Appendix G

South Cow Creek Diversion Dam Geomorphic Assessment

South Cow Creek Diversion Dam Geomorphic Assessment

PREPARED FOR: Pacific Gas and Electric Company under contract to CH2M Hill

PREPARED BY: North State Resources, Inc.

DATE: May 20, 2008

This technical memorandum provides an assessment of the sediment stored behind Pacific Gas and Electric Company's (PG&E's) South Cow Creek Diversion Dam in support of PG&E's planned decommissioning of the Cow portion of the Kilarc-Cow Creek, FERC Project No. 606. The assessment focuses on the particle size distribution, potential for trace metal accumulations, and potential scour volume of these depositional materials. This memorandum is organized as follows:

- Introduction
- Background
- Methods
- Results
- Recommendations

Introduction

North State Resources, Inc. (NSR) prepared this Technical Memorandum to provide an assessment of depositional materials (sediment) stored in the impoundment created by the South Cow Creek Diversion Dam. This assessment relies on information and data obtained during field investigations at the impoundment during December 2007 and March 2008, supplemented by results provided by laboratory analysis.

The report includes recommendations for decommissioning with respect to sediment release and the excavation and storage of stored sediment. Data collected for this assessment will also be used to assist PG&E in determining potential impacts to the environment associated with future sediment management actions.

Background

Under the direction of PG&E, NSR collected bulk samples from the sediments stored behind the South Cow Creek Diversion Dam. These bulk samples were used to determine the particle size distribution of sediment stored behind the dam. NSR also conducted a screening-level site assessment for trace metals to determine the presence or absence of mercury (Hg), methylmercury (MeHg), copper (Cu), Silver (Ag), and arsenic (As) within the stored sediment. Finally, NSR surveyed the topography of the sediment deposit and the longitudinal profile of the stream channel upstream and downstream of the dam.

Methods

This assessment was prepared by Jim Fitzgerald, Certified Engineering Geologist (#2436), with support from other NSR staff in accordance with standard industry practices for sites of this type and Business

and Professions Code section 7800 et seq. (Geologists and Geophysicists Act). All field work described in the following paragraphs was performed in December 2007 and March 2008. Appendix A provides laboratory results received from Graham Matthews Associates (GMA).

To characterize the horizontal and vertical distribution of stored sediment, boreholes were located at representative locations across the area of the deposit in a manner that would account for spatial variation in the texture of the substrate. The sampling scheme was designed to determine the heterogeneity of the depositional features associated with the diversion dam. Within the stratified sampling area, the boreholes were located by sedimentary facies (e.g., gravel bar versus thalweg) and bored vertically. The bulk and trace metal sediment samples were taken from boreholes that penetrated gravel with at least some fine sediment less than 2 millimeters (mm) in diameter.

Boreholes were drilled using a barrel sampler. The top 4 to 6 inches of the streambed was frozen solid at the time of sampling, but this condition did not inhibit the sampling effort. A borehole log was completed for each hole, and the substrate texture, rounding, moisture content, and consistency were recorded by depth. The depth of boreholes was limited to about 2 feet (ft) due to the large cobble and coarse gravel texture of the stored sediment. Near the dam, these boreholes penetrated the top 10% of the deposit.

Seven bulk sediment samples were collected from alluvial deposits stored behind the South Cow Creek Diversion Dam. The bulk sediment sample locations were chosen to best represent the depositional features associated with the stored sediment. Figure 1 illustrates the locations of these samples relative to the diversion dam. The samples were dried and sieved; the particles trapped in the sieves were measured to determine the percentile of particle distribution and weighed to determine the cumulative percent dry weight.

Bulk sediment samples C-I, C-II, and C-III were collected from a gravel bar on the upstream northeast side of diversion dam. Samples C-IVA, C-IVB, C-V, and C-VI were collected along the thalweg at progressively further distances from the diversion dam. Sample C-IVA represents the streambed armor layer particle size distribution, and sample C-IVB represents the subsurface distribution. Borehole locations were limited to areas of the stream that could be waded during the December 2007 field effort. Portions of the thalweg near the diversion dam are more than 6 ft deep; these areas were not sampled.

The bulk sediment samples were dried and sieved at the GMA sediment laboratory using the sieve mesh sizes listed in Table 1.

The trace metal sediment samples were taken from boreholes C-I and C-III. These samples were sieved in the field, and sand size material (i.e., < 2 mm) was collected in Certified Precleaned plastic jars with Teflon lids and sent to Brooks Rand Laboratory for analysis. While attempts were made to collect sediment sizes of less than 63 microns (silt and clay), there was not enough silt or clay in the bulk samples to collect the minimum sample volume of about 10 grams.

Table 1. Sieve Mesh Size Breaks for Particle Size Analysis

U.S. Standard Sieve Mesh Size (mm)	Wentworth Scale Size Gradation
256	Cobble large
180	
128	Cobble small
90	
64	Cobble–gravel break
45	Gravel very coarse
31.5	
22.4	Gravel coarse
16	
11.2	Gravel medium
8	
5.6	Gravel fine
4	
2.8	
2	Gravel–sand break
0.063	Sand–silt break
Pan	

The trace metals assessment focused on fine sediment less than 2 mm and analyzed the samples for total solids and the presence or absence of Hg, MeHg, Cu, Ag, and As. The sediment sample volume was between 8 and 12 ounces per sample and included all of the material less than 2 mm in diameter.

Trace metal sediment quality criteria published by the National Oceanic and Atmospheric Administration (NOAA) (Buchman 1999) and the Canadian Council of Ministers of the Environment (2000) and concentrations reported by the U.S. Geological Survey (USGS) (2001) were used as screening values since specific sediment quality criteria have not been established by the State of California. The measured concentration of metals in sediment samples taken from behind the South Cow Creek Diversion Dam was compared to the NOAA and Canadian trace metal sediment screening values and the concentrations reported by the USGS (2001). The NOAA publication summarizes existing trace metal data and reports the range of background concentrations, the Threshold Effects Level (TEL), Probable Effects Level (PEC), and Upper Effects Threshold (UET) (Buchman 1999). The Canadian guidelines offer two trace metal risk levels: a lower value called an interim sediment quality guideline (ISQG) and an upper value called the probable effect level (PEL) (Canadian Council of Ministers of the Environment 2000).

The NOAA and Canadian effects levels were not developed for regulatory purposes; rather, they were established as screening values to be used as part of geochemical investigations to determine the likelihood of adverse biological effects. The NOAA and Canadian studies indicate that trace element concentrations below the TEL and ISQG are unlikely to be associated with adverse biological effects; conversely, concentrations above the PEC and PEL are likely to be associated with adverse biological effects. Trace element concentrations between the ISQG and PEL fall within the range where effects are possible (Buchman 1999). These trace metal sediment quality guidelines are used in this investigation as screening values that can be used to develop and focus management decisions.

At South Cow Creek Diversion Dam, the surface topography of stored sediment was surveyed, and longitudinal channel profiles were surveyed upstream and downstream of the dam. The survey was completed using a Nikon 522 Total Station. A measurement precision of +/- 0.01 ft for control points and +/- 0.1 ft for foreshots was achieved. The Total Station is accurate to +/- 0.01 ft at 500 ft and +/- 0.1 ft at 1000 ft. Known local control points were surveyed to help ensure horizontal and vertical accuracy relative to the established benchmark elevations (located on the dam abutment wall).

A total of 1,703 ft of water course was surveyed using the Total Station. A total of 756 individual points, each measuring the northing, easting, and elevation of a specific point, were used to measure the topography of stored sediment, thalweg bed surface, the diversion dam, and downstream right and left bankfull features. The surveyed horizontal position coordinates were translated to latitude, longitude, and feet above mean sea level using the Northern American Horizontal Datum 1983(feet), State Plain, California Zone 1 datum. The surveyed elevations were translated to the National Geodetic Vertical Datum 1929.

At a minimum, survey points were selected where the surface topography changed +/- 0.5 ft. Three local benchmarks were surveyed to help ensure horizontal and vertical accuracy relative to the established benchmark elevation (BM-4- PG&E Survey Cap, 1,561.4 ft above sea level). Two benchmarks are established on each of the diversion dam abutments and a third was established on a large boulder located well above flood stage on the right bank near the diversion's right abutment. The surface topography was surveyed in enough detail to produce a 0.5-ft interval contour map (Figure 2). The accuracy of the subsurface contour map is limited to a 2-ft interval (Figure 3) since the surface was estimated.

The longitudinal profile survey extended 1,099 ft upstream and 604 ft downstream of the diversion dam and measured the stream channel thalweg, slope breaks, and stable control points. The longitudinal profile survey measured elevation points at intervals sufficient to characterize all local changes in bed gradient.

The in-place volume and weight of stored sediment was calculated by subtracting the volume of cut between the Triangular Irregular Network (TIN) surface layer and projected TIN subsurface layer using spatial data incorporated into a GIS project. This TIN subsurface layer represents the horizontal and vertical scour potential. The actual depth of the stored sediment was only measurable just upstream of the dam and at the top of the potential scour point. As a result, the horizontal extent and vertical depth of scour were estimated using the longitudinal profile, potential scour grade trend line, upper bank slope, and ocular field observations. The upstream extent of scour, defined as the scour control point, was located using the energy grade line for the upstream and downstream stream channel and presence of boulder and bedrock material exposed along the lower stream bank and channel bottom. The energy grade was calculated using the longitudinal profile data. The scour control point elevation is located where the where the upstream end of the grade intersects boulder and bedrock material. The subsurface contours were generated using the surface topography, substrate character, and longitudinal profile data. The subsurface layer is intended to represent the potential topography of the bed and bank of South Cow Creek once the dam is removed. The accuracy of the TIN layers is limited to a 2-ft contour interval. The accuracy of the surface TIN layer is ± 0.5 foot and the accuracy of the subsurface TIN layer is ±2 feet.

The sediment dry weight by particle size was also calculated by proportioning the in-place volume of stored sediment using the bulk sample particle size results. Because the boreholes were shallow (i.e., < 2 ft), this assessment makes the assumption that the averaged particle size results represent the distribution of the entire volume of stored sediment.

Results

Bulk Sample Particle Size

The percentile of particle distribution (d_x) was calculated for each bulk sample in millimeters (Table 2). Within the sample set, particle size distributions ranged from a minimum d_5 of 0.37 mm (sample C-I) to a maximum d_{90} of 158.97 mm (C-II). The average d_{50} for all bulk samples is 56.1 mm with an average d_5 of 11.2 mm and an average d_{90} of 111.2 mm. In order of increasing d_{50} size, the ranks of the samples are C-I, C-VI, C-IVB, C-V, C-III, C-II, and C-IV A. The armor layer is much coarser than the layer below, where the d_{50} changes from 95.6 mm to 32.6 mm within 6 inches of the surface. There were no measurable particles less than 2 mm in the armor layer, whereas the subsurface layer had 10% fines less than 2 mm.

Table 2. South Cow Creek Diversion Dam Bulk Sediment Sample Particle Size Distribution Percentile Statistics

	Sample ID						
Percentile of Particle Distribution	**C-I Gravel Bar**	**C-II Gravel Bar**	**C-III Gravel Bar**	**C-IV(A) Armor Layer**	**C-IV(B) Subsur-face Layer**	**C-V Gravel Bar**	**C-VI Thalweg**
D5	0.37	2.20	37.47	36.17	0.60	0.64	0.57
D16	1.20	22.15	52.22	64.13	4.85	6.19	1.66
D25	2.83	41.94	62.81	71.33	12.20	18.78	4.24
D35	8.57	64.86	71.45	80.29	20.79	33.03	11.64
D50	20.39	87.67	85.69	95.59	32.56	46.23	24.65
D65	36.34	112.93	100.56	113.20	45.33	59.22	37.29
D75	49.29	131.94	111.28	126.71	59.32	69.24	47.83
D84	62.61	147.55	121.91	143.55	72.02	79.16	66.91
D90	75.95	158.97	132.73	156.26	80.77	86.55	86.88

The bulk samples collected from the gravel bar northeast of the diversion dam (samples C-I, C-II, and C-III) contained an average d_{50} of 64.6 mm, an average d_5 of 13.4 mm, and an average d_{90} of 122.6 mm. The bulk samples collected from the thalweg upstream of the diversion dam (samples C-IVA and B, C-V, and C-VI) have an average d_{50} of 49.8 mm, an average d_5 of 9.5 mm, and an average d_{90} of 102.6 mm. In order of increasing d_{50} size, the rank of the samples is C-I, C-VI, C-V, C-III, C-II, and C-IV A. Ocular observations of the thalweg suggest that the substrate is very coarse cobble to boulder near the diversion intake on the south side of the channel near the dam. Large chunks of recycled concrete line portions of the thalweg, and the left lower bank is formed by bedrock material.

The particle size analysis data from the six bulk samples were used to group particles into four size categories: greater than 64 mm (cobble-boulder); 2–64 mm (gravel); 2–0.063 mm (sand); and less than 0.063 mm (silt/clay) (Table 3). Each sample was classified using the Wentworth Scale (Table 1). All of the samples were classified as a cobble or gravel.

Table 3: Summary of Cobble +, Gravel, Sand, and Silt by Dry Weight for South Cow Creek Near Diversion

Sample ID	> 64 mm	Gravel (64 mm–2mm)	Sand (2 mm–0.063 mm)	Silt (< 0.063)	Wentworth Classification
C-I	15.2%	63.2%	21.3%	0.3%	Medium gravel
C-II	65.7%	29.5%	4.8%	0.1%	Cobble
C-III	74.1%	25.8%	0.1%	0.0%	Gravelly cobble
C-IV A	84.2%	15.8%	0.0%	0.0%	Cobble
C-IV B	22.2%	67.3%	10.5%	0.1%	Coarse gravel
C-V	30.3%	57.5%	12.1%	0.1%	Cobbly very coarse gravel
C-VI	17.0%	64.8%	18.1%	0.1%	Coarse gravel

All of the bulk sediment samples have a low proportion of fine sediment less than 2 mm. There is very little to no silt/clay size sediment (all samples less than 1%) (Table 3). Particles between 0.063 mm and 2 mm (sand) have an average percent dry weight of 9.6%, with maximum of 21.3%, and a minimum of 0.1%. For particle sizes greater than 64 mm (cobble), the average cumulative percent by weight for all bulk samples is 44.1 %, with maximum of 84.2% and a minimum of 15.1%. Particles between 2 mm and 64 mm (gravel) have an average dry weight of 46.3%, with maximum of 67.3% and a minimum of 15.8%.

