. Excerpts of the analytical report relevant only to the Sidney mine are included here and as a result some pages from the complete report are missing. Analytical data for the other 2 projects are reported in separate documents. A complete copy of the analytical report is available, upon request, from the project file.



STL

ANALYTICAL REPORT

Job Number: 580-3244-1

Job Description: MBS Monte Cristo

For:
USDA Forest Service
215 Melody Lane
Wenatchee, WA 98801

Attention: Greg Graham

A handwritten signature in black ink that reads "H Curbow".

Heather Curbow
Project Mgmt. Assistant
hcurbow@stl-inc.com
08/21/2006

Project Manager: Heather Curbow

STL Seattle is a part of Severn Trent Laboratories, Inc.

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

Severn Trent Laboratories, Inc.
STL Seattle 5755 8th Street East, Tacoma, WA 98424
Tel (253) 922-2310 Fax (253) 922-5047 www.stl-inc.com

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METHOD SUMMARY

Client: USDA Forest Service

Job Number: 580-3244-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Inductively Coupled Plasma - Mass Spectrometry	STL SEA	SW846 6020	
Acid Digestion of Waters for Total Recoverable or	STL SEA		SW846 3005A
Hardness, Total (mg/l as CaCO ₃), Titrimetric, EDTA	STL SEA	MCAWW 130.2	
Anions by Ion Chromatography	STL SEA	EPA-04 300.0	

LAB REFERENCES:

STL SEA = STL Seattle

METHOD REFERENCES:

EPA-04 - "Methods For The Determination Of Inorganic Substances In Environmental Samples", EPA/600/R-93/100, August 1993.

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

STL Seattle

SAMPLE SUMMARY

Client: USDA Forest Service

Job Number: 580-3244-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-3244-1	MC-GC-1	Water	08/02/2006 1030	08/08/2006 0815
580-3244-2	MC-GC-3	Water	08/02/2006 1300	08/08/2006 0815
580-3244-3	MC-GC-4	Water	08/02/2006 1315	08/08/2006 0815
580-3244-4	MC-GC-5	Water	08/02/2006 1715	08/08/2006 0815
580-3244-5	MC-GC-6	Water	08/02/2006 1445	08/08/2006 0815
580-3244-6	MC-GC-9	Water	08/02/2006 1645	08/08/2006 0815
580-3244-7	MC-GC-10	Water	08/02/2006 1830	08/08/2006 0815
580-3244-8	MC-76-1	Water	08/03/2006 0930	08/08/2006 0815
580-3244-9	MC-76-2	Water	08/03/2006 0945	08/08/2006 0815
580-3244-10	MC-76-3	Water	08/03/2006 1130	08/08/2006 0815

STL Seattle

Analytical Data

Client: USDA Forest Service

Job Number: 580-3244-1

Client Sample ID: MC-76-1

Lab Sample ID: 580-3244-8
Client Matrix: Water

Date Sampled: 08/03/2006 0930
Date Received: 08/08/2006 0815

6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method:	6020	Analysis Batch:	580-9897	Instrument ID:	SEA026
Preparation:	3005A	Prep Batch:	580-9855	Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/14/2006 1642			Final Weight/Volume:	50 mL
Date Prepared:	08/14/2006 0957				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.0058		0.00037	0.0020
Lead	0.00023	J B	0.000016	0.0020
Antimony	0.0038	B	0.000061	0.0020
Cadmium	ND		0.000037	0.0020
Copper	0.0013	J B	0.000075	0.0020
Nickel	0.0047	B	0.000052	0.0020
Zinc	0.0079	B	0.00026	0.0050

Analytical Data

Client: USDA Forest Service

Job Number: 580-3244-1

Client Sample ID: MC-76-2Lab Sample ID: 580-3244-9
Client Matrix: WaterDate Sampled: 08/03/2006 0945
Date Received: 08/08/2006 0815**6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable**

Method:	6020	Analysis Batch:	580-9897	Instrument ID:	SEA026
Preparation:	3005A	Prep Batch:	580-9855	Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/14/2006 1647			Final Weight/Volume:	50 mL
Date Prepared:	08/14/2006 0957				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.019		0.00037	0.0020
Lead	0.00010	J B	0.000016	0.0020
Antimony	0.0015	J B	0.000061	0.0020
Cadmium	ND		0.000037	0.0020
Copper	0.00074	J B	0.000075	0.0020
Nickel	0.00032	J B	0.000052	0.0020
Zinc	0.0049	J B	0.00026	0.0050