The bulk samples collected from the gravel bar northeast of the diversion dam (samples C-I, C-II, and C-III) contained an average of 51.6% cobble (> 64 mm), 39.5% gravel (64–2 mm), 8.7% sand (2 mm–0.063 mm), and 0.1% silt (< 0.063 mm) of the total dry weight. In these three samples, it appears that the amount of gravel, sand, and silt/clay increase as distance from the stream bank decreases, but the amount of cobble size material decreases as distance from the stream bank decreases.

The bulk samples collected upstream of the diversion dam along the thalweg (samples C-IVA, C-V, and C-VI) contained an average of 38.4% cobble, 51.3% gravel, 10.2% sand, and less than 0.1% silt of the total sample volume. Of the thalweg samples, sample C-VI contained the highest percent of sand (18.1%) and silt (0.1%). In these three samples, it appears that the gravel texture is progressively finer upstream of the dam, with less cobble further upstream as well (Table 3).

Trace Metal Sediment Geochemistry

Two Hg, MeHg, Cu, Ag, and As sediment samples were collected at the South Cow Creek Diversion Dam from boreholes C-I and C-III taken from the gravel bar (Figure 1). For Quality Assurance/Quality Control (QA/QC) purposes, one field duplicate sample was taken from borehole C-III. Appendix B provides the results received from Brooks Rand Laboratory. Detectable amounts of Hg, MeHg, Cu, Ag, and As were measured (Table 4). The percent difference for the field duplicated sample is 11% for Hg, -9% for MeHg, 15% for Cu, 18% for Ag, and -4% for As.

Table 4. South Cow Creek Diversion Dam Trace Metal Results

Sample ID	Site	Total Solids %	Hg (ng/g)	MeHg (ng/g)	Cu 63 (mg/kg)	Ag 107 (mg/kg)	As 75 (mg/kg)	Notes
C-I	South Cow	87.12	8.92	0.032	27	0.12	1.6	
C-III	South Cow	81.65	7.14	0.011	30	0.11	2.4	
C-IIID	South Cow	83.36	6.33	0.012	25.6	0.09	2.5	Field duplicate

Field observations and geochemical data indicate that there is a low potential to release Hg, MeHg, Ag, and As from the depositional material stored behind the South Cow Creek Diversion Dam (Table 4). Overall, the geochemical data suggest that sediment samples have concentrations of the measured trace metals near background levels and are below the published TEL and PEL sediment quality guidelines. The small number of trace metal sediment samples limits the certainty of this risk assessment.

The concentration of Hg is not elevated in sediments stored behind the South Cow Creek Diversion Dam and is near background levels according to the NOAA and Canadian sediment quality standards: background = 4–51 mg/kg; TEL = 174 mg/kg; and PEL = 486 mg/kg.

The concentration of Cu is not elevated in sediments stored behind the South Cow Creek Diversion Dam and is close to background levels according to the NOAA and Canadian sediment quality standards: background = 10–25 mg/kg; TEL = 35.7 mg/kg; and PEL = 197 mg/kg.

The concentration of Ag is not elevated in sediments stored behind the South Cow Creek Diversion Dam and is close to background levels according to the NOAA and Canadian sediment quality standards where background = < 0.5 mg/kg.

The concentration of As is not elevated in sediments stored behind the South Cow Creek Diversion Dam and is close to background levels according to the NOAA and Canadian sediment quality standards: background = 1.1 mg/kg; TEL = 5.9 mg/kg; and PEL = 17 mg/kg.

Topographic Survey

Topography

The topographic features of the stored sediments were mapped using the Total Station. A 0.5-ft contour map and a TIN were created from the topographic survey points. The projected lateral and upstream extent of scour was used to bound the topographic map shown as Figure 2. The area within the map represents the channel area inundated by stored sediments.

Longitudinal Profile

Figure 4 is a longitudinal profile of the thalweg surface, diversion dam, pools, and downstream bankfull features. This profile was created using data collected during the topographic survey. Bankfull stage

survey points were collected using clearly identifiable visual indicators such as high flow scour, lower bank extent of sand deposits, and trapped large woody debris. The gradient of the entire thalweg bed surface is 1.1%. The gradient of the thalweg bed surface upstream of the diversion dam is 1.1%, and the gradient downstream of the dam is 1.0%. There is one large pool upstream of the diversion dam along the left bank, and bedrock crops out along the upper and lower stream bank. Field mapping indicates that the bottom of the pool is controlled by large pieces of old concrete. There are three pools downstream of the diversion dam visible on the longitudinal profile (Figure 4). The first pool is bedrock controlled and is just below the diversion dam. This pool is maintained by water that flows and plunges over the dam. This pool will likely be filled once the dam is removed. There are two more pools downstream that are more than 7 ft deep and are cut into boulder and bedrock material. Some of the stored sediment behind the diversion dam will likely be temporarily deposited in these pools.

The longitudinal profile data were used to estimate the potential upstream extent of scour if the diversion dam were removed and to estimate the new channel gradient through the scoured stream channel. The control point is a theoretical point where upstream scouring (headcutting) would stop if the diversion dam were removed entirely. For this study reach, the scour control point is about 428 ft upstream of the diversion dam at an elevation of 1558.6 ft, as shown on Figure 4. At this point, the stream channel substrate is boulder and bedrock material. Survey points taken below the dam show that the stream has likely scoured below the original channel bed elevation. Hard copies of historical cross-section, observed in the field, and anecdotal information given by a local land owner suggest that the dam's footings were placed below the original channel bottom. The survey data show that the pool below the diversion dam has scoured below the bottom of the dam's footings (Figure 4).

Sediment Volume and Weight Calculations

The potential scour volume resulting from stream channel incision after removal of the dam was estimated using the surface and subsurface topography layers (Figure 2 and Figure 3). The total volume that would be scoured and transported downstream depends on subsurface conditions not completely determinable during field investigations. The total measured in-place volume of stored sediment was calculated to be about 1,400 cubic yards (yd^3), and the weight of gravel was estimated to be about 2,200 tons. The estimate is based on a conversion factor of 1.6 tons/yd^3. The total stored sediment volume was adjusted using a bulking factor of 1.2 where the gravel volume increases 20% once scoured or excavated.

The bulk sediment sample particle size distribution results were vertically and horizontally averaged to estimate the dry weight of stored sediment by particle size class. The particle size classes summarized in Table 3 were used to estimate the dry weight of stored sediment. Most of the stored sediment is gravel size material (Table 5). About 44% of the gravel size material is > 64 mm. Less than 10% of the stored sediment is sand (< 2 mm), and silt/clay represents less than 1% of the total estimated dry weight of sediment.

Table 5. Stored Sediment Dry Weight by Particle Size Class

Particle Size Class	Dry Weight (tons)	Dry Weight (% of total)
> 64 mm	920	44%
2–64 mm	965	46%
0.063–2 mm	199	10%
< 0.063 mm	2	0%

Results from the volume and weight calculations show that fine material represents a small portion (about 10%) of the total dry weight of stored sediment. Because the particle size classes are averaged and the bulk samples boreholes did not penetrate the lower portions of the stored sediment, these calculations are considered estimates with a margin of error of about 30%.

The subsurface streambed shown in Figure 3 is an approximation of the bed surface and represents a maximum depth of potential scour and the predicted stable channel form following dam removal and

scour. It will likely take several years for this form to be reached and will depend on the frequency and magnitude of flood events. A large flood could scour the entire deposit in one water year. Figure 5 illustrates the surface and subsurface longitudinal profile upstream of the diversion dam. The potential depth of scour ranges from 0.5 ft near the control point (Figure 4) to 12 ft at the diversion dam.

Stream channel cross-sections were created from the topographic data and show the current bed-surface elevation relative to the potential bed-surface elevation. The locations of the cross-sections are shown on Figure 1. The shape of the subsurface cross-section was estimated using the data described above and was developed to pass the bankfull and floodprone high flow events.

Cross-section X-1 is located 30 ft upstream of the diversion dam at which point the bed is predicted to drop between 4 and 6 ft (Figure 3 and Figure 6). The depth of scour will be limited by the presence of large boulders and bedrock that are visible along the lower right bank at this cross-section. Cross-section X-2 is located about 110 ft upstream of the diversion dam at which point the bed is predicted to drop between 3 and 4 ft (Figure 3 and Figure 7). If bedrock is deeper than depicted on Figure 3, then the depth of scour will end up being deeper than predicted. Cross-section X-3 is located about 175 ft upstream from the diversion dam at which point the bed is predicted to drop about 4 ft (Figure 3 and Figure 8). The distribution of bedrock along the lower left bank at this cross-section suggests that there may be a bedrock shelf at this point that will cause the stream gradient to increase. Cross-section X-4 is located about 225 ft upstream from the diversion dam at which point the bed is predicted to drop about 4 ft (Figure 3 and Figure 9). The distribution of bedrock along the lower right bank above and below this cross-section suggests that a pool is likely to form near the right bank.

Recommendations

The following recommendations are intended to assist PG&E in refining the alternatives related to removal of the South Cow Creek Diversion Dam and the dispensation of sediments stored behind it.

Treatment of Stored Sediment

Using the data and results of this assessment, NSR recommends leaving the stored sediments in place and allowing the stream to scour, transport, and redistribute these sediments in response to the restored hydrology of South Cow Creek. The percentage of fines < 2 mm is likely less than 10% of the total weight of stored sediment. The concentrations of the measured trace metals in the stored sediments are close to background levels and flushing the sediments downstream is not expected to impair the water quality or affect the beneficial uses of South Cow Creek.

Stream Channel Condition

The results of this assessment of scour potential suggest that the stream reaches upstream and downstream of the diversion dam will not be degraded as a result of dam removal. Once the new dynamic equilibrium of the stream channel is reached, the stability and habitat quality will likely be better than the present condition. NSR recommends mechanically shaping the stored sediment deposit immediately upstream of the dam to facilitate stream channel recovery. About 250 yd^3 of stored sediment would need to be removed from this area. In addition, a new gravel bar could be shaped along the lower right bank of the stream as shown in Figure 3 and Figure 6. The cost of doing this work is estimated to be about $7,500.

References

Buchman, M. F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration. Updated in 2004.

Canadian Council of Ministers of the Environment. 2000. Canadian sediment quality guidelines for the protection of aquatic life. Accessed March 12, 2008 at http://www.ec.gc.ca/CEQG-RCQE/English/Ceqg/Sediment/default.cfm.

U.S. Geological Survey. 2001. Geochemistry of mercury and other trace elements in fluvial tailings upstream of Daguerre Point Dam, Yuba River, California. (Scientific Investigations Report 2004-5165.)

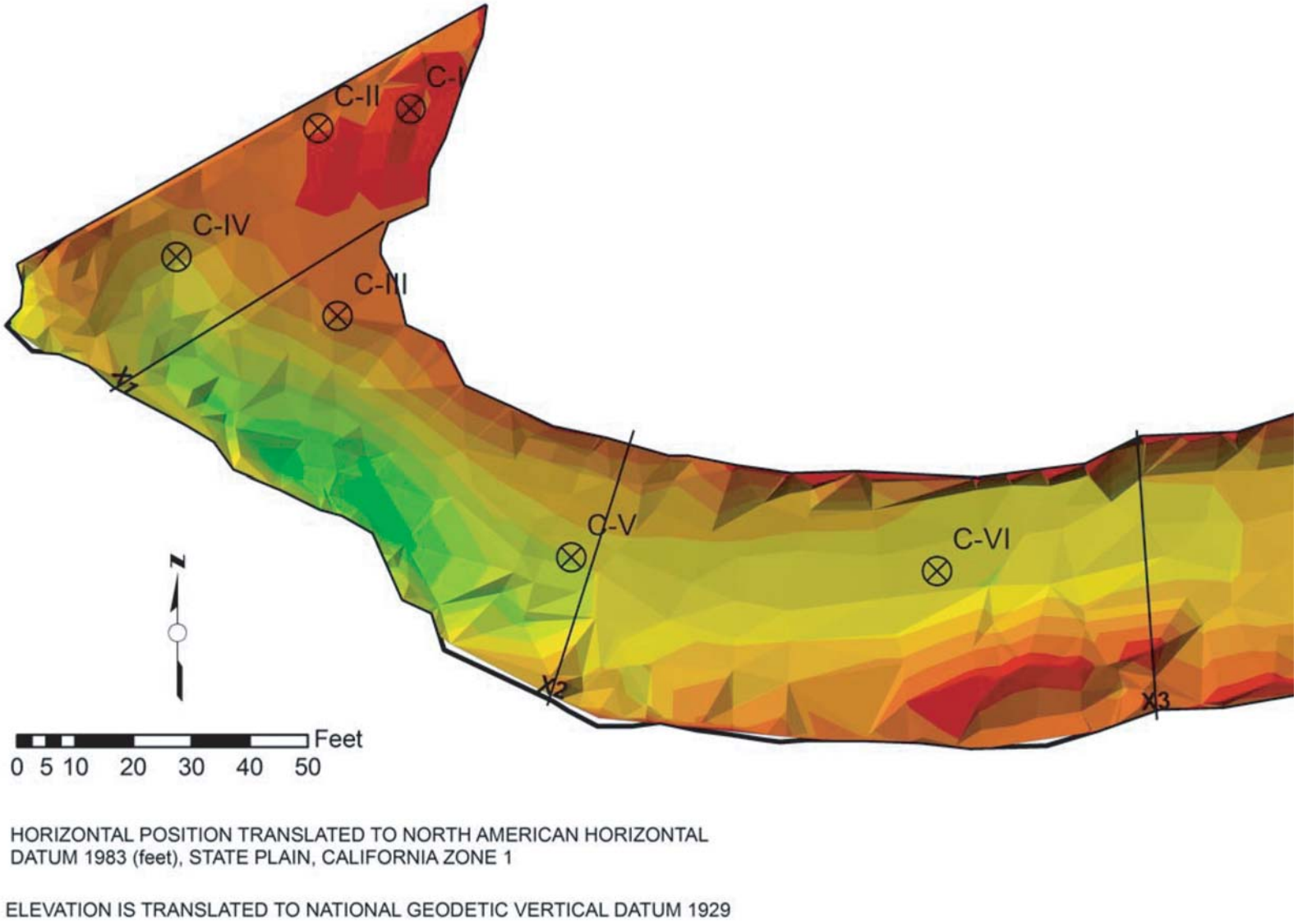

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Figure 1
Cow Creek Diversion Dam Borehole Location Map

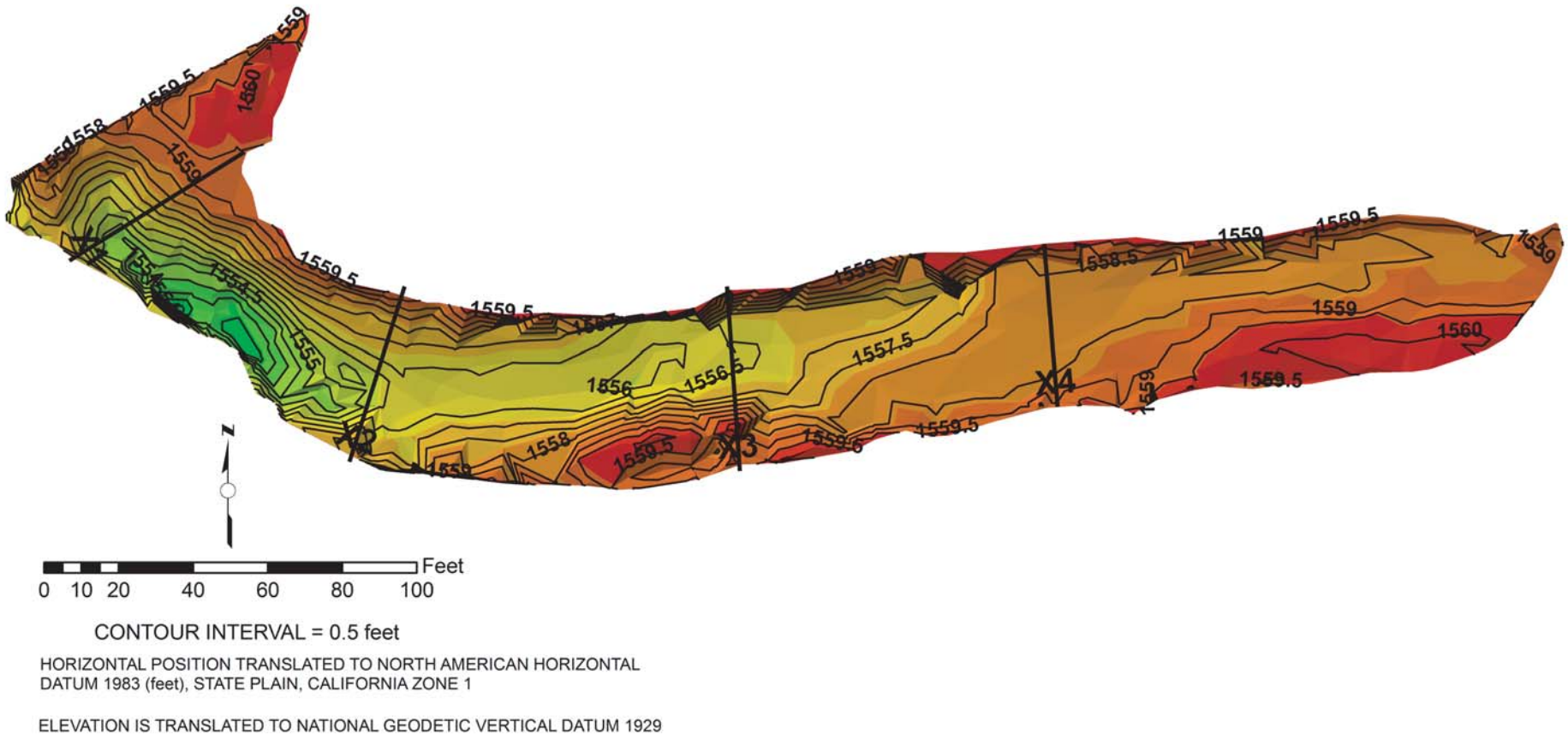

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Figure 2
Cow Creek Diversion Dam Surface TIN Layer and Contour Map Showing Location of Cross-Sections

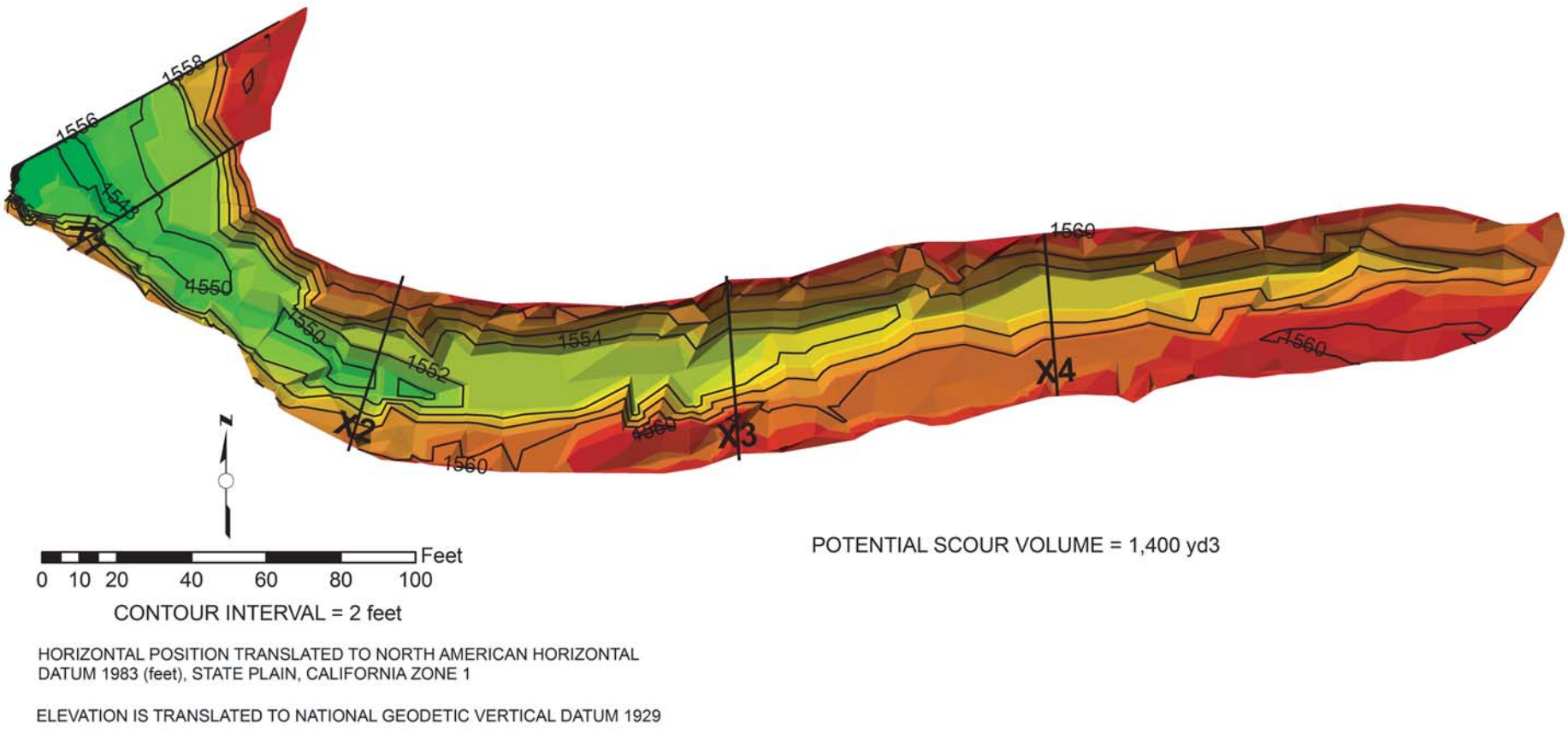

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Figure 3
Cow Creek Diversion Dam Subsurface TIN Layer and Contour Map Showing Location of Cross-Sections and Potential Scour Volume Calculation Results

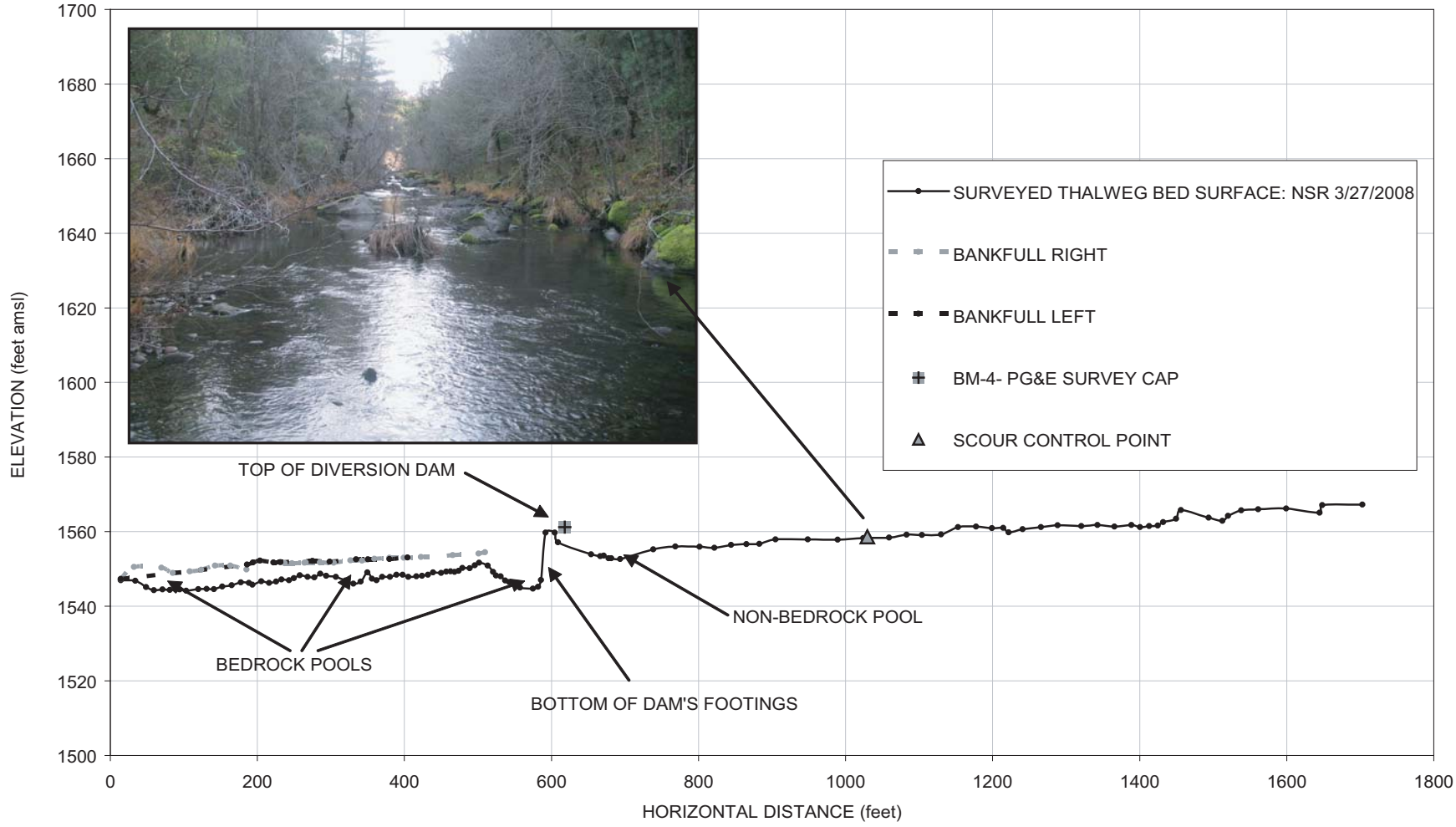

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Figure 4
Longitudinal Profile of South Cow Creek at Cow Creek Diversion

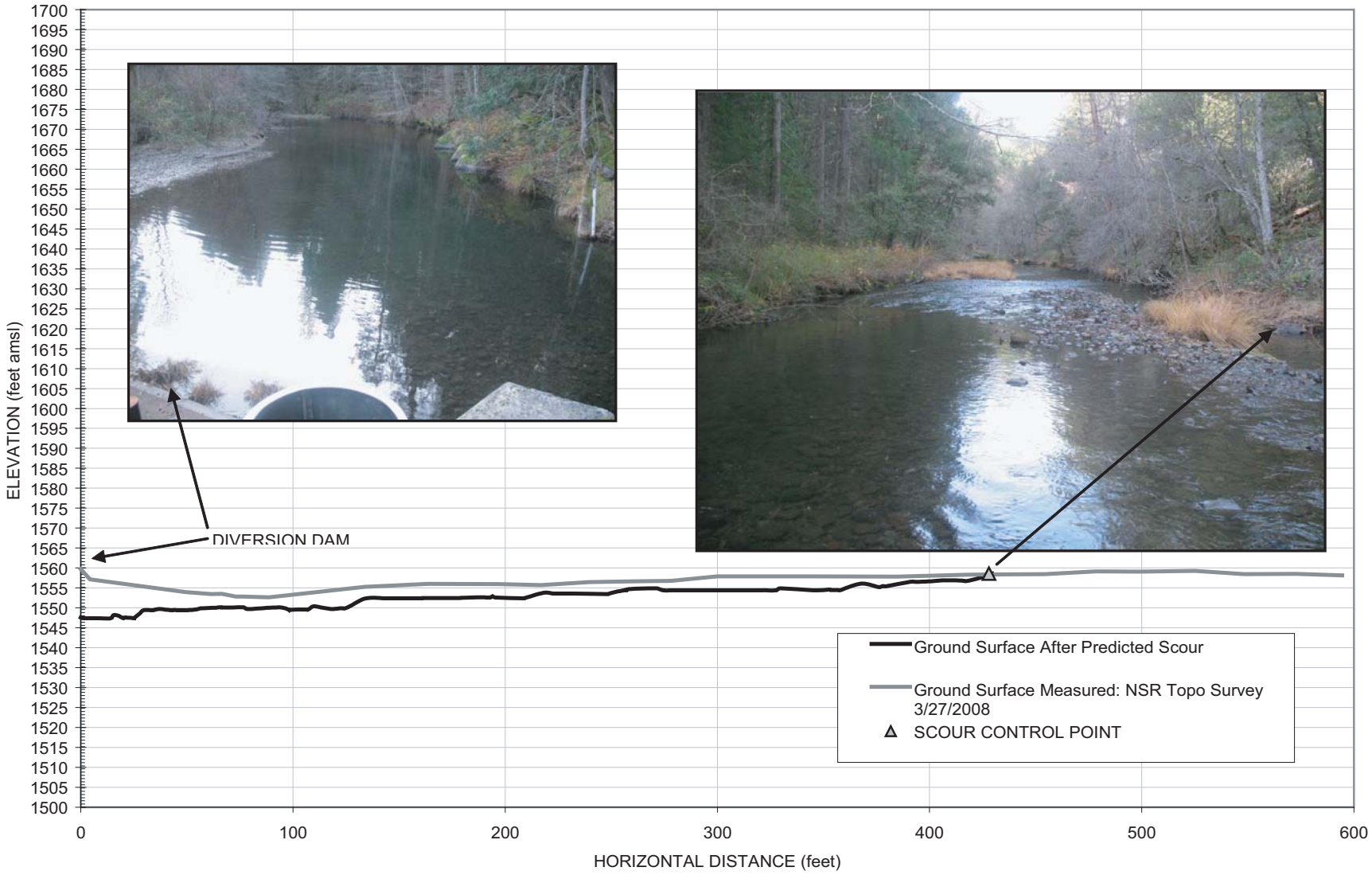

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Figure 5
Longitudinal Profile Showing the Present Thalweg Elevation and Potential Elevation After Scour