Analytical Data

Client: USDA Forest Service

Job Number: 580-3244-1

Client Sample ID: MC-76-3

Lab Sample ID: 580-3244-10
Client Matrix: Water

Date Sampled: 08/03/2006 1130
Date Received: 08/08/2006 0815

6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method:	6020	Analysis Batch:	580-9897	Instrument ID:	SEA026
Preparation:	3005A	Prep Batch:	580-9855	Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/14/2006 1652			Final Weight/Volume:	50 mL
Date Prepared:	08/14/2006 0957				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	0.00034	J B	0.000016	0.0020
Antimony	0.0031	B	0.000061	0.0020
Cadmium	ND		0.000037	0.0020
Copper	0.00060	J B	0.000075	0.0020
Nickel	0.00028	J B	0.000052	0.0020
Zinc	0.0052	B	0.00026	0.0050

Analytical Data

Client: USDA Forest Service

Job Number: 580-3244-1

General Chemistry**Client Sample ID:** MC-GC-10Lab Sample ID: 580-3244-7
Client Matrix: WaterDate Sampled: 08/02/2006 1830
Date Received: 08/08/2006 0815

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Hardness as calcium carbonate	250		mg/L	2.0	2.0	1.0	130.2
Anly Batch: 580-9756		Date Analyzed	08/10/2006 0941				

Client Sample ID: MC-76-1Lab Sample ID: 580-3244-8
Client Matrix: WaterDate Sampled: 08/03/2006 0930
Date Received: 08/08/2006 0815

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.6		mg/L	0.038	0.30	1.0	300.0
Anly Batch: 580-9706		Date Analyzed	08/08/2006 1904				

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Hardness as calcium carbonate	9.0		mg/L	2.0	2.0	1.0	130.2
Anly Batch: 580-9756		Date Analyzed	08/10/2006 0941				

Client Sample ID: MC-76-2Lab Sample ID: 580-3244-9
Client Matrix: WaterDate Sampled: 08/03/2006 0945
Date Received: 08/08/2006 0815

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Hardness as calcium carbonate	9.0		mg/L	2.0	2.0	1.0	130.2
Anly Batch: 580-9756		Date Analyzed	08/10/2006 0941				

Analytical Data

Client: USDA Forest Service

Job Number: 580-3244-1

General Chemistry

Client Sample ID: MC-76-3

Lab Sample ID: 580-3244-10
Client Matrix: Water

Date Sampled: 08/03/2006 1130
Date Received: 08/08/2006 0815

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.8		mg/L	0.038	0.30	1.0	300.0
	Anly Batch: 580-9706	Date Analyzed	08/08/2006	1922			

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Hardness as calcium carbonate	8.0		mg/L	2.0	2.0	1.0	130.2
	Anly Batch: 580-9756	Date Analyzed	08/10/2006	0941			

Quality Control Results

Client: USDA Forest Service

Job Number: 580-3244-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-9855**

**Method: 6020
Preparation: 3005A
Total Recoverable**

MS Lab Sample ID: 580-3244-1
Client Matrix: Water
Dilution: 50
Date Analyzed: 08/14/2006 1536
Date Prepared: 08/14/2006 0957

Analysis Batch: 580-9897
Prep Batch: 580-9855

Instrument ID: SEA026
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 580-3244-1
Client Matrix: Water
Dilution: 50
Date Analyzed: 08/14/2006 1541
Date Prepared: 08/14/2006 0957

Analysis Batch: 580-9897
Prep Batch: 580-9855

Instrument ID: SEA026
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic	103	106	75 - 125	2	20		
Lead	104	107	75 - 125	3	20	B	B
Antimony	80	83	75 - 125	4	20	B	B
Cadmium	103	102	75 - 125	1	20		
Copper	105	106	75 - 125	0	20	B	B
Nickel	105	107	75 - 125	2	20	B	B
Zinc	103	107	75 - 125	3	20	B	B

Duplicate - Batch: 580-9855

**Method: 6020
Preparation: 3005A
Total Recoverable**

Lab Sample ID: 580-3244-1
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 08/14/2006 1531
Date Prepared: 08/14/2006 0957

Analysis Batch: 580-9897
Prep Batch: 580-9855
Units: mg/L

Instrument ID: SEA026
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Arsenic	0.00205	0.000390	136	20	J
Lead	0.000135 J	0.000150	11	20	J B
Antimony	0.00424	0.00371	13	20	B
Cadmium	0.0000250	0.0000100	NC	20	
Copper	0.00157 J	0.00155	1	20	J B
Nickel	0.00143 J	0.00119	19	20	J B
Zinc	0.00462 J	0.00951	69	20	B