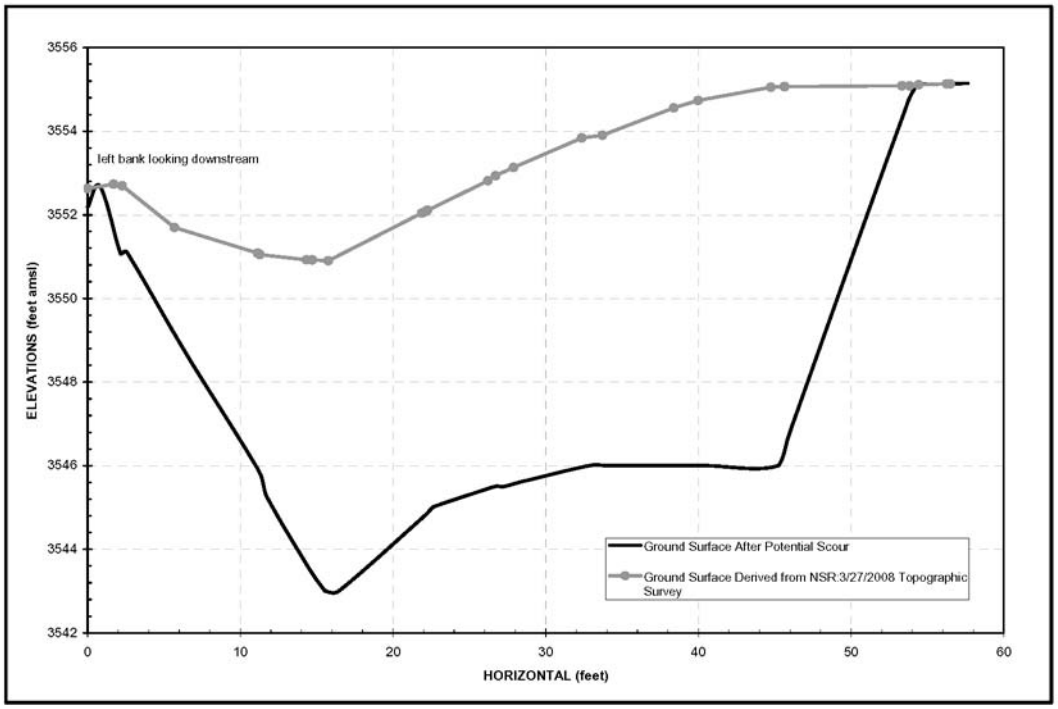

Figure 6. Stream channel cross-section X-1 showing the present bed elevation and potential elevation after scour. Gravel bar should form along right bank forming a steep upper bank composed of unconsolidated gravel.

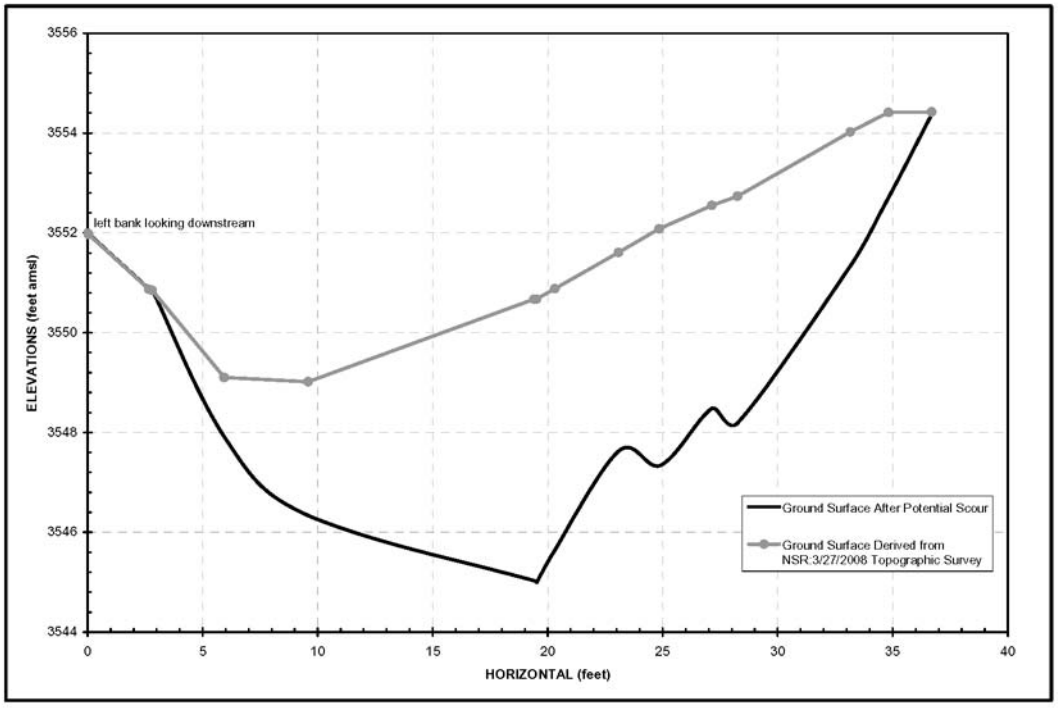

Figure 7. Stream channel cross-section X-2 showing the present bed elevation and potential elevation after scour. Thalweg is likely to migrate north along exposed bedrock and boulder material that forms the right bank at this cross-section.

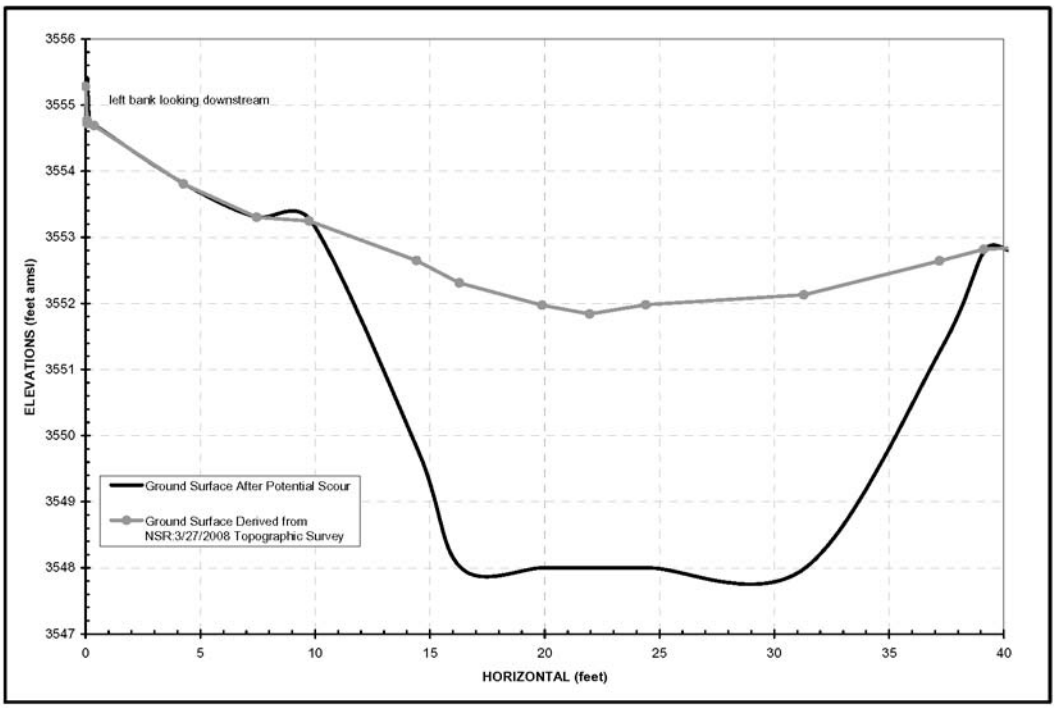

Figure 8. Stream channel cross-section X-3 showing the present bed elevation and potential elevation after scour.

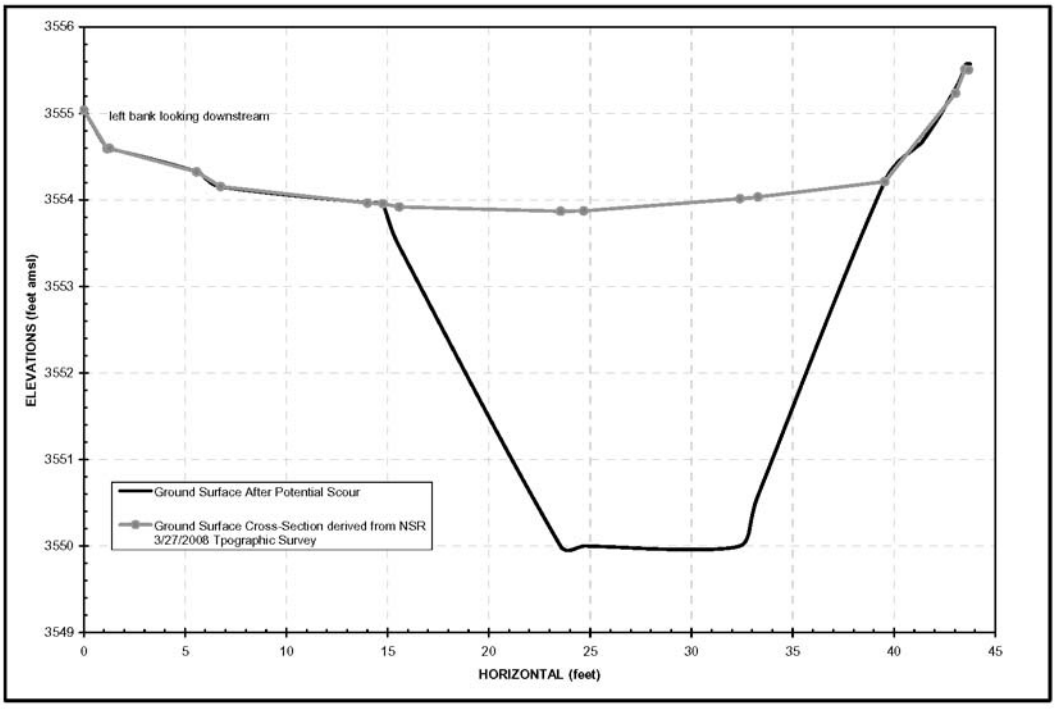

Figure 9. Stream channel cross-section X-4 showing the present bed elevation and potential elevation after scour.

Attachment A

Graham Matthews and Associates
Kilarc-Cow Bulk Sample Processing
Laboratory Analysis Report

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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-I**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/21/2008

Processed by: DM

UNITS G

---------- WEIGHT ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	0.0		**0.0%**	**100.0%**
90	128	1701.5		**4.9%**	**100.0%**
64	90	3600.0		**10.3%**	**95.1%**
45	64	4630.0		**13.3%**	**84.8%**
31.5	45	3660.0		**10.5%**	**71.6%**
22.4	31.5	3170.0		**9.1%**	**61.1%**
16	22.4	2530.0		**7.2%**	**52.0%**
11.2	16	2200.0		**6.3%**	**44.8%**
8	11.2	1530.0		**4.4%**	**38.5%**
5.6	8	1116.1		**3.2%**	**34.1%**
4	5.6	952.0		**2.7%**	**30.9%**
2.8	4	1149.0		**3.3%**	**28.2%**
2	2.8	1149.0		**3.3%**	**24.9%**
1	2	2642.6		**7.6%**	**21.6%**
0.85	1	669.7		**1.9%**	**14.0%**
0.5	0.85	1805.5		**5.2%**	**12.1%**
0.25	0.5	1559.3		**4.5%**	**7.0%**
0.125	0.25	571.2		**1.6%**	**2.5%**
0.063	0.125	177.3		**0.5%**	**0.9%**
Pan	0.063	121.5		**0.3%**	**0.3%**
TOTAL:					

SIZE PARAMETERS

D5	**0.4 mm**
D16	**1.2 mm**
D25	**2.8 mm**
D35	**8.6 mm**
D50	**20.4 mm**
D65	**36.3 mm**
D75	**49.3 mm**
D84	**62.6 mm**
D90	**76.0 mm**
dg	**11.7 mm**
FREDLE	**2.8 mm**
T&B STEELHEAD SURVIVAL	**52.9 mm**
T&B CHINOOK SURVIVAL	**65.1 mm**
% LESS THAN 2 mm	**21.6%**
% LESS THAN 0.85 mm	**12.1%**

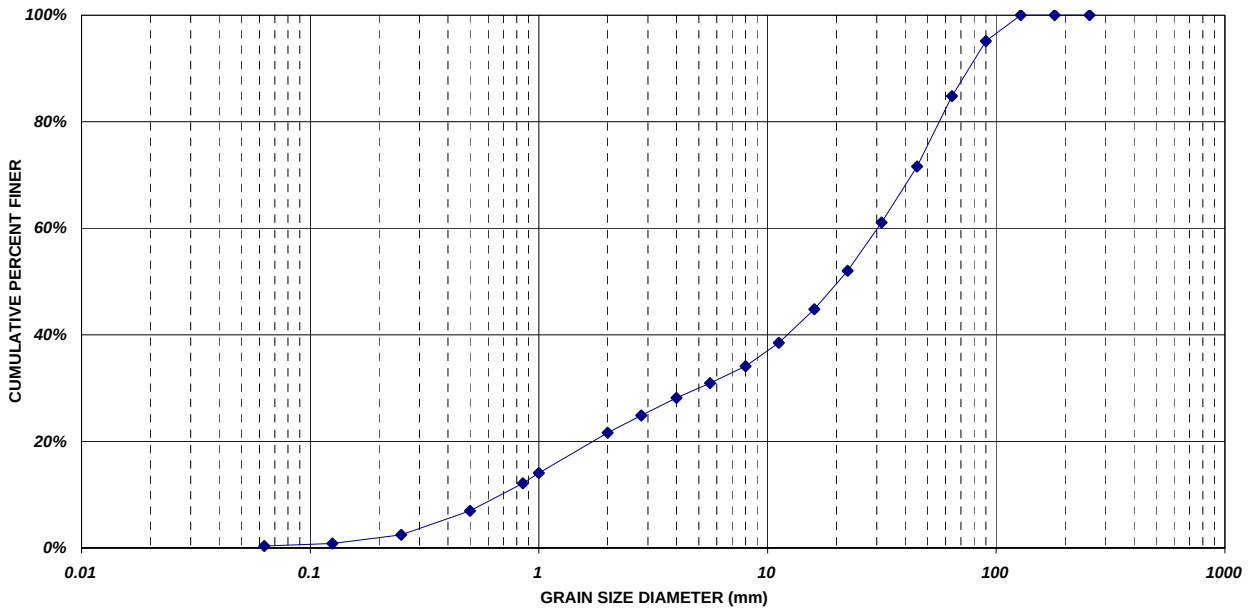
ADDITIONAL NOTES:

Dmax= 100.0 mm

Dmax mass= 1702 g

Sample Dry Wt **34940** - Total Processed Wt 34935 = Net Loss: 5.4

% of Sample: 0.02%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-II**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/21/2008

Processed by: DM

UNITS G

---------- **WEIGHT** ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	8520.0		**27.4%**	**100.0%**
90	128	6600.0		**21.3%**	**72.6%**
64	90	5270.0		**17.0%**	**51.3%**
45	64	2520.0		**8.1%**	**34.3%**
31.5	45	1830.0		**5.9%**	**26.2%**
22.4	31.5	1310.0		**4.2%**	**20.3%**
16	22.4	970.0		**3.1%**	**16.1%**
11.2	16	830.0		**2.7%**	**13.0%**
8	11.2	490.0		**1.6%**	**10.3%**
5.6	8	455.9		**1.5%**	**8.7%**
4	5.6	305.2		**1.0%**	**7.3%**
2.8	4	266.6		**0.9%**	**6.3%**
2	2.8	181.6		**0.6%**	**5.4%**
1	2	301.4		**1.0%**	**4.8%**
0.85	1	96.6		**0.3%**	**3.9%**
0.5	0.85	378.6		**1.2%**	**3.6%**
0.25	0.5	459.8		**1.5%**	**2.3%**
0.125	0.25	200.9		**0.6%**	**0.9%**
0.063	0.125	42.5		**0.1%**	**0.2%**
Pan	0.063	21.6		**0.1%**	**0.1%**
TOTAL:					

SIZE PARAMETERS

D5	**2.2 mm**
D16	**22.1 mm**
D25	**41.9 mm**
D35	**64.9 mm**
D50	**87.7 mm**
D65	**112.9 mm**
D75	**131.9 mm**
D84	**147.5 mm**
D90	**159.0 mm**
dg	**55.8 mm**
FREDLE	**31.5 mm**
T&B STEELHEAD SURVIVAL	**91.4 mm**
T&B CHINOOK SURVIVAL	**101.4 mm**
% LESS THAN 2 mm	**4.8%**
% LESS THAN 0.85 mm	**3.6%**

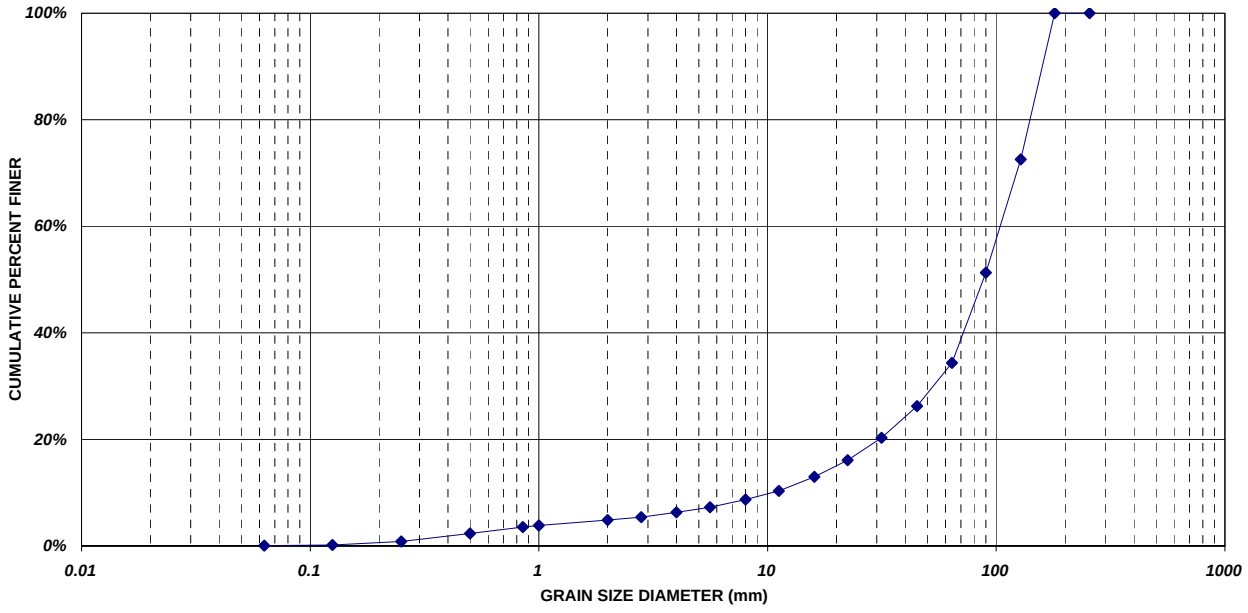
ADDITIONAL NOTES:

Dmax= 200.0 mm

Dmax mass= 5199 g

Sample Dry Wt **31010** - Total Processed Wt 31051 = Net Loss: -40.7

% of Sample: -0.13%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-III**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/19/2008

Processed by: BC

UNITS G

---------- **WEIGHT** ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	3870.0		**11.2%**	**100.0%**
90	128	12020.0		**34.8%**	**88.8%**
64	90	9730.0		**28.1%**	**54.1%**
45	64	5940.0		**17.2%**	**25.9%**
31.5	45	2409.0		**7.0%**	**8.7%**
22.4	31.5	459.5		**1.3%**	**1.8%**
16	22.4	81.5		**0.2%**	**0.4%**
11.2	16	16.7		**0.0%**	**0.2%**
8	11.2	0.0		**0.0%**	**0.2%**
5.6	8	0.0		**0.0%**	**0.2%**
4	5.6	0.5		**0.0%**	**0.2%**
2.8	4	1.5		**0.0%**	**0.2%**
2	2.8	2.1		**0.0%**	**0.2%**
1	2	6.5		**0.0%**	**0.2%**
0.85	1	2.1		**0.0%**	**0.1%**
0.5	0.85	9.8		**0.0%**	**0.1%**
0.25	0.5	15.3		**0.0%**	**0.1%**
0.125	0.25	9.1		**0.0%**	**0.1%**
0.063	0.125	4.8		**0.0%**	**0.0%**
Pan	0.063	4.6		**0.0%**	**0.0%**
TOTAL:					

SIZE PARAMETERS

D5	**37.5 mm**
D16	**52.2 mm**
D25	**62.8 mm**
D35	**71.4 mm**
D50	**85.7 mm**
D65	**100.6 mm**
D75	**111.3 mm**
D84	**121.9 mm**
D90	**132.7 mm**
dg	**82.1 mm**
FREDLE	**61.7 mm**
T&B STEELHEAD SURVIVAL	**94.7 mm**
T&B CHINOOK SURVIVAL	**93.9 mm**
% LESS THAN 2 mm	**0.2%**
% LESS THAN 0.85 mm	**0.1%**

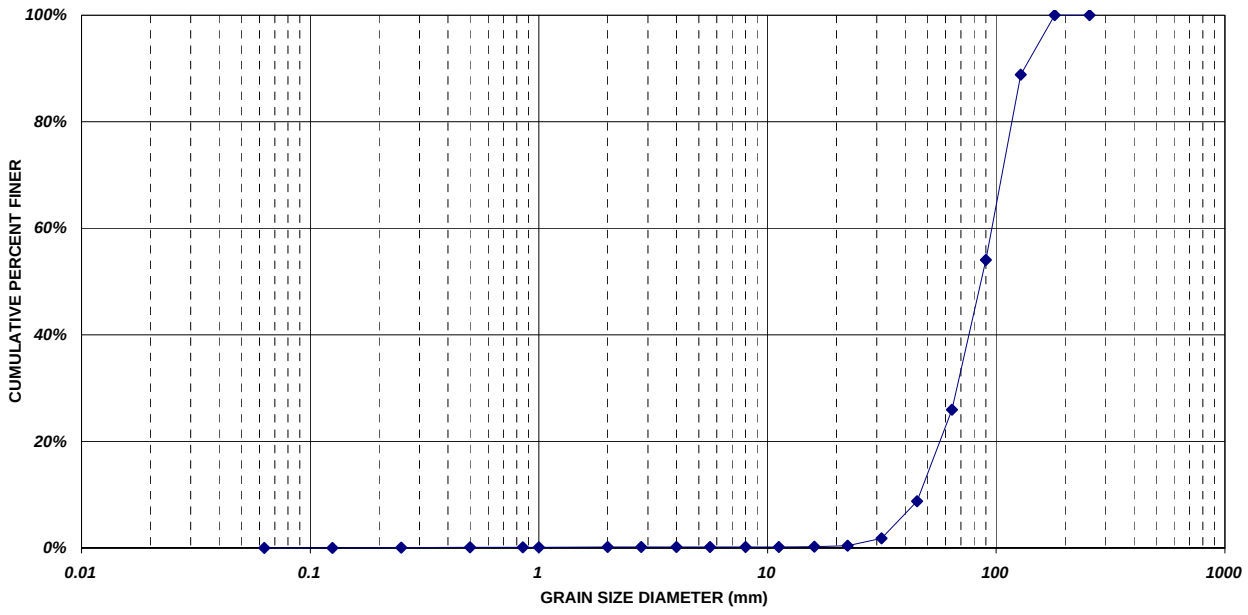
ADDITIONAL NOTES:

Dmax= 170.0 mm

Dmax mass= 3870 g

Sample Dry Wt **34620** - Total Processed Wt 34583 = Net Loss: 37.0

% of Sample: 0.11%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-IV A**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 12/21/2008

Processed by: DM

UNITS G

---------- **WEIGHT** ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	6420.0		**24.1%**	**100.0%**
90	128	8320.0		**31.2%**	**75.9%**
64	90	7680.0		**28.8%**	**44.7%**
45	64	1769.0		**6.6%**	**15.8%**
31.5	45	1738.0		**6.5%**	**9.2%**
22.4	31.5	526.5		**2.0%**	**2.7%**
16	22.4	102.5		**0.4%**	**0.7%**
11.2	16	37.5		**0.1%**	**0.3%**
8	11.2	16.0		**0.1%**	**0.2%**
5.6	8	8.5		**0.0%**	**0.1%**
4	5.6	3.5		**0.0%**	**0.1%**
2.8	4	2.5		**0.0%**	**0.0%**
2	2.8	1.5		**0.0%**	**0.0%**
1	2	2.0		**0.0%**	**0.0%**
0.85	1	0.5		**0.0%**	**0.0%**
0.5	0.85	1.8		**0.0%**	**0.0%**
0.25	0.5	2.3		**0.0%**	**0.0%**
0.125	0.25	1.4		**0.0%**	**0.0%**
0.063	0.125	0.6		**0.0%**	**0.0%**
Pan	0.063	0.3		**0.0%**	**0.0%**
TOTAL:					

SIZE PARAMETERS

D5	**36.2 mm**
D16	**64.1 mm**
D25	**71.3 mm**
D35	**80.3 mm**
D50	**95.6 mm**
D65	**113.2 mm**
D75	**126.7 mm**
D84	**143.5 mm**
D90	**156.3 mm**
dg	**91.7 mm**
FREDLE	**68.8 mm**
T&B STEELHEAD SURVIVAL	**94.7 mm**
T&B CHINOOK SURVIVAL	**93.5 mm**
% LESS THAN 2 mm	**0.0%**
% LESS THAN 0.85 mm	**0.0%**

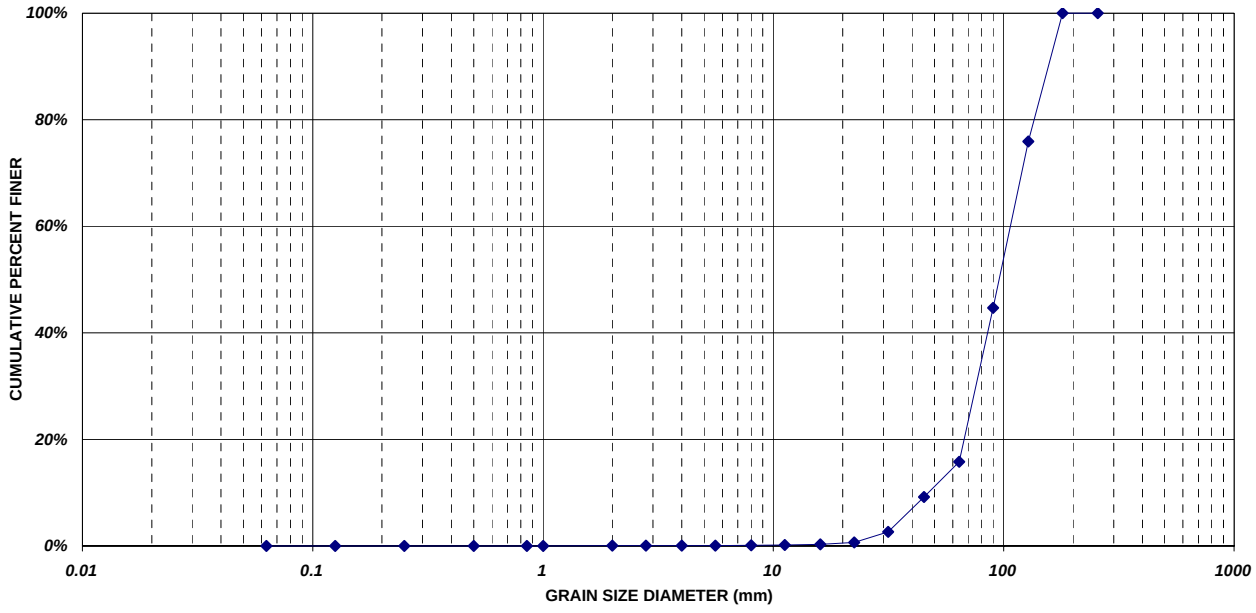
ADDITIONAL NOTES:

Dmax= 170.0 mm

Dmax mass= 2990 g

Sample Dry Wt **26630** - Total Processed Wt 26634 = Net Loss: -4.4

% of Sample: -0.02%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-IV-B**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/25/2008