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: USDA Forest Service

Job Number: 580-3244-1

Method Blank - Batch: 580-9756

Method: 130.2
Preparation: N/A

Lab Sample ID: MB 580-9756/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/10/2006 0941
Date Prepared: N/A

Analysis Batch: 580-9756
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL	RL
Hardness as calcium carbonate	ND		2.0	2.0

Lab Control Spike - Batch: 580-9756

Method: 130.2
Preparation: N/A

Lab Sample ID: LCS 580-9756/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/10/2006 0941
Date Prepared: N/A

Analysis Batch: 580-9756
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Hardness as calcium carbonate	1000	1000	100	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: USDA Forest Service

Job Number: 580-3244-1

Method Blank - Batch: 580-9706

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 580-9706/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/08/2006 1325
Date Prepared: N/A

Analysis Batch: 580-9706
Prep Batch: N/A
Units: mg/L

Instrument ID: SEA025
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Sulfate	ND		0.038	0.30

Lab Control Spike - Batch: 580-9706

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 580-9706/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/08/2006 1307
Date Prepared: N/A

Analysis Batch: 580-9706
Prep Batch: N/A
Units: mg/L

Instrument ID: SEA025
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	10.0	10.2	102	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

DATA REPORTING QUALIFIERS

Client: USDA Forest Service

Job Number: 580-3244-1

Lab Section	Qualifier	Description
Metals	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

STL Seattle

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STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

**Chain of
Custody Record**



2.9

Client: **USDA FOREST SERVICE** Project Manager: **GREG GRAHAM** Date: **8/4/2006** Chain of Custody Number: **26355**

Address: **D15 MELODY LANE** Telephone Number (Area Code)/Fax Number: **509-664-9285** Lab Number: **3244** Page: **1** of **1**

City: **WENATCHEE** State: **WA** Zip Code: **98801** Site Contact: **TOM COYNER**

Project Name and Location (State): **MBS - MONTE CRISTO** Carrier/Vehicle Number: **FEDEX**

Contract/Purchase Order/Quote No.: **E-MAIL FROM TOM COYNER**

Special Instructions/Conditions of Receipt: **ALL SAMPLES FOR METALS + HARDNESS PRESERVED W/ HAIR DRY**

ALL SAMPLES FOR SOY² - ARE UNPRESERVED.

REPEAT ALL METALS CONCENTRATIONS TO METHOD DETECTION LIMIT W/ J FLAG.

EXPECT HIGH + LOW METALS CONCENTRATIONS

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Analysis (Attach list if more space is needed)	Special Instructions/Conditions of Receipt
			Air	Soil	Water	Other		
1 MC-6C-1	8/2/06	1030	X				X TOTAL METALS BY EPA 300.0 SULFATE PB, SO ₂ , Zn	
2 MC-6C-3	8/2/06	1300					X HARDNESS AS CALOR BY EPA 130.2	
3 MC-6C-4	8/2/06	1315					X TOTAL METALS BY EPA 300.0	
4 MC-6C-5	8/2/06	1715					X TOTAL METALS BY EPA 300.0	
5 MC-6C-6	8/2/06	1445					X TOTAL METALS BY EPA 300.0	
6 MC-6C-9	8/2/06	1645					X TOTAL METALS BY EPA 300.0	
7 MC-6C-10	8/2/06	1830					X TOTAL METALS BY EPA 300.0	
8 MC-76-1	8/3/06	0930	X				X TOTAL METALS BY EPA 300.0	
9 MC-76-2	8/3/06	0945					X TOTAL METALS BY EPA 300.0	
10 MC-76-3	8/3/06	1130					X TOTAL METALS BY EPA 300.0	

Container: Yes No Cooler Temp: **4°C**

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Poison A

Sample Disposal: Return To Client Archive For **1** Months (A fee may be assessed if samples are retained longer than 1 month)

QC Requirements (Specify):

1. Received By: **Shay B. Stecher** Date: **8/7/06** Time: **0800**

2. Received By: **Shay B. Stecher** Date: **8/7/06** Time: **0800**

3. Received By: **Shay B. Stecher** Date: **8/7/06** Time: **0800**

Comments:

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

STL8274-580 (12/02)

LOGIN SAMPLE RECEIPT CHECK LIST

Client: USDA Forest Service

Job Number: 580-3244-1

Login Number: 3244

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	