Processed by: BC

UNITS G

---------- WEIGHT ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	0.0		**0.0%**	**100.0%**
90	128	1397.0		**4.3%**	**100.0%**
64	90	5750.0		**17.8%**	**95.7%**
45	64	4220.0		**13.1%**	**77.8%**
31.5	45	5000.0		**15.5%**	**64.7%**
22.4	31.5	4040.0		**12.5%**	**49.2%**
16	22.4	2440.0		**7.6%**	**36.7%**
11.2	16	1740.0		**5.4%**	**29.1%**
8	11.2	1340.0		**4.2%**	**23.7%**
5.6	8	797.4		**2.5%**	**19.6%**
4	5.6	814.8		**2.5%**	**17.1%**
2.8	4	710.7		**2.2%**	**14.5%**
2	2.8	580.7		**1.8%**	**12.3%**
1	2	858.1		**2.7%**	**10.5%**
0.85	1	277.4		**0.9%**	**7.9%**
0.5	0.85	1014.1		**3.1%**	**7.0%**
0.25	0.5	970.8		**3.0%**	**3.9%**
0.125	0.25	234.0		**0.7%**	**0.9%**
0.063	0.125	26.0		**0.1%**	**0.1%**
Pan	0.063	17.3		**0.1%**	**0.1%**
TOTAL:					

SIZE PARAMETERS

D5	**0.6 mm**
D16	**4.9 mm**
D25	**12.2 mm**
D35	**20.8 mm**
D50	**32.6 mm**
D65	**45.3 mm**
D75	**59.3 mm**
D84	**72.0 mm**
D90	**80.8 mm**
dg	**20.6 mm**
FREDLE	**9.3 mm**
T&B STEELHEAD SURVIVAL	**80.4 mm**
T&B CHINOOK SURVIVAL	**94.6 mm**
% LESS THAN 2 mm	**10.5%**
% LESS THAN 0.85 mm	**7.0%**

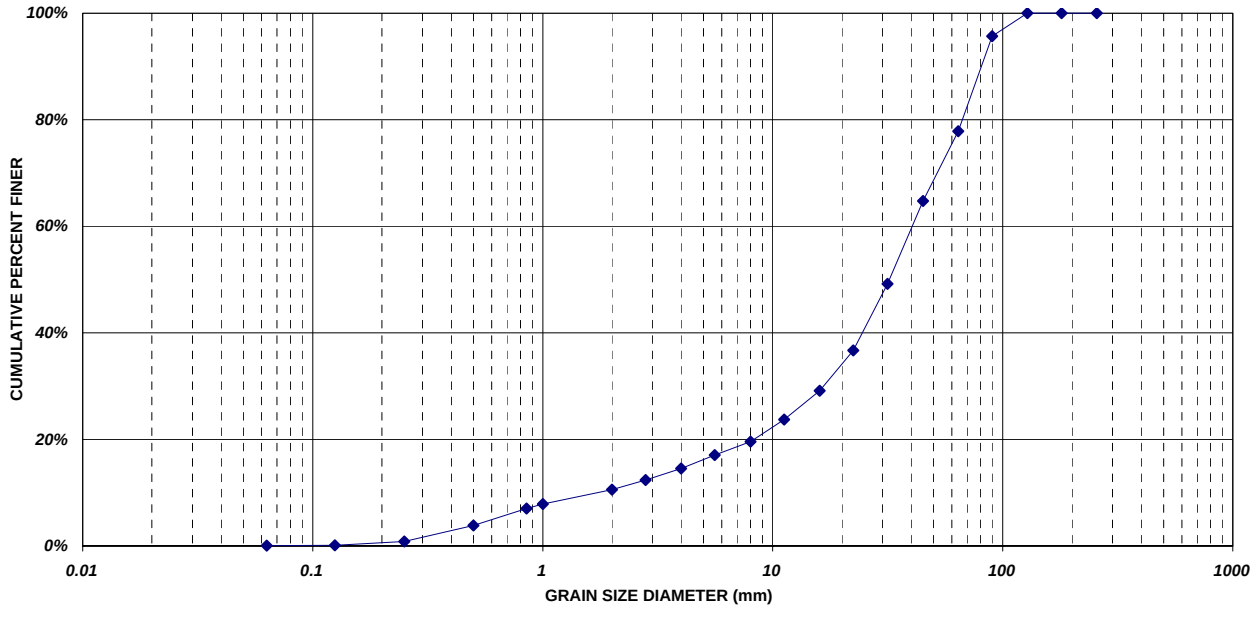
ADDITIONAL NOTES:

Dmax= 95.0 mm

Dmax mass= 1397 g

Sample Dry Wt **32240** - Total Processed Wt 32228 = Net Loss: 11.7

% of Sample: 0.04%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-V**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/25/2008

Processed by: BC

UNITS G

---------- **WEIGHT** ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	0.0		**0.0%**	**100.0%**
90	128	2375.5		**7.4%**	**100.0%**
64	90	7390.0		**22.9%**	**92.6%**
45	64	6880.0		**21.3%**	**69.7%**
31.5	45	4750.0		**14.7%**	**48.4%**
22.4	31.5	2016.0		**6.3%**	**33.6%**
16	22.4	1458.5		**4.5%**	**27.4%**
11.2	16	1065.0		**3.3%**	**22.8%**
8	11.2	811.5		**2.5%**	**19.5%**
5.6	8	458.1		**1.4%**	**17.0%**
4	5.6	380.3		**1.2%**	**15.6%**
2.8	4	371.7		**1.2%**	**14.4%**
2	2.8	354.4		**1.1%**	**13.3%**
1	2	1296.5		**4.0%**	**12.2%**
0.85	1	414.9		**1.3%**	**8.1%**
0.5	0.85	1149.6		**3.6%**	**6.9%**
0.25	0.5	795.2		**2.5%**	**3.3%**
0.125	0.25	197.9		**0.6%**	**0.8%**
0.063	0.125	43.2		**0.1%**	**0.2%**
Pan	0.063	25.9		**0.1%**	**0.1%**
TOTAL:					

SIZE PARAMETERS

D5	**0.6 mm**
D16	**6.2 mm**
D25	**18.8 mm**
D35	**33.0 mm**
D50	**46.2 mm**
D65	**59.2 mm**
D75	**69.2 mm**
D84	**79.2 mm**
D90	**86.5 mm**
dg	**25.8 mm**
FREDLE	**13.4 mm**
T&B STEELHEAD SURVIVAL	**82.5 mm**
T&B CHINOOK SURVIVAL	**98.5 mm**
% LESS THAN 2 mm	**12.2%**
% LESS THAN 0.85 mm	**6.9%**

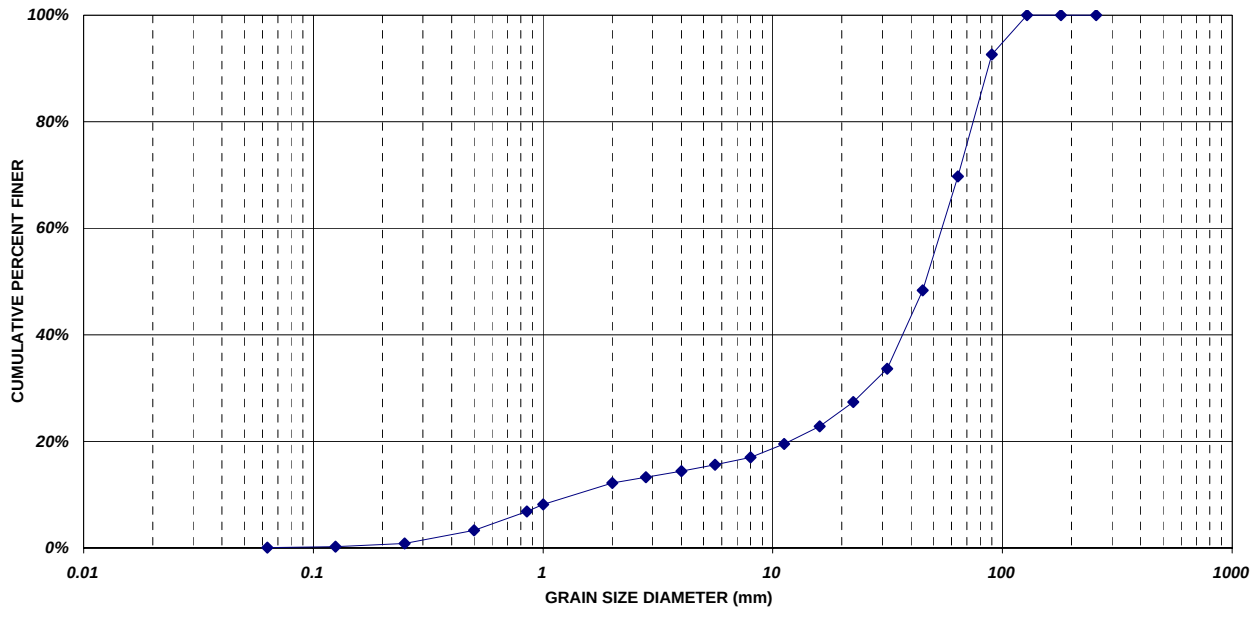
ADDITIONAL NOTES:

Dmax= 135.0 mm

Dmax mass= 2376 g

Sample Dry Wt **32240** - Total Processed Wt 32234 = Net Loss: 5.7

% of Sample: 0.02%



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BULK SAMPLE: PARTICLE SIZE ANALYSIS

River:	**Cow Creek**	**Sample #**	**C-VI**
Location:		**Date Collected:**	**12/13/2007**
Crew:		**Method of Collection:**	
Description		**Surface/Sub-surface**	
Sampler		**Bag # of #**	

Date Processed: 2/25/2008

Processed by: BC

UNITS G

---------- **WEIGHT** ----------

Sieve	Finer than	Final Net		%	Cum%<
256		0.0		**0.0%**	**100.0%**
180	256	0.0		**0.0%**	**100.0%**
128	180	0.0		**0.0%**	**100.0%**
90	128	2213.5		**9.2%**	**100.0%**
64	90	1887.5		**7.8%**	**90.8%**
45	64	2323.5		**9.6%**	**83.0%**
31.5	45	3639.5		**15.1%**	**73.3%**
22.4	31.5	2706.0		**11.2%**	**58.2%**
16	22.4	1570.5		**6.5%**	**47.0%**
11.2	16	1478.0		**6.1%**	**40.5%**
8	11.2	1031.0		**4.3%**	**34.3%**
5.6	8	688.3		**2.9%**	**30.1%**
4	5.6	643.6		**2.7%**	**27.2%**
2.8	4	697.3		**2.9%**	**24.5%**
2	2.8	822.4		**3.4%**	**21.6%**
1	2	1966.7		**8.2%**	**18.2%**
0.85	1	420.2		**1.7%**	**10.1%**
0.5	0.85	1037.0		**4.3%**	**8.3%**
0.25	0.5	706.2		**2.9%**	**4.0%**
0.125	0.25	187.7		**0.8%**	**1.1%**
0.063	0.125	44.7		**0.2%**	**0.3%**
Pan	0.063	26.8		**0.1%**	**0.1%**
TOTAL:					

SIZE PARAMETERS

D5	**0.6 mm**
D16	**1.7 mm**
D25	**4.2 mm**
D35	**11.6 mm**
D50	**24.6 mm**
D65	**37.3 mm**
D75	**47.8 mm**
D84	**66.9 mm**
D90	**86.9 mm**
dg	**14.3 mm**
FREDLE	**4.3 mm**
T&B STEELHEAD SURVIVAL	**70.9 mm**
T&B CHINOOK SURVIVAL	**79.8 mm**
% LESS THAN 2 mm	**18.2%**
% LESS THAN 0.85 mm	**8.3%**

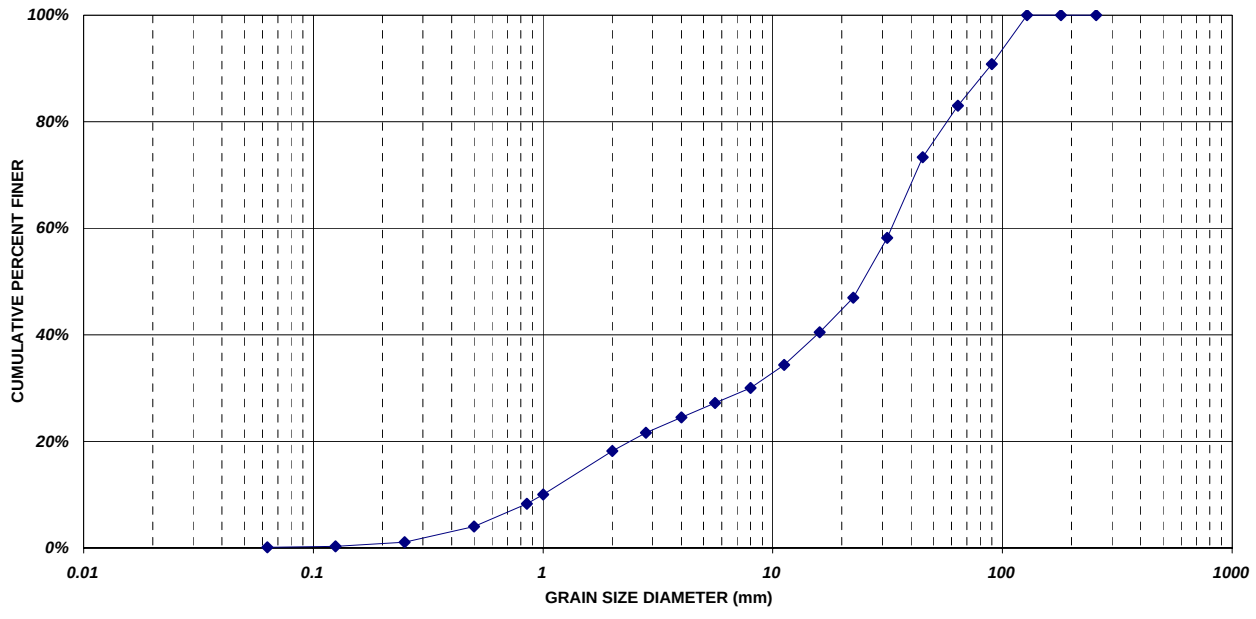
ADDITIONAL NOTES:

Dmax= 140.0 mm

Dmax mass= 2214 g

Sample Dry Wt **24100** - Total Processed Wt 24091 = Net Loss: 9.4

% of Sample: 0.04%



Attachment B

Brooks Rand Labs
Trace Metals Analysis Report

BROOKS RAND LABS

MEANINGFUL METALS DATA

March 11, 2008

North State Resources
Attn: Jim Fitzgerald
305 Chestnut St
Mount Shasta CA 96067
fitzgerald@nsrnet.com

RE: BRL Project Reference: NSR-MS0801 BRL Project ID: 0806042
Client Project Reference: P26601

Mr. Fitzgerald,

This is a report regarding the analysis of nineteen sediment samples received by Brooks Rand Labs (BRL) on February 7, 2008. The requested analyses were mercury (Hg), monomethyl mercury (MMHg), arsenic (As), copper (Cu), and silver (Ag). The analyses for several samples and analytes were cancelled as requested by the client. The samples were received, prepared, analyzed, and stored according to BRL standard operating procedures (SOP) and EPA methodology.

The results were blank-corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific method detection limits (MDL), method reporting limits (MRL), and other details.

According to BRL SOP BR0011 for MMHg, samples should be analyzed within 48 hours after preparation. Due to an instrument malfunction at the time of analysis the samples in sequence 0800156 (B080204) were not properly processed. Since the ethylating reagent was already present in the samples, the system was re-started and the samples were analyzed upon return on Monday morning. Based on good recoveries produced by the continuing calibration verification standards (CCV) indicating the system was in control, and two matrix spike/matrix spike duplicate (MS/MSD) sets that met the acceptance criterion, the results have been reported unqualified. Additionally, the results from this sequence match the results from a previous analysis in a different sequence that demonstrated a calibration discrepancy.

An additional blank spike (BS2) was prepared for analysis in sequence 0800161 (B080209). The result for this blank spike did not match the spiking information suggesting that a blank spike from a different batch was actually analyzed. When the alternate spiking information was entered, the blank spike calculated a recovery with the control limits. All certified reference

materials (CRM), MS/MSD sets, and BS1 met their respective criteria and the BS2 has not been reported.

The results less than or equal to the MDL have been qualified "U" for non-detect and have been reported at the MDL. The results above the MDL and less than or equal to the MRL have been qualified "B" and should be considered estimates. All other criteria were met and no additional qualification of the data was required.

BRL, a NELAC accredited laboratory (FL LAB ID E87982), certifies that the reported results meet all NELAC requirements. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Amanda Fawley
Project Manager
amanda@brooksrand.com

Amy Durdle
Project Manager
amy@brooksrand.com

BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

ANALYTICAL REPORT FOR SAMPLES

Sample ID	BRL ID	Date Sampled	Date Received	Matrix
K-IIb	0806042-01	12/12/07	02/07/08	Soil/Sediment
K-IIIb	0806042-02	12/12/07	02/07/08	Soil/Sediment
K-IIbM	0806042-04	12/12/07	02/07/08	Soil/Sediment
K-IIIbM	0806042-05	12/12/07	02/07/08	Soil/Sediment
C-III	0806042-07	12/13/07	02/07/08	Soil/Sediment
C-IIIDM	0806042-08	12/13/07	02/07/08	Soil/Sediment
C-I	0806042-10	12/13/07	02/07/08	Soil/Sediment
C-IM	0806042-11	12/13/07	02/07/08	Soil/Sediment
C-III	0806042-14	12/13/07	02/07/08	Soil/Sediment
C-IIIM	0806042-15	12/13/07	02/07/08	Soil/Sediment

Amy Durdle

Amy Durdle For Amanda Fawley
Project Manager

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

BATCH SUMMARY FOR SAMPLES

Batch	Parameter	Prep Date	Analyzed Date	Sequence
B080190	%TS by EPA Method 160.3	02/14/2008	02/15/2008	N/A
B080201	Hg by EPA Method 1631, Appendix	02/20/2008	02/21/2008	0800142
B080202	%TS by EPA Method 160.3	02/20/2008	02/22/2008	N/A
B080204	MMHg by EPA Method 1630 mod.	02/21/2008	02/25/2008	0800156
B080209	As 75 by EPA Method 1638 mod.	02/19/2008	02/27/2008	0800161
B080289	Ag 107 by EPA Method 1638 mod.	02/29/2008	03/02/2008	0800174
B080289	Cu 63 by EPA Method 1638 mod.	02/29/2008	03/02/2008	0800174

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

SAMPLE RESULTS

Total Mercury and Mercury Speciation by CVAFS

Analyte	Method	Total or Dissolved	Result	Qualifier	MDL	MRL	Units	Batch	Sequence
K-IIb 0806042-01 Soil/Sediment									
Hg	EPA Method 1631, Appendix		4.13		0.07	0.24	ng/g dry	B080201	0800142
K-IIIb 0806042-02 Soil/Sediment									
Hg	EPA Method 1631, Appendix		3.52		0.08	0.26	ng/g dry	B080201	0800142
K-IIbM 0806042-04 Soil/Sediment									
MMHg	EPA Method 1630 mod.		0.011	U	0.011	0.035	ng/g dry	B080204	0800156
K-IIIbM 0806042-05 Soil/Sediment									
MMHg	EPA Method 1630 mod.		0.011	U	0.011	0.034	ng/g dry	B080204	0800156
C-III 0806042-07 Soil/Sediment									
Hg	EPA Method 1631, Appendix		7.14		0.07	0.22	ng/g dry	B080201	0800142
C-IIIDM 0806042-08 Soil/Sediment									
MMHg	EPA Method 1630 mod.		0.012	B	0.010	0.031	ng/g dry	B080204	0800156
C-I 0806042-10 Soil/Sediment									
Hg	EPA Method 1631, Appendix		8.92		0.07	0.23	ng/g dry	B080201	0800142
C-IM 0806042-11 Soil/Sediment									
MMHg	EPA Method 1630 mod.		0.032		0.009	0.030	ng/g dry	B080204	0800156
C-III 0806042-14 Soil/Sediment									
Hg	EPA Method 1631, Appendix		6.33		0.07	0.24	ng/g dry	B080201	0800142

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BROOKS RAND LABS

MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

SAMPLE RESULTS

Total Mercury and Mercury Speciation by CVAFS

Analyte	Method	Total or Dissolved	Result	Qualifier	MDL	MRL	Units	Batch	Sequence
C-IIIM	**0806042-15**	**Soil/Sediment**							
MMHg	EPA Method 1630 mod.		0.011	B	0.011	0.034	ng/g dry	B080204	0800156

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BROOKS RAND LABS
MEANINGFUL METALS DATA

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Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

SAMPLE RESULTS

Trace Metals by ICP-MS

Analyte	Method	Total or Dissolved	Result	Qualifier	MDL	MRL	Units	Batch	Sequence
K-IIb 0806042-01 Soil/Sediment									
Ag 107	EPA Method 1638 mod.		0.15		0.04	0.12	mg/kg dry	B080289	0800174
As 75	EPA Method 1638 mod.		1.1	B	0.5	1.4	mg/kg dry	B080209	0800161
Cu 63	EPA Method 1638 mod.		51.2		0.21	1.23	mg/kg dry	B080289	0800174
K-IIIb 0806042-02 Soil/Sediment									
Ag 107	EPA Method 1638 mod.		0.19		0.04	0.13	mg/kg dry	B080289	0800174
As 75	EPA Method 1638 mod.		0.7	B	0.5	1.4	mg/kg dry	B080209	0800161
Cu 63	EPA Method 1638 mod.		34.2		0.22	1.27	mg/kg dry	B080289	0800174
C-III 0806042-07 Soil/Sediment									
Ag 107	EPA Method 1638 mod.		0.11	B	0.04	0.12	mg/kg dry	B080289	0800174
As 75	EPA Method 1638 mod.		2.4		0.4	1.3	mg/kg dry	B080209	0800161
Cu 63	EPA Method 1638 mod.		30.0		0.20	1.20	mg/kg dry	B080289	0800174
C-I 0806042-10 Soil/Sediment									
Ag 107	EPA Method 1638 mod.		0.12		0.03	0.11	mg/kg dry	B080289	0800174
As 75	EPA Method 1638 mod.		1.6		0.4	1.3	mg/kg dry	B080209	0800161
Cu 63	EPA Method 1638 mod.		27.0		0.19	1.12	mg/kg dry	B080289	0800174
C-III 0806042-14 Soil/Sediment									
Ag 107	EPA Method 1638 mod.		0.09	B	0.04	0.12	mg/kg dry	B080289	0800174
As 75	EPA Method 1638 mod.		2.5		0.4	1.3	mg/kg dry	B080209	0800161
Cu 63	EPA Method 1638 mod.		25.6		0.20	1.19	mg/kg dry	B080289	0800174

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BROOKS RAND LABS

MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

SAMPLE RESULTS

Physical Properties

Analyte	Method	Total or Dissolved	Result	Qualifier	MDL	MRL	Units	Batch	Sequence
K-IIb 0806042-01 Soil/Sediment									
%TS	EPA Method 160.3		75.30		0.10	0.32	%	B080202	N/A
K-IIIb 0806042-02 Soil/Sediment									
%TS	EPA Method 160.3		75.54		0.10	0.32	%	B080202	N/A
K-IIbM 0806042-04 Soil/Sediment									
%TS	EPA Method 160.3		76.11		0.05	0.16	%	B080190	N/A
K-IIIbM 0806042-05 Soil/Sediment									
%TS	EPA Method 160.3		78.63		0.05	0.16	%	B080190	N/A
C-III 0806042-07 Soil/Sediment									
%TS	EPA Method 160.3		81.65		0.10	0.32	%	B080202	N/A
C-IIIDM 0806042-08 Soil/Sediment									
%TS	EPA Method 160.3		83.03		0.05	0.16	%	B080190	N/A
C-I 0806042-10 Soil/Sediment									
%TS	EPA Method 160.3		87.12		0.10	0.32	%	B080202	N/A
C-IM 0806042-11 Soil/Sediment									
%TS	EPA Method 160.3		86.43		0.05	0.16	%	B080190	N/A
C-III 0806042-14 Soil/Sediment									
%TS	EPA Method 160.3		83.36		0.10	0.32	%	B080202	N/A

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SAMPLE RESULTS

Physical Properties

Analyte	Method	Total or Dissolved	Result	Qualifier	MDL	MRL	Units	Batch	Sequence
C-IIIM 0806042-15 Soil/Sediment									
%TS	EPA Method 160.3		80.74		0.05	0.16	%	B080190	N/A

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BROOKS RAND LABS

MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Accuracy and Precision

Batch	Method	SOP	Matrix

B080190 **EPA Method 160.3** **BR-1501** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Duplicate (0806042-04)			B080190-DUP1					
%TS	76.10	%	76.11				0.01	15

B080201 **EPA Method 1631, Appendix** **BR-0002** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Laboratory Fortified Blank(0803063)			B080201-BS1					
Hg	0.09	ng/g dry		0.1000	90	70-130		
Duplicate (0806039-06)			B080201-DUP1					
Hg	71.84	ng/g dry	67.20				7	30
Matrix Spike (0806039-06)			B080201-MS1					
Hg	424.7	ng/g dry	67.20	337.7	106	70-130		
Matrix Spike Duplicate (0806039-06)			B080201-MSD1					
Hg	415.4	ng/g dry	67.20	343.3	101	70-130	2	30
Certified Reference Material (0720023, MESS-3)			B080201-SRM1					
Hg	93.63	ng/g dry		91.00	103	0-200		

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MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Accuracy and Precision

Batch	Method	SOP	Matrix

B080202 **EPA Method 160.3** **BR-1501** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Duplicate (0806042-01)			B080202-DUP1					
%TS	75.46	%	75.30				0.2	15

B080204 **EPA Method 1630 mod.** **BR-0011** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Laboratory Fortified Blank(0805077)			B080204-BS1					
MMHg	0.021	ng/g dry		0.02500	84	65-135		
Duplicate (0806042-05)			B080204-DUP1					
MMHg	0.011U	ng/g dry	0.011 U					35
Matrix Spike (0806042-05)			B080204-MS1					
MMHg	0.107	ng/g dry	0.011 U	0.1010	106	65-135		
Matrix Spike Duplicate (0806042-05)			B080204-MSD1					
MMHg	0.103	ng/g dry	0.011 U	0.1000	103	65-135	4	35
Certified Reference Material (0720007, CC-580)			B080204-SRM1					
MMHg	62.03	ng/g dry		75.00	83	65-135		

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BROOKS RAND LABS
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Organization: North State Resources
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BRL Project ID: 0806042
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QUALITY ASSURANCE SUMMARY

Accuracy and Precision

Batch	Method	SOP	Matrix

B080204 **EPA Method 1630 mod.** **BR-0011** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Certified Reference Material (0720007, CC-580)			B080204-SRM2					
MMHg	65.51	ng/g dry		75.00	87	65-135		

B080209 **EPA Method 1638 mod.** **BR-0067** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Laboratory Fortified Blank(0808067)			B080209-BS1					
As 75	1.8	mg/kg dry		2.000	90	75-125		
Duplicate (0806042-01)			B080209-DUP1					
As 75	0.7	mg/kg dry	1.1				44	30
Matrix Spike (0806042-01)			B080209-MS1					
As 75	83.0	mg/kg dry	1.1	98.90	83	70-130		
Cu 63	130.3	mg/kg dry	39.50	98.92	92	70-130		
Matrix Spike Duplicate (0806042-01)			B080209-MSD1					
As 75	88.7	mg/kg dry	1.1	96.90	90	70-130	7	30
Certified Reference Material (0751120, NIST 2709)			B080209-SRM1					
As 75	16.6	mg/kg dry		17.70	94	0-200		

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MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Accuracy and Precision

Batch	Method	SOP	Matrix

B080209 **EPA Method 1638 mod.** **BR-0067** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Certified Reference Material (0517001, NIST 2710)			B080209-SRM2					
As 75	550.0	mg/kg dry		626.0	88	75-125		
Certified Reference Material (0750097, MESS 3)			B080209-SRM3					
As 75	18.2	mg/kg dry		21.20	86	75-125		

B080289 **EPA Method 1638 mod.** **BR-0067** **Soil/Sediment**

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Laboratory Fortified Blank(0809108)			B080289-BS2					
Ag 107	0.43	mg/kg dry		0.5000	86	75-125		
Duplicate (0806042-01)			B080289-DUP1					
Ag 107	0.16	mg/kg dry	0.15				6	30
Cu 63	57.28	mg/kg dry	51.20				11	30
Matrix Spike (0806042-01)			B080289-MS1					
Ag 107	24.85	mg/kg dry	0.15	25.89	95	70-130		
Cu 63	108.1	mg/kg dry	51.20	64.72	88	70-130		

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
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BRL Project ID: 0806042
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BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Accuracy and Precision

Batch	Method	SOP	Matrix
B080289	EPA Method 1638 mod.	BR-0067	Soil/Sediment

Analyte	Result	Units	Sample Value	Spike Value	% Recovery	% Recovery Limits	Duplicate RPD	RPD Limits
Matrix Spike Duplicate (0806042-01)				B080289-MSD1				
Ag 107	24.48	mg/kg dry	0.15	24.28	100	70-130	2	30
Cu 63	109.7	mg/kg dry	51.20	60.70	96	70-130	1	30
NIST 2709				B080289-SRM1				
Ag 107	0.38	mg/kg dry		0.4100	93	75-125		
Cu 63	35.35	mg/kg dry		34.60	102	75-125		
PACS-2				B080289-SRM2				
Ag 107	1.12	mg/kg dry		1.220	92	75-125		
Cu 63	306.4	mg/kg dry		310.0	99	75-125		

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BROOKS RAND LABS
MEANINGFUL METALS DATA

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Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Method Blanks/Detection Limits

Batch #	Method #	SOP #	Matrix
B080190	EPA Method 160.3	BR-1501	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							%	
Method Blanks								
%TS								
B080190-BLK1	0.00	%						
B080190-BLK2	0.00	%						
Method Blank Summary					0.10	0.03	0.05	0.16

Batch #	Method #	SOP #	Matrix
B080201	EPA Method 1631, Appendix	BR-0002	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							ng/g	
Method Blanks								
Hg								
B080201-BLK1	0.04	ng/g						
B080201-BLK2	0.07	ng/g						
B080201-BLK3	0.06	ng/g						
B080201-BLK4	0.04	ng/g						
Method Blank Summary			0.05	0.02	0.06	0.02	0.03	0.10

Batch #	Method #	SOP #	Matrix
B080202	EPA Method 160.3	BR-1501	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							%	

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Method Blanks/Detection Limits

Batch #	Method #	SOP #	Matrix
B080202	EPA Method 160.3	BR-1501	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							%	
Method Blanks								
%TS								
B080202-BLK1	-0.06	%						
B080202-BLK2	-0.03	%						
Method Blank Summary					0.20	0.07	0.10	0.32

Batch #	Method #	SOP #	Matrix
B080204	EPA Method 1630 mod.	BR-0011	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							ng/g	
Method Blanks								
MMHg								
B080204-BLK1	0.005	ng/g						
B080204-BLK2	0.006	ng/g						
B080204-BLK3	0.003	ng/g						
B080204-BLK4	0.003	ng/g						
Method Blank Summary			0.004	0.002	0.016	0.005	0.008	0.025

Batch #	Method #	SOP #	Matrix
B080289	EPA Method 1638 mod.	BR-0067	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL	MRL
							mg/kg dry	

Amy Durdle

Amy Durdle For Amanda Fawley
Project Manager

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Organization: North State Resources
Contact: Jim Fitzgerald

BRL Project ID: 0806042
BRL Project Reference: NSR-MS0801
BRL Project Manager: Amanda Fawley
Report Date: March 11, 2008

QUALITY ASSURANCE SUMMARY

Method Blanks/Detection Limits

Batch #	Method #	SOP #	Matrix
B080289	EPA Method 1638 mod.	BR-0067	Soil/Sediment

Analyte	Result	Units	Average	Standard Deviation	Average Limits	StDev Limits	MDL mg/kg dry	MRL mg/kg dry
Method Blanks								
Ag 107								
B080289-BLK1	-0.00100	mg/kg dry						
B080289-BLK2	-0.00500	mg/kg dry						
B080289-BLK3	0.03	mg/kg dry						
Method Blank Summary			0.01	0.02	0.10	0.03	0.03	0.10
Cu 63								
B080289-BLK1	-0.13	mg/kg dry						
B080289-BLK2	-0.12	mg/kg dry						
B080289-BLK3	-0.13	mg/kg dry						
Method Blank Summary			-0.13	0.01	1.00	0.17	0.17	1.00

Amy Durdle

Amy Durdle For Amanda Fawley
Project Manager

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BROOKS RAND LABS
MEANINGFUL METALS DATA

Phone: 206-632-6206
Fax: 206-632-6017
Email: brl@brooksrand.com

WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07
QA Level:	Standard	**Sample Custodian:**	Jason Barrett
EDD:	None	**BRL Project Manager:**	Amanda Fawley
Turn-around time:	20	**Courier:**	FedEx

Shipping Container #1

Custody Seals: Present

Airbill #: 944224315019
Shipping Container: Default Cooler
Shipping Container Temp.: 3.0 °C
Shipping Container Coolant: Ice

Work order notes:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-01	K-IIb	12/12/07 10:50	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-01A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-02	K-IIIb	12/12/07 11:15	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-02A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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Email: brl@brooksrand.com

WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-03	K-IID	12/12/07 12:00	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-03A	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-04	K-IIbM	12/12/07 10:50	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-04A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-05	K-IIIbM	12/12/07 11:15	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-05A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-06	K-IIDM	12/12/07 12:00	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-06A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-07	C-III	12/13/07 10:40	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-07A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

0806042-08	C-IIIDM	12/13/07 10:40	Soil/Sediment

	Container	Size	Preservation	pH		
0806042-08A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

0806042-09	FB-1	12/13/07	Soil/Sediment

	Container	Size	Preservation	pH		
0806042-09A	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Mo
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ba
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Be
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cd
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Co
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Zn
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ni
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Pb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Sb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Se
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Tl
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	V
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cr

Comments: FB: Do not spike

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WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-10	C-I	12/13/07 10:00	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-10A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-11	C-IM	12/13/07 10:00	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-11A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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Email: brl@brooksrand.com

WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-12	C-II	12/13/07 10:20	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-12A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ba
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Be
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cd
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Co
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Zn
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Mo
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ni
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Pb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Sb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Se
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Tl
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	V
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cr

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-13	C-IIM	12/13/07 10:20	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-13A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-14	C-III	12/13/07 10:35	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-14A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

0806042-15	C-IIIM	12/13/07 10:35	Soil/Sediment

	Container	Size	Preservation	pH		
0806042-15A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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MEANINGFUL METALS DATA

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Fax: 206-632-6017
Email: brl@brooksrand.com

WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-16	C-IV	12/13/07 10:50	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-16A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ba
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Be
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cd
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Co
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Zn
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Mo
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ni
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Pb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Sb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Se
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Tl
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	V
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cr

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-17	C-IVM	12/13/07 10:50	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-17A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments:

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MEANINGFUL METALS DATA

Phone: 206-632-6206
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Email: brl@brooksrand.com

WORK ORDER
0806042

Customer:	North State Resources	**Due Date:**	03/06/08
Contact:	Jim Fitzgerald	**Receipt date:**	02/07/08 08:45
Project ID:	NSR-MS0801	**Log-in date:**	02/08/08 15:07

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-18	C-V	12/13/07 11:10	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-18A	Jar HDPE	8oz	None		**Method:** EPA Method 1631, Appendix	Hg
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ag
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	As
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ba
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Be
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cd
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Co
	Jar HDPE	8oz	None		**Method:** EPA Method 160.3	%TS
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cu
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Zn
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Mo
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Ni
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Pb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Sb
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Se
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Tl
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	V
	Jar HDPE	8oz	None		**Method:** EPA Method 1638 mod.	Cr

Comments:

BRL Sample ID	Client ID / Site ID	Collection Date/Time	Matrix	Analyte
0806042-19	C-VM	12/13/07 11:10	Soil/Sediment	

	Container	Size	Preservation	pH		
0806042-19A	Jar Glass	8oz	None		**Method:** EPA Method 1630 mod.	MMHg
	Jar Glass	8oz	None		**Method:** EPA Method 160.3	%TS

Comments: Sample decanted

D Hawley - updated
Sample Custodian

2-12-08
Date

D Hawley
Reviewed By

2-12-08
Date

0806042

BROOKSRAND
TRACE METALS ANALYSIS & PRODUCTS

Chain Of Custody Record

White: LAB COPY
Yellow: CUSTOMER COPY

Client: Entrix via NSR	COC receipt confirmation? (Y) N)	Ship to: **Brooks Rand LLC**
Contact: Jim Fitzgerald	If yes, by Fax / Email (circle one)	3958 6th Avenue NW
Address: 305 Chestnut St. Mt. Shasta, CA 96067	Fax #:	Seattle, WA 98107
	Email: fitzgerald@nsrnet.com	Phone: 206-632-6206
	Sampler's name: Jim Fitzgerald	Fax: 206-632-6017
Phone #: (530) 227-8963	Client project ID: PZ6601	Email: samples@brooksrand.com
PO #: Z6601	BRL project ID: ENY002	www.brooksrand.com

	Sample ID	Collection: Date	Collection: Time	Miscellaneous: Sampler (initials)	Miscellaneous: Matrix type	Miscellaneous: # of containers	Miscellaneous: Sample field filtered (Y/N)	Field Preservation: Unpreserved / ice only	Field Preservation: HCl/HNO_3/BrCl (circle one)	Field Preservation: Other (specify)	Analyses required: Total Hg, EPA 1631	Analyses required: Methyl Hg, EPA 1630	Analyses required: Metals ICP-MS (specify)	Analyses required: As / Se species (specify)	Analyses required: % Solids	Analyses required: Filtration	Analyses required: Other (specify) CAM 17	Analyses required: Other (specify)	Analyses required: Other (specify)	Comments
1	K-I	12/12/07	1035	JF	S	1	N	X									X			JF
2	K-V	12/12/07	1050	JF	S	1	N	X												JF
3	K-IIb	12/12/07	1050	JF	S	1	N	X									X			
4	K-IV	12/12/07	1115	JF	S	1	N	X												JF
5	K-IIIb	12/12/07	1115	JF	S	1	N	X									X			
6	K-IX	12/12/07	1135	JF	S	1	N	X												JF
7	K-IIb	12/12/07	1200	JF	S	1	N	X									X			
8																				
9																				
10																				

Relinquished by: Jim Fitzgerald	Date: 2/6/08	Time: 1100	Received by:
Relinquished by:	Date:	Time:	Received at BRL by:
Shipping carrier: Fed Ex	# of coolers: 1		BRL Tracking #:

Date:	Time:	
Date: 2/9/08	Time: 845	

0806042

BROOKSRAND
TRACE METALS ANALYSIS & PRODUCTS

Chain Of Custody Record

White: LAB COPY
Yellow: CUSTOMER COPY

Client: Entrix via NSR	COC receipt confirmation? (Y) / N)	Ship to: **Brooks Rand LLC**
Contact: Jim Fitzgerald	If yes, by Fax / Email (circle one)	3958 6th Avenue NW
Address: 305 Chestnut St. Mt. Shasta, CA 96067	Fax #:	Seattle, WA 98107
	Email: Sitzgerald@snsnet.com	Phone: 206-632-6206
	Sampler's name: Jim Fitzgerald	Fax: 206-632-6017
Phone #: (530) 227-8963	Client project ID: P26601	Email: samples@brooksrand.com
PO #: 26601	BRL project ID: ENX002	www.brooksrand.com

	Sample ID	Collection: Date	Collection: Time	Misc: Sampler (initials)	Misc: Matrix type	Misc: # of containers	Misc: Sample field filtered (Y/N)	Field Preservation: Unpreserved / ice only	Field Preservation: HCl/HNO_3/BrCl (circle one)	Field Preservation: Other (specify)	Analyses required: Total Hg, EPA 1631	Analyses required: Methyl Hg, EPA 1630	Analyses required: Metals ICP-MS (specify)	Analyses required: As / Se species (specify)	Analyses required: % Solids	Analyses required: Filtration	Analyses required: Other (specify) CAM 17	Analyses required: Other (specify)	Analyses required: Other (specify)	Comments
1	VR-IDM	12/12/07	1055	JF	S	1	N	X				X								Sample Split in 2008 JF
2	K-IIDM	12/12/07	1050	JF	S	1	N	X				X								Sample Split in 2008 JF
3	K-IIbM	12/12/07	1050	JF	S	1	N	X				X								
4	K-IIIM	12/12/07	1115	JF	S	1	N	X				X								JF
5	K-IIIbM	12/12/07	1115	JF	S	1	N	X				X								
6	K-IVDM	12/12/07	1135	JF	S	1	N	X				X								JF
7	K-IIDM	12/12/07	1200	JF	S	1	N	X				X								
8	C-III	12/13/07	1040	JF	S	1	N	X				~~X~~ JF					X			
9	C-IIIDM	12/13/07	1040	JF	S	1	N	X				X								
10	FB-1	12/13/07	1130	JF	W	1	N	X									X			

Relinquished by: Jim Fitzgerald	Date: 2/6/08	Time: 1100	Received by:
Relinquished by:	Date:	Time:	Received at BRL by: Date: 2/9/08 Time: 845
Shipping carrier: Fed Ex	# of coolers: 1		BRL Tracking #:

0806042

BROOKSRAND
TRACE METALS ANALYSIS & PRODUCTS

Chain Of Custody Record

White: LAB COPY
Yellow: CUSTOMER COPY

Client: Entrix via NSR	COC receipt confirmation? (Y) N)	Ship to: **Brooks Rand LLC**
Contact: Jim Fitzgerald	If yes, by Fax / Email (circle one)	3958 6th Avenue NW
Address: 305 Chestnut St. Mt. Shasta, CA 96067	Fax #:	Seattle, WA 98107
	Email: fitzgerald@nsrnet.com	Phone: 206-632-6206
	Sampler's name: Jim Fitzgerald	Fax: 206-632-6017
Phone #: (530) 227-8963	Client project ID: PZ66001	Email:samples@brooksrand.com
PO #: Z66001	BRL project ID: ENX 002	www.brooksrand.com

	Sample ID	Collection: Date	Collection: Time	Misc: Sampler (initials)	Misc: Matrix type	Misc: # of containers	Misc: Sample field filtered (Y/N)	Field Preservation: Unpreserved / ice only	Field Preservation: HCl/HNO_3/BrCl (circle one)	Field Preservation: Other (specify)	Analyses required: Total Hg, EPA 1631	Analyses required: Methyl Hg, EPA 1630	Analyses required: Metals ICP-MS (specify)	Analyses required: As / Se species (specify)	Analyses required: % Solids	Analyses required: Filtration	Analyses required: Other (specify) CAM 17	Analyses required: Other (specify)	Analyses required: Other (specify)	Comments
1	C-I	12/13/07	1000	JF	S	1	N	X									X			
2	C-I M	12/13/07	1000	JF	S	1	N	X				X								
3	C-II	12/13/07	1020	JF	S	1	N	X									X			
4	C-II M	12/13/07	1020	JF	S	1	N	X				X								
5	C-III	12/13/07	1035	JF	S	1	N	X									X			
6	C-III M	12/13/07	1035	JF	S	1	N	X				X								
7	C-IV	12/13/07	1050	JF	S	1	N	X									X			
8	C-IV M	12/13/07	1050	JF	S	1	N	X				X								
9	C-V	12/13/07	1110	JF	S	1	N	X									X			
10	C-V M	12/13/07	1110	JF	S	1	N	X				X								

Relinquished by: Jim Fitzgerald	Date: 12/16/08	Time: 1100	Received by:
Relinquished by:	Date:	Time:	Received at BRL by: Date: 2/9/08 Time: 845
Shipping carrier: Fed Ex	# of coolers: 1		BRL Tracking #: