Role of Nitrate in the Remobilization and Attenuation of Selenium in Coal Mine Waste

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Role of Nitrate in the Remobilization and Attenuation of Selenium in Coal Mine Waste Environments

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Executive Summary

Selenium (Se) and nitrogen (N) compounds represent constituents of environmental concern at coal mine operations in the cordillera of western Canada. Se is released to the environment via the weathering of exposed rock surfaces associated with mine waste materials (*e.g.*, waste rock, pit walls, coarse coal reject (CCR) and tailings). Conversely, mine-related loadings of nitrogen compounds [nitrate (NO_3), nitrite (NO_2) and ammonia (NH_3)] are primarily governed by the leaching of blasting residues associated with nitrogen-based explosives.

There is evidence to indicate that, in some environments, NO_3 can affect both the oxidation and attenuation of Se. There are several biogeochemical mechanisms by which NO_3 may be linked to Se leaching, mobility and attenuation, including; 1) concurrent microbially-mediated reduction of NO_3 and Se (common attenuation mechanism); 2) inhibition of Se reduction by NO_3 (maintenance of Se mobility); and 3) Se mobilization via the direct oxidation of Se-bearing minerals (*e.g.*, pyrite) by NO_3.

In order to provide more insight into the links between NO_3 and Se in coal mine waste environments in western Canada, a two-phased assessment was conducted: 1) a literature review of information relevant to the interactions of NO_3 with Se; and 2) compilation and assessment of drainage chemistry data for mines in northeast and southeast British Columbia. Mine waste facility drainage chemistry was compiled from eight mine sites, comprising a dataset of 833 samples (mostly seeps and sedimentation ponds). Se behaviour was also considered in the context of waste facility characteristics and mining practices, including explosive use, degree of saturation, and waste type (*e.g.,* CCR *versus* waste rock).

The roles of NO_3 as an inhibitor to Se reduction, as well as an oxidant of both pyrite and Se, are supported by laboratory and field-based studies of agriculture-impacted systems. The inhibition of selenate reduction by the presence of NO_3 has been demonstrated to occur at NO_3-N concentrations as low as 1 mg/L in laboratory settings, while other studies have found simultaneous reduction of selenate and NO_3. The oxidation of reduced Se and sulfur by NO_3 has been observed in groundwater systems hosting Se in Cretaceous shales. This is supported by the thermodynamics of sulfur and Se oxidation which indicate reduced sulfur (*e.g.*, iron sulfide or pyrite) and reduced Se (*e.g.*, Se^0 and Se^{2-}) can be oxidized through denitrification pathways.

The importance of NO_3 in affecting Se release and mobility from mine wastes is strongly dependent on the potential for suboxic conditions to develop within the interior of waste

facilities. Specifically, both the reduction of selenate as well as Se oxidation by NO_3 are inhibited by the presence of atmospheric O_2. Data for redox indicators of mine waste seepage (NO_2, NH_3, Mn, Fe, NO_2:NO_3 and NH_3:NO_3) and pore gas profiles examined as part of this study suggest that oxygen depletion is a common feature to coal waste rock environments, the scale and magnitude of which is likely highly variable. Given the likelihood of suboxia on either micro and macro scales, and the availability of NO_3-N (most values > 10 mg/L), NO_3 has the potential to affect both Se remobilization and attenuation.

With regards to concurrent NO_3 and Se attenuation, there is considerable evidence that anaerobic environments within some mine wastes facilitate the removal of both Se and NO_3 from solution through microbially-mediated reduction reactions, producing water compositions with relatively low NO_3 concentrations and low Se:SO_4 ratios. This is particularly evident for CCR and saturated pit backfill facilities, which are more likely to develop suboxia in comparison to subaerial waste rock dumps. Nitrogen redox couples (NO_2:NO_3 and NH_3:NO_3) and Mn concentrations show inverse relationships with Se concentration and Se:SO_4 ratios in some waste rock drainages, consistent with Se mobility being reduced in low redox potential environments.

Waste facilities with relatively low Se:SO_4 ratios show weaker correlations of Se with major ion indicators of waste rock weathering (SO_4, Ca and Mg) compared to waste facilities with elevated Se:SO_4 ratios. Facilities with elevated Se:SO_4 ratios generally also show strong correlations between Se and NO_3. The fact that Se does not correlate well with SO_4 or other major ions in drainages with low Se:SO_4 ratios is indicative of non-conservative Se behaviour (Se attenuation), and specifically suggests that Se is being attenuated by processes which do not affect SO_4, Ca or Mg. In these facilities, Se maintains its correlation with NO_3, suggesting that the primary Se attenuation process also affects NO_3. The only processes that have the potential to attenuate both Se and NO_3 relate to anaerobic reduction mechanisms (*i.e*., selenate reduction and denitrification).

In terms of NO_3 as an inhibitor of Se reduction, it is possible that elevated NO_3 concentrations inhibit Se attenuation in anaerobic zones of waste rock facilities. However, this mechanism cannot be defined with certainty as there are no direct measurements of the degree of anoxia in most waste rock facilities. Possible indicators of inhibitory behaviour include the observation of strong Se correlations with major ions (SO_4, Ca and Mg) in waste facilities characterized by elevated Se:SO_4 ratios and NO_3 concentrations. This may indicate that within these facilities Se is relatively mobile and exhibits similar (conservative) behavior as other weathering products. In Gates Formation facilities, there is little evidence of Se attenuation as inferred from Se:SO_4 ratios. Such observations may reflect the inhibition of Se reduction by NO_3, as Gates

Formation waste rock facilities generally produce a higher range of NO_3 concentrations (NO_3-N of 15 mg/L to 133 mg/L) in comparison to Gething and Mist Mountain Formation drainages.

The potential for Se remobilization via direct oxidation pathways is more difficult to identify. Such difficulties relate to the complexity in differentiating multiple oxidation pathways that share common reaction products, and the potential for auto-correlative effects relating to the flushing of soluble Se, N and S from freshly blasted rock surfaces. However, given the likelihood of suboxia on macro and/or micro-scales and the abundance of NO_3 in waste rock environment, it is possible that Se/S oxidation is variably governed by NO_3 reduction pathways. The relative importance of this secondary oxidation pathway is difficult to quantify.

Overall, results of the literature review and drainage chemistry analysis suggest that NO_3 has the potential to influence Se behaviour in coal mine environments, although the scale and magnitude of such influences are uncertain. With regards to the inhibition of Se reduction, the presence of NO_3 may be a rate limiting variable, and has relevance to both passive and active treatment systems. The role of NO_3 as an oxidizer of reduced Se and S is less clear. However, the prerequisite conditions for this process to operate (suboxia combined with NO_3 availability) are present for the majority of waste facilities examined.

Sommaire

Les composés du sélénium (Se) et les composés de l'azote (N) représentent des constituants inquiétants pour l'environnement sur les sites d'exploitation minière du charbon dans la cordillère de l'Ouest du Canada. Le Se est libéré dans l'environnement lors de l'altération des surfaces rocheuses exposées associées aux rejets miniers (p. ex. stériles, parois des mines à ciel ouvert, résidus grossiers de charbon (RGC) et résidus). À l'inverse, les charges en composés azotés reliées à la mine [nitrate (NO_3), nitrite (NO_2) et ammoniac (NH_3)] sont principalement régies par la lixiviation des résidus d'explosif associés à ceux de base d'azote.

Il existe des preuves à l'effet que, dans certains environnements, NO_3 peut modifier l'oxydation et l'atténuation du Se. Il y a plusieurs mécanismes biogéochimiques par lesquels NO_3 peut être lié à la lixiviation du Se, à sa mobilité et à son atténuation. Parmi ceux-ci : 1) réduction concurrente de NO_3 et Se par des réactions microbiologiques (mécanisme commun d'atténuation); 2) inhibition de la réduction de Se par NO_3 (maintien de la mobilité du Se); 3) mobilisation du Se lors de l'oxydation directe des minéraux (p. ex. la pyrite) par NO_3.

Afin de mieux comprendre les liens entre NO_3 et Se dans les environnements de rejets de charbon dans l'Ouest du Canada, nous avons réalisé une évaluation en deux phases : 1) étude bibliographique pertinents pour les interactions de NO_3 avec Se; 2) compilation et évaluation des données sur la chimie du drainage pour les mines du nord-est et du sud-est de la Colombie-Britannique. La chimie du drainage des rejets miniers a été compilée à partir des données sur huit sites miniers, comprenant un ensemble de données de 833 échantillons (principalement de suintements et de bassins de sédimentation). Le comportement du Se a aussi été pris en compte dans le contexte des caractéristiques des rejets et des pratiques d'exploitation, y compris de l'utilisation d'explosifs, du degré de saturation et du type de rejets (p. ex. RGC ou stériles).

Les rôles de NO_3 comme inhibiteur de la réduction du Se, ainsi que comme oxydant de la pyrite et du Se, sont documentés au moyen d'études en laboratoire et sur le terrain sur des systèmes agricoles. Lors d'expériences en laboratoire, il a été montré que l'inhibition de la réduction du sélénate en présence de NO_3 survient à des concentrations de NO_3-N aussi faibles que 1 mg/L, alors que d'autres études ont montré une réduction simultanée du sélénate et de NO_3. L'oxydation du Se et du soufre réduits par NO_3 a été observée dans l'eau souterraine chargée en Se dans des schistes du Crétacé. Ceci est appuyé par la thermodynamique de l'oxydation du soufre et du Se, qui montre que le soufre réduit (p.

ex. sulfure de fer ou pyrite) et du Se réduit (p. ex. Se^0 et Se^{2-}) peuvent être oxydés lors de processus de dénitrification.

L'importance de NO_3 pour la libération et la mobilité du Se présent dans les rejets miniers est fortement dépendante du potentiel de développement de conditions suboxiques à l'intérieur des rejets. Spécifiquement, la réduction du sélénate ainsi que l'oxydation du Se par NO_3 sont inhibées par la présence de l'oxygène atmosphérique. Les données sur le indicateurs redox du suintement des rejets miniers (NO_2, NH_3, Mn, Fe, NO_2:NO_3 et NH_3:NO_3) et sur les profils de gaz interstitiel examinées dans le cadre de la présente étude suggèrent que l'appauvrissement en oxygène est une caractéristique commune des environnements de stériles de charbon, dont l'ampleur et l'échelle sont probablement très variables. Étant donné la probabilité de conditions suboxiques aux échelles microscopique et macroscopique et la disponibilité de NO_3-N (plupart des valeurs > 10 mg/L), NO_3 a le potentiel pour modifier la remobilisation et l'atténuation du Se.

En ce qui concerne l'atténuation concurrente de NO_3 et du Se, il existe d'innombrables preuves à l'effet que les environnements anaérobies dans certains rejets miniers facilitent l'élimination du Se et de NO_3 en solution grâce à des réactions de réduction microbiologique, produisant des compositions d'eau avec des concentrations de NO_3 relativement faibles et des rapports Se/SO_4 faibles. Ceci est particulièrement évident pour les RGC et le remblayage de mines à ciel ouvert saturé, qui sont les plus propices à développer des conditions suboxiques, comparativement aux stériles subaériens. Les couples redox de l'azote (NO_2:NO_3 et NH_3:NO_3) et les concentrations de Mn exhibent une relation inverse de celle de la concentration de Se et des rapports Se/SO_4 dans certains drainages de stériles, associées à une mobilité du Se réduite dans des environnements à faible potentiel redox.

Les rejets avec des rapports Se/SO_4 relativement faibles exhibent des corrélations moins fortes entre le Se et les principaux indicateurs ioniques de l'altération des stériles (SO_4, Ca et Mg), comparativement aux rejets avec des rapports Se/SO_4 élevés. Ceux avec des rapports Se/SO_4 élevés exhibent généralement aussi de fortes corrélations entre Se et NO_3. Le fait que Se ne soit pas bien corrélé avec SO_4 ou d'autres ions majeurs dans les drainages à faible rapport Se/SO_4 indique un comportement non conservateur du Se (atténuation du Se) et suggère spécifiquement que le Se est atténué par des procédés qui n'affectent pas SO_4, Ca ou Mg. Dans ce telles installations, le Se conserve sa corrélation avec NO_3, suggérant que le principal processus d'atténuation du Se affecte aussi NO_3. Les seuls procédés ayant le potentiel d'atténuer à la fois Se et NO_3 sont reliés à des mécanismes de réduction anaérobies (p. ex. réduction du sélénate et dénitrification).

En termes de NO_3 en tant qu'inhibiteur de la réduction du Se, il est possible que des concentrations élevées de NO_3 inhibent l'atténuation du Se dans des zones anaérobies des stériles. Toutefois, ce mécanisme ne peut pas être défini avec certitude, car il n'existe pas de mesure directe du degré d'anoxie dans la plupart des haldes de stériles. Parmi de possibles indicateurs du comportement inhibiteur, on retrouve l'observation de fortes corrélations entre Se et les principaux ions (SO_4, Ca et Mg) dans les rejets caractérisées par des rapports Se/SO_4 et des concentrations de NO_3 élevés. Ceci peut indiquer que le Se est relativement mobile et exhibe un comportement (conservateur) similaire à celui d'autres produits de l'altération. Dans les haldes de la formation Gates, il existe peu de preuve de l'atténuation du Se, tel que présumé par les rapports Se/SO_4. De telles observations peuvent refléter l'inhibition de la réduction du Se par NO_3, les stériles de la formation Gates produisant généralement des concentrations de NO_3 dans une gamme plus élevées (NO_3-N de 15 à 133 mg/L) comparativement aux drainages des formations Gething et Mist Mountain.

Le potentiel de remobilisation du Se par des réactions d'oxydation directe est plus difficile à déterminer. De telles difficultés sont reliées à la complexité à faire la différence entre plusieurs voies d'oxydation, qui mettent en jeu des produits de réaction communs, et au potentiel d'effets auto-corrélatifs liés au lessivage de Se, N et S solubles à partir de surfaces rocheuses récemment exposées après explosion. Néanmoins, étant donné la probabilité de conditions suboxiques à l'échelle macroscopique et/ou microscopique et l'abondance de NO_3 dans des environnements de stériles, il est possible que l'oxydation de Se/S soit régie de manière variable par des voies de réduction du NO_3. L'importance relative de cette voie d'oxydation secondaire est défficile à évaluer.

Globalement, les résultats de l'étude bibliographique et de l'analyse de la chimie du drainage suggèrent que NO_3 peut potentiellement avoir une influence sur le comportement du Se dans des environnements de mine de charbon, bien que l'échelle et l'ampleur de telles influences soient incertaines. En ce qui concerne l'inhibition de la réduction du Se, la présence de NO_3 peut être une variable limitante et est d'intérêt pour les systèmes de traitement passifs ou actifs. Le rôle de NO_3 en tant qu'oxydant du Se et du S réduits est moins clair. Toutefois, les conditions pré-requises pour qu'un tel processus ait lieu (suboxie combinée à la disponibilité de NO_3) existent dans la majorité des installations de rejets étudiées.

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1. Introduction

1.1 Overview

Selenium (Se) and nitrogen (N) compounds represent parameters of environmental concern at coal mine operations in the cordillera of western Canada, including northeast British Columbia (B.C.), southeast B.C. and western Alberta. Se is common to most rock types, and is often enriched in coal-bearing sedimentary rocks, primarily as a substitution element in the sulfide mineral pyrite (Swaine, 1990; Ryan and Dittrick, 2001). Selenium can be released to the environment via the oxidation of sulfides in exposed rock surfaces associated with mine waste materials (*e.g.*, waste rock, exposed pit walls, coal rejects and tailings). Conversely, mine-related releases of nitrogen compounds [nitrate (NO_3), nitrite (NO_2) and ammonia (NH_3)] are primarily governed by leaching of residual blasting residues associated with the use of nitrogen-based explosives (*e.g.*, ammonium nitrate fuel oil or ANFO).

The primary concern related to Se in the environment is its potential to bioaccumulate in reproductive tissues and be transferred to eggs, resulting in potential reproductive effects such as abnormalities in developing embryos and/or embryo mortality (Ohlendorf *et al*., 1986; Palace and Wautier, 2004; Chapman *et al*., 2010). Species most at risk from Se exposure are egg-laying vertebrates (*e.g.*, fish, water birds and amphibians) that feed on fish and/or aquatic invertebrates. The most significant toxicity pathway for organisms is dietary exposure, in which reproductive adults are exposed to elevated concentrations of Se in their food sources. In this regard, the toxicity of Se can be viewed as a maternal transfer mechanism.

Given the potential for Se toxicity, in conjunction with evidence of mine-related increases in waterborne Se concentrations in southeast and northeast B.C., considerable work has been done to define the controls governing Se mobilization (Lussier *et al.*, 2003; Day *et al*., 2012; Kennedy *et al.*, 2012), attenuation (Dungan and Frakenburger, 1999; Martin *et al*., 2011) and bioaccumulation (Orr *et al*., 2012; Presser, 2013). Extensive efforts have also been invested in the assessment and development of passive and active Se treatment systems (CH2MHILL, 2010, 2013; Bianchin *et al.*, 2013; Gusek *et al*., 2008).

There is evidence to suggest that, in some environments, NO_3 can affect both the remobilization and attenuation of Se. The release of Se from coal waste materials is generally assumed to occur through the oxidation of reduced Se species (Se^{2-} and Se^0) in the solid phase and release to porewaters as more soluble and mobile oxidized Se species, namely selenate [Se^{VI}] and to a lesser degree selenite [Se^{IV}] (Lussier *et al.,* 2003). In particular, the oxidation of Se enriched sulfide minerals is considered to be a primary leaching pathway for Se, whereby both reduced sulfur and Se are oxidized to mobile oxyanions (*e.g.*, sulfate and selenate) (Day *et al.*, 2012). In aerobic environments, Se oxidation by molecular oxygen (electron acceptor) is the most thermodynamically favoured pathway. In suboxic settings, other secondary electron acceptors may become involved. In particular, there is evidence to suggest that in certain environments (*e.g.*, agricultural-influenced aquifers) NO_3 may play an important role in oxidation of reduced Se. Such conclusions are supported by both laboratory and field data that demonstrate the ability of NO_3 to oxidize both reduced Se and S (Wright, 1999; Zhang *et al.*, 2009; Torrentó *et al*., 2010; Bailey *et al.*, 2012).

Both NO_3 and selenate can be reduced and attenuated under anaerobic conditions. However, there are conflicting reports in the literature as to whether these reactions take place simultaneously or in sequence. From a thermodynamic perspective, NO_3 reduction occurs at a slightly higher redox potential than selenate, and therefore NO_3 reduction is theoretically favored given the higher energy yield of this reaction. There are a number of field and laboratory assessments that support this, showing that NO_3 removal is required before selenate reduction will take place (Oremland *et al*., 1989; Weres *et al.*, 1990; Sposito *et al.*, 1991; White *et al.*, 1991; Steinberg *et al.*, 1992; Bailey *et al.*, 2012, Bao *et al.*, 2013). There are also a number of reports that show simultaneous Se and NO_3 reduction (Macy *et al.*, 1993; Rege *et al.*, 1999, Oremland *et al.*, 1999). It is hypothesized that a threshold concentration of NO_3 exists above which selenate reduction is inhibited (Oremland *et al.*, 1991). Similarly, assessments of sediment interstitial waters indicate that Fe(III) and sulfate reduction can occur concurrently, despite the higher energy yield of the former (Postma and Jakobsen, 1996). From these studies it can be surmised that the potential for overlap in redox couples may relate to the degree of heterogeneity of the system and the availability of different electron acceptors.

The potential for NO_3 to affect Se release from waste rock dumps essentially relates to the development of anoxia in unsaturated waste rock. That is, anaerobic conditions are required for NO_3 to either oxidize reduced forms of Se or to inhibit aqueous selenate (Se^{VI}) reduction. Anaerobic reduction reactions are generally not considered when interpreting waste rock drainage geochemistry owing to the high gas permeability typical of subaerial waste rock facilities. Further, the collection of waste rock drainages from ponds or seeps is generally not conducive to preserving geochemical indicators of anaerobic conditions (*e.g.*, NO_2, NH_3, Mn^{2+} and Fe^{2+}) owing to their instability in the presence of atmospheric oxygen. These considerations make conclusions regarding the degree of anoxia in waste rock facilities qualitative in the absence of direct pore gas measurements. When pore gas profiles are collected, regions of reduced oxygen or even anoxia are commonly identified (Kuo and Ritchie, 1999; Lefebvre and Gelinas, 1995; Lefebvre *et al*., 2001; Sracek *et al.*, 2004; Milczarek *et al*., 2009). Furthermore, anaerobic microenvironments may develop on sulfide mineral surfaces where reduction reactions are taking place (De Beer *et al.*, 1994), similar to acidic microenvironments which have been found in otherwise neutral-pH mine waste environments (Blowes *et al.*, 1995; Nordstrom and Southam, 1997; Stockwell, 2002; Dockrey *et al*., 2014). In the absence of oxygen, microbial assemblages will utilize NO_3 and selenate as electron acceptors.

1.2 Study Components and Objectives

For the coal mine industry, potential links between NO_3 and Se have relevance with respect to several aspects of Se management, including: 1) source control (prevention); 2) natural attenuation; and 3) passive and active treatment. In order to provide more insight into the links between NO_3 and Se in coal mine waste environments in western Canada, a two-phased assessment was conducted:

- Literature review of information relevant to the interactions of NO_3 with Se, as well as information relating to the influence of NO_3 on the stability of Se-bearing minerals (*e.g.*, pyrite); and
- Compilation and assessment of drainage chemistry data for coal mines in northeast and southeast B.C. to assess the links between NO_3 and Se. Overall, data for four (4) mines in northeast B.C. and four (4) mines in southeast B.C. were examined.

The overall objective of this study was to assess the potential links between explosive-derived nitrogen compounds and the remobilization and attenuation of Se associated with coal mine waste materials. Specific objectives included:

- To assess the potential importance of NO_3-related Se remobilization. This objective relies on differentiating this mechanism from other leaching/oxidation pathways (*e.g.*, Se/S oxidation by oxygen);
- To assess the importance of NO_3 as an inhibitor to Se reduction;
- To examine how the above objectives relating to remobilization and attenuation may be influenced by waste type, waste storage, and explosive use;
- To assess the implications of the analysis as it relates to water and waste management; and
- To make recommendations with respect to field sampling methods as well as laboratory and field studies.

2. Selenium and Nitrogen in Mine Waste Environments

Selenium has been recognized as an element of environmental concern for several decades due to its toxicity to egg-laying vertebrates (*e.g.*, fish and water birds). However, the understanding of Se release and attenuation processes in mine settings remains limited. Selenium behavior is complicated by a number of factors, including: low concentration in host rocks (*i.e.*, typically less than 1 to 2 ppm), variable oxidation states, and diverse mineral associations (*e.g.*, organics, sulfides, sulfates and elemental forms). The behavior of nitrogen is somewhat better understood due to its widespread occurrence in sewage, explosives and fertilizer.

In this chapter, background information regarding nitrogen and Se occurrence, speciation, release and mobility in waste rock environments is reviewed. The chapter concludes with a discussion of the potential links between nitrogen and Se in mine-related settings.

2.1 Nitrogen Availability in Mine Waste

Inorganic and organic nitrogen phases are present naturally in coal mine rocks, accounting for approximately 1.5 wt.% (Bragg *et al.*, 1998). However, the leachability of such phases is limited, as indicated by low values for NO_3 in unperturbed drainages containing coal-bearing strata (NO_3-N values generally less than 0.05 mg/L). The abundance of soluble inorganic nitrogen species in mine drainages, including NO_3, NO_2 and NH_3, relates primarily to the leaching of residual blasting residues associated with the use of nitrogen-based explosives (Pommen, 1983). The behaviour and abundance of inorganic nitrogen in mine waste drainage is dependent on nitrogen speciation, reduction-oxidation (redox) potential and explosive use. These variables, as well as nitrogen behaviour in mine settings, are discussed below.

2.1.1 Nitrogen Speciation and Redox Reactions

Dissolved inorganic nitrogen typically exists in one of four oxidation states, N^{V}, N^{III}, N^{0} and N^{-III}, which speciate as NO_3^-, NO_2^-, N_2 and NH_3, respectively. The relative abundance of these species in solution is highly dependent on redox conditions, as illustrated by pe-pH relationships (Figure 2-1). The phases which are stable under the greatest range of pe-pH conditions are NO_3 and NH_3. Dinitrogen gas (N_2) is relatively insoluble, and its formation results in nitrogen loss to the atmosphere. Nitrite is highly soluble; however, its relatively narrow stability range precludes it from dominating nitrogen speciation under most pe-pH conditions.

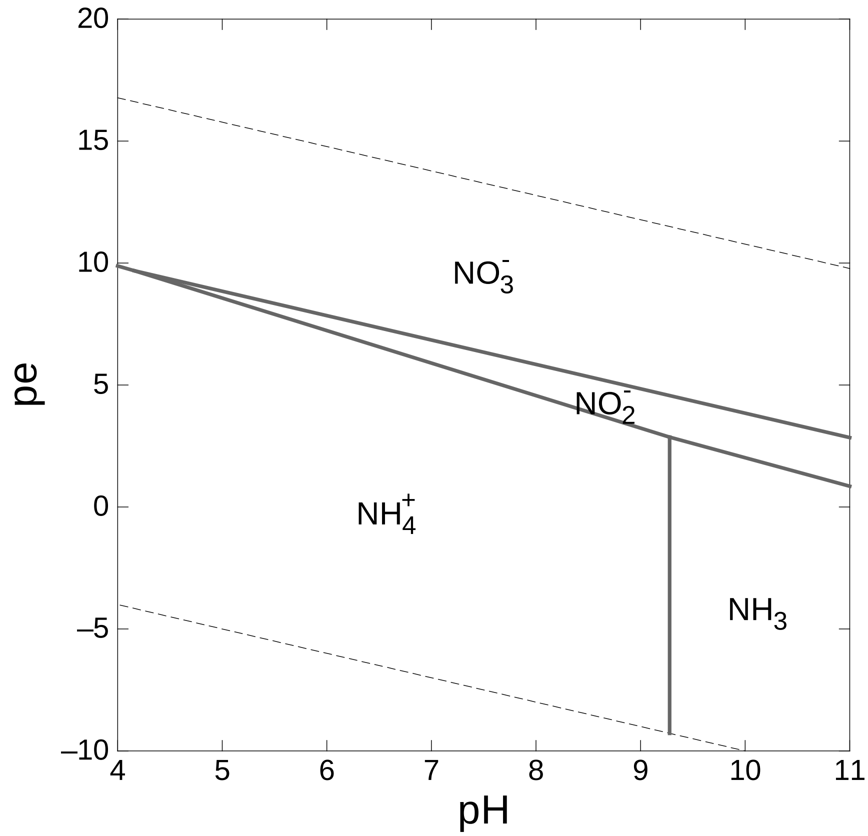


Figure 2-1: Nitrogen pe-pH speciation diagram in Fe-S system at 25°C; assuming activities of 10^{-3}, 10^{-5} and 10^{-2} for N, Fe and S, respectively.

In the presence of oxygen, the formation and stability of NO_3 is favored. Ammonia and nitrite can be directly oxidized to NO_3 by molecular oxygen. In the absence of oxygen, microbially-mediated NO_3 reduction reactions can occur, where NO_3-N is converted to more reduced forms (*e.g.* NO_2, $N_{2(g)}$ or NH_3). Specifically, microbial populations utilize electron acceptors in order of their free energy yield (Table 2-1). In the presence of dissolved oxygen, aerobic bacteria will utilize O_2 as a terminal electron acceptor since this redox reaction affords the greatest free energy. In the absence of oxygen, however, secondary oxidants will be utilized. These, in order of their free energy yield, are NO_3^-, SeO_4^{2-}, Mn(IV)-oxides, Fe(III)-oxides and SO_4^{2-} (Table 2-1).

Table 2-1:
Oxidation/reduction reactions in order of deceasing redox potential and increasing free energy yield. Parameters in red refer to those measured in solution to infer redox conditions.

Decreasing Redox Potential ↓	**1. Oxygen (O_2) Consumption:** $O_2 + 4H^+ + 4e^- \rightarrow 2H_2O$ **2. Nitrate (NO_3^-) Reduction (Denitrification)** $2NO_3^- + 12H^+ + 10e^- \rightarrow N_2 + 6H_2O$ **3. Selenate (SeO_4^{2-}) Reduction:** $SeO_4^{2-} + 3H^+ + 2e^- \rightarrow HSeO_3^- + H_2O$ **4. Manganese Oxide (MnO_2) Reduction:** $MnO_2(s) + 4H^+ + 2e^- \rightarrow Mn^{2+} + 2H_2O$ **5. Fe Oxide (FeOOH) Reduction:** $FeOOH(s) + 3H^+ + e^- \rightarrow Fe^{2+} + 2H_2O$ **6. Sulfate (SO_4^{2-}) Reduction:** $SO_4^{2-} + 9H^+ + 8e^- \rightarrow HS^- + 4H_2O$	↑ Increasing Free Energy Yield

The most commonly observed NO_3 reduction reaction is denitrification, where NO_3 is reduced to dinitrogen gas during organotrophic cell respiration (Seitzinger 1988; Cornwell *et al.*, 1999) (Table 2-1). Other NO_3 reduction pathways include; organotrophic dissimilatory NO_3 reduction, chemoautotrophic NO_3 reduction coupled to oxidation of sulfide-sulfur or ferrous iron, and anaerobic ammonium (NH_4^+) oxidation, where NO_3 and ammonium react to produce dinitrogen gas (Burgin and Hamilton, 2007). Note that NO_2 is commonly formed as an intermediate oxidation product during either NO_3 reduction or NH_3 oxidation.

2.1.2 Explosive Use

The most common explosive in the mining industry is ANFO. In general, ANFO contains 94% ammonium-nitrate (NH_4NO_3) and 6% diesel fuel oil (simplified as CH_2). Several potential reaction pathways exist for the decomposition (combustion) of ANFO explosives. The primary products of ANFO decomposition are water (H_2O) and nitrogen oxides (NO_x), with nitrous oxide gas (N_2O) being the most prevalent as shown in Equation 1 (Vyazovkin *et al.*, 2001; Sinditskii *et al.*, 2005):

$$NH_4NO_3 \rightarrow 2H_2O + 2N_2O_{(g)} \qquad \text{(Equation 1)}$$

Nitrous oxide is relatively insoluble, and a majority is lost to the atmosphere in gaseous forms. Other potential reaction products produced during ANFO combustion include nitric oxide (NO) and nitrogen dioxide (NO_2) (Oommen and Jain, 1999). Nitric oxide and NO_2 gasses can react with liquid water and water vapour to form highly soluble nitric acid (HNO_3). To the authors' knowledge, no studies have been conducted regarding nitrogen oxide dispersion or attachment to rock surfaces and its effects on drainage chemistry in waste rock environments.

Elevated concentrations of inorganic nitrogen in waste rock drainage are generally attributed to incomplete detonation or dissolution prior to detonation of nitrogen based explosives (*e.g.*, ANFO). Ammonium-nitrate is highly soluble in water and rapidly dissociates (Revey, 1996):

$$NH_4NO_3 \rightarrow NH_4^+ + NO_3^- \quad \text{(Equation 2)}$$

Ammonium-nitrate can also directly oxidize sulfide minerals at room temperature and during detonation. Reaction products that have been found during pyrite oxidation by NH_4NO_3 include $(NH_4)_2Fe(SO_4)_2$ and $(NH_4)_3Fe(SO_4)_3$ along with other non-nitrogen bearing Fe-oxide and sulfate minerals (Nakamura *et al.*, 1994).

2.1.3 Nitrogen in Mine Environments

Relatively few studies have been published regarding the quantity of nitrogen that is deposited on blasted rock surfaces. Pommen (1983) calculated that 6% of nitrogen used at the Fording River Mine in southeastern B.C. was released to the receiving environment within a year of waste deposition, although later studies found this to be an overestimation (Ferguson and Leask, 1988).

A study of 5 coal mines in southeastern B.C. (Ferguson and Leask, 1988) observed that between 0.1% and 4.3% of nitrogen in explosives was released one year after waste deposition. Note that this widely cited study does not attempt to estimate the total soluble nitrogen inventory made available by blasting. Rather, the authors relate nitrogen release from waste rock dumps on an annual basis to explosive usage over the same time period. Therefore, these estimates are believed to be an underestimate of total explosive nitrogen residues on waste rock surfaces. Significantly higher nitrogen loss estimates (12% to 28%) were calculated by Morin and Hutt (2009) at an underground metal mine in B.C. Laboratory tests conducted on freshly blasted rock from the Diavik mine found that the nitrogen leached from blasted rock corresponded to a 5.4% nitrogen loss from blasting explosives (Bailey *et al.*, 2013), which is similar to the nitrogen losses reported within one year of waste rock deposition by Pommen (1983) and Ferguson and Leask (1988).

ANFO explosives are hygroscopic (absorb moisture), and hence their efficacy is affected by moisture content. Wet conditions can potentially result in incomplete detonation or detonation failures (Pommen, 1983). In high moisture environments, ANFO emulsions are commonly employed. Emulsion explosives are ANFO based, but include an aqueous solution supersaturated with NH_4NO_3 prill surrounded by an immiscible fuel oil.

Emulsions are generally blended with ANFO for application under wet blasting conditions. Emulsion use has been correlated with increased nitrogen release to the environment (Ferguson and Leask, 1988). This is predicted to relate primarily to the preferred use of emulsions under wet blasting conditions which are more prone to nitrogen losses. Ferguson and Leask (1988) found that mine sites using relatively little emulsion incurred N losses of 0.2%, while mine sites using mostly slurry emulsions (under wetter conditions) lost 2% to 4.3% of explosive-derived N. Nitrogen losses can also be greatly affected by explosive practices, relating to variables such as explosive quality, powder column contamination, presence of fractures/voids, improper stemming, improper decking and spills (Revey, 1996).

In coal mine environments, the leaching of residual blasting residues from rock surfaces contributes to increased soluble nitrogen content in mine waters. A study in western Canada using nitrogen stable isotopes confirmed that the source of NO_3 in the spoils is N used in blasting (Mahmood *et al*., 2014). Ammonia and NO_3 represent primary products of uncombusted ANFO, while NO_2 represents an intermediate oxidation product between NH_3 and NO_3. In this regard, all three nitrogen species can be present in mine site discharges. Given the relatively long water residence times in waste rock environments, and the aerobic conditions commonly present, NO_3 tends to dominate the nitrogen inventory in waste rock drainages. In waste rock seepages at coal mines in western Canada, NO_3-N concentrations can range from 5 to over 100 mg/L depending on the size and age of the waste rock dump.

2.2 Selenium Occurrence and Geochemistry in Coal Mine Environments

2.2.1 Selenium Speciation and Occurrence

Selenium occurs naturally in all rock types, but tends to be enriched in sedimentary rocks associated with coal deposits. In coal-bearing strata, Se is predicted to occur as reduced forms (Se^{-II} oxidation states) in association with sulfur (Lussier *et al*., 2003). The speciation of Se in water is highly dependent on redox potential, pH, ionic strength, biological/microbial interactions and kinetic limitations (rates of reactions). In particular, redox conditions have been shown to present a dominant variable governing the speciation of Se in aquatic systems (Masscheleyn and Patrick, 1993). In oxygenated surface waters at circumneutral pH, selenate (SeO_4^{2-}; Se^{VI}) is predicted to dominate the Se species assemblage. At lower redox potentials, selenate is reduced to selenite (SeO_3^{2-}; Se^{IV}) (Oremland *et al*., 1991). In theory, selenate (Se^{VI}) reduction should occur at a slightly lower redox potential to that of NO_3 reduction, and hence only mildly suboxic conditions are required for Se reduction (Table 2-1).

Selenite has a greater tendency for adsorption and therefore exhibits reduced mobility in comparison to selenate. In reducing environments, elemental Se (Se^0) and organic/inorganic selenides (Se^{-II}) become important, and their formation can present a dominant accumulation pathway in reducing environments (Zhang and Moore, 1997; Martin *et al.*, 2011). The formation of volatile methylated species such as dimethylselenide by fungi, bacteria and algae and subsequent volatilization of gaseous Se to the atmosphere can also be important mechanisms of Se loss from aquatic environments (Hansen *et al.*, 1998; Dungan and Frakenberger, 1999). A pe-pH diagram summarizing Se speciation relationships is provided in Figure 2-2.

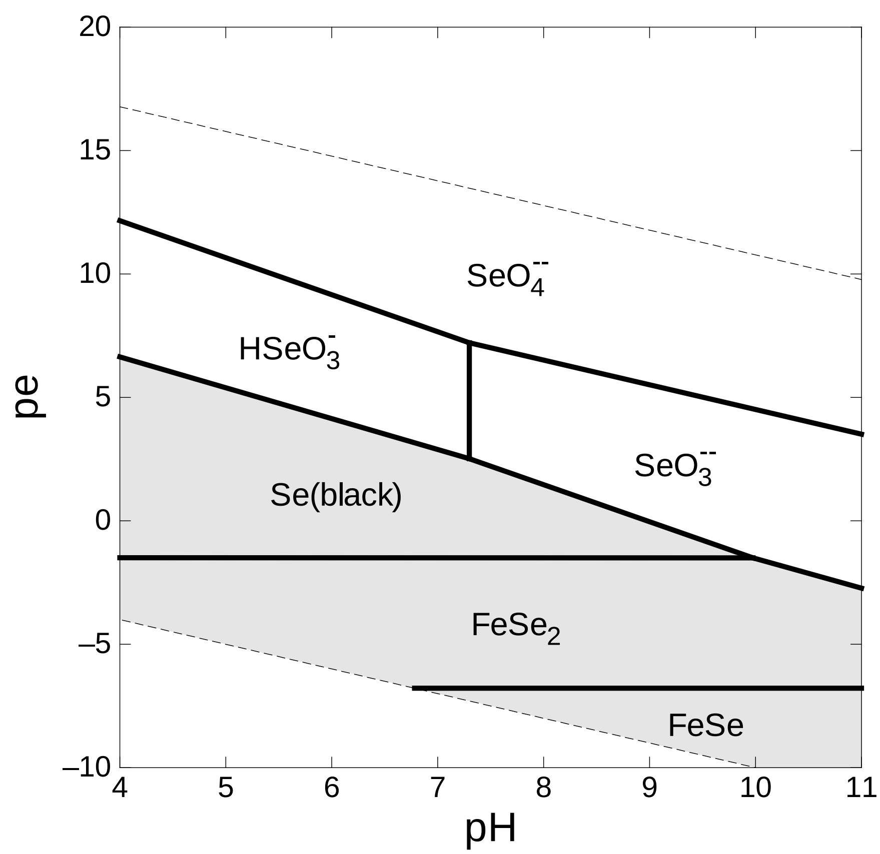


Figure 2-2: Selenium pe–pH speciation diagram for in Fe-S system at 25°C; assuming activities of 10^{-6}, 10^{-4} and 10^{-2} for Se, Fe and S, respectively.

Selenium is typically found in crustal rocks in very low concentrations, with average crustal abundances ranging from 0.05-0.09 ppm (Turekian and Wedepohl, 1961). Coal is relatively enriched in Se, although it typically occurs in trace quantities (approximately 1-2 ppm) (Thomas and Fariborz, 2000). Discrete Se minerals have been identified in coal, although they tend to be rare. Rather, Se is typically found as a substitution element for S

(Minkin *et al*., 1984). Yudovich and Ketris (2006) showed that Se occurs as organically-complexed forms analogous to chemically reduced sulfur in coal materials, which could be released by oxidation.

In carboniferous formations, Se is predominantly associated with sulfide minerals and organic matter. However, the relative abundance of Se between these two reservoirs has been found to be quite variable. For instance, in Powder River Basin coals, a majority of Se (~75%) has been found to be associated with organic carbon (Finkelman and Gross 1999), while investigations in waste rock from southeastern B.C. found that most (~80%) Se is associated with sulfide minerals (*e.g.*, pyrite) (Ryan and Dittrick, 2001; Kennedy *et al.*, 2012). In mine waste materials at coal mines in western Canada, including waste rock, CCR and tailings, the abundance of Se varies with rock type, with the lowest concentrations occurring in sandstones (~1 mg/kg) and higher concentrations occurring in finer-grained lithologies (*e.g.*, typically 2 to 4 mg/kg in mudstones).

The affinity for Se uptake in sulfide minerals is variable. A survey of published Se content in sulfides found the general order of decreasing Se/S ratios to be galena, chalcopyrite, pyrite, pyrrhotite and sphalerite (Fitzpatrick, 2008). Although pyrite and pyrrhotite generally have lower Se concentrations than galena and chalcopyrite, they can generally be expected to contain a majority of sulfide associated Se due to their increased abundance in most settings.

2.2.2 Selenium Release Mechanisms

Due to the abundance of calcareous rock types, most coal mines in the Canadian Rocky Mountains produce neutral pH drainages, although acid generating sulfide minerals are present. In this regard, environmental concerns relating to Se in western Canada are typically associated with neutral-pH metal leaching rather than acid rock drainage.

Factors controlling the remobilization of Se from coal mine wastes are not completely understood. However, there are two pathways that warrant consideration:

- Sulfide mineral oxidation; and
- Dissolution of primary sulfate minerals.

Each of these is discussed in turn below. Differentiating between the various mechanisms of Se release is difficult given that all processes are predicted to liberate the same suite of reaction products (*i.e.*, Se, SO_4, Ca, Mg and alkalinity). The presence of Ca and Mg, for example, is not unique to sulfide oxidation since carbonate mineral dissolution will occur regardless of whether acid is produced by sulfide mineral weathering.

2.2.2.1 Sulfide Mineral Oxidation

The oxidation of sulfide minerals (*e.g.*, pyrite) is generally considered to be the primary leaching pathway for Se, whereby both reduced sulfur and Se are oxidized to mobile oxyanions (*e.g.*, sulfate and selenate) (Day *et al.*, 2012). Under neutralizing conditions typical to coal mine settings in western Canada, non-acidic leachates are generated containing Ca, Mg, CO_3, SO_4 and selenate.

The chemical reaction by which pyrite (FeS_2) is broken down to dissolved iron and SO_4 by reaction with water and molecular oxygen is referred to as oxidation. The sulfide (S^{2-}) in pyrite is converted to SO_4, and Se contained in the pyrite is similarly converted from selenide (Se^{2-}) to selenate (SeO_4^{2-}) or selenite (SeO_3^{2-}). While oxygen is not necessarily required to be the oxidant, under atmospheric conditions, it is the most energetically favourable oxidant for the reaction to proceed. Oxidation reactions involve a net loss of electrons. Specifically, the oxidation of sulfide to sulfate produces or “donates” 14 electrons when the reaction proceeds to the right (as per Equation 3):

$$FeS_2 + 8H_2O \rightarrow Fe_2^{+} + 2SO_4^{2-} + 16H^{+} + 14e^{-} \qquad \text{(Equation 3)}$$

For the oxidation reaction to proceed, another balancing reducing reaction must receive or “accept” the electrons donated from pyrite to an electron acceptor (oxidant). There are numerous possible oxidants that may undergo reduction. For example, oxygen can be reduced to water:

$$½O_2 + H^{+} + e^{-} \rightarrow H_2O \qquad \text{(Equation 4)}$$

Alternatively, NO_3 can be reduced to nitrogen gas:

$$NO_3^{-} + 6H^{+} + 5e^{-} \rightarrow ½N_2 + 3H_2O \qquad \text{(Equation 5)}$$

The ability for any of these oxidants to accept electrons depends on the redox potential. Under aerobic conditions (presence of molecular oxygen), the oxygen reaction is favoured over the NO_3 reaction, due to the higher free energy yield of the former. The presence of oxygen will inhibit the ability of the NO_3 reaction to proceed.

The availability of oxygen in the majority of coal waste rock dumps is generally assumed to be non-limiting. As a result, oxidation of sulfides in waste material should primarily involve oxygen. However, zones of oxygen depletion (anaerobic zones) are commonly observed in the interiors of waste rock facilities when gas concentration profiles are measured (Kuo and Ritchie, 1999; Lefebvre and Gelinas, 1995; Lefebvre *et al.*, 2001; Sracek *et al.*, 2004). In such zones NO_3 has the potential to serve as the primary oxidant. The occurrence and size of zones of oxygen depletion in waste rock environments is highly variable between different waste rock facilities and is difficult to estimate with predictive modelling.

On a smaller scale (*e.g.*, millimetre to micrometre-scale), suboxic conditions can develop on rock surfaces associated with variability in the local environment. These small scale anaerobic environments may develop in zones of elevated sulfide content, or on sulfide mineral surfaces themselves. For instance, sulfide minerals crusted by secondary weathering products or biofilms will inhibit oxygen diffusion to the sulfide mineral surfaces (Nicholson *et al.,* 1990; Bernstein *et al.,* 2013), potentially providing an environment amenable to anaerobic reduction reactions to take place. Low redox potential microenvironments are analogous to acidic microenvironments which have been found to exist on sulfide mineral surfaces in otherwise neutral-pH mine waste environments (Southam and Beveridge, 1992; Blowes *et al*., 1995; Nordstrom and Southam, 1997; Kawano and Tomita, 2001; Mielke *et al.,* 2003, Miller *et al.*, 2009; Dockrey *et al*., 2014).

Given the potential for oxygen limitation on either macro or micro scales within waste rock environments, there is the potential for oxidants other than oxygen to participate in sulfide mineral oxidation reactions. Of the secondary oxidants available, NO_3 represents the next most favoured reaction in terms of its free energy yield. Further, NO_3 is typically present in abundance within waste rock settings. Collectively, it can be assumed that the oxidation of sulfide minerals by NO_3 may be relevant under certain environmental conditions. Although this process has not been confirmed in field scale studies in mine environments, there have been a number of field studies documenting sulfide oxidation by NO_3 in aquifers impacted by agriculture runoff (Postma *et al.,* 1991; Pauwels *et al.,* 2000; Schwientek *et al*., 2008; Zhang *et al*., 2009; and Torrentó *et al.,* 2010). Similarly, Se release has also been noted in aquifers receiving high NO_3 concentrations in field and laboratory settings (Wright, 1999; Bailey *et al.,* 2012). This topic is discussed further in Section 2.3 (Relationship between NO_3 and Se in coal mine environments).

2.2.2.2 Dissolution of Primary Sulfate Minerals

In this context, primary phases refer to pre-existing minerals that were present prior to their excavation or exposure during mining, and may contain Se substituted for sulfur. The forms of Se in such sulfate phases is unknown, but likely comprise selenate (SeO_4^{2-}) and/or selenite (SeO_3^{2-}). The main sulfate minerals that may incorporate Se in mine settings include gypsum ($CaSO_4 \cdot 2H_2O$, Fernández-González *et al.,* 2006) and barite ($BaSO_4$, Andara *et al*., 2005). Selenium can also substitute for carbonate ions in the structure of calcite (Reeder *et al.,* 1994; Staudt *et al.,* 1994). The solubility of sulfate minerals and the kinetics of their dissolution would be expected to control the release of Se.

2.2.3 Selenium Mobility and Attenuation

Selenate (SeO_4^{2-}) is the most oxidized form of Se, and is the most favorable oxidation state under aerobic conditions generally required for sulfide oxidation. Selenate behaves relatively conservatively in solution and Se can be expected to remain largely unreactive along aerobic flow paths due to the limited sorption of selenate and limited potential for the precipitation as secondary mineral phases. Co-precipitation of selenate in sulfate minerals such as gypsum (Fernández-González *et al.,* 2006), barite (Andara *et al.*, 2005) and calcite (Prieto *et al.,* 2013) has been proposed under aerobic conditions. However, these mechanisms are likely limited by the high solubility of gypsum in settings containing abundant ankerite/dolomite ($Ca(Fe,Mg)(CO_3)_2$) and the low abundance of barium in source rocks to support barite precipitation (Day *et al.*, 2012).

Under suboxic to anoxic conditions, the potential for Se attenuation is greatly enhanced. In suboxic environments, Se is amenable to a suite of microbially-mediated processes that favour the reduction of Se^{VI} and removal of dissolved Se from solution, including: 1) adsorption of selenite to other mineral surfaces; 2) precipitation of elemental Se; and 3) precipitation of Se as inorganic/organic selenides (Masscheleyn and Patrick, 1993). In coal mine settings in western Canada, the passive removal of Se has been shown to occur in mine-influenced wetlands (Martin *et al.*, 2011), saturated backfill contained within flooded open pits (Bianchin *et al.,* 2013) and in stratified pit lakes (Martin *et al*., 2013).

2.3 Relationship between Nitrate and Selenium

Much of the state of knowledge linking the behaviour of Se and NO_3 originates from laboratory and field studies of systems impacted by agricultural activities. Although agricultural settings are not directly comparable to waste rock environments, similar geochemical principles apply. In response to Se-induced mortality, congenital deformities, and reproductive failures in aquatic birds discovered at Kesterson Reservoir (Ohlendorf *et al.*, 1986), the U.S. Department of the Interior implemented the National Irrigation Water Quality Program to study the effects of irrigation drainage on water resources and on fish and wildlife (Deason, 1986). Early studies linked the mobilization of Se from Se-rich parent rocks (*e.g.*, Cretaceous shales) to irrigation activities (Seiler *et al.*, 1999), although specific connections to the role of NO_3 were not defined. Subsequent laboratory and field investigations highlighted the potential role of NO_3 in influencing the remobilization, fate and transport of Se in groundwater systems (*e.g.,* Wright, 1999; Bailey *et al.*, 2012). In the following sections, the relationships between nitrate and Se are discussed with respect to: 1) nitrate as an inhibitor of Se reduction; 2) nitrate as an oxidant of reduced sulfur and Se; and 3) the implications of these relationships in coal mine settings.

2.3.1 Nitrate as an Inhibitor of Selenium Reduction

Anaerobic reduction of selenate has been found to be an effective means of Se remediation. Considering that selenate is generally present in trace quantities and is reduced at a similar redox potential as NO_3, selenate reduction is often considered a side reaction of denitrification (Watts *et al.,* 2005). However, field and laboratory studies provide conflicting evidence as to whether NO_3 and selenate reduction occur simultaneously or in sequence.

From a thermodynamic perspective, NO_3 reduction occurs at a slightly higher redox potential than selenate (Table 2-1), and therefore NO_3 reduction is theoretically favored given the higher energy yield of this reaction. The inhibition of selenate reduction by the presence of NO_3 has been shown in both field and laboratory settings. In terms of laboratory experiments, a body of literature exists that demonstrates the ability of NO_3 to inhibit selenate reduction (Oremland *et al.*, 1989; Weres *et al.,* 1990; Sposito *et al*., 1991; White *et al.,* 1991; Steinberg *et al.,* 1992; Bailey *et al.,* 2012, Bao *et al.,* 2013). For example, Baily *et al*. (2012) showed inhibition of selenate reduction at NO_3 concentrations as low as 1 mg/L (NO_3-N). Similarly, in a field-based study of a Se-contaminated aquifer in the Lower Arkansas River Valley (Colorado), the retention of selenate in solution along groundwater flow paths was attributed to the presence of elevated NO_3 associated with agriculture activities (Gates *et al.,* 2009). In both of these papers, the presence of NO_3 was highlighted as a limiting factor with regards to the potential for the natural attenuation of Se via microbially-mediated reduction of selenate to reduced forms. It is hypothesized that NO_3 inhibits Se reduction by its higher reduction potential and/or by decreasing selenate reductase activity (Bao *et al.*, 2013).

Other studies have identified simultaneous reduction of NO_3 and selenate. Specifically, a number of laboratory studies have demonstrated mixed and pure bacterial cultures capable of simultaneous reduction of NO_3 and selenate (Macy *et al.*, 1993; Rege *et al.*, 1999, Oremland *et al.,* 1999). Field studies have also identified the occurrence of selenate reduction in the presence of NO_3-N concentrations as high as 8 mg/L (Oremland *et al.*, 1991). Selenate reduction in a denitrifying groundwater system was also identified by Bianchin *et al*. (2013). However, NO_3-N concentrations were <1 mg/L, making it unclear as to whether selenate and NO_3 reduction occurred concomitantly. Oremland *et al*. (1990) posited that there is a threshold concentration of NO_3 at which NO_3 and selenate reduction can occur simultaneously. However this threshold is yet to be defined, is likely variable between different environments, and also likely influenced by the NO_3:Se concentration ratio.

A recent bioreactor study by Zhao *et al.* (2014), found that NO_3 could inhibit selenate reduction under electron acceptor (H_2) limiting conditions, while complete reduction of NO_3 and selenate occurred when the electron acceptor (H_2) was non-limiting. These results support earlier findings *(e.g.*, Oremland *et al.*, 1989; Weres *et al*., 1990) that demonstrated the inhibition of selenate reduction by NO_3. Zhao *et al.* (2014) achieved simultaneous selenate and NO_3 reduction when NO_3 loadings were sufficiently low to allow complete consumption within the bioreactor. This result suggests that near complete removal of NO_3 is required for significant selenate reduction to occur.

Based on results in the literature, the potential role of NO_3 as an inhibitor of selenate reduction in mine waste environments is uncertain. This uncertainty relates to the variable results observed in controlled laboratory experiments as well as the complexity of waste rock environments. Considering the high degree of spatial heterogeneity in waste rock settings, some degree of selenate reduction may occur in zones of denitrification. However, the potential for elevated NO_3 concentrations to inhibit selenate reduction in anaerobic zones must also be considered.

2.3.2 Nitrate as an Oxidant of Reduced Sulfur and Selenium

The role of NO_3 as an oxidant of both reduced sulfur (*e.g.*, pyrite) and reduced Se (*e.g.*, selenide) has been examined through theoretical, laboratory and field based approaches. Thermodynamic calculations indicate that reduced sulfur and Se (*e.g.*, Se^0 and Se^{2-}) can be oxidized by NO_3 and NO_2, both of which serve as electron acceptors (Garrels and Christ, 1965). The oxidation of reduced S (in pyrite) by NO_3 can be described by Equation 6, while that for Se-bearing pyrite oxidation by NO_3 is shown as Equation 7.

Pyrite oxidation by NO_3:

$$5FeS_2 + 14NO_3^- + 4H^+ \rightarrow 5Fe^{2+} + 10SO_4^{2-} + 7N_2 + 2H_2O \qquad \text{(Equation 6)}$$

Se-bearing pyrite oxidation by NO_3:

$$5Fe(Se,S)_2 + 14NO_3^- + 4H^+ \rightarrow 5Fe^{2+} + 10(SeO_4^{2-}, SO_4^{2-}) + 7N_2 + 2H_2O \qquad \text{(Equation 7)}$$

As described in Section 2.2.1 (Selenium Speciation and Occurrence), Se may be hosted in coal-bearing rocks in association with both pyrite (as Se substituted for sulfur) and as discrete metal/organo selenides. Accordingly, both Equations 6 and 7 have potential relevance to the remobilization of Se in coal mine environments.

On a laboratory scale, Wright (1999) examined the oxidation of Se by NO_3 in batch solutions containing Cretaceous shales and varying concentrations of NO_3. Under controlled conditions in the absence of oxygen, the data showed that Se was oxidized by NO_3, with calculated oxidation rate constants increasing with increased NO_3

concentration. The author concluded that proper management of nitrogen-based fertilizer applications in areas containing Se-rich parent rocks may help to control the oxidation and mobility of Se in groundwater systems.

In another laboratory based study, anaerobic batch and flow-through experiments were performed to assess the links between pyrite oxidation and NO_3 reduction (Torrentó *et al*., 2010). The results demonstrated the oxidation of pyrite by NO_3 in the presence of autotrophic denitrifying bacterium *Thiobacillus denitrificans*, with pyrite serving as the sole electron donor. Nitrate reduction rates and NO_3 removal efficiencies were dependent on pyrite grain size, initial NO_3 concentration and pH.

In terms of field studies, the link between pyrite oxidation and denitrification was investigated by Schwientek *et al.* (2008) in a groundwater system impacted by agricultural runoff. The results of nitrogen and sulfur isotopic analysis in groundwater suggested denitrification was coupled to pyrite oxidation. In another combined field (agricultural based) and laboratory study, the inhibition of selenate reduction in the presence of NO_3, as well as the oxidation of reduced Se from shale through denitrification, were investigated (Bailey *et al.*, 2012). Groundwater samples collected from an alluvium-shale interface suggested that elevated levels of selenate could be attributed, in part, to autotrophic denitrification. This conclusion was supported by laboratory studies that showed the importance of denitrification in governing the release of both selenate and sulfate from shale materials (Bailey *et al.*, 2012).

2.3.3 Implications for Coal Mine Settings

The role of NO_3 as an inhibitor to Se reduction, as well as an oxidant for the oxidation of pyrite and Se, is supported by thermodynamic, laboratory studies and field-based assessments. Such processes may have relevance to coal mine environments. Overall, the importance of NO_3 in affecting Se release and mobility from waste rock facilities will be strongly tied to the potential for suboxic conditions to develop in waste rock interiors. Specifically, NO_3 will only be relevant in inhibiting selenate reduction in anaerobic environments, as the reduction of selenate is also inhibited by the presence of atmospheric O_2. Similarly, NO_3 will only serve as the primary oxidizing agent of reduced Se in anaerobic environments, as atmospheric O_2 is a more thermodynamically favoured electron donor.

Waste rock dumps are often assumed to represent aerobic environments, with high rates of gas exchange owing to the coarse grained nature of waste rock and development of temperature driven pressure gradients between dump interiors and the ambient atmosphere. However, zones of oxygen depletion (anaerobic zones) are commonly observed in the interior of waste rock facilities when gas concentration profiles are measured (Kuo and Ritchie, 1999; Lefebvre and Gelinas, 1995; Lefebvre *et al.*, 2001; Sracek *et al.,* 2004). It is within these zones of oxygen depletion that the relevance of NO_3 to Se release and attenuation emerges. As discussed previously, zones of oxygen depletion can exist at the macro-scale, as observed in pore gas profiles, or in microenvironments which can form on the interface of minerals containing reduced phases (*i.e*., sulfide minerals).

In terms of inhibitory effects, the reduction of Se has been shown to be inhibited at NO_3 concentrations greater than 1 mg/L (as N) (Baily *et al*., 2012). Given that NO_3-N concentrations within porewater environments of waste rock dumps are commonly between 10 and 100 mg/L, and given the common occurrence of suboxia within large waste rock dumps, such inhibitory effects may be relevant at coal mines in western Canada. Similarly, the depletion of dissolved oxygen that occurs on both micro- and macro-scales in waste rock dumps, implies that the oxidation of pyrite and Se by NO_3 is also relevant. The relative importance of these processes for coal mines in western Canada is explored in Chapter 4.

3. Mine Site Background

Coal mines considered in this report are located in the Foreland Belt of eastern B.C. The Foreland Belt includes predominantly Cretaceous coal deposits in the Peace River Coal district of northeastern B.C., and the Jurassic-Cretaceous Kootenay coalfields of southeastern B.C. These coal deposits formed along the eastern margin of the Cordilleran Orogen in deltaic, alluvial and lacustrine environments along a marine shoreline (Smith, 1989). Coals mined in this region are bituminous in grade and formed with limited marine influence. Owing to the grade and other quality parameters (*e.g.,* low sulfur content and ash yield), coal from these regions is primarily mined for metallurgical coke used in steel production. Mines in these two regions have no reported history of acid rock drainage (ARD) from waste rock as a result of the low sulfide content coupled with excess carbonate minerals. The location of mine sites considered in this study is provided in Figure 3-1.

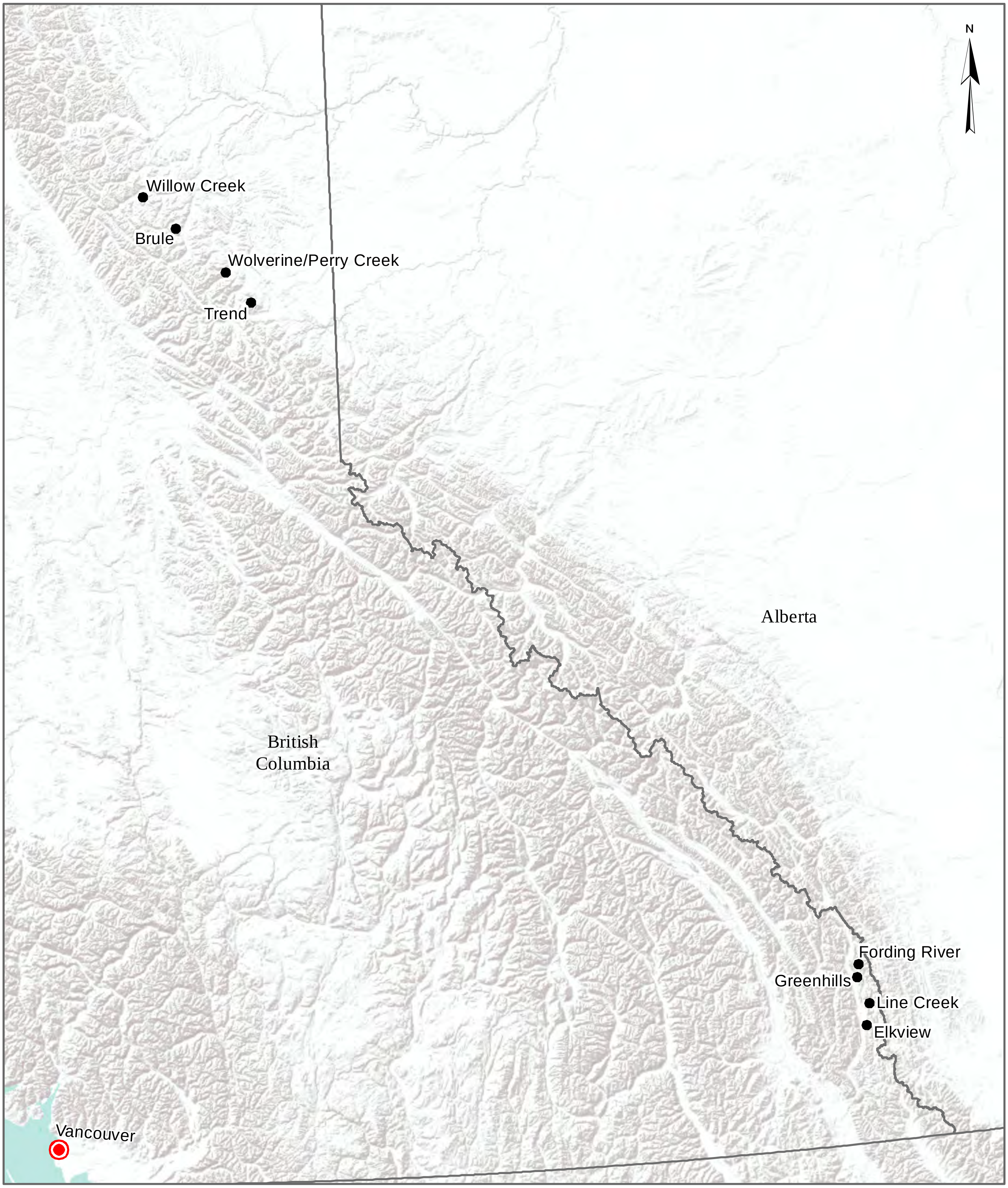
3.1 Elk Valley Coal Mines

3.1.1 Geology

In southeastern B.C. (Elk Valley), coal extraction occurs from the Mist Mountain Formation (Mist Mt. Fm.) in the Jurassic-Cretaceous Kootenay Group. This formation consists of an inter-bedded succession of predominantly non-marine sandstone, siltstone, mudstone, rare conglomerate and thin to thick coal seams (Gibson, 1985). The formation varies in thickness from 25 to 665 m and contains numerous coal seams up to 18 m thick. The coals vary in rank from low volatile bituminous to semi-anthracite in the north part of the basin. The Mist Mt. Fm. is underlain by the Morrisey Fm., which is comprised of massive sandstone believed to be deposited in a coastal environment and overlain by the Elk Fm. which is interpreted to have formed in a coastal fluvial-alluvial environment. The Mist Mt. Fm. was formed in a paleo-environment with limited marine influence.

3.1.2 Geochemistry

In the Elk Valley, a number of studies have investigated the occurrence and solid state speciation of Se in waste rock. In general, the abundance of Se varies with rock type, with the lowest concentrations occurring in sandstones (~1 mg/kg) and higher concentrations occurring in mudstones (typically 2 to 4 mg/kg). Maximum Se concentrations are typically less than 10 mg/kg.



LEGEND

- ● Mine Location
- ▭ Provincial Border

DATE SAVED:	Feb 01, 2013
DRAWN BY:	SSS
REVIEWED:	AM
VERSION:	1

Coordinate System: NAD 1983 UTM Zone 10N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

1:4,000,000

0 25 50 Km

CLIENT:

LORAX ENVIRONMENTAL

PROJECT:

TITLE: Location of Northeastern BC (Peace River) and Southeastern BC (Elk Valley) coal mines considered in this study.

PROJECT #:

FIGURE: 3-1

C:\Users\victor.LORAX\Documents\R990-4\FigX-x_Overview Mines_31Jan2013_AL_Arc10.0.mxd

Investigations using different techniques have produced a range of estimates concerning the solid state speciation of Se. Kennedy *et al*. (2012) and Lussier *et al.* (2003) estimated Se occurrence based on chemical extractions. Lussier *et al*. (2003) found that 60% to 84% of the total Se was associated with sulfides and organic matter, making no attempt to differentiate between these two reservoirs. This testwork found lesser amounts of Se associated with water soluble (2.5 to 21.3%), hydrous ferric/manganese oxides (1.0 to 10.6%) and silicate gangue minerals (5.9 to 24.7%). Note that differentiating between sulfide and organic reservoirs based on chemical extractions is difficult since these phases can be extracted under similar conditions.

An attempt was made to differentiate between organic and sulfide associated Se by Kennedy *et al*. (2012), who estimated that 80% of total Se was associated with sulfide sulfur, with lesser amounts associated with organic (~20%) and water soluble species (<2%). A more recent study by Essilfie-Dughan *et al*. (2014) employed X-ray absorption near–edge spectroscopy (XANES) radiation and electron probe micro-analyses (EMPA) analysis to identify Se solid state speciation. Selenium K-edge XANES spectra of 8 waste rock samples found that 5.7 to 36 % of Se in the waste rock occurs as pyritic Se, 29 to
48 % as organo-Se, 2.3 to 38 % as selenite (Se^{4+}) incorporated in minerals, and 1.2 to 52 % as exchangeable, oxyhydroxide and clay adsorbed forms of Se^{4+}. Specific Se bearing minerals identified with EMPA analysis (elemental X-ray mapping) were pyrite, chalcopyrite, sphalerite, barite and iron oxyhydroxides.

Due to the generally low total sulfur content (~0.2% on average) and high abundance of carbonate minerals in waste materials at mine operations in the Elk Valley, the waste materials in this region are not acid generating (Day *et al*., 2012; MacGregor *et al.*, 2012), and therefore environmental concerns relating to Se are typically in association with neutral to basic-pH leaching.

3.1.3 Mining History and Methods

Mining of bituminous-grade coals has occurred in the Elk Valley since the late nineteenth century when underground mining near the town of Fernie began. Open pit mining methods began in the 1960's. There are currently five active coal mines in the Elk Valley area, all of which are owned by Teck Resources Ltd. (Teck) (Figure 3-1). The operating mines in the area from north to south are the Fording River Operations (29 km northeast of Elkford, B.C.), Greenhills Operations (8 km northeast of Elkford, B.C.), Line Creek Operations (25 km north of Sparwood, B.C.), Elkview Mine (3 km east of Sparwood, B.C.) and Coal Mountain Operations (30 km southeast of Sparwood, B.C.). Other companies have tenure in the area but are not currently mining. Of the five Elk Valley coal mines, only four were considered in this study. These are outlined in Table 3-1.

Table 3-1:
Summary of coal mines considered in this study

Mine	Abbreviation	Coal bearing formation	Start of Operations
Elk Valley Region			
Elkview Operations	EVO	Mist Mt. Fm.	1969
Line Creek Operations	LCO	Mist Mt. Fm.	1982
Greenhills Operations	GHO	Mist Mt. Fm.	1982
Fording River Operations	FRO	Mist Mt. Fm.	1972
Peace River Region			
Willow Creek Mine	WCM	Gething Fm.	2004
Wolverine Mine	WM	Gates Fm.	2006
Trend Mine	TM	Gates Fm.*	2005
Brule Mine	BM	Gething Fm.	2004

*The Trend mine has also produced minor amounts of Gething Fm. waste rock.

Mining occurs at all four study sites by conventional drill-and-blast and truck-and-shovel methods. Raw coals are hauled and conveyed to processing plants located near each mining operation. Coarse wastes from processing are disposed in dedicated dumps located adjacent to the plants, and fine process wastes (tailings) are deposited in impoundments. The latter does not occur at all operations.

Waste rock produced from the Mist Mt. Fm. predominantly consists of non-coal sedimentary rocks, but also includes coal from seams that are too thin or of poor quality. Waste rock disposal occurs dominantly in external dumps with tipping faces varying from tens to hundreds of metres in height. Backfilling into exhausted sections of pits occurs at some locations. Historically, co-disposal of waste rock and CCR has taken place at some mines.

3.1.4 Climate

Climate conditions in the Elk Valley are variable depending on location (*e.g.*, orographic effects), elevation and aspect. Data from the government operated climate station at Sparwood, B.C. located within the Elk Valley shows an average annual temperature of 4.3°C, with monthly means ranging from -12.4°C (December) to 16.2°C (July). Mean annual precipitation averages 603 mm, with two thirds of precipitation falling as rain. Climate data for individual mine sites were not available at time of writing.

3.2 Peace River District Coal Mines

3.2.1 Geology

In the northeast Peace River district, coal extraction occurs in the Gates and Gething Formations of the Ft. St. John Group. North of the Sukunka River, mining activities primarily focus on the Gething Fm., while south of the Sukunka River mining activities are centered on the Gates Fm.. To date, most coal production has taken place from the Gates Fm. The Gates Fm. is comprised of an 80 to 300 m thick succession of non-marine to marginal marine sandstones, conglomerates and shales/mudstones. This formation contains up to 11 major coal seams as thick as 10 m (Smith *et al.*, 1994). The Gates Fm. is underlain by the Moosebar Fm. marine shales and overlain by marine shales of the Hulcross Fm. (McMechan, 1994). The Gething Fm. is a predominantly non-marine succession which varies in thickness from about 100 m south of the Sukunka River to over 1000 m in the north. The Gething Fm. consists of conglomerates, sandstones, siltstones, mudstone and shales. Although this sedimentary unit is predominantly non-marine, it does contain some marine shale end members (Legun, 1990). Over 100 coal seams of low to medium volatile bituminous coal have been identified in the Gething Fm. (Legun, 1988). The Gething Fm. is overlain by Moosebar Fm. marine shales and underlain by conglomeratic sandstones of the Cadomin Fm.

3.2.2 Geochemistry

Northeast Coal is mainly low in sulfur but there are occurrences of higher sulfur coals, especially in the Gething Fm. owing to some marine influence (Grieve *et al.*, 1996). Total sulfur content in coal seam material from the Gates Fm. ranges from 0.18 to 0.65% with a median of 0.48%, while Gething Fm. coals show a sulfur range of 0.24 to 2.49% (median of 0.79%) (Grieve *et al.*, 1996). The sulfur content of waste rock in this region is quite variable, with most materials showing values <1%. The sulfate minerals barite and gypsum have been identified in the Gates Fm., albeit at trace quantities. The dominant carbonate mineral observed in these formations is dolomite, with lesser quantities of calcite, ankerite and siderite (WCCC, 2007).

Studies regarding Se abundance and mineralogy are relatively limited compared to that of the Elk Valley region. A relationship exists between clast size and Se content in both the Gates and Gething Fm., with mudstones generally showing greater Se concentrations than coarser grained units. The highest Se concentrations are generally found immediately above or below coal seams. Median Se values in mudstones, siltstones, sandstones and coal are 3.4, 2.5, 1.7, and 1.4 ppm, respectively, as measured at the Brule Mine (Gething Fm. waste rock) (WCCC, 2005). Waste Rock at the Trend Mine (Gates Fm.) generally has between 1 and 2 ppm Se (NEMI, 2006).

The proportion of Se associated with organics *versus* sulfide minerals has not been quantified. A scanning electron microscope energy dispersive X-ray spectroscopy (SEM-EDS) analysis of Gates Fm. waste rock did not identify significant Se associated with iron sulfide minerals (*i.e.*, pyrite and marcasite) but did identify a distinct lead mineral that was highly seleniferous as an inclusion within sphalerite (WCCC, 2004). This is consistent with the greater affinity of Se for galena relative to Fe-sulfide minerals (Fitzpatrick, 2008). Furthermore, there is not a consistent relationship between sulfide-sulfur and Se in Gates Fm. waste rock (WCCC, 2004). This suggests that Se is not uniformly enriched in the sulfide mineral assemblage. There is, however, a trend of increasing solid phase Se with increasing Pb and Zn in Gates Fm. waste rock (WCCC, 2004); suggesting that Se may preferentially be associated with Pb and Zn sulfide minerals rather than Fe-sulfide minerals in this formation.

3.2.3 Mining History and Methods

Coal mining in the Peace River district of northeastern B.C. began in the early twentieth century (1908) at the King Gething Mine. Coal mining was relatively limited until the 1980's when the Quintette and Bullmoose Mines were opened. Infrastructure developments in the region led to renewed interest in the Peace River coal fields resulting in the opening of five coal mines between 2004 and 2007. Coal mines in the Peace River region considered in this report were opened between 2004 and 2006 and are outlined in Table 3-1. Most waste rock dumps in the Peace River district are constructed in lifts rather than valley fill or end dumping methods.

3.2.4 Climate

Coal mines in the northeast Peace River District are located in the western foothills of the Rocky Mountains. Temperature data from Environment Canada's Bullmoose Station near Tumbler Ridge, B.C. indicates a mean annual temperature of 2.1°C based on monitoring between 1982 and 2000. Temperature at individual mine sites will vary considerably with elevation. Precipitation is largely dictated by elevation and location relative to the Foreland Belt of the North American Cordillera (*i.e.*, orographic effects). As such, precipitation is highly variable in this region, ranging from 400 mm to 1200 mm (Natural Resources Canada, 2012). Mean annual precipitation reported for individual mine sites ranges from 579 mm (Wolverine Mine) to 1090 mm (Trend Mine).

4. Results and Discussion

Water quality data for waste rock dumps from mine operations presented in Table 4-1 are considered in this chapter. The database is described in Section 4.1 along with the methods and approach to data screening. In Section 4.2, the relationship(s) of Se with major ions, trace metals and indicators of redox potential are discussed, while Section 4.3 considers other waste facility variables that may affect Se leaching (*e.g.*, waste dump size, construction method, explosive use, rock saturation and waste type).

4.1 Approach and Methods

4.1.1 Database Description

In total, eight coal mines provided water quality monitoring data in support of this study (Table 4-1). Analysis included the examination of data collected to the end of 2012, with most data representing the period 2007-2012. The complete water quality database is provided in Appendix A, while statistics regarding specific parameters are provided throughout this chapter. Types of sampling locations considered include rock drains, seeps, sediment ponds, and boreholes. Data for receiving streams were not considered due to the confounding effects of dilution and oxidation artifacts on source water interpretations. In total, 833 water quality samples were considered in the analysis.

Background information for each of the mine waste facilities is presented in Table 4-1. This table includes the mass, waste type, water type and depositional period associated with the facility. The facility naming convention presented in Table 4-1, which is used throughout the report, identifies the mine site first (*e.g.*, Brule Mine is BM, Green Hills Operation is GHO) followed by the facility name or monitoring location (*e.g.*, Southeast Dump is SED). Note that multiple seeps have been sampled for some of these facilities. An outline of waste facility and monitoring data available for the various mine sites grouped by geologic formation is provided below. These geologic formations include the Gething Fm. and Gates Fm. in northeast B.C. (Peace River region), and the Mist Mt. Fm. in southeast B.C. (Elk Valley region).

4.1.1.1 Gething Formation

Water quality monitoring data were available for four waste rock dumps, a pit backfill dump, and a mixed waste rock/CCR facility across two mine sites (Brule Mine and Willow Creek Mine) that exploit Gething Fm. coal. The pit backfill dump is monitored with groundwater wells while the other waste facilities are monitored at seepage locations. The pit backfill facility (Brule Mine) is abutted by the BM-NED waste rock/CCR dump (Table 4-1). Some drainage from the saturated BM-DPB backfill area likely reports to the adjacent BM-NED facility as seepage.

Table 4-1:
Waste Facility Background

Mine	Geologic Formation	Facility Name	Mine/Facility ID	Waste Type	Mass (10^6 t)	Period of Deposition[1]	Period of WQ Data	Sampling Site ID	WQ Samples (n)	Water Type
Brule	Gething Fm.	Southeast Dump	BM-SED	Waste Rock	51	2008-present	2010 - 2012	SP2ES, SP2SS	26	Seep
		Northeast Dump	BM-NED	Waste Rock and CCR	15	2004-present	2009 - 2012	NDSN, NDSS, LBS	15	Seep
		Dillon Pit Backfill	BM-DPB	Pit Backfill Waste Rock	8.2	2011-present	2012	BM-11-01, BM-11-02	5	Borehole
Wolverine	Gates Fm.	South Dump	WM-SD	Waste Rock	76	2006-2010	2007 – 2011	SD1, Seep-6, 7, 8	14	Seep
		North Dump	WM-ND	Waste Rock	22	2006-2009	2007 - 2011	Seep-1, 2, 3, 4, 5, 12	21	Seep
		East Dump	WM-ED	Waste Rock	89	2007-2009	2010	Seep 9	6	Seep
Willow Creek	Gething Fm.	7C West Dump	WCM-7C	Waste Rock	9.2	2000-2012	2012	North Dump Seep	10	Seep
		4C South Dump	WCM-4C	Waste Rock	5.5	2000-2011	2006 – 2007	Seep A	2	Seep
		7P Dump	WCM-7P	Waste Rock	35	2000-2011	2012	7P SE	2	Seep
Trend	Gates Fm.	South Block Babcock	TM-SBB	Waste Rock, CCR and Tailings	77	2005-present	2007 - 2010	BT-11S, BT-13S	15	Seep
		South Block Gordon	TM-SBG	Waste Rock, CCR and Tailings	21	2009-present	2009 – 2012	GT42	14	Seep
Elk View Operations	Mist Mt. Fm.	Bodie Creek	EVO-BC1	Waste Rock	685	1993 to 2008	2007 - 2009	BC1	46	Rock Drain
		Dry Creek	EVO-DC1	Waste Rock	1,014	1969 to 2008	2007 – 2009	DC1	12	Rock Drain
		Goddard Creek	EVO-GC2	Waste Rock	2.8	1995	2007 – 2009	GC2	55	Rock Drain
		F2	EVO-F2	Pit Backfill Waste Rock	132	Prior to 1990	2010 - 2012	F2	6	Borehole
Line Creek Operations	Mist Mt. Fm.	West Line Creek	LCO-WLC	Waste Rock	211	1984 to 2011	2007 - 2011	WLC	28	Rock Drain
Fording River Operations	Mist Mt. Fm.	Clode Creek	FRO-CC1	Waste Rock	556	1983 to 2008	2007 – 2009	CC1	30	Pond
		Eagle Creek	FRO-EC1	Waste Rock	167	1975 to 1984; 1999 to 2008	2007 – 2009	EC1	33	Pond
		Kilmarnock Creek	FRO-KC1	Waste Rock	2522	1980 to 2008	2007 – 2009	KC1	29	Rock Drain
Green Hills Operations	Mist Mt. Fm.	Cataract Creek	GHO-CC1	Waste Rock	947	1984 to 2008	2007 - 2010	CC1	37	Pond
		Porter	GHO-PC1	Waste Rock	205	1986 to 2008	2007 – 2009	PC1	34	Rock Drain
		Greenhills	GHO-GCS	Waste Rock	303	1982 to 2008	1996 - 2011	GCSPD	106	Rock Drain
		Thompson	GHO-LTC	Waste Rock	208	1988 to 1990; 2001 to 2008	1996 - 2011	LTCSPD	111	Rock Drain
		Wolfram	GHO-WCP	Waste Rock	14	2003 to 2008	2005 - 2010	WCPI	41	Rock drain
		Area A	GHO-BH1	CCR	66	1982 to 2007	2009 - 2012	BH1	17	Seep

Analysis included examination of data collected to the end of 2012.

4.1.1.2 Gates Formation

There are five waste rock dumps across two mine sites (Wolverine Mine and Trend Mine) which produce Gates Fm. coal. Note that the Trend Mine has also produced some Gething Fm. waste over its mine life. Waste rock, CCR and tailings have been co-disposed at the two waste rock facilities at the Trend Mine. While the Wolverine Mine facilities contain exclusively waste rock. All of these facilities are monitored at seeps.

4.1.1.3 Mist Mountain Formation

Four mine sites considered in this study are located in southeastern B.C. and mine coal from the Mist Mt. Fm. Facilities include thirteen waste rock dumps, a CCR pile and a pit backfill facility. The water quality in the pit backfill dump is monitored with a groundwater well while the CCR pile is monitored at a seepage location. The other Mist Mt. Fm. facilities are monitored at rock drains or sediment ponds which are in some cases 100’s to 1000’s of metres down-gradient from the waste rock facilities.

4.1.2 Data Analysis

Relationships between Se and other dissolved species were assessed through correlative analysis in order to identify geochemical linkages, with a focus on the relationship between Se and NO_3, as well as the links to other ions indicative of waste rock weathering (Ca, Mg) and redox conditions (Fe, Mn, NO_2, NH_3). Specifically, linear regression analysis was conducted for Se (dependent variable) against independent variables indicative of leaching or behavioural processes. Coefficients of determination (R^2) were used to evaluate the strength of the relationships examined. Flow rates associated with the various waste rock drainages were not compiled in this study, and therefore mass loadings are not considered. Care was taken to identify the potential for auto-correlative relationships that may not reflect true mechanistic linkages. The primary thrust of the analysis was based on the relationships between Se and other dissolved parameters, with the ratio of Se to SO_4 used as an indicator of relative Se leaching. This ratio is considered a useful indicator of relative Se release as Se and SO_4 are both assumed to be released primarily from sulfide oxidation reactions. Variations in this ratio can be used to infer relative mobility of Se compared to SO_4.

It should be observed that there is a considerable degree of inherent complexity in the dataset that limits the interpretive power of the analysis. Specifically, there are a number of variables that can affect Se behaviour, including geology, region, climate, dump size, dump age, explosive use, facility type, and waste type (CCR *versus* waste rock). These variables cannot be considered independently in some cases. For instance, mine sites in southeastern B.C. tend to have older and larger waste rock dumps then mine sites in northeastern B.C. The intrinsic Se leaching potential will also vary with geologic formations and rock types mined at a given location. Therefore, most comparisons between facilities are limited to facilities within the same geologic formation.

In order to simplify the analysis, water quality data were grouped by geologic formation. This was done to reduce the difference in intrinsic metal leaching potential of the rock itself, although some geochemical variation in waste rock composition within a single geologic formation is expected. Grouping data by geologic formation also implicitly divides waste rock facilities according to region and climate, given that the Mist Mt. Fm. is restricted to southeast B.C., while the Gething Fm. and Gates Fm. are restricted to northeast B.C. Data are generally presented as plots comparing concentrations and elemental ratios; however, data for some individual waste facilities are presented in some cases to illustrate specific relationships or processes. Data values reported less than the detection limit (DL) were excluded from the correlative analysis, although they were included (value = DL) for basic statistics (*i.e.*, mean, median, percentiles).

4.1.3 Data Screening

Monitoring locations selected for this study were limited to sites receiving drainage from a single waste facility. When multiple pond or rock drain sampling locations were available for a single facility, only the sampling site located closest to the source was incorporated into the analysis. Some ponds and rock drains receive runoff from undisturbed areas between the waste facility and the sampling location, resulting in dilution of source waters at drainage monitoring points. In order to exclude diluted samples from the database, and to preferentially limit the analysis to more concentrated waters representative of waste rock interactions, only water quality samples with SO_4 concentrations exceeding 100 mg/L were considered. This cut-off value is higher than background values in the region which typically range from 5 to 50 mg/L (Minnow, 2014). Note that relatively few samples (n=27) were excluded based on this criterion, as shown in Section 4.2.1. Furthermore, some outlier data points were excluded based on professional discretion, and applied only to long-term data sets when a value clearly deviated from historic seasonal ranges. The methods of sample collection and analysis, and quality assurance and quality control steps taken by the industrial participants were not reviewed in this report.

Potential artifacts associated with the data set include those related to oxidation effects. Specifically, there is the potential for oxidation artifacts associated with waters that have been exposed to atmospheric conditions for extended periods. This may include stations that are located 100s of metres downstream from their seepage sources or sedimentation ponds. For seepages that are suboxic in nature, prolonged periods of exposure will result in the oxidation of redox sensitive species such as dissolved Fe, Mn, NH_3, NO_2 and selenite. Such processes have the potential to hinder interpretations of redox conditions as well as the behaviour of Se and N. The potential magnitude of error associated with such oxidation processes could not be evaluated.

4.2 Selenium Behaviour in Coal Mine Waste Drainage

In this section, the relationships between Se and other parameters in waste rock drainages are reviewed. The purpose of this analysis is to identify associations which can be related to geochemical processes affecting Se release and attenuation. The first subsection compares the relationship of Se with other major ions in waste rock drainage, with a focus on parameter correlations and the interrelationships between Se, SO_4 and NO_3. The relationship between Se and parameters indicative of redox conditions are then considered. The section concludes with an analysis of Se relationships with other trace elements.

4.2.1 Selenium Behavior in Relation to Major Ions

In this section, the relationship between Se and major ions in waste rock drainage is explored, with a focus on the relationship between Se, SO_4 and NO_3. The range of concentrations of these parameters and the Se:SO_4 ratios for the various facilities considered in this study are presented in Table 4-2. Note that this table excludes data from the two pit backfill facilities. These facilities are discussed in Section 4.2.4 (Effect of Saturated Backfill).

4.2.1.1 Selenium Behavior in Relation to Nitrate, Sulfate and Other Major Ions

The relationships between SO_4 and NO_3 with Se in waste rock drainage waters are illustrated in Figure 4-1 and Figure 4-2, respectively. These figures include statistics on individual waste rock facilities and individual data points grouped by geology (formation). Plotting individual data points provides a way to examine the entire dataset; however, overall trends in such plots are biased towards waste rock facilities with the most samples. R^2 values for Se with SO_4, NO_3 and other major ions (Mg, Ca, Na, alkalinity and chloride) are shown in Table 4-3.

In Gates Fm. waste rock drainage, Se shows a linear relationship with both SO_4 (R^2 = 0.74) and NO_3 (R^2 = 0.87) (Figure 4-1 and Figure 4-2). Similarly, Mist Mt. Fm. waste rock facilities generally illustrate a linear relationship between Se with SO_4 concentrations (R^2 = 0.75) (Figure 4-1). Selenium also shows a linear relationship with NO_3 in the Mist Mt. Fm. facilities (R^2 = 0.45), although not as strong as the relationship between Se and SO_4 (Figure 4-2).

Table 4-2:
Unsaturated waste facility drainage statistics for Se:SO_4 (ratio), and Se, SO_4 and NO_3 concentration. Data are provided for 90th (p90), 50th (p50) and 10th (p10) percentiles.

Mine-Facility ID	Geologic Formation	Waste Type	Se: SO_4 (µg/L : mg/L)				Se (mg/L)					SO_4 (mg/L)					NO_3–N (mg/L)				
			n	p90	p50	p10	n	n < DL	p90	p50	p10	n	n < 100mg/L	p90	p50	p10	n	n < DL	p90	p50	p10
TM-SBB	Gates Fm.	Waste Rock, CCR and Tailings	15	0.15	0.11	0.08	15	0	0.061	0.047	0.032	18	0	692	524	221	18	0	54	44	21
TM-SBG	Gates Fm.	Waste Rock, CCR and Tailings	14	0.32	0.19	0.15	14	0	0.25	0.18	0.12	32	0	1420	1180	723	32	0	170	130	87
WM-ED	Gates Fm.	Waste Rock	6	0.22	0.19	0.14	6	0	0.095	0.064	0.032	6	0	489	341	210	6	0	54	38	21
WM-ND	Gates Fm.	Waste Rock	16	0.23	0.13	0.08	16	0	0.075	0.041	0.020	21	5	591	279	134	21	1	57	15	7.5
WM-SD	Gates Fm.	Waste Rock	12	0.18	0.13	0.08	14	0	0.13	0.061	0.022	16	2	869	528	146	14	0	70	48	12.3
BM-NED	Gething Fm.	Waste Rock and CCR	15	0.16	0.08	0.04	15	0	0.051	0.027	0.015	15	0	475	378	264	15	0	13	2.5	1.6
BM-SED	Gething Fm.	Waste Rock	26	0.51	0.33	0.23	26	0	0.23	0.10	0.038	26	0	623	367	130	26	0	110	32	17
WCM-4C	Gething Fm.	Waste Rock	2	N/A	0.12	N/A	2	0	N/A	0.079	N/A	2	0	N/A	517	N/A	2	0	N/A	8.9	N/A
WCM-7C	Gething Fm.	Waste Rock	10	0.06	0.04	0.02	10	0	0.098	0.058	0.027	10	0	1860	1720	1490	10	0	5.6	4.3	2.5
WCM-7P	Gething Fm.	Waste Rock	2	N/A	0.03	N/A	2	0	N/A	0.037	N/A	2	0	N/A	1410	N/A	2	0	N/A	1	N/A
EVO-BC1	Mist Mt. Fm.	Waste Rock	45	0.29	0.21	0.15	46	0	0.13	0.093	0.059	45	0	532	418	359	33	0	42	32	18
EVO-DC1	Mist Mt. Fm.	Waste Rock	11	0.21	0.18	0.15	11	0	0.13	0.11	0.010	12	1	760	585	530	8	0	4.4	3.7	2.9
EVO-GC2	Mist Mt. Fm.	Waste Rock	52	0.17	0.11	0.09	53	0	0.025	0.015	0.011	55	2	152	130	111	47	0	1.1	0.76	0.57
FRO-CC1	Mist Mt. Fm.	Waste Rock	29	0.27	0.20	0.16	30	0	0.051	0.035	0.025	29	0	221	171	141	27	0	12	8	5.4
FRO-EC1	Mist Mt. Fm.	Waste Rock	33	0.24	0.21	0.18	33	0	0.39	0.31	0.23	33	0	1800	1500	1130	30	0	69	54	41
FRO-KC1	Mist Mt. Fm.	Waste Rock	28	0.36	0.24	0.16	29	0	0.099	0.057	0.037	29	1	405	256	127	27	0	61	37	16
GHO-BH1	Mist Mt. Fm.	CCR	15	0.03	0.01	0.00	17	0	0.032	0.0047	0.0013	17	0	1730	1020	691	18	13	0.20	<0.1	<0.085
GHO-CC1	Mist Mt. Fm.	Waste Rock	35	0.43	0.35	0.23	37	0	0.57	0.37	0.2	48	0	1440	1160	778	37	0	43	36	29
GHO-GCS	Mist Mt. Fm.	Waste Rock	80	0.22	0.18	0.11	103	0	0.10	0.042	0.016	84	3	555	321	178	79	1	4.2	1.8	0.24
GHO-LTC	Mist Mt. Fm.	Waste Rock	73	0.15	0.12	0.10	111	0	0.041	0.023	0.0033	73	0	357	256	152	73	1	4	2	0.53
GHO-PC1	Mist Mt. Fm.	Waste Rock	34	0.25	0.21	0.16	34	0	0.086	0.07	0.056	50	0	447	359	266	37	0	4.1	1.7	1.3
GHO-WCP	Mist Mt. Fm.	Waste Rock	38	0.14	0.08	0.02	40	0	0.025	0.012	0.006	38	13	301	210	110	27	0	23	8.3	2.3
LCO-WLC	Mist Mt. Fm.	Waste Rock	28	0.55	0.49	0.47	28	0	0.57	0.49	0.24	28	0	1160	975	481	28	0	40	34	19

Notes:
Data from saturated backfill facilities excluded from table.
DL = detection limit. Statistical calculations used values equivalent to the DL.
Se:SO_4 ratios not calculated for samples with SO_4 values <100 mg/L and/or Se values less than detection limit
N/A = not applicable
CCR = coarse coal reject

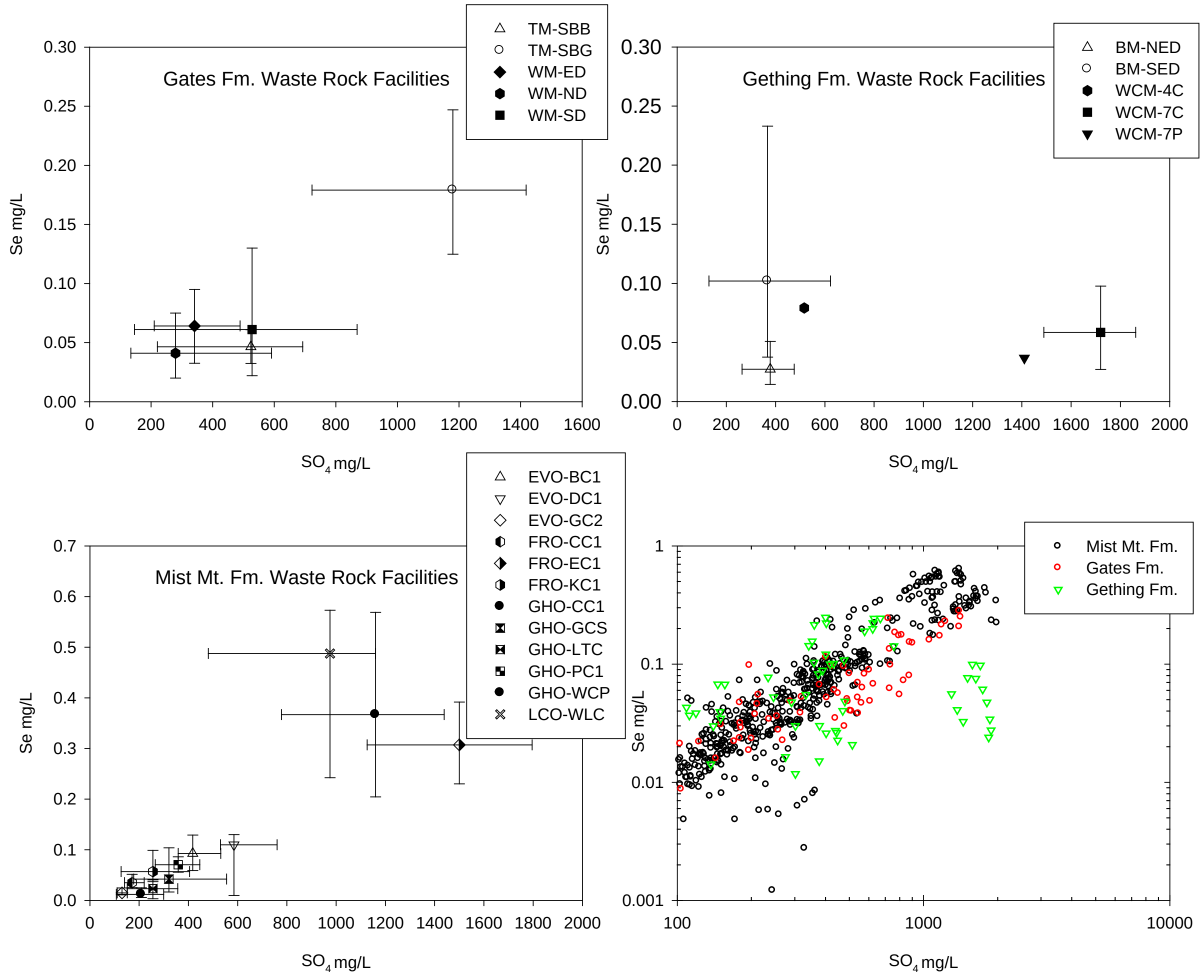


Figure 4-1: Sulfate versus Se concentration for unsaturated facility drainages containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph.

Gething Fm. waste rock facilities are unique in that drainages do not show linear correlations between Se and SO_4 (R^2 = 0.004). Selenium concentrations are actually lowest in those Gething waste facilities that produce the highest SO_4 concentrations. Gething Fm. drainages show a much stronger relationship of Se with NO_3 (R^2 = 0.64) in comparison to SO_4 (Figure 4-1 and Figure 4-2). A relationship between Se and SO_4 is generally expected as Se is predicted to occur as a replacement for S in coal mine waste rock. The lack of a linear relationship between Se and SO_4 in Gething Fm. waste rock facilities indicates that either Se is associated with other host phases in addition to sulfide minerals (*e.g.*, as discrete Se-bearing minerals) or that a process is affecting Se mobility that does not impact SO_4 (*e.g.*, attenuating processes for Se that do not apply to SO_4).

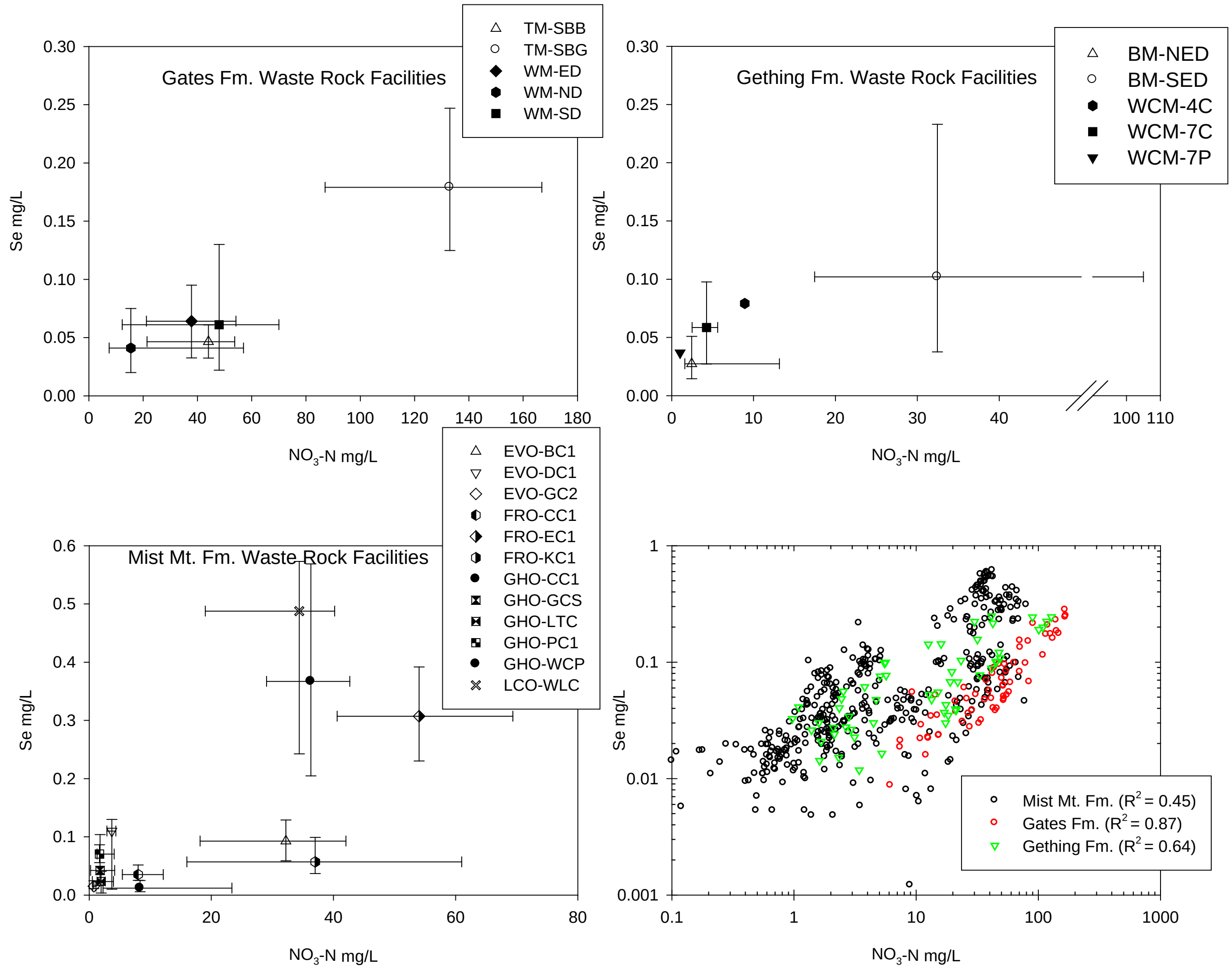


Figure 4-2: Nitrate-N versus Se concentration for unsaturated facility drainages containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph.

For most facilities, drainages which show relatively strong correlations ($R^2 > 0.5$) of Se with SO_4 and NO_3 also exhibit relatively strong correlations of Se with Mg and Ca (Table 4-3). Mg and Ca are released primarily from carbonate mineral dissolution associated with the leaching of rock surfaces by meteoric waters or the neutralization of acidity from sulfide mineral oxidation. The relatively strong correlations of Se with Mg and Ca indicate that the release and mobility of Se in these waste rock dumps is tied to that of other products associated with mine waste weathering. Other major ions in waste rock drainage (Na, Cl and alkalinity) show poorer correlations with Se (Table 4-3).

Table 4-3:
Coefficients of determination (R2) of Se with major ions in unsaturated facility drainage.

Mine/ Facility ID	Geologic Formation	Waste Type	R^2 (Se: species)						
			SO_4	NO_3	Mg	Ca	Na	T-Alk	Cl
TM-SBB	Gates Fm.	Waste Rock, CCR and Tailings	0.58	0.35	0.50	0.53	0.02	0.47	0.06
TM-SBG	Gates Fm.	Waste Rock, CCR and Tailings	0.62	0.56	0.73	0.77	0.01	0.42	0.00
WM-ED	Gates Fm.	Waste Rock	0.82	0.83	0.79	0.87	0.63	0.55	-
WM-ND	Gates Fm.	Waste Rock	0.59	0.56	0.62	0.50	0.00	0.12	0.03
WM-SD	Gates Fm.	Waste Rock	0.68	0.82	0.69	0.62	0.27	0.00	0.95
BM-NED	Gething Fm.	Waste Rock and CCR	0.00	0.55	0.03	0.03	0.40	0.15	0.04
BM-SED	Gething Fm.	Waste Rock	0.69	0.52	0.54	0.55	0.31	0.02	0.09
WCM-4C	Gething Fm.	Waste Rock	-	-	-	-	-	-	-
WCM-7C	Gething Fm.	Waste Rock	0.28	0.75	0.12	0.07	0.16	0.27	-
WCM-7P	Gething Fm.	Waste Rock	-	-	-	-	-	-	-
EVO-BC1	Mist Mt. Fm.	Waste Rock	0.29	0.05	0.04	0.01	0.01	0.57	0.25
EVO-DC1	Mist Mt. Fm.	Waste Rock	0.20	0.04	0.02	0.16	0.03	-	0.31
EVO-GC2	Mist Mt. Fm.	Waste Rock	0.34	0.58	0.27	0.08	0.00	0.50	0.01
FRO-CC1	Mist Mt. Fm.	Waste Rock	0.57	0.64	0.84	0.65	0.27	-	0.09
FRO-EC1	Mist Mt. Fm.	Waste Rock	0.34	0.19	0.48	0.66	0.08	-	0.02
FRO-KC1	Mist Mt. Fm.	Waste Rock	0.49	0.67	0.92	0.83	0.97	-	0.01
GHO-BH1	Mist Mt. Fm.	CCR	0.01	0.77	0.29	0.17	0.14	0.07	0.17
GHO-CC1	Mist Mt. Fm.	Waste Rock	0.57	0.37	0.41	0.54	-	-	0.00
GHO-GCS	Mist Mt. Fm.	Waste Rock	0.75	0.71	-	-	-	0.05	-
GHO-LTC	Mist Mt. Fm.	Waste Rock	0.68	0.77	-	-	-	0.11	-
GHO-PC1	Mist Mt. Fm.	Waste Rock	0.24	0.04	0.09	0.02	-	-	0.36
GHO-WCP	Mist Mt. Fm.	Waste Rock	0.00	0.44	-	-	-	0.39	-
LCO-WLC	Mist Mt. Fm.	Waste Rock	0.94	0.92	0.96	0.94	0.37	0.29	0.66

Note: R^2 values greater than 0.5 are shaded in light grey, values greater than 0.75 are shaded in dark grey. Number of Se and SO_4 measurements collected are presented in Table 4-2, the number of measurements for other parameters are provided in Appendix A. Values below detection limit and samples with SO_4 below 100 mg/L are excluded from calculation of R^2 values.

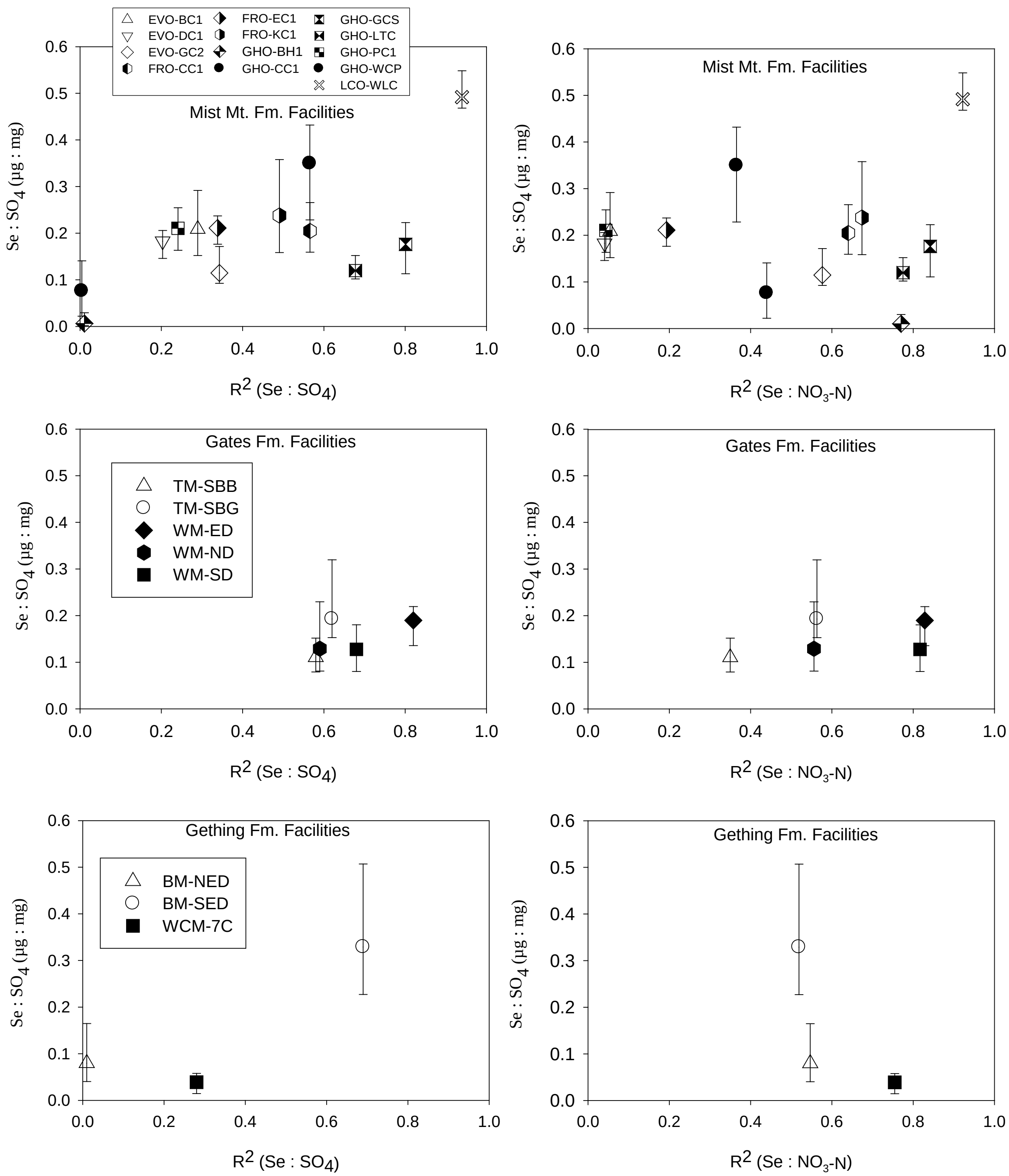


Figure 4-3: Relationship between Se:SO_4 ratios and degree of correlation of Se with SO_4, and NO_3-N as calculated by coefficient of determination (R^2) values. Data represent unsaturated facility drainages containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Se:SO_4 ratios in the Gates Fm. facilities (left), Gething Fm. facilities (center) and Mist Mt. Fm. facilities (right).

As another means to examine the relationship between Se, SO_4 and NO_3, the ratio of Se:SO_4 was plotted against R^2 values for Se with SO_4 and NO_3 (Figure 4-3). In this manner, the ratio of Se:SO_4 can be related to the strength of correlation with NO_3 and SO_4. The data demonstrate that a number of facilities with low Se:SO_4 ratios (Se:SO_4 < 0.1 µg Se/mg SO_4) have relatively strong correlations with NO_3 (R^2>0.5) but not with SO_4. This relationship is most evident at BM-NED and WCM-7C in the Gething Formation, and GHO-BH1, EVO-GC2 and GHO-WCP in the Mist MT. Fm. (Figure 4-3). These facilities generally show poor correlations of Se with Ca and Mg compared to other waste facilities (Table 4-3).

The relatively poor correlation of Se with SO_4 at low Se:SO_4 ratios indicates the operation of a Se attenuation mechanism that does not affect SO_4 or other major ion indicators of waste rock drainage (Ca and Mg). There are a number of processes that could be responsible for attenuating Se in the interior of waste rock dumps. As described in Chapter 2, potential attenuation processes include: 1) the reduction of selenate to selenite followed by adsorption; 2) reduction of selenate and precipitation as secondary phases (*e.g.*, elemental Se); 3) selenate sorption with Fe-oxyhydroxides;; 4) precipitation of Se with secondary sulfate-minerals; and 5) precipitation of selenate in carbonate-minerals. As outlined above, facilities with low Se:SO_4 ratios and poor correlations between Se/SO_4, Se/Ca and Se/Mg generally show good correlations between Se and NO_3. The fact that Se maintains its correlation with NO_3 suggests that the primary Se attenuation process also affects NO_3. The only process listed above which has the potential to attenuate both Se and NO_3 are those involving anaerobic reduction.

4.2.1.2 Selenium, Sulfate and Nitrate Ratios

In order to normalize the NO_3-Se relationship to SO_4 concentrations in different waste facilities, the relationship between NO_3 concentrations and Se:SO_4 ratios were plotted by geology in Figure 4-4. The premise is that in waste rock environments where Se remobilization is influenced by NO_3, higher Se:SO_4 ratios may be expected to be associated with higher NO_3 concentrations.

Mist Mt. Fm. facilities plot in two distinct groupings (Figure 4-4). Five facilities (LCO-WLC, FRO-EC1, GHO-CC1, EVO-BC1 and FRO-KC1) show median NO_3-N concentrations greater than 30 mg/L and exhibit the highest range of median Se:SO_4 ratios (0.21 to 0.49 µg Se/mg SO_4) in the Mist Mt. Fm. The seven other facilities show median NO_3-N concentrations of less than 8 mg/L and median Se:SO_4 ratios ranging from 0.08 to 0.20 µg Se/mg SO_4. There is no consistent trend between NO_3 and Se:SO_4 ratios, other than these general groupings of high NO_3 concentrations with high Se:SO_4 ratios, and low NO_3 concentrations with low Se:SO_4 ratios.

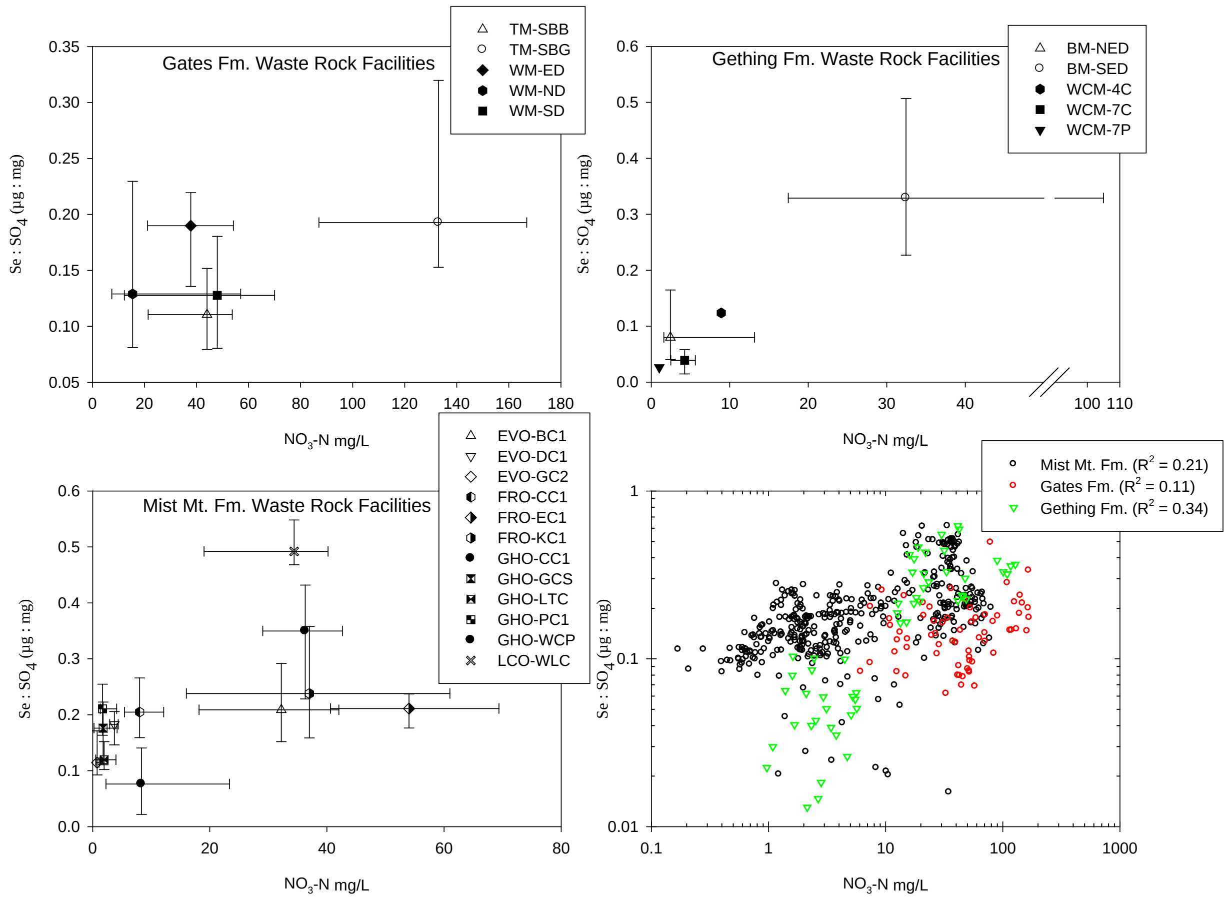


Figure 4-4: Nitrate-N concentration versus Se:SO_4 ratio in unsaturated facility drainages containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph.

Mist Mt. Fm. drainages are unique in that they are generally sampled in ponds or rock drains that can be 100's to 1000's of metres downgradient of mine waste seepage discharges. In this regard, dilution may play a role in lowering concentrations as well as Se:SO_4 ratios in these drainages. Specifically, background waters generally show Se and SO_4 concentrations of <1.0 µg/L and 10 mg/L, respectively. Given that the Se:SO_4 ratio in background flows (<0.1 µg/mg) is much lower than that in source waters, dilution can be expected to lower Se:SO_4 ratios. This dilution effect, however, is predicted to be minor, particularly for screened data (where SO_4 > 100 mg/L). As an example, source waters containing 1,000 mg/L SO_4 and 500 µg/L Se (0.50 µg Se/mg SO_4) and diluted at a ratio of 10:1 (background: source), results in a decrease of the Se:SO_4 ratio to only 0.46 µg Se/mg SO_4 (*i.e.*, 8% decrease in ratio). This exercise suggests that dilution alone cannot explain the large variation in Se:SO_4 ratios observed in Mist Mt. Fm. facilities.

Drainage water quality associated with the Gates Fm. does not show a clear relationship between NO_3 and Se:SO_4 ratios (Figure 4-4). The waste facility producing the highest NO_3 concentrations also exhibits the highest Se:SO_4 ratios. However, there is no clear relationship among the other four facilities. This relationship is not necessarily dissimilar from the relationship observed for Mist Mt. Fm. drainages, which show a strong relationship between NO_3 and Se:SO_4 ratio at median NO_3-N concentrations greater than 8 mg/L. Median NO_3-N concentrations in Gates Fm. waste rock are all greater than 8 mg/L, ranging from 15 mg/L to 133 mg/L.

Gething Fm. waste facilities are unique in that they exhibit a clear linear relationship between Se:SO_4 ratios and NO_3-N concentrations (Figure 4-4). Further, Gething Fm. waste rock drainages, which show SO_4 concentrations greater than 1500 mg/L, exhibit the lowest Se:SO_4 ratios of any waste rock facility (WCM-7C in Table 4-2). The low Se:SO_4 ratio seen at WCM-7C and some other Gething Fm. facilities suggests that Se mobility is inhibited relative to SO_4. Specifically, the combination of low Se:SO_4 ratios and prominent correlations with NO_3 in some Gething Fm. waste rock drainages suggest the inhibition of Se mobility is linked to the removal of NO_3. This relationship is presumed to reflect a biogeochemical process linking the two parameters, namely the attenuation of both Se and NO_3 by a common biogeochemical process (*e.g.*, reductive processes). Overall, the low Se:SO_4 ratio at some Gething Fm. facilities implies the occurrence of Se attenuation mechanisms that do not affect SO_4.

As outlined in Chapter 2, sulfide oxidation as well as the dissolution of soluble phases associated with freshly blasted surfaces represent two possible Se mobilization processes. In order to assess the relative importance of these mechanisms, SO_4 and Se ratios normalized by NO_3 were used as indicators. Specifically, Bailey *et al.* (2013) suggests that low SO_4:NO_3 ratios may be associated with a greater contribution of water soluble SO_4 from freshly blasted surfaces also containing NO_3, while increases in the ratio are related to an increase in SO_4 released from kinetic weathering processes (sulfide oxidation). This approach was applied to the water quality data for drainages considered in this study.

A clear evolution of SO_4:NO_3 and Se:NO_3 ratios can be observed in time series plots for TM-SBG seepage (Figure 4-5), which show an increase in the SO_4:NO_3 ratio while the Se:NO_3 ratio remains relatively invariant. The increase in SO_4:NO_3 can be interpreted as an increase in the amount of SO_4 originating from sulfide oxidation, in comparison to the rinsing of water soluble SO_4 present on mineral surfaces immediately after blasting. The fact that the Se:NO_3 ratio remains relatively constant, while Se:SO_4 ratios decline, suggests that Se may be originating from other sources in addition to sulfide oxidation (*e.g.*, the dissolution of soluble Se phases). The dissolution of soluble Se phases would be predicted to have most relevance to young and active waste rock dumps, such as TM-SBG (active deposition from 2009 to present). Alternatively, the data may imply the commensurate reduction and attenuation of both Se and NO_3 within this facility.

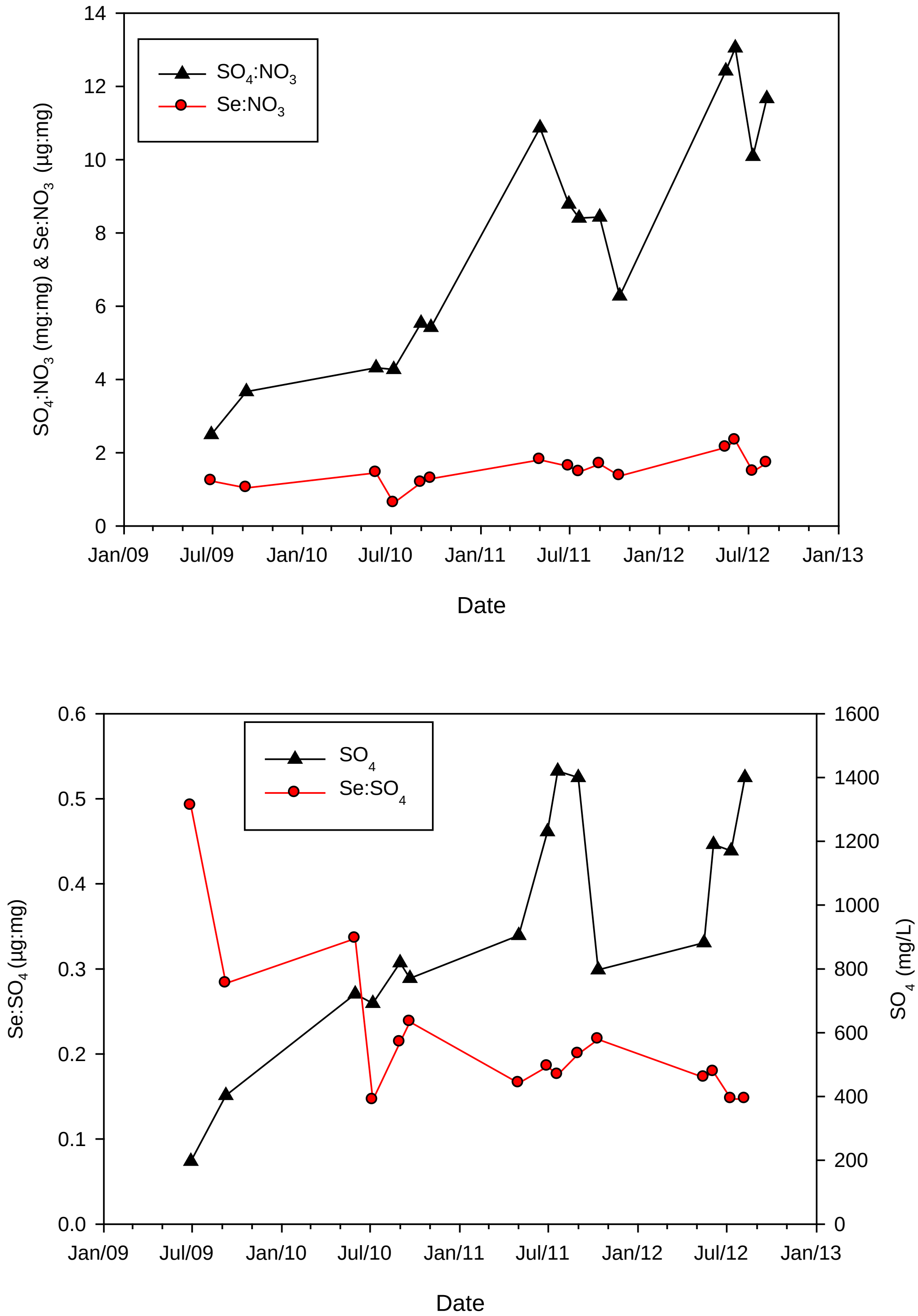


Figure 4-5: Time series of SO_4 and Se normalized by NO_3-N (top) and Se:SO_4 ratios with SO_4 concentrations (bottom) measured in seepage from TM-SBG.

4.2.2 Selenium Behavior in Relation to Redox Conditions

The relevance of NO_3 to Se release and attenuation is predicted to be dependent on redox conditions within the interior of waste dumps. Anaerobic conditions are required for NO_3 to oxidize reduced Se, as well as to be relevant in maintaining Se in solution by inhibiting selenate reduction. Nitrate and Se can also be attenuated together through reductive processes (*e.g.*, denitrification and selenate reduction), which again only take place in suboxic conditions. In the following sections, pore gas profiles for waste dumps in conjunction with water quality data for redox-sensitive species are used to describe the redox conditions for the various waste rock facilities.

4.2.2.1 Redox Conditions as Inferred from Pore Gas Concentrations

Waste rock dumps are often assumed to be aerobic environments, with high rates of gas exchange owing to the coarse grained nature of waste rock and development of temperature driven convective exchange between dump interiors and the atmosphere. However, zones of oxygen depletion (anaerobic zones) are observed in the interior of waste rock dumps when gas concentration profiles are measured (Kuo and Ritchie, 1999; Lefebvre and Gelinas, 1995; Lefebvre *et al.*, 2001; Sracek *et al.*, 2004; Milczarek *et al.*, 2009). Such macroscale zones of oxygen depletion could provide an environment amenable for anaerobic reduction reactions to occur. Even in the absence of pore gas oxygen depletion, there is the potential for biofilm micro-environments on mineral surfaces to become oxygen depleted, allowing anaerobic reduction reactions to proceed (De Beer *et al*., 1994).

Gas profiles providing direct measurements of oxygen availability are available for two Mist Mt Fm. waste facilities, including the West Line Creek waste rock pile (LCO-WLC) and the Area A CCR pile (GHO-BH1). Oxygen and CO_2 concentration profiles for GHO-BH1 and LCO-WLC are presented in Figure 4-6 and Figure 4-7, respectively. Note that a description of methods and complete results for gas profile data are presented in SRK (2012).

Pore gas profiles of LCO-WLC indicate the dump is largely aerobic, although localized zones of suboxia are evident (Figure 4-6). Two zones of oxygen depletion are observed, one between a depth of 10-30 m and the other between 60-90 m. Zones of oxygen depletion are mirrored by increases in pore gas CO_2, reflecting limitations on gas exchange with ambient air in the interior of the waste dump. The LCO-WLC waste rock dump was constructed by end dumping and valley fill methods. This facility shows the highest Se:SO_4 ratios and has produced relatively high NO_3 concentrations compared to other dumps in this study (Table 4-2). Further, Se correlates relatively well with SO_4, NO_3, Mg and Ca showing that fluctuations in Se are similar to other waste rock weathering products, possibly indicating relatively conservative Se behaviour (*i.e.*, lack of attenuation).

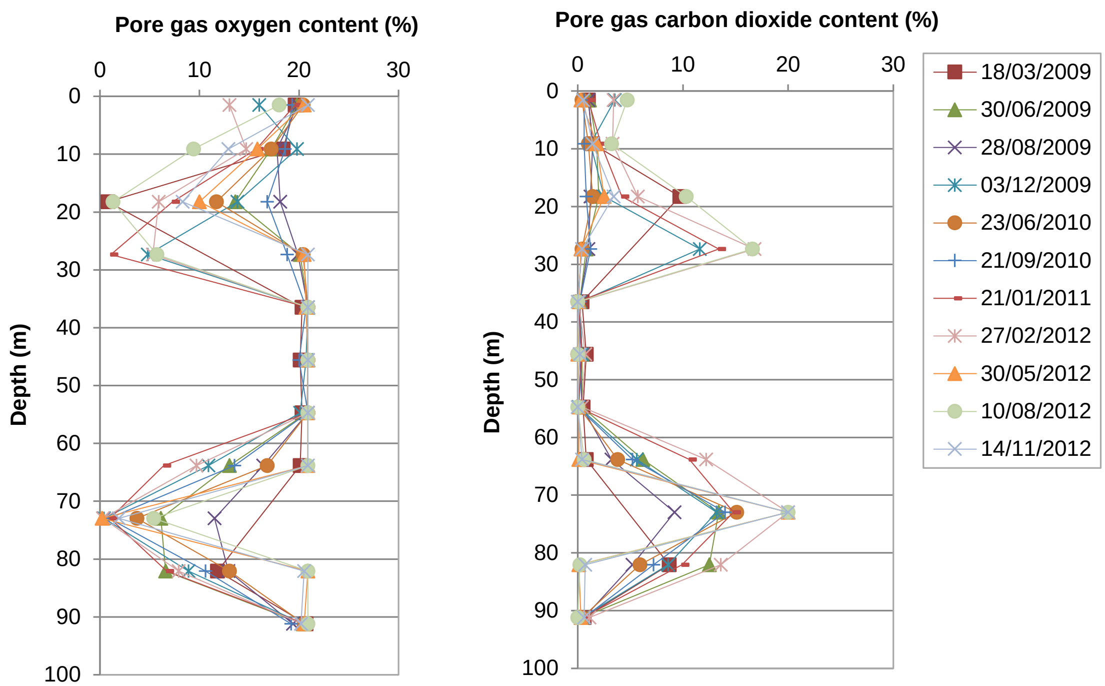


Figure 4-6: Pore gas profile of West Line Creek waste rock dump (LCO-WLC) at the Line Creek Operation (From SRK, 2012)

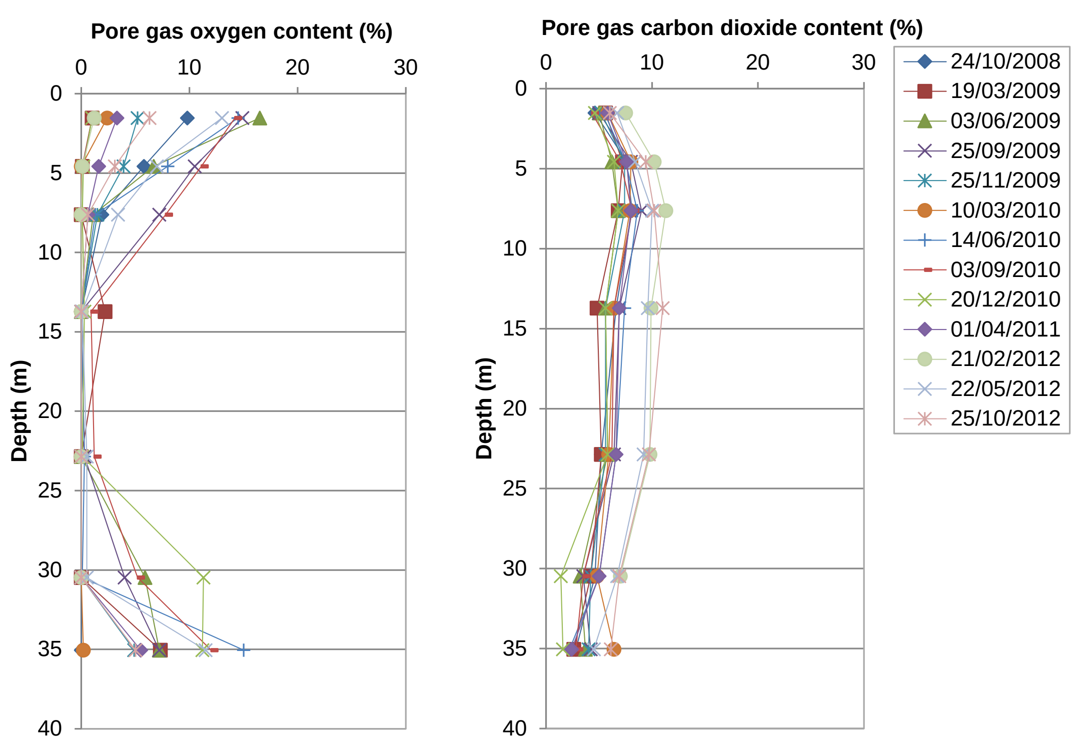


Figure 4-7: Pore gas profile of "Area A" CCR pile (GHO-BH1) at the Green Hills Operation (From SRK, 2012)

In contrast, pore gas profiles from a CCR facility (GHO-BH1) indicate predominantly anaerobic conditions at depths greater than 5 m (Figure 4-7). The drainage from this facility, which was constructed in lifts, contains relatively low Se concentrations and low Se:SO_4 ratios (Table 4-2). Further, Se concentrations in GHO-BH1 seepage have a stronger correlation with NO_3 compared to SO_4, Ca or Mg (Table 4-3), indicating that Se mobility is being inhibited relative to other waste rock oxidation products. Collectively, these data suggest the occurrence of Se attenuation in association with anaerobic reduction reactions. This assumption is supported by the pore gas profile which indicates the prevalence of suboxia (Figure 4-7). Differences between CCR and waste rock as they relate to Se mobility are further discussed in Section 4.2.5.

4.2.2.2 Redox Conditions as Inferred from Water Quality Indicators

In addition to pore gas monitoring data, redox conditions can be inferred from drainage chemistry for redox-sensitive parameters. As described in Chapter 2, microbial populations will utilize secondary electron acceptors in the absence of dissolved oxygen in order of their free energy yield (see Table 2-1). These include NO_3 [N^{V}], selenate [Se^{VI}], Mn-oxides [Mn^{IV}], Fe-oxides [Fe^{III}] and SO_4 [S^{VI}]. Reliable measurements of the reduced species generated as a result of these reactions are challenging owing to their instability in the presence of oxygen. For instance, ferrous iron [Fe^{II}] will oxidize in minutes upon exposure to atmospheric oxygen, while Mn^{II} may persist for days to weeks in oxygenated surface waters (Davison, 1993). Once oxidized, these metals will quickly precipitate from solution in neutral pH environments. The oxidation of reduced nitrogen species (NO_2 and NH_3) by atmospheric oxygen is microbially mediated, with rates of oxidation being highly variable. Given the concerns regarding stability of these parameters, there is the inherent potential for oxidation artifacts associated with the water quality data. In some cases, reported concentrations may underestimate actual values present in dump seepages.

Concentration ranges for various redox-sensitive species in waste rock drainages (Mn, Fe, NH_3 and NO_2) are provided in Table 4-4, while calculated NO_2/NO_3 and NH_3/NO_3 ratios are provided in Table 4-5. Iron and Mn both have soluble reduced forms [Mn(II) and Fe(II)], and form insoluble oxyhydroxides in their oxidized forms in neutral pH environments. Although Fe and Mn speciation data are not available, it can be assumed that most of the dissolved Fe and Mn present in waste rock drainage occurs in reduced (+2) oxidation states. An exception to this will be when Fe is associated with colloids that may pass through a 0.45 micron filter (Davison, 1993), thereby contributing to the "dissolved" fraction. The potential importance of colloidal Fe cannot be quantified.

Nitrite and NH_3 are unstable in the presence of atmospheric oxygen, and therefore elevated concentrations can provide an indication of low redox potentials in waste rock drainages. Monitoring data for three nitrogen species (NO_3, NO_2 and NH_3) representing different oxidation states [N(V), N(III) and N(-III)] were available for a number of the facilities considered. Data regarding multiple oxidation states of nitrogen provided an opportunity to consider redox couples in the assessment (Table 4-5). A redox couple is the ratio of a reduced species to its corresponding oxidized form (*e.g.*, NO_2/NO_3 or NH_3/NO_3). Although redox couples are not necessarily a good indicator of a solutions overall redox state, they can provide insight into specific redox processes taking place (Sigg, 2000). Redox processes affecting NO_3 are closely tied to Se, and therefore nitrogen redox couples are considered a relevant indicator of redox processes that may affect Se mobility.

The median concentration and 90^{th} percentile values for water quality redox indicators (Fe, Mn, NO_2 and NH_3) are plotted in Figure 4-8 while nitrogen redox couples (NO_2:NO_3 and NH_3:NO_3) are plotted in Figure 4-9. The largely anaerobic Area A CCR facility (GHO-BH1) shows the highest concentrations of NH_3, Fe and Mn, as well as the highest proportion of reduced N species (as inferred from NO_2:NO_3 and NH_3:NO_3) (Table 4-5). These results are in contrast to the West Line Creek waste rock dump (LCO-WLC), where pore gas measurements show largely aerobic conditions, with only localized zones of oxygen depletion. The LCO-WLC waste rock dump shows the lowest range of NH_3 and Mn concentrations, with Fe concentrations uniformly below detection limits (Table 4-4).

Other waste facilities show values for redox proxies intermediate to the end members defined by GHO-BH1 and LCO-WLC. This comparison suggests that most facilities have greater degrees of suboxia than LCO-WLC (Figure 4-6), but are more aerobic then GHO-BH1 (Figure 4-7).

4.2.2.3 Relationship between Redox Conditions and Selenium Mobility

In this section, the relationship between redox conditions and Se mobility is explored. Note that in subsequent figures, GHO-BH1 data are excluded as this facility contains exclusively CCR. The relationship between redox indicators and Se release for CCR is discussed in more detail in section 4.2.5 (Selenium Behaviour in Coal Reject).

Due to the relatively low redox potential required to support Fe(II) stability and the rapid kinetics of Fe(II) oxidation, most samples are below detection limit, providing little insight into waste facility redox potential. The highest range of Fe concentrations are observed at EVO mine sites, with EVO-GC2 having the highest median Fe concentration of any unsaturated waste rock facility. This facility generally produces relatively low Se:SO_4 ratios (median of 0.11 µg/mg) and the lowest NO_3-N concentrations (median of 1.0 mg/L) compared to other Mist Mt. Fm. waste rock dumps (Table 4-2), suggesting that reductive processes may be inhibiting Se mobility.

Table 4-4:
Unsaturated facility drainage statistics for redox indicators. Data are provided for 90^{th} (p90), 50^{th} (p50) and 10^{th} (p10) percentiles.

Mine/ Facility ID	Geologic Formation	Waste Type	NO_2-N (mg/L)					NH_3-N (mg/L)					Dissolved Fe (mg/L)					Dissolved Mn (mg/L)				
			n	n<DL	p90	p50	p10	n	n<DL	p90	p50	p10	n	n<DL	p90	p50	p10	n	n<DL	p90	p50	p10
TM-SBB	Gates Fm.	Waste Rock, CCR and Tailings	18	2	0.18	0.064	<0.02	14	2	0.24	0.037	<0.0066	18	15	0.0803	<0.03	<0.03	18	0	0.50	0.16	0.028
TM-SBG	Gates Fm.	Waste Rock, CCR and Tailings	28	0	0.24	0.11	0.027	13	4	0.11	0.012	<0.005	15	15	<0.03	<0.03	<0.03	15	0	0.35	0.2	0.097
WM-ED	Gates Fm.	Waste Rock	6	0	0.72	0.14	0.097	6	1	0.17	0.049	<0.0085	6	6	<0.03	<0.03	<0.03	6	0	0.13	0.12	0.069
WM-ND	Gates Fm.	Waste Rock	16	5	0.4	0.01	<0.0021	15	8	0.041	<0.01	<0.005	16	12	0.122	<0.03	<0.03	16	1	0.47	0.035	0.0082
WM-SD	Gates Fm.	Waste Rock	14	2	0.14	0.036	<0.02	13	1	0.29	0.071	0.0076	14	12	0.0307	<0.03	<0.03	14	1	0.42	0.078	0.01
BM-NED	Gething Fm.	Waste Rock and CCR	15	9	0.18	<0.01	<0.01	0	0	-	-	-	15	8	0.119	<0.03	<0.03	15	1	0.29	0.011	0.0044
BM-SED	Gething Fm.	Waste Rock	26	16	0.035	0.014	<0.01	0	0	-	-	-	26	24	<0.03	<0.03	<0.03	26	1	0.036	0.022	0.0036
WCM-4C	Gething Fm.	Waste Rock	2	0	-	0.19	-	2	1	-	0.054	-	2	2	<0.03	<0.03	<0.03	2	0	-	0.07	-
WCM-7C	Gething Fm.	Waste Rock	10	8	0.02	<0.02	<0.02	0	0	-	-	-	10	10	<0.03	<0.03	<0.03	10	0	0.0017	0.00056	0.00032
WCM-7P	Gething Fm.	Waste Rock	2	2	-	<0.02	-	0	0	-	-	-	2	2	<0.03	<0.03	<0.03	2	1	-	0.011	-
EVO-BC1	Mist Mt. Fm.	Waste Rock	30	3	0.091	0.026	<0.0077	30	5	0.23	0.066	<0.013	13	3	0.14	0.049	<0.015	13	4	0.014	0.0071	<0.0025
EVO-DC1	Mist Mt. Fm.	Waste Rock	8	3	0.019	0.0035	<0.00035	9	8	0.021	<0.01	<0.0005	9	8	0.0218	<0.015	<0.015	9	5	0.0027	0.0025	0.0012
EVO-GC2	Mist Mt. Fm.	Waste Rock	46	10	0.049	0.009	<0.0018	33	18	0.073	<0.021	<0.0005	18	0	0.726	0.166	0.0817	18	0	0.049	0.02	0.011
FRO-CC1	Mist Mt. Fm.	Waste Rock	27	12	0.073	0.018	<0.0025	27	6	0.48	0.03	<0.005	8	7	0.0312	<0.015	<0.015	11	0	0.011	0.008	0.0057
FRO-EC1	Mist Mt. Fm.	Waste Rock	30	13	0.18	0.024	<0.0025	28	13	0.11	0.01	<0.005	13	13	<0.015	<0.015	<0.015	16	3	0.0033	0.0019	<0.00066
FRO-KC1	Mist Mt. Fm.	Waste Rock	26	19	0.011	<0.0025	<0.0025	25	19	0.016	<0.005	<0.005	9	9	<0.015	<0.015	<0.015	12	5	0.0025	0.0011	<0.00015
GHO-BH1	Mist Mt. Fm.	CCR	18	17	<0.02	<0.02	<0.01	18	2	0.54	0.24	<0.005	18	9	8.45	<0.03	<0.03	14	1	2.4	1.0	0.051
GHO-CC1	Mist Mt. Fm.	Waste Rock	25	19	0.018	<0.0025	<0.0025	37	34	0.025	<0.005	<0.005	14	14	<0.015	<0.015	<0.015	14	14	<0.0025	<0.0025	<0.0025
GHO-GCS	Mist Mt. Fm.	Waste Rock	79	61	0.02	<0.005	<0.005	0	0	-	-	-	0	0	-	-	-	0	0	-	-	-
GHO-LTC	Mist Mt. Fm.	Waste Rock	73	46	0.023	<0.005	<0.0033	0	0	-	-	-	0	0	-	-	-	0	0	-	-	-
GHO-PC1	Mist Mt. Fm.	Waste Rock	23	22	<0.0025	<0.0025	<0.0013	37	34	0.025	<0.005	<0.005	14	14	<0.015	<0.015	<0.015	14	14	<0.0025	<0.0025	<0.0025
GHO-WCP	Mist Mt. Fm.	Waste Rock	27	19	0.15	<0.005	<0.005	0	0	-	-	-	0	0	-	-	-	0	0	-	-	-
LCO-WLC	Mist Mt. Fm.	Waste Rock	28	24	0.034	<0.02	<0.01	55	24	0.0051	<0.005	<0.005	28	28	<0.03	<0.03	<0.03	28	9	0.0017	0.00025	<0.0001

Notes:
Data from saturated backfill facilities excluded from table.
DL = detection limit. Statistical calculations used values equivalent to the DL.
CCR = coarse coal reject

Table 4-5:
Unsaturated facility drainage statistics for nitrogen redox couples. Data are provided for 90th (p90), 50th (p50) and 10th (p10) percentiles

Mine/ Facility ID	Geologic Formation	Waste Type	NO_2:NO_3 (N/N)				NH_3:NO_3 (N/N)			
			n	p90	p50	p10	n	p90	p50	p10
TM-SBB	Gates Fm.	Waste Rock, CCR and Tailings	18	0.00732	0.00159	0.000454	14	0.0067	0.00072	0.00014
TM-SBG	Gates Fm.	Waste Rock, CCR and Tailings	28	0.00215	0.000804	0.000287	13	0.0007	0.00013	0.000044
WM-ED	Gates Fm.	Waste Rock	6	0.0284	0.00483	0.00185	6	0.0071	0.002	0.00016
WM-ND	Gates Fm.	Waste Rock	16	0.0245	0.000385	0.000242	15	0.0027	0.00079	0.00012
WM-SD	Gates Fm.	Waste Rock	14	0.00483	0.00039	0.00025	13	0.01	0.0046	0.00012
BM-NED	Gething Fm.	Waste Rock and CCR	15	0.0146	0.00524	0.00303	0	-	-	-
BM-SED	Gething Fm.	Waste Rock	26	0.000994	0.000472	0.000229	0	-	-	-
WCM-4C	Gething Fm.	Waste Rock	2	-	0.0319	-	2	-	0.0091	-
WCM-7C	Gething Fm.	Waste Rock	10	0.00814	0.00476	0.00356	0	-	-	-
WCM-7P	Gething Fm.	Waste Rock	2	-	0.0195	-	0	-	-	-
EVO-BC1	Mist Mt. Fm.	Waste Rock	30	0.00292	0.000823	0.000178	30	0.0068	0.0026	0.00038
EVO-DC1	Mist Mt. Fm.	Waste Rock	5	0.00778	0.00126	0.000252	6	0.0052	0.00036	0.00012
EVO-GC2	Mist Mt. Fm.	Waste Rock	46	0.0623	0.0124	0.00318	33	0.11	0.021	0.00077
FRO-CC1	Mist Mt. Fm.	Waste Rock	27	0.00961	0.00307	0.000237	27	0.073	0.004	0.00071
FRO-EC1	Mist Mt. Fm.	Waste Rock	30	0.00383	0.000522	0.0000366	28	0.0029	0.00019	0.000073
FRO-KC1	Mist Mt. Fm.	Waste Rock	26	0.000271	0.0000787	0.0000372	25	0.00054	0.00017	0.000089
GHO-BH1	Mist Mt. Fm.	CCR	18	0.20	0.20	0.114	18	5.5	2.4	0.066
GHO-CC1	Mist Mt. Fm.	Waste Rock	25	0.000507	0.0000738	0.000062	37	0.00072	0.00019	0.00012
GHO-GCS	Mist Mt. Fm.	Waste Rock	79	0.0246	0.00424	0.00131	0	-	-	-
GHO-LTC	Mist Mt. Fm.	Waste Rock	73	0.0244	0.00355	0.00128	0	-	-	-
GHO-PC1	Mist Mt. Fm.	Waste Rock	23	0.00192	0.00147	0.000737	37	0.015	0.0038	0.0023
GHO-WCP	Mist Mt. Fm.	Waste Rock	27	0.00724	0.00208	0.000565	0	-	-	-
LCO-WLC	Mist Mt. Fm.	Waste Rock	28	0.000931	0.000546	0.000293	27	0.00026	0.00015	0.00013

Notes:
Samples with SO_4 concentrations below 100 mg/L are excluded from statistics.
Data from saturated backfill facilities excluded from table.
DL = detection limit. Statistical calculations used values equivalent to the DL.
CCR = coarse coal reject

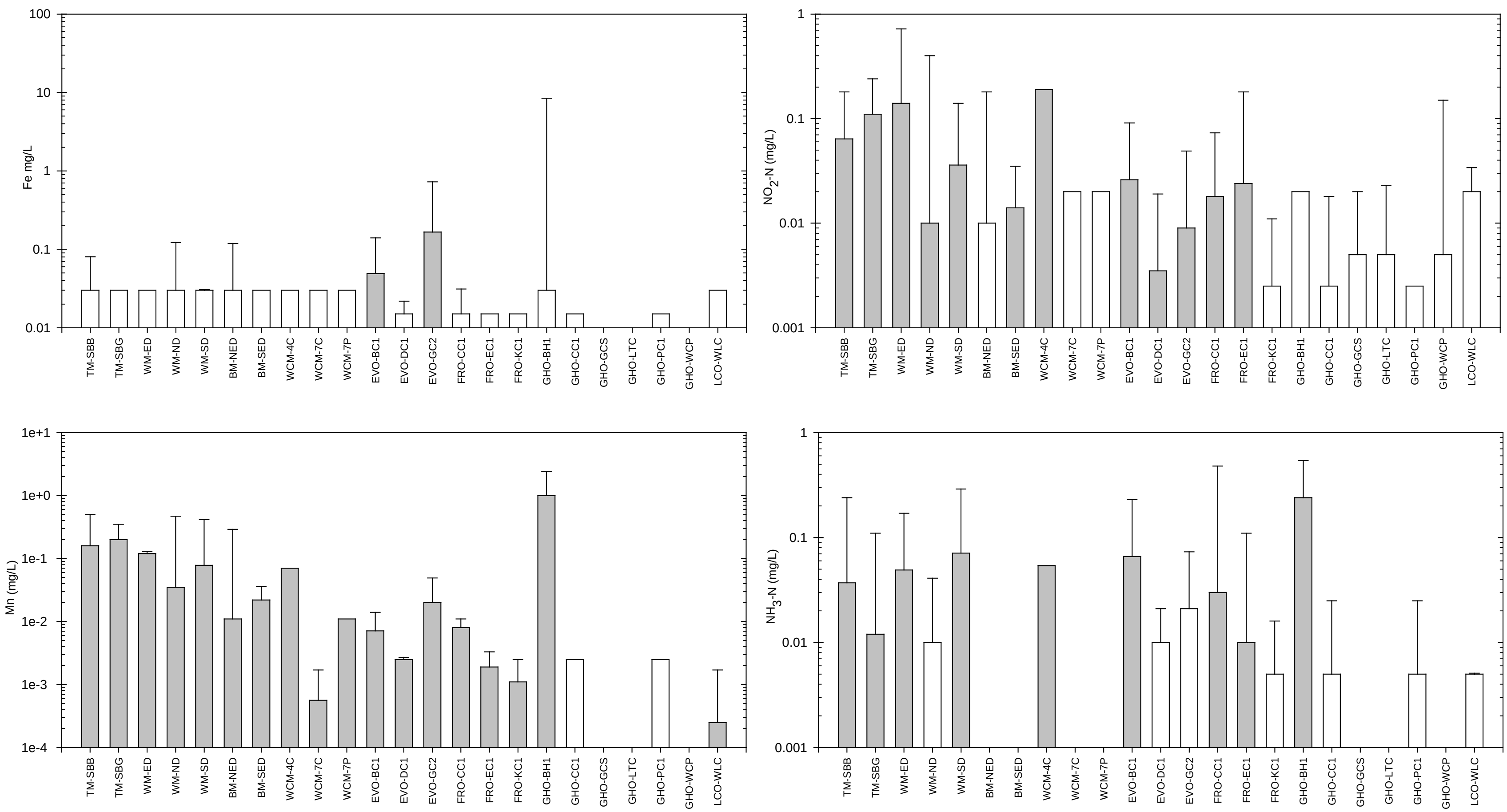


Figure 4-8: Median values for Fe, NO_2–N, Mn and NH_3–N in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Shaded bars indicate median values which were above the detection limit while hollow bars indicate median concentrations which are below detection limit. Whiskers represent 90th percentile values. Whiskers are not included when 90th percentile values are at detection limit or due to limited number of samples.

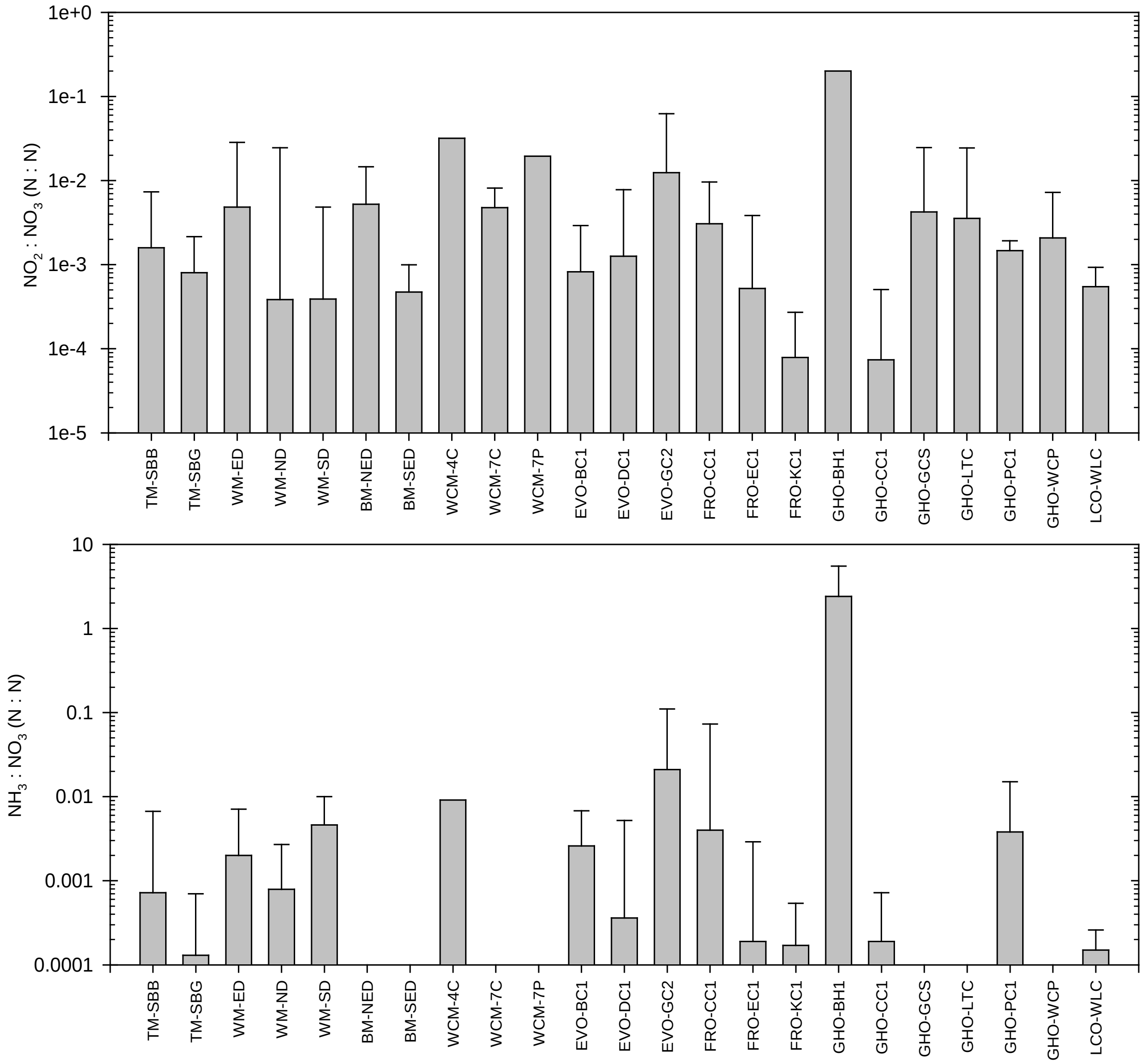


Figure 4-9: Median values for NO_2:NO_3 and NH_3:NO_3 in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Whiskers are not included when 90th percentile values are at detection limit or due to limited number of samples.

Reductive dissolution of Mn requires less reducing condition than that for Fe, and the oxidation kinetics of Mn(II) are relatively slow. As such, Mn can provide a more reliable indicator of anaerobic conditions in waste rock facilities than Fe. Manganese concentrations are plotted against Se and Se:SO_4 ratios in Figure 4-10 and Figure 4-11, respectively. In the Mist Mt Fm., facilities with elevated Mn generally produce low Se concentrations and low Se:SO_4 ratios (Figure 4-10 and Figure 4-11). When individual data points are plotted, an inverse relationship is evident. This observation is consistent with the attenuation of Se in suboxic settings. The relationship between Mn and Se is less clear for the Gates Fm. and Gething Fm. Gates Fm. facilities produce the highest range of Mn concentrations. The lack of a correlation between Se and Mn suggests that Mn release is not associated with Se attenuation in these facilities.

Scatter plots of Se versus NH_3 and NO_2 were generated to assess the links between Se mobility and redox-sensitive parameters (Figure 4-12). As well, Se:SO_4 ratios as a function of NH_3 and NO_2 were examined on the premise that increasing NH_3 and NO_2 concentration (reflecting degree of suboxia) may be associated with lower Se:SO4 ratios (reflecting Se attenuation). In general, there is little or no relationship evident regarding NO_2 or NH_3 concentrations with either Se concentration or Se:SO_4 ratio (Figure 4-12).

Absolute concentrations of NO_2 and NH_3 are not necessarily reliable indicators of redox potential because unlike Mn and Fe, their oxidized counterpart (NO_3) is highly soluble in neutral pH environments. An alternative estimate of redox potential can be produced from the ratio of reduced to oxidized nitrogen species (redox couple). Waste rock dumps in all three geologic formations show weak inverse relationships between the proportion of reduced N species (as inferred from nitrogen redox couples NO_2:NO_3 and NH_3:NO_3) and Se concentration (Figure 4-13 and Figure 4-14). Weak inverse relationships can also be observed between nitrogen redox couples and Se:SO_4 ratios for Mist Mt. Fm. and Gething Fm. facilities (Figure 4-15 and Figure 4-16). The decline in Se:SO_4 ratios in association with an increase in the proportion of reduced nitrogen species in the Gething Fm. and the Mist Mt. Fm. drainages may provide supporting evidence of Se attenuation under mildly suboxic conditions.

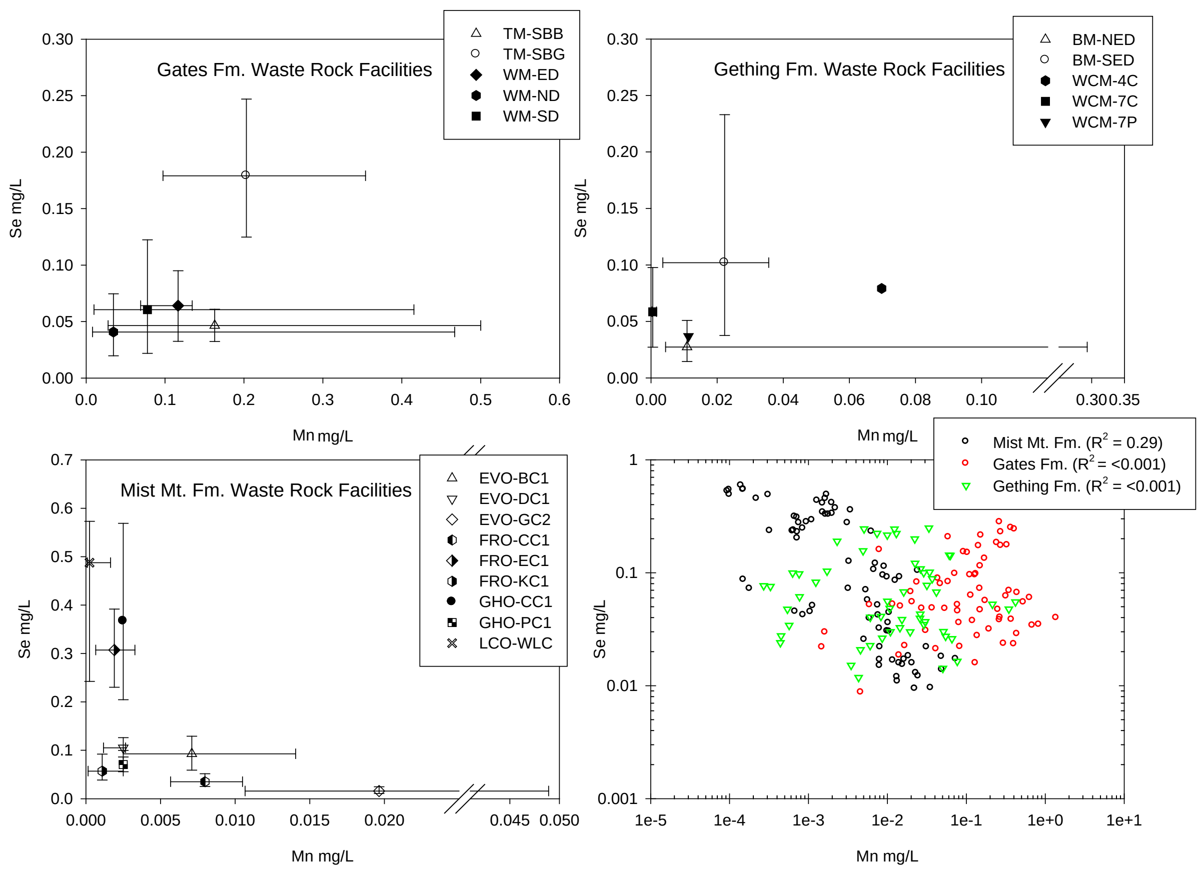


Figure 4-10: Manganese *versus* Se concentration in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph. Only data points that are above detection limit are included in the lower right graph.

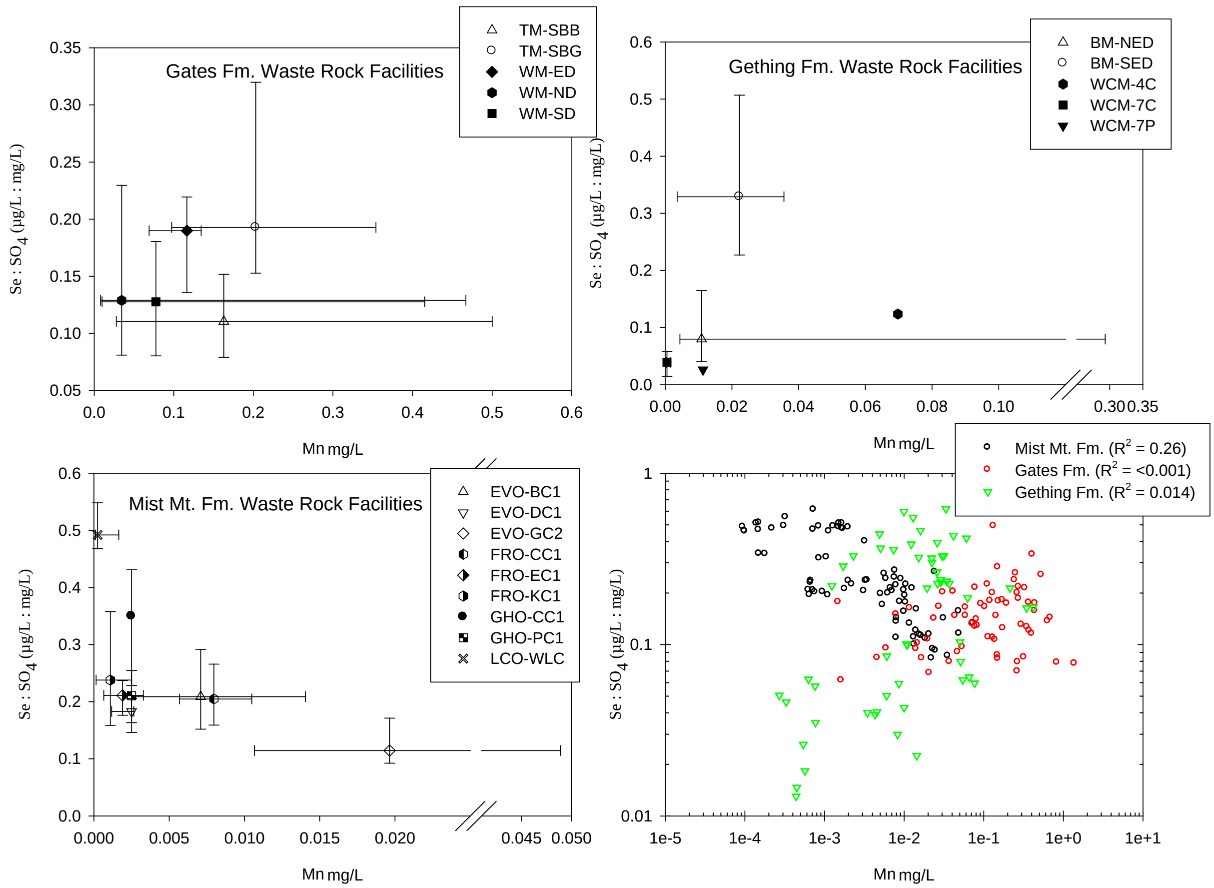


Figure 4-11: Dissolved manganese concentration *versus* Se:SO_4 ratio in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph. Only data points that are above detection limit are included in the lower right graph.

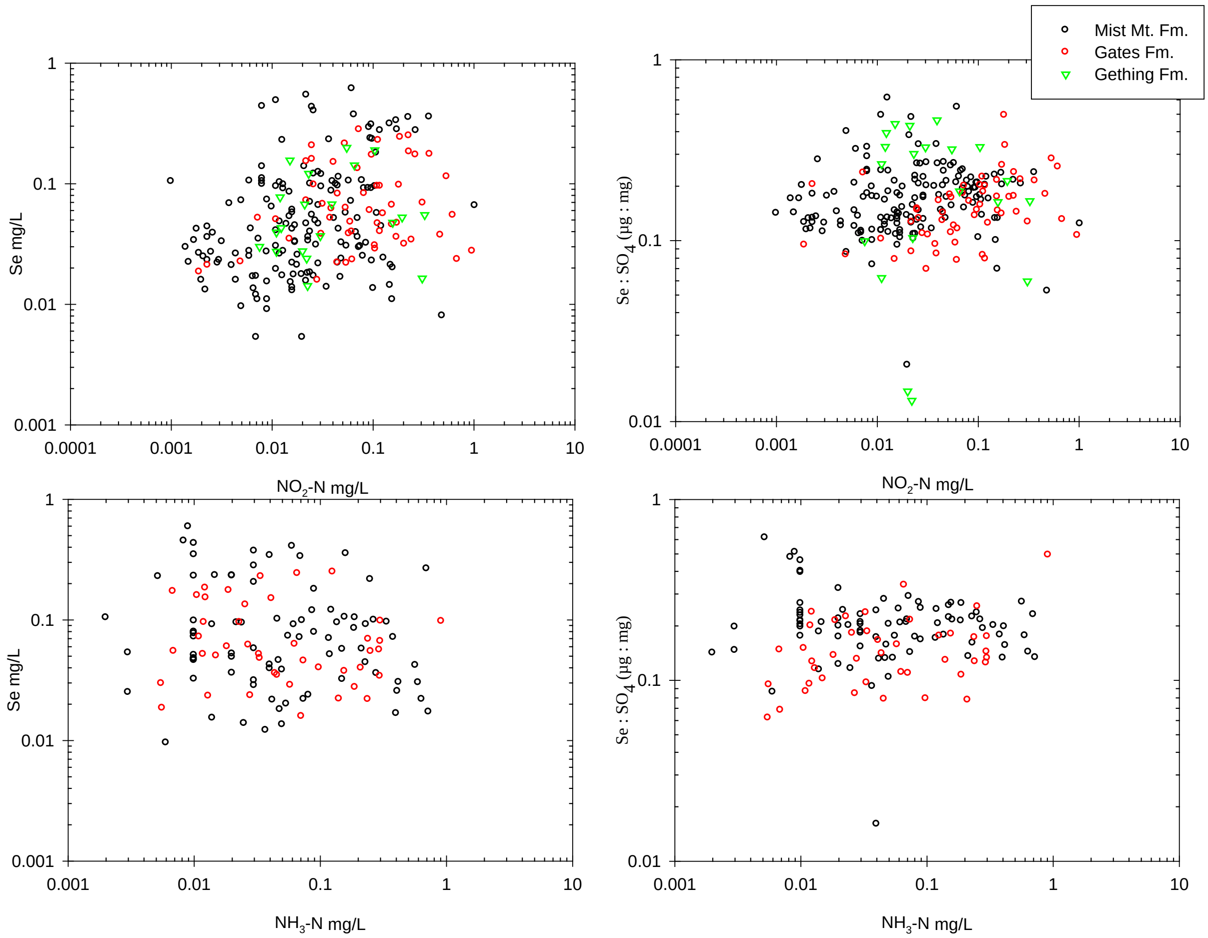


Figure 4-12: Relationship between reduced nitrogen species (NO_2 and NH_3) with Se concentration and Se:SO_4 ratio in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Data are grouped by geologic formation with only data points above detection limit included. Note that NH_3 data were generally not available for Gething Fm. waste rock drainages.

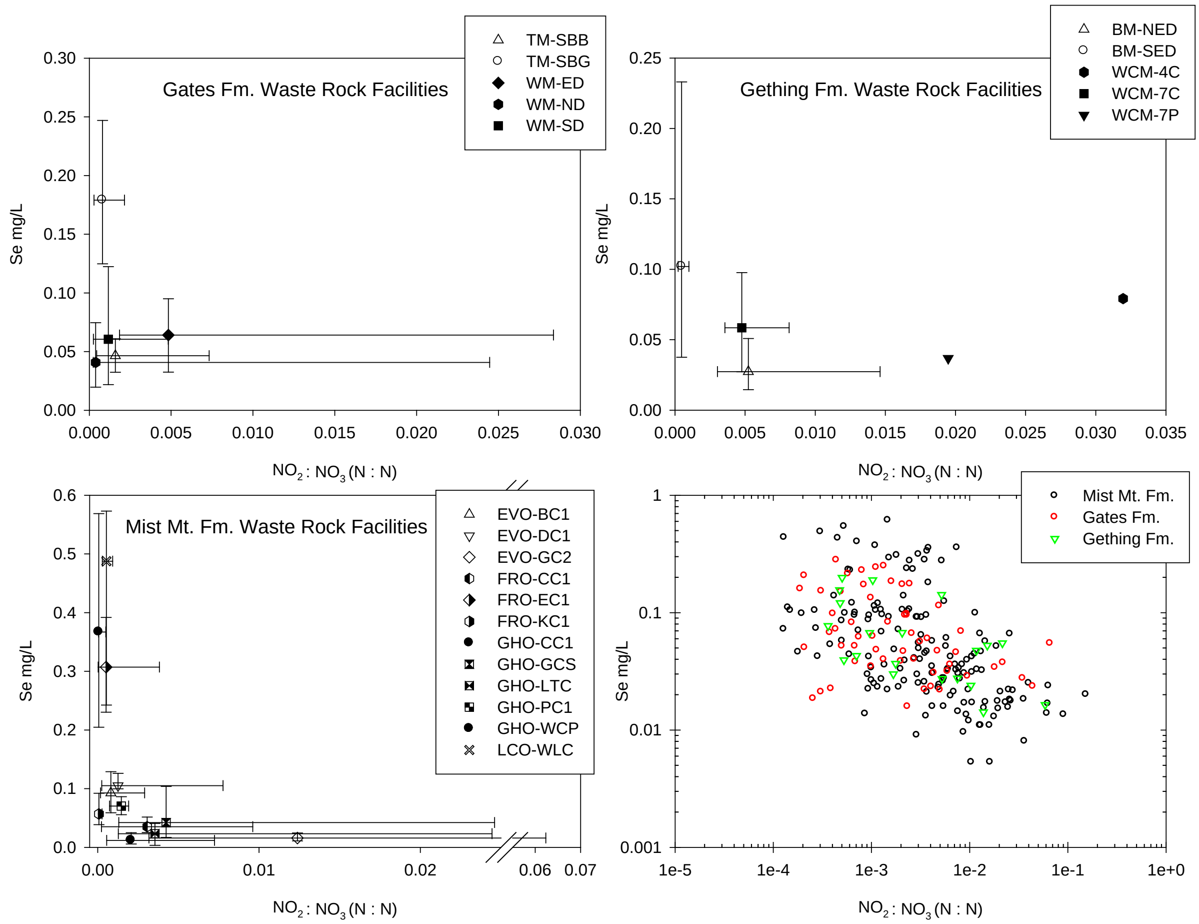


Figure 4-13: Nitrite:nitrate redox couple *versus* Se concentration in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph. Only data points that are above detection limit are included in the lower right graph.

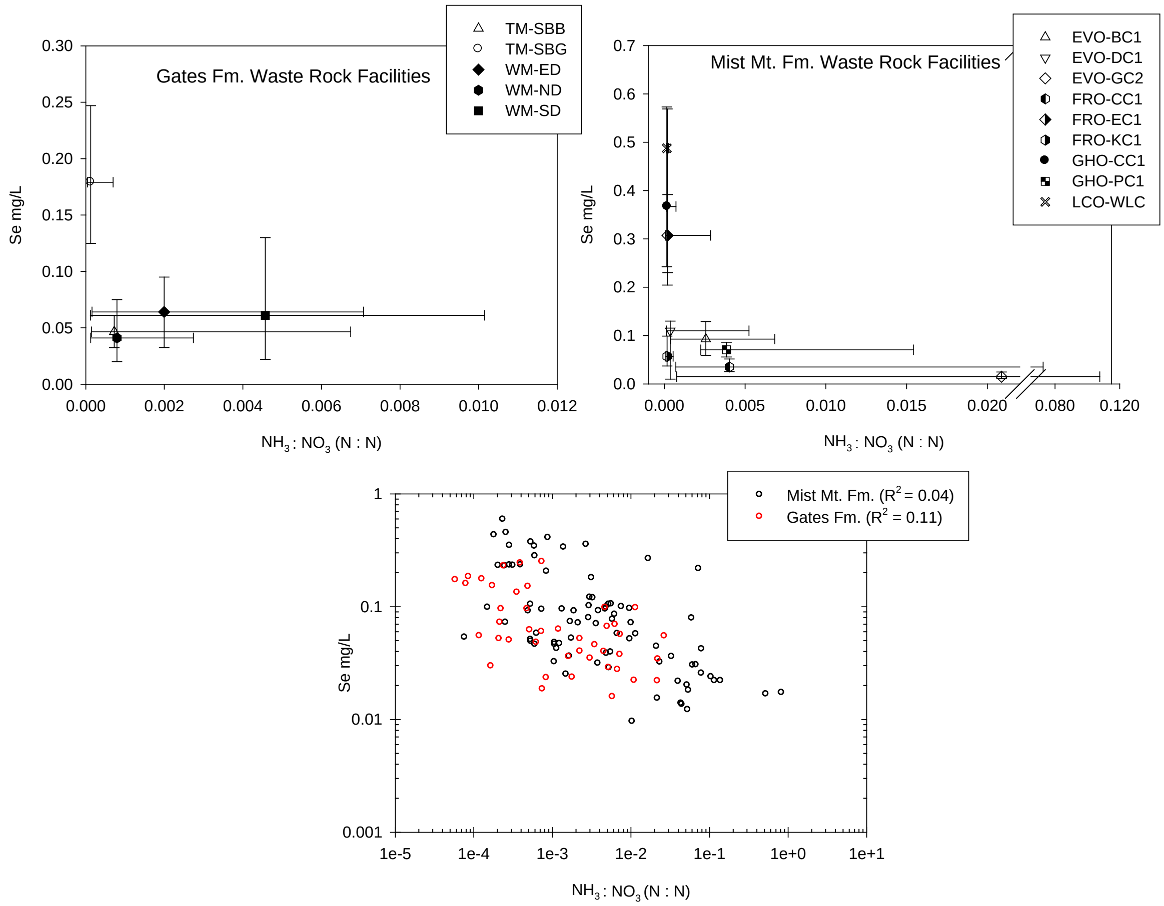


Figure 4-14: Ammonia:nitrate redox couple *versus* Se concentration in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left) and Mist Mt. Fm. facilities (top right). Individual data points grouped by geologic formation are plotted in the lower graph. Note that NH_3 data were generally not available for Gething Fm. waste rock drainages. Only data points that are above detection limit are included in the lower graph.

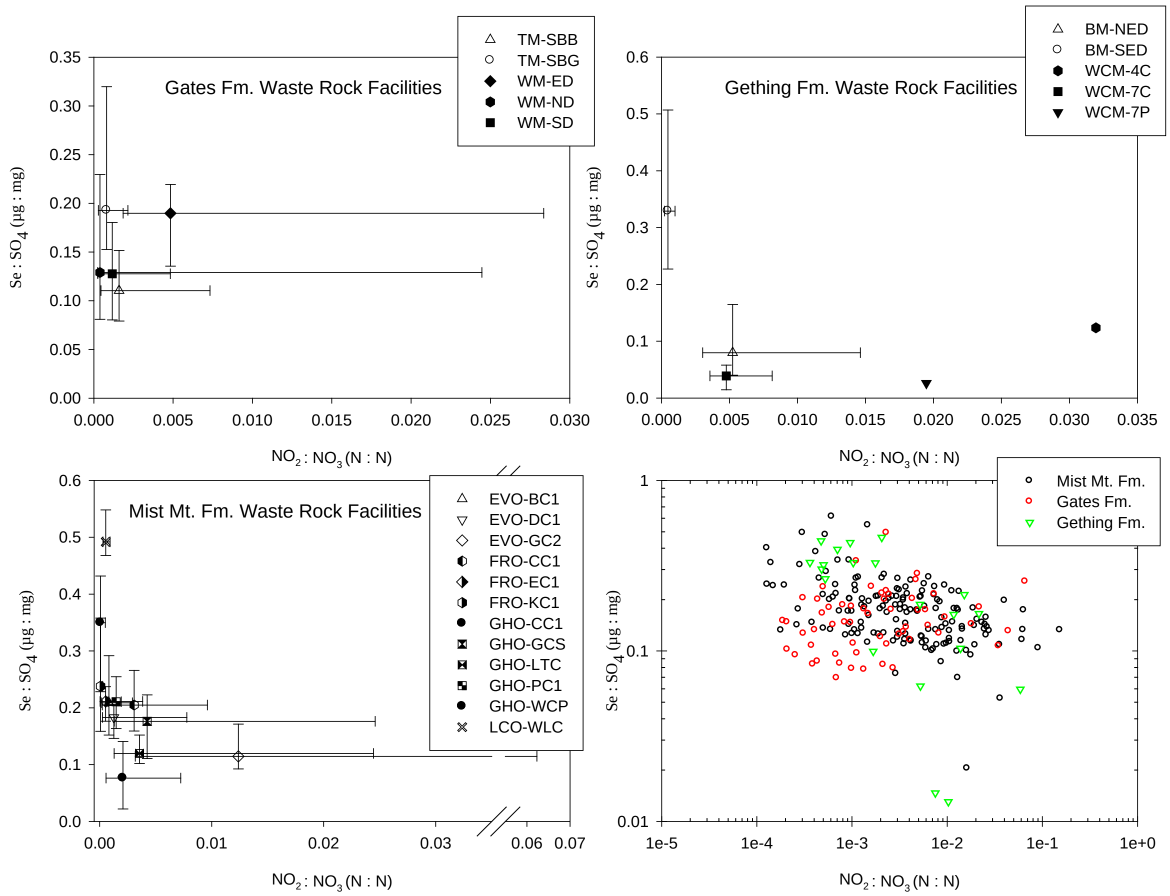


Figure 4-15: Nitrite:nitrate redox couple *versus* Se:SO_4 ratio in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left), Gething Fm. facilities (top right) and Mist Mt. Fm. facilities (bottom left). Individual data points grouped by geologic formation are plotted in the lower right graph. Only data points that are above detection limit are included in the lower right graph.

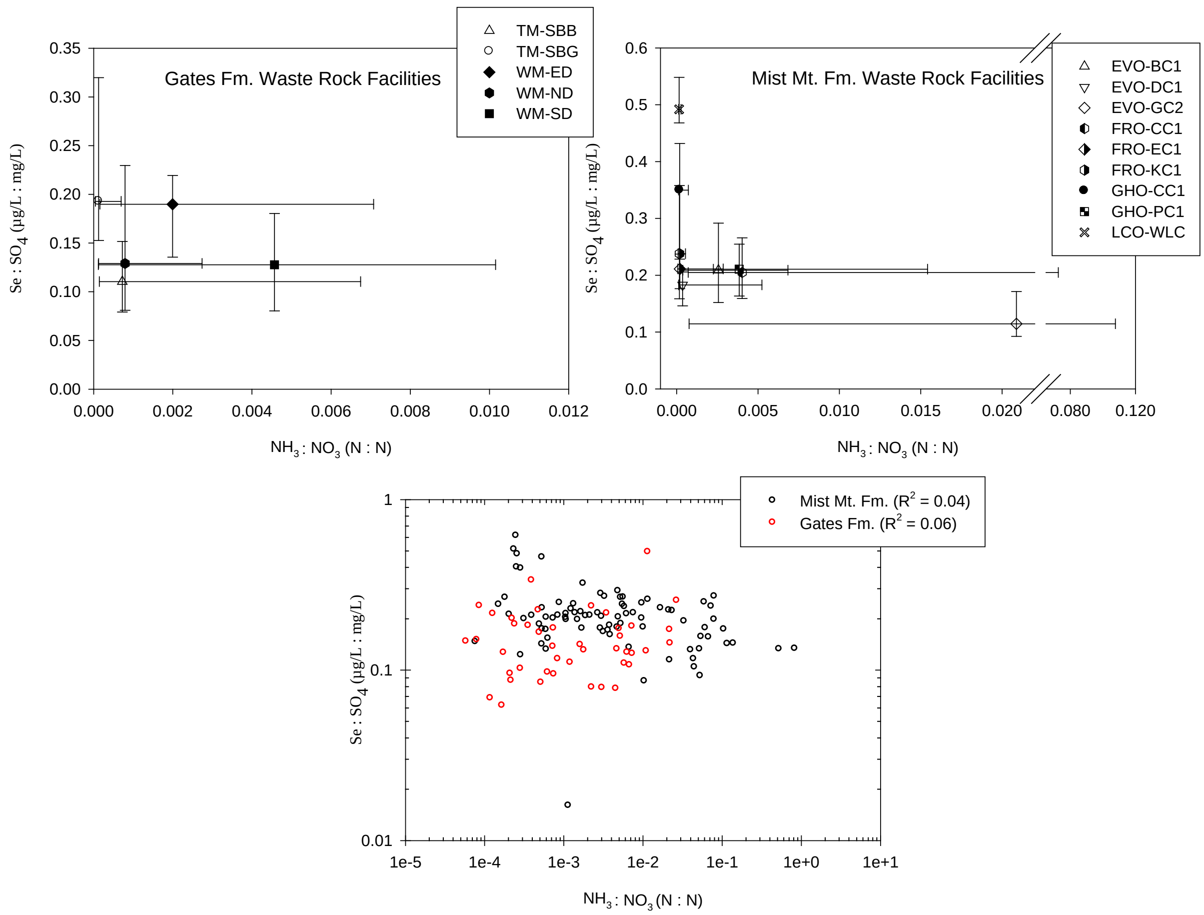


Figure 4-16: Ammonia:nitrate redox couple *versus* Se:SO_4 ratio in drainage for unsaturated facilities containing waste rock or a mixture of waste rock plus CCR and tailings. Symbols mark the median values and whiskers represent upper and lower 90th percentiles for Gates Fm. facilities (top left) and Mist Mt. Fm. facilities (top right). Individual data points grouped by geologic formation are plotted in the lower graph. Note that NH_3 data were generally not available for Gething Fm. waste rock drainages. Only data points that are above detection limit are included in the lower graph.

Note that several Mist Mt. Fm. sampling points are situated a considerable distance from the waste facilities, raising the possibility that the observed correlations are due to reactions that occur outside the waste facilities along surface flow paths. In contrast, Gething Fm. facilities are sampled at waste rock seeps, indicating that the relationships observed for these drainages are more closely linked to processes occurring within the waste rock dump interior. A relationship between nitrogen redox couples and Se concentration can also be observed for Gates Fm. drainages (Figure 4-13 and Figure 4-14). However, the relationship does not extend to Se:SO_4 ratios in this geologic formation (Figure 4-15 and Figure 4-16).

Collectively, the inverse relationship between Se and Mn concentrations in the Mist Mt. Fm., the wide-spread inverse relationship between Se concentration and redox potential (as inferred from NH_3:NO_3 and NO_2:NO_3 redox couples), and lower Se:SO_4 ratios coincident with decreasing redox potential (as inferred from redox couples), suggest that anaerobic reduction reactions affect Se mobility in most waste rock dumps considered in the Gething Fm. and Mist Mt. Fm.

Selenium mobility within Gething Fm. waste rock dumps appears to be the most sensitive to the redox conditions as inferred from nitrogen redox couples. As an example, time series plots of drainage water quality from WCM-7C are presented in Figure 4-17. The data illustrate a closer relationship between NO_3 and Se in comparison to Se and SO_4, similar to that observed for other Gething Fm. facilities (Figure 4-1 and Figure 4-2). Nitrite (NO_2) concentrations only increase above detection limit when Se and NO_3 concentrations are at a minimum.

Selenium concentrations associated with Gates Fm. facilities show the least sensitivity to chemical indicators of redox potential. These facilities exhibit the highest Mn concentrations and a similar proportion of reduced N species as waste facilities in the Gething Fm. and Mist Mt. Fm. Gates Fm. facilities are unique in that the range of NO_3 concentrations is considerably higher than in the other two formations, with median NO_3-N concentrations ranging from 15 mg/L to 133 mg/L. For these systems, the weak correlation between redox indicators and Se:SO_4 ratios in drainage could potentially be explained by the inhibition of Se^{VI} reduction by NO_3. As outlined in Chapter 2, NO_3-N concentrations as low as 1 mg/L have been found to prevent Se^{VI} reduction and maintain Se solubility in laboratory test work (Bailey *et al.*, 2012). This process may be responsible for the general lack of correlation between Se and indicators of anaerobic reduction in Gates Fm. waste rock drainages. Alternatively, Gates Fm. facilities are relatively well aerated, and the elevated Mn concentrations may be a result of Mn release from mineral phases containing reduced Mn^{2+}.

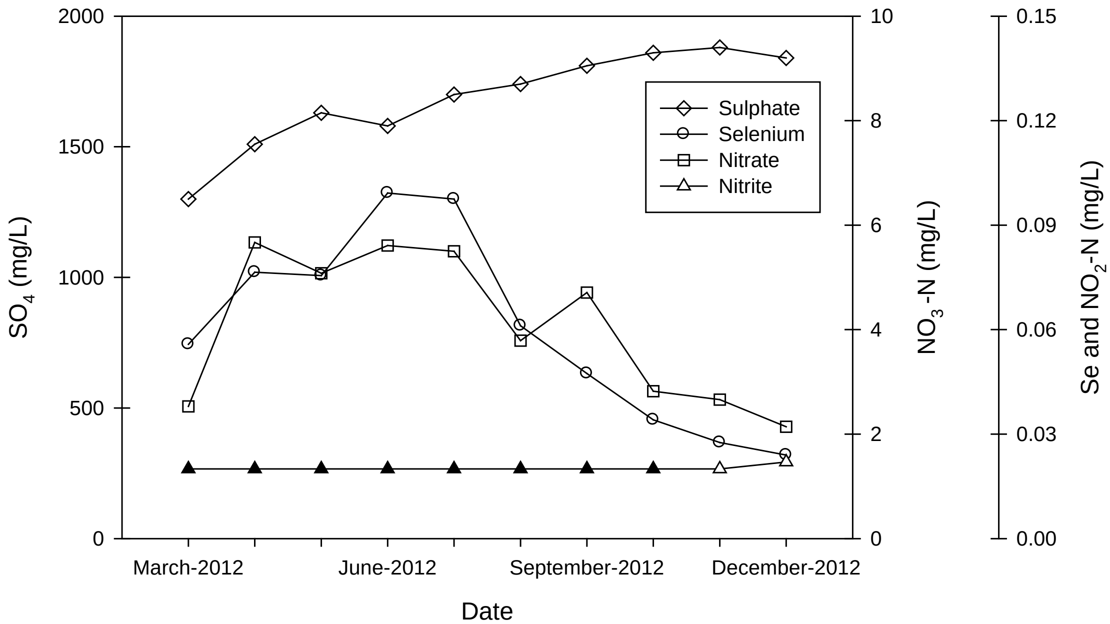


Figure 4-17: Time series of sulfate, selenium, nitrate-N and nitrite-N for seep WCM-7C. Note that detection limit data points are filled with black, while data points above detection limits are open symbols.

4.2.3 Powder Factor and Percent Emulsion

Previous studies at coal mines in southeastern B.C. have related nitrogen release to powder factor and % emulsion (Pommen, 1983; Ferguson and Leask, 1988). Powder factor describes the amount of explosives (kg) per bank cubic metre (BCM) of waste rock. Emulsions show higher N loss rates in comparison to ANFO (see Section 2.1.3 - Nitrogen in Mine Environments). Powder factors and % emulsion values for mine sites considered in this study are provided in Table 4-6. Note that values are provided for 2007 to 2010, and therefore, only reflect recent operational explosive use. In this regard, historical variations in explosive use are not accounted for. Furthermore, records of explosive use at WCM were not available, and therefore the reported powder factor and % emulsions are pre-mine estimates (PVC, 1997).

Table 4-6:
Average powder factors expressed in kg explosives per bank cubic meter (BCM) of rock blasted and % Slurry (Emulsions)

Mine site:	TM	WM	BM	WCM	GHO	FRO	LCO	EVO
Powder Factor (kg/BCM)	0.97	0.78	0.70	0.52	0.79	0.73	0.70	0.58
% Emulsion	55%	NA	35%	10%	50%	60%	40%	59%

Notes: Blasting data reported from mine site operations between 2007 and 2010, with the exception of WCM. Explosive use data from WCM is based on pre-mining projections from PVC, 1997. TM = Trend Mine, WM = Wolverine Mine, BM = Brule Mine, WCM = Willow Creek Mine, GHO = Greenhills Operations, FRO = Fording River Operations, LCO = Line Creek Operations, EVO = Elk Valley Operations. Emulsion percentage is not available (NA) for WM.

A relationship can be seen between NO_3 concentration (Table 4-2) and explosive use (Table 4-6) in the relatively young mine sites of northeastern B.C. (TM, WM, WCM and BM). Trend Mine, for example, exhibits the highest range of NO_3 concentrations and has reported the highest powder factor. In contrast, WCM exhibits the lowest range of NO_3 concentrations, the lowest powder factor and % emulsion. Nitrate concentrations (and hence explosive use) show a positive correlation with Se in mine drainages at these mine sites. That is, WCM facilities are characterized by a lower range of Se concentrations and Se:SO_4 ratios compared the other mine sites in the Peace River Region (N.E. B.C.).

No clear relationship exists between NO_3, Se and explosive use data in Mist Mt. Fm. Mine sites. Mist Mt. Fm. Mine sites have relatively similar powder factors and % emulsion compared to the younger mine sites in the Peace River Region (northeastern B.C.). Furthermore, these waste facilities have been constructed over a time period of decades, so recent powder factor data cannot be expected to accurately describe nitrogen abundance.

4.2.4 Effect of Saturated Backfill

Pits that have been mined out are commonly used to deposit waste rock and are often referred to as backfilled pits. This waste storage configuration in relation to the final water table elevation generally results in a portion of the waste rock being permanently saturated, leading to the potential for development of reducing conditions. The elements of a conceptual model are shown in Figure 4-18 as a cross-section through a backfilled pit with waste rock partially flooded by water at a level defined by the pit decant elevation (spill point). The upper, aerobic, zones of the backfill are characterized by the oxidation of pyrite (a host for Se) in the presence of gaseous oxygen resulting in release of SO_4 and Se. In the center of the pile, oxygen deficient conditions may develop due to oxygen consumption by the oxidation of residual organics and sulfide minerals. These conditions do not necessarily require saturation. Below the water table elevation, suboxia is more likely to develop given the greatly reduced rates of gas transfer in saturated media. Under suboxic conditions, denitrification and Se reduction can be expected.

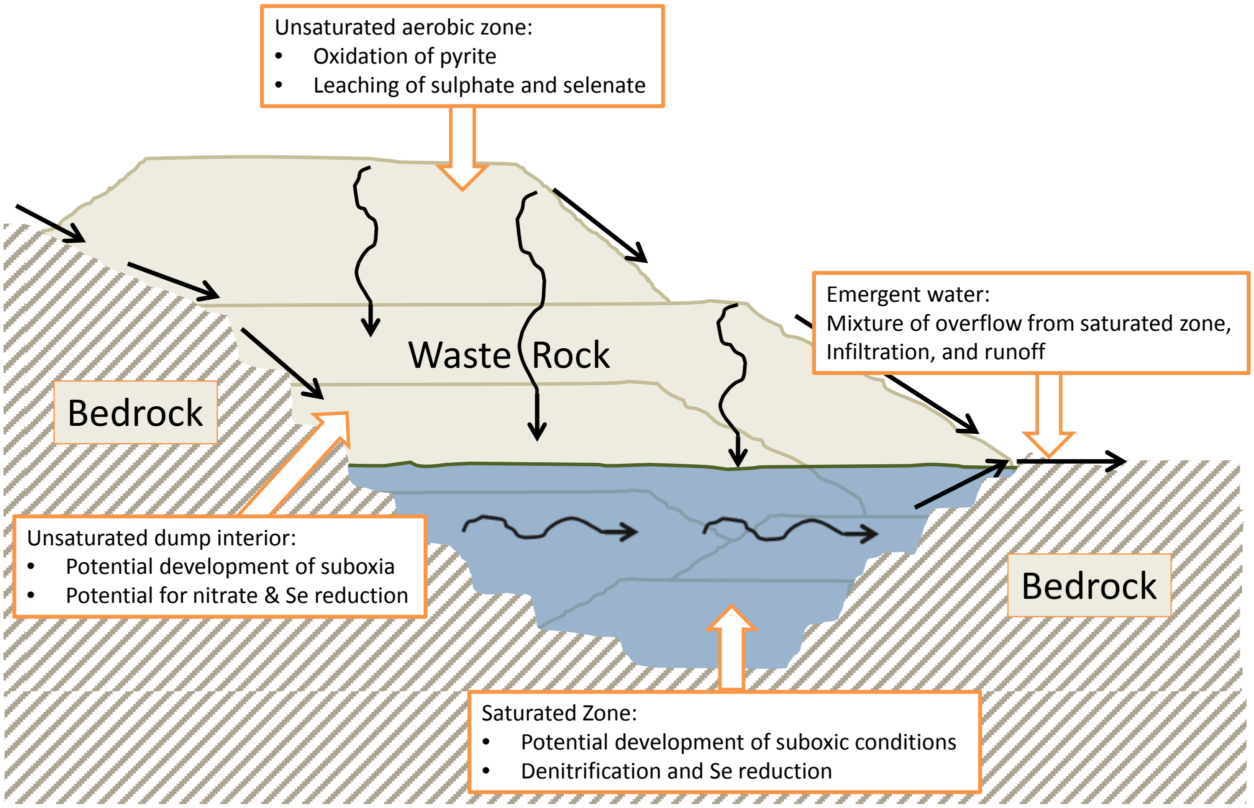


Figure 4-18: Conceptual cross-section through a backfilled pit. Black arrows indicate conceptual flow pathways.

Saturated zones of backfilled pits can provide optimum environments for the attenuation of Se as well as NO_3. In such systems, the oxygen demand imposed by residual carbon (*e.g.*, coal), in conjunction with relatively-long water residence times, encourage the development of suboxic conditions within the backfill pore spaces. As outlined in Section 2.2, under conditions of suboxia, Se is host to a suite of microbially-mediated processes that favour the removal of dissolved Se from solution.

Water quality data from wells screened in the saturated zones of two backfill pits were available for this study (BM-DPB and EVO-F2; Table 4-7). The potential merits of backfilled pits to serve as sites for Se attenuation were assessed through a detailed hydrogeologic field investigation of the Dillon Pit, Brule Mine (BM-DPB) (Bianchin *et al.*, 2013). This study involved the installation of 11 monitoring wells at 5 locations within the boundaries of a backfilled pit, both within and upgradient of the saturated backfill. The results show a reduction in dissolved Se concentrations from at least 40 µg/L (upgradient of saturated zone) to <1 µg/L within the saturated waste rock pore spaces (Figure 4-19). Collectively, the data imply that the saturated zone in the backfilled pit is serving as an effective site for the bioremediation of both Se and NO_3 under mildly suboxic conditions.

Table 4-7:
Selected water quality from piezometers screened in saturated zones of two backfill waste rock facilities.

Mine/Facility ID	Date	SO_4	Se	NO_3-N	NO_2-N	NH_3-N	D-Mn	D-Fe
EVO-F2	08-Apr-10	1580	0.00161	12.9	<0.02	0.954	0.972	<0.030
	14-Sep-10	1600	0.00146	12.3	<0.02	0.835	0.939	<0.030
	26-Jul-11	1600	0.00144	8.46	<0.02	0.97	0.948	0.036
	15-Sep-11	1530	0.00136	8.03	0.107	0.75	0.994	<0.030
	15-Dec-11	1510	<0.0005	0.54	0.054	0.624	1.15	13.6
	16-Mar-12	1420	<0.0005	<0.1	<0.02	0.332	1.18	<0.010
BM-DPB	28-May-12	116	<0.0001	<0.025	<0.005	0.87	0.128	0.051
	29-May-12	718	<0.0002	<0.05	<0.1	0.33	0.616	0.338
	28-May-12	726	<0.0002	0.11	<0.02	3.58	0.690	1.26
	30-May-12	889	0.00089	0.37	0.043	0.39	1.21	0.261
	29-May-12	740	0.00054	<0.05	<0.1	0.359	0.418	0.256

Notes:
Concentrations provided in mg/L.
Values for BM-DPB represent data for 5 different monitoring wells. All screened within saturated backfill.
EVO = Elk Valley Operations, BM = Brule Mine.

Data for BM-DPB and EVO-F2 backfill pits are plotted alongside data from unsaturated waste rock facilities in Figure 4-20 and Figure 4-21, respectively. Overall, water quality from the backfilled pits exhibit a reducing character, as shown by the relatively-high concentrations of NH_3, D-Fe and D-Mn (Table 4-7). There is a steady decline in NO_3-N concentrations in EVO-F2 from 12.9 mg/L in April 2010 to <0.1 mg/L in December 2011. Other parameters such as SO_4, NH_3 and Mn are stable over this time period. It is considered likely that the high NO_3 concentrations initially measured in this well are due to contamination during piezometer installation. Backfilled pits have lower Se concentrations in comparison to the unsaturated waste rock dumps, with Se often below detection limits (Table 4-7). The backfilled pits also produce lower Se:SO_4 ratios than the unsaturated waste rock dumps considered in this study. Overall, the results demonstrate that Se is being removed from solution in both backfilled pits as a result of anaerobic reduction reactions.

The redox-related behaviour shown for saturated backfill (Figure 4-20 and Figure 4-21), and specifically evidence for Se attenuation, is also observed to some extent for unsaturated waste rock. This is most clearly illustrated by the relationship of Se with NO_3 and nitrogen redox couples in the Gething Fm., and Se with Mn and nitrogen redox couples in the Mist Mt. Fm. Common patterns in these facilities suggest that similar processes (*i.e.*, anaerobic reduction) promote Se removal in unsaturated waste rock dumps, albeit to a lesser degree.

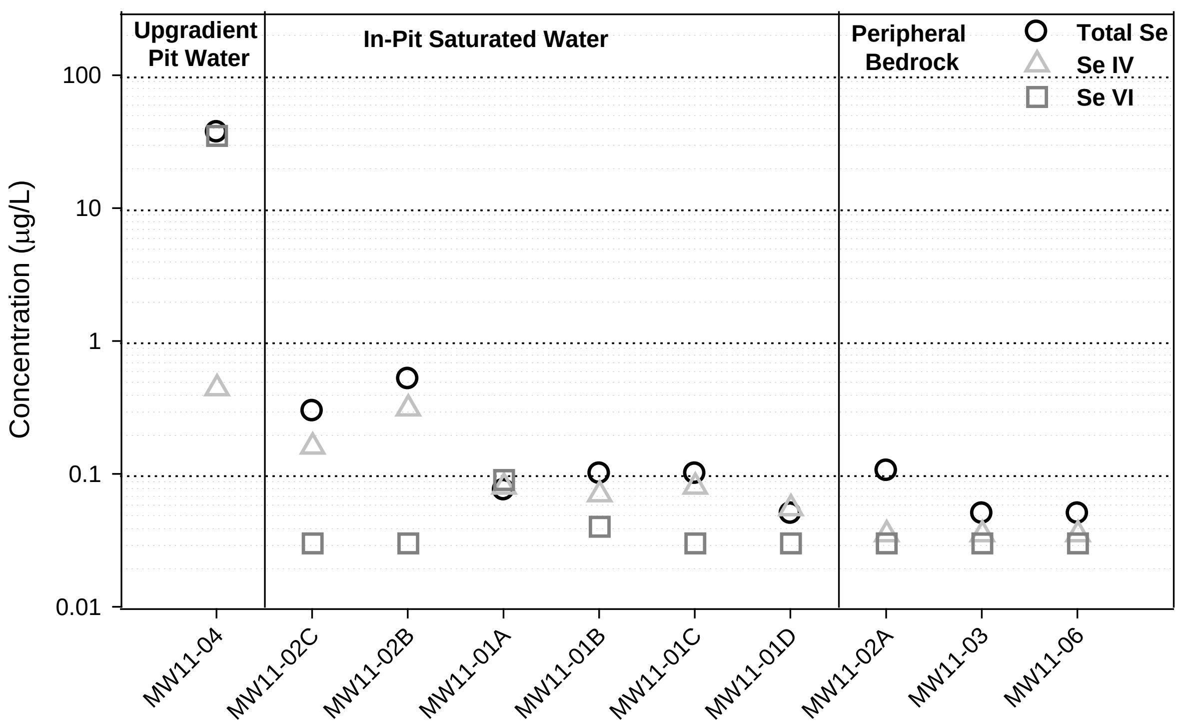


Figure 4-19: Geometric mean Total Se, Se(VI) and Se(IV) concentrations in groundwater of May 2012 and March 2013 for the Dillon Pit, Brule Mine (BM-DPB). Data are shown for groundwater wells for upgradient pit water (aerobic and unsaturated zone upgradient of saturated zone), in-pit saturated water (saturated zone below water table) and peripheral bedrock (native materials on pit periphery) Data from Bianchin *et al.*, 2013.

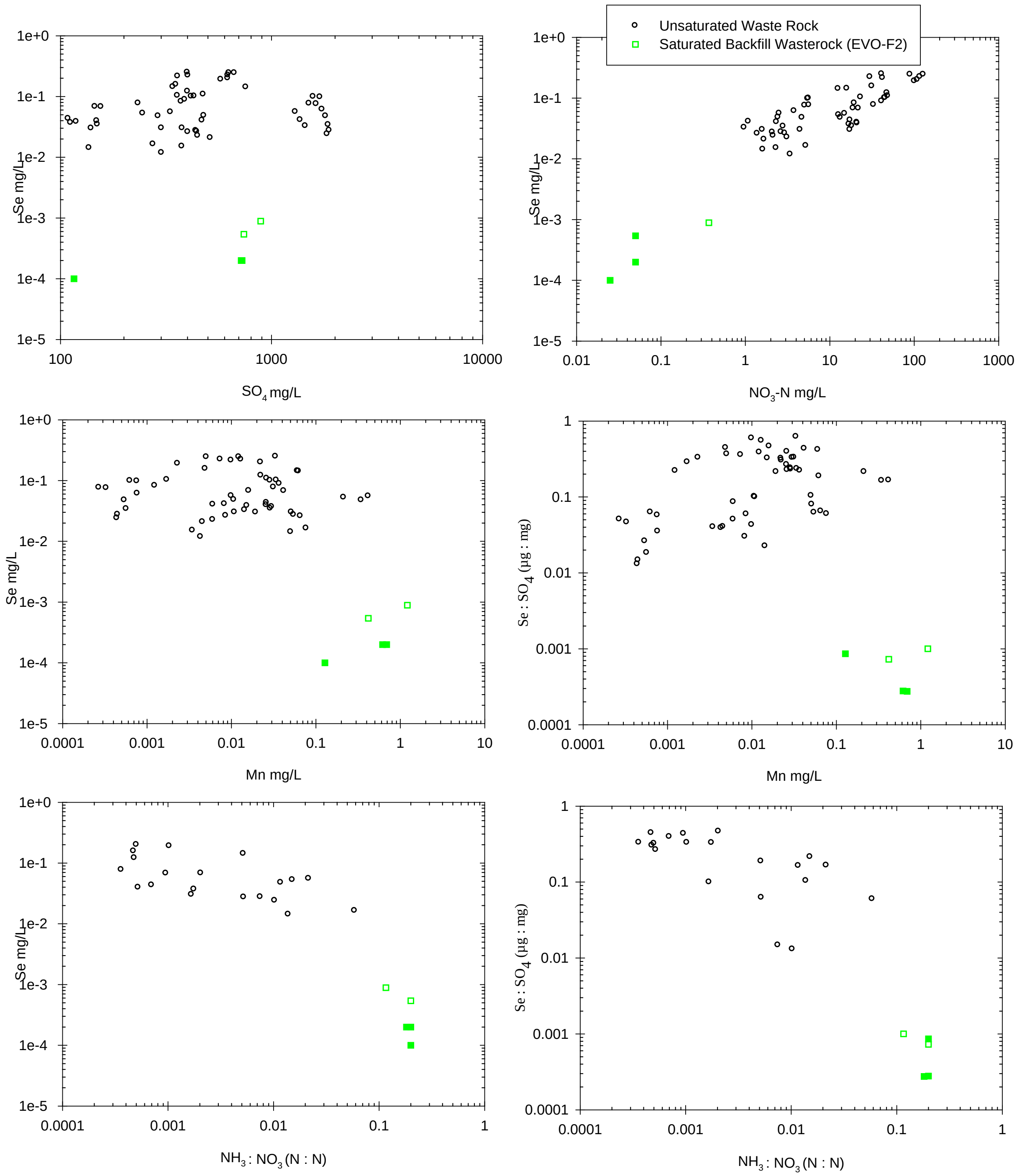


Figure 4-20: Saturated backfill water chemistry for BM-DPB plotted with unsaturated waste rock drainage chemistry from Gething Fm. mine sites. Samples with NO_3 or Se that are below detection limits are shown as filled symbols, while data with NO_3 and Se above detection limits are not filled. Note log scale on Y-axis.

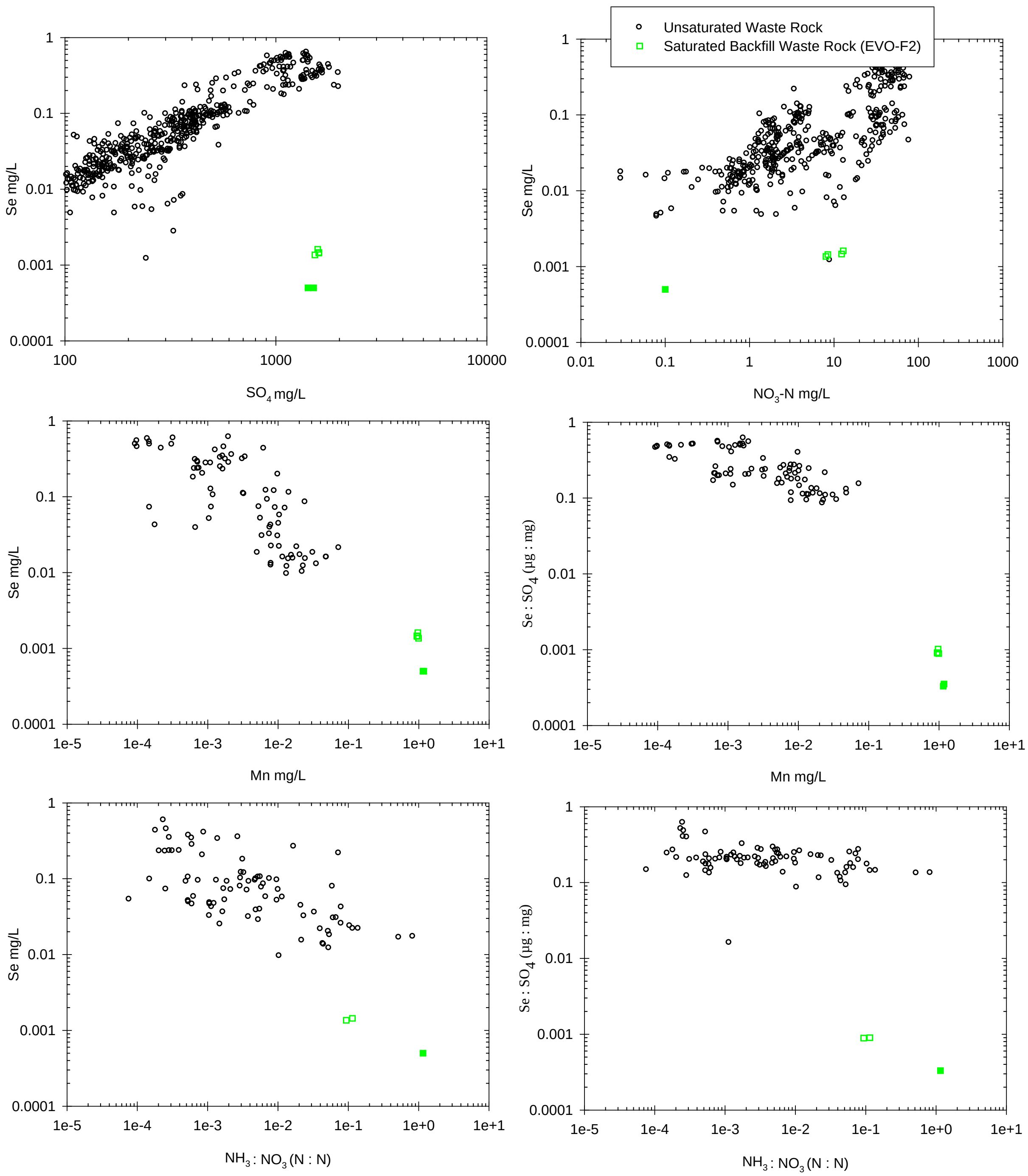


Figure 4-21: Saturated backfill water chemistry for EVO-F2 plotted with unsaturated waste rock drainage chemistry from Mist Mt. Fm. mine sites. Samples with NO_3 or Se that are below detection limits are shown as filled symbols, while data with NO_3 and Se above detection limits are not filled. Detection limit data are otherwise excluded from the plots. Note that NO_3 and Se are only below detection limits in EVO-F2 wells. Note log scale on Y-axis.

4.2.5 Selenium Behaviour in Coarse Coal Reject

CCR is generated from the processing of coal and is predominantly composed of coal, although non-coal material (*e.g.*, mudstones and sandstones) are incorporated into the waste. The material generally has a smaller particle size, and therefore larger surface area, than waste rock (*e.g.*, 14 m^2/kg for CCR versus <5 m^2/kg for waste rock; SRK, 2012). The concentration of Se in CCR tends to be similar to or greater than that in waste rock. Coal reject is more amenable to supporting suboxic conditions than waste rock due to the smaller particle size and associated higher moisture content, which reduces gas permeability. Organic carbon content is not markedly different between CCR and waste rock, although the larger surface area associated with CCR likely makes it more accessible to the microbial community to support anaerobic metabolism.

Drainage chemistry from four facilities known to contain CCR were made available for this study. This includes a waste facility containing exclusively CCR (GHO-BH1), a waste facility where CCR and waste rock are co-disposed (BM-NED), and two facilities where CCR, waste rock and tailings are co-disposed (TM-SBB and TM-SBG). BM-NED is down gradient of the BM-DPB pit backfill facility and may receive some drainage originating from the saturated pit, although the degree to which is uncertain. GHO-BH1 has been part of a larger Se research study by SRK Consulting (Canada) Inc. since 2008 (SRK, 2012) and has included seep sampling, solid-phase analysis of solids recovered during installation of two boreholes, and monitoring of pore gas composition and temperature. Note that pore gas data from this CCR facility are discussed in Section 4.2.2.1.

Water quality data for facilities containing CCR are plotted alongside data for unsaturated waste rock drainages within the respective geologic formations in Figure 4-22, Figure 4-23 and Figure 4-24. It is important to note that historically, some CCR has been mixed with waste rock at some Mist Mt. Fm. mine sites. The location and quantity of this co-disposed CCR, however, are uncertain.

Seepage water quality at GHO-BH1 generally indicates suboxic conditions, as revealed by high levels dissolved Mn (3.2 mg/L) and Fe (11.2 mg/L) (Table 4-7). Concentrations of parameters considered indicators of anaerobic reduction are higher at GHO-BH1 than in any unsaturated waste rock facility considered in this study (Table 4-4). Results of borehole gas concentrations since 2009 indicate low oxygen and high carbon dioxide concentrations in the Area “A” pile (see Figure 4-7). Such conditions of low redox potential are favorable for the removal of Se from solution via reduction of selenate to selenite or elemental Se.

Seepage quality from the mixed CCR/Waste Rock facility BM-NED does not exhibit the same reducing character as GHO-BH1. However, there are some indications that the redox potential of BM-NED is relatively low compared to other unsaturated waste rock facilities, particularly compared to the adjacent BM-SED waste rock dump. BM-NED shows high concentrations of dissolved Fe and Mn compared to BM-SED (Table 4-4), with maximum concentrations for the former of 0.42 mg/L and 0.32 mg/L, respectively. Median values of these parameters are similar to other Gething Fm. waste rock facilities (Table 4-4). The BM-NED waste facility also shows considerably lower NO_3 and Se concentrations and lower Se:SO_4 ratios than BM-SED (Table 4-2). The slightly elevated concentrations of Mn and Fe reported for BM-NED seepages, in combination with the relatively low Se:SO_4 ratios, suggest the occurrence of anaerobic reduction reactions for Se.

Unlike the two facilities discussed above, the mixed waste rock/CCR/tailings piles at TM (TM-SBB and TM-SBG) show similar or greater Se, NO_3 and SO_4 concentrations compared to other waste rock facilities in the Gates Fm. Furthermore, these mixed facilities do not show elevated concentrations of parameters indicative of reducing conditions (*e.g.*, Mn, Fe, NO_2, NH_3). Drainages associated with TM-SBB and TM-SBG exhibit the highest range of NO_3 concentrations of any waste facility considered in this study (Table 4-2). The relatively high NO_3 and Se concentrations associated with TM-SBB and TM-SBG may reflect inhibition of selenate reduction (due to presence of NO_3) or simply an absence of anaerobic zones within these facilities. In either case, Se release from these mixed facilities does not appear to be inhibited as evident for BM-NED and GHO-BH1.

Drainages associated with GHO-BH1 and BM-NED show relatively low NO_3 concentrations compared to other waste rock facilities. Due to the inferred reducing character of these facilities, the low NO_3 values can likely be attributed, at least in part, to denitrification. However, it is also important to note that the initial abundance of explosive-derived nitrogen in CCR may be lower than that of waste rock. Coarse coal reject is sourced from within or adjacent to coal seams, and coal mine operators will generally limit blasting near coal seams to avoid diluting the coal product with waste rock. The initial abundance of soluble NO_3 on CCR surfaces would not impact the propensity for anoxia to develop in CCR pore spaces. However, under anaerobic conditions, elevated NO_3 concentrations may inhibit selenate reduction and removal. In this regard, the more limited NO_3 abundance in CCR wastes may facilitate more rapid development of suboxia and redox conditions conducive to Se reduction.

The relationships of Se with Mn, NO_3 and nitrogen redox couples at GHO-BH1 and BM-NED are similar to those observed in saturated pit backfill facilities, as well as some unsaturated waste rock facilities (Figure 4-22 and Figure 4-23). This suggests that anaerobic reduction processes may also play a role in controlling Se release in drainage chemistry from unsaturated waste rock, albeit to a lesser degree than in facilities containing CCR. It is unclear why these relationships are not also observed at the two Gates Fm. mixed waste facilities (TM-SBG and TM-SBB; Figure 4-24). The absence of evidence for Se attenuation in these facilities may be related to the relative quantities of CCR and waste rock, location of material placement, or differences in material composition between the different facilities.

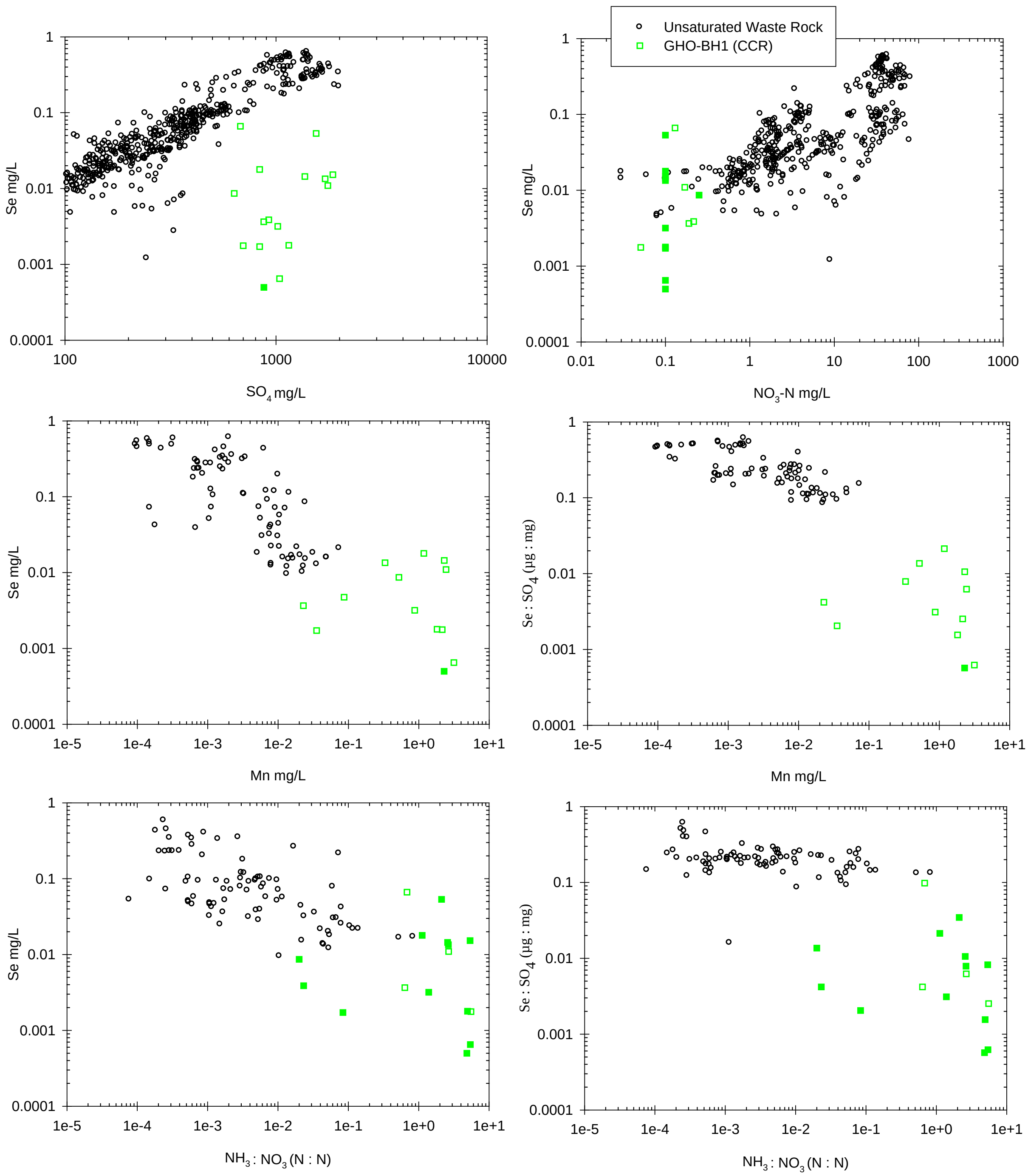


Figure 4-22: Unsaturated CCR (GHO-BH1) drainage chemistry plotted with unsaturated waste rock drainage chemistry from Mist Mt. Fm. mine sites. Samples with NO_3 or Se concentrations below detection limits are represented by filled symbols, while data with NO_3 and Se above detection limits are not filled. Note that only GHO-BH1 data show values below detection limit values. Data from other parameters are excluded when below detection limits (Mn and NH_3).

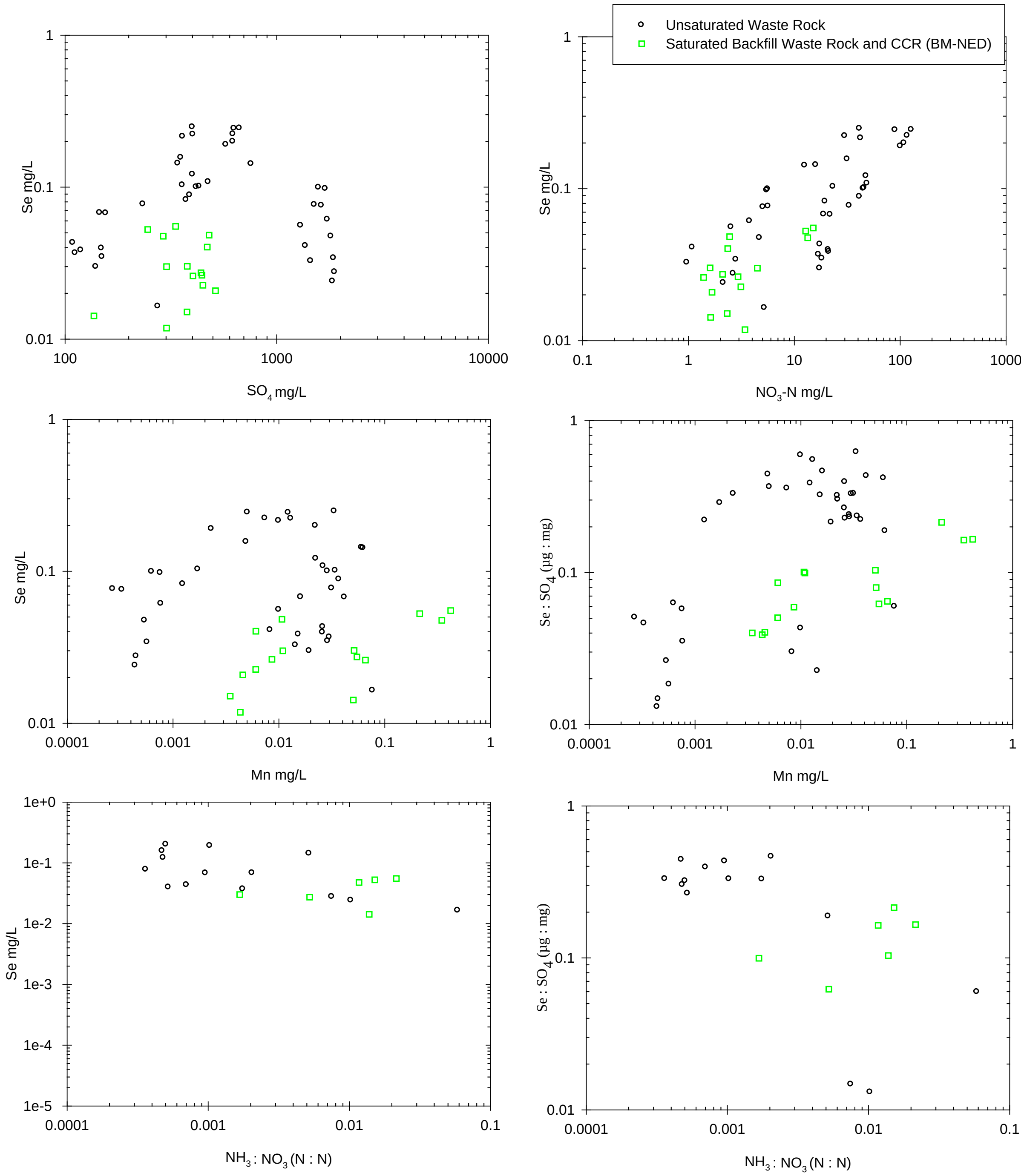


Figure 4-23: Unsaturated mixed CCR and waste rock (BM-NED) drainage chemistry plotted with unsaturated waste rock drainage chemistry from Gething Fm. mine sites. Only above detection limit values are plotted.

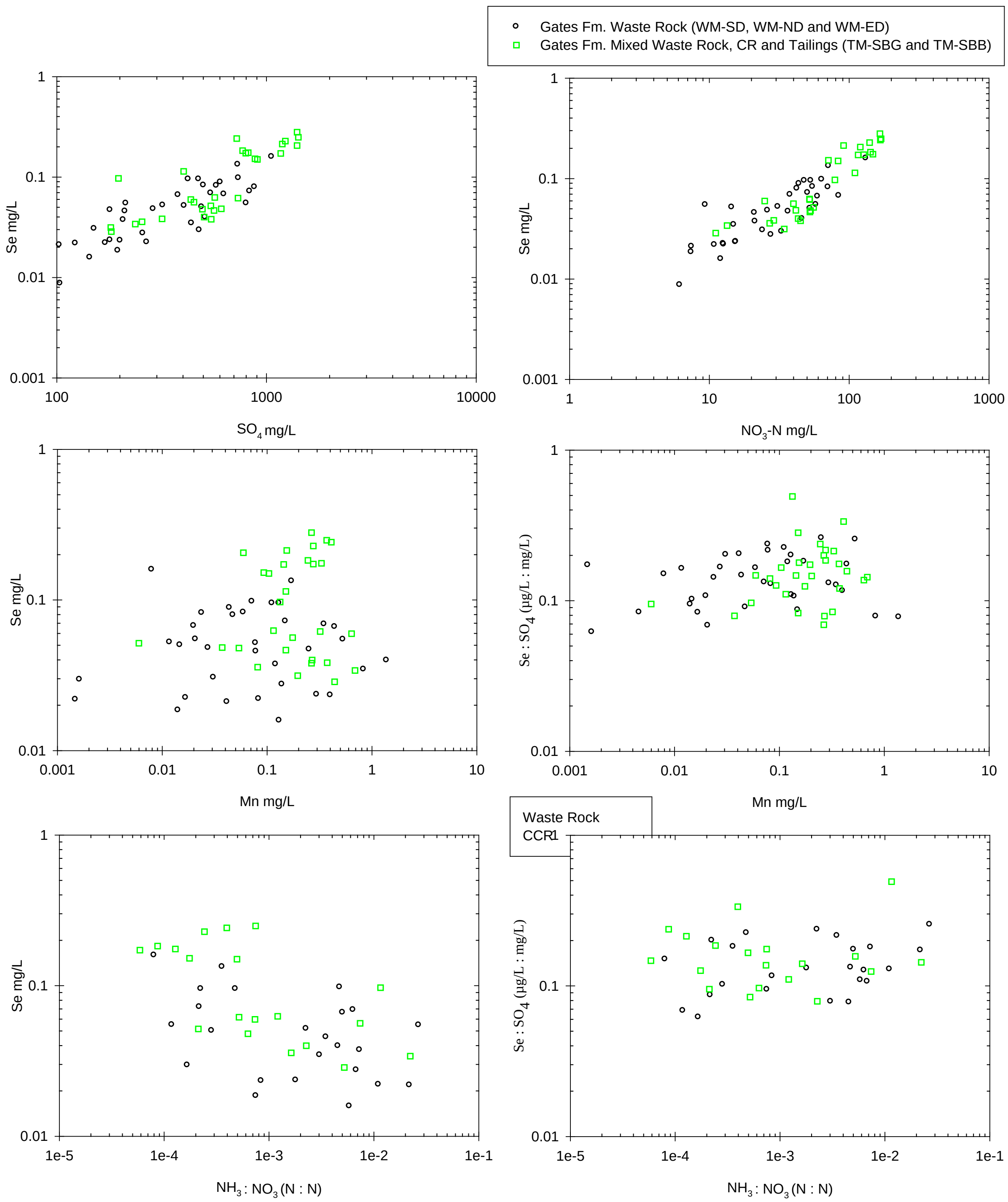


Figure 4-24: Drainage chemistry from unsaturated Gates Fm. facilities containing mixed waste rock, CCR and tailings (TM-SBG and TM-SBB) plotted with facilities containing exclusively waste rock (WM-ND, WM-ED and WM-SD). Only above detection limit values are plotted.

5. Conclusions and Potential Implications for Selenium Management

In this study, the linkages between blasting-derived nitrogen compounds and Se behaviour in coal mine waste drainages were evaluated, which included examination of eight mine sites in northeastern and southeastern B.C. Overall, the data provide insight into a number of mechanisms that can influence the remobilization, transport and attenuation of Se in coal mine environments. A number of factors impacting Se release which are not directly related to NO_3 abundance were also identified. In this chapter, the most relevant findings of the assessment are summarized. Implications of the study to Se management are also discussed within the context of water and mine waste management.

5.1 Conclusions

Literature Review

The role of NO_3 as an inhibitor to Se reduction, as well as an oxidant for the oxidation of pyrite and Se, is supported by thermodynamic, laboratory and field-based assessments. The most salient conclusions relating to these aspects as derived from the literature review include the following:

- Under suboxic conditions, both selenate and NO_3 can be attenuated by anaerobic reduction reactions. From a thermodynamic perspective, NO_3 reduction is favoured over selenate reduction, although laboratory and field studies demonstrate that such reactions may occur simultaneously. Considering the high degree of spatial heterogeneity in waste rock settings, selenate reduction may be expected in zones of denitrification.

- Based on thermodynamic principles, NO_3 has the potential to inhibit selenate reduction in anaerobic zones. The inhibition of selenate reduction by the presence of NO_3 has been demonstrated in field and laboratory settings at NO_3 concentrations as low as 1 mg/L (as NO_3-N). However, the concentration at which NO_3 can inhibit selenate reduction is poorly defined, and is likely variable between different environments.

- Thermodynamic calculations indicate that reduced sulfur (*e.g.*, pyrite) and Se (*e.g.* Se^0 and Se^{2-}) can be oxidized by both NO_3 and NO_2, which serve as electron acceptors in the oxidation process. The oxidation of reduced Se and sulfur by NO_3 has been demonstrated at both the laboratory and field scale for systems hosting Se in Cretaceous shales.

- The importance of NO_3 in affecting Se release and mobility from waste rock facilities is strongly tied to the potential for suboxic conditions to develop in waste rock interiors. Specifically, the potential for NO_3 to serve as an inhibitor to selenate reduction will only have relevance in suboxic environments. Similarly, NO_3 can only serve as an oxidizing agent of reduced Se in suboxic environments, as atmospheric O_2 is a more thermodynamically favoured electron donor.

General Relationships between Selenium, Sulfate and Nitrate

Selenium generally occurs as a replacement for S, and therefore a linkage between Se and SO_4 concentrations is expected. Gates Fm. waste rock drainages show positive correlations of Se with both SO_4 (R^2 = 0.74) and NO_3 (R^2 = 0.87). For Mist Mt. Fm. waste rock drainages, Se generally exhibits a stronger linear relationship with SO_4 (R^2 = 0.75) and a weaker relationship with NO_3 (R^2 = 0.45). Gething Fm. waste rock dumps are unique in that Se has a stronger correlation with NO_3 (R^2 = 0.64) than with SO_4 (R^2 = 0.004).

There are several mechanisms by which NO_3 may be linked to Se leaching and mobility in coal mine environments, including: 1) concurrent microbial-mediated reduction of NO_3 and Se (common attenuation mechanism); 2) inhibition of Se reduction by NO_3 (maintenance of Se mobility); and 3) NO_3 promoting Se release (direct oxidation of reduced Se by NO_3 and liberation of selenate). Each of these mechanisms requires that suboxia exist at either the macro or micro scale in the interior of waste facilities, as the presence of atmospheric oxygen will inhibit these processes. Anaerobic redox reactions are generally not considered when interpreting waste rock drainage geochemistry owing to the high gas permeability typical of subaerial waste rock dumps. The following bullets summarize the evidence for suboxic conditions within coal mine waste environments:

- Pore gas profiles for Mist Mt. Fm. waste facilities show macro-scale zones of oxygen depletion, with low oxygen levels observed over tens of metres within the waste dump interior. Furthermore, there is a body of evidence in the primary literature that indicates regions of anoxia often develop in the interiors of large waste rock dumps.

- Redox sensitive indicators in waste rock drainages, including NH_3, NO_2, Fe, Mn and nitrogen redox couples (NO_2:NO_3 and NH_3:NO_3) are indicative of mild suboxia in drainages from several waste rock facilities in southeast and northeast B.C. Pore gas data for the Mist Mt. Fm. waste dumps suggest that the abundance of these chemical indicators is related to the degree of anoxia in the interior of waste rock dumps.

Overall, data for redox indicators suggest that oxygen limitation is a common feature to coal waste rock environments, the scale of which is variable. In the absence of oxygen, microbial populations will utilize NO_3 as the next most thermodynamically favorable electron acceptor in oxidation processes. Given the likelihood of suboxia on either micro and macro scales, and the sensitivity of NO_3 and selenate to suboxia, it can be assumed that environments exist where NO_3 has the potential to affect both Se remobilization and attenuation in coal mine environments. Evidence regarding the relative importance of these processes is summarized below.

Concurrent Nitrate and Selenium Attenuation

With regards to concurrent NO_3 and Se attenuation, there is considerable evidence that anaerobic environments within waste rock dumps result in the removal of both Se and NO_3 from solution, producing water compositions with relatively low Se:SO_4 ratios.

- Case studies of CCR and saturated pit backfill facilities show that anaerobic conditions promote the attenuation of both Se and NO_3 through reduction reactions. Anoxia is more likely to develop in backfilled pits and CCR facilities in comparison to sub-aerial waste rock dumps due to the common occurrence of saturated conditions in pit backfills and the relatively fine grained nature of CCR. Selenium concentrations and Se:SO_4 ratios in pit backfill and most CCR drainages show an inverse relationship with indicators of anaerobic reduction reactions, including the proportion of reduced nitrogen species (as revealed by NO_2:NO_3 and NH_3:NO_3 redox couples) and dissolved Mn concentration. These data suggest that the attenuation of Se under suboxic conditions occurs through microbially-mediated reduction reactions.

- Nitrogen redox couples (NO_2:NO_3 and NH_3:NO_3) and Mn concentrations show an inverse relationship with Se concentrations and Se:SO_4 ratios in waste rock drainages of the Mist Mt. Fm. and Gething Fm. This is consistent with decreased Se mobility in anaerobic environments. Similar correlations are observed for some unsaturated waste rock dumps. These cases suggest that anaerobic reactions may also be affecting Se and NO_3 mobility in unsaturated waste rock environments, albeit to a lesser degree than in CCR and saturated pit backfill.

- Waste rock facilities showing relatively strong correlations between Se and major ion indicators of waste rock weathering (SO_4, Ca and Mg) generally exhibit relatively high Se:SO_4 ratios. In contrast, waste facilities with relatively low Se:SO_4 ratios show weaker correlations of Se with these weathering proxies. Facilities showing both low Se:SO_4 ratios and poor correlations between Se and

SO_4, Ca and Mg generally also show strong correlations between Se and NO_3. The fact that Se does not correlate well with SO_4 or other major ions in drainages with low Se:SO_4 ratios is illustrative of non-conservative Se behaviour. Specifically, the data suggest that Se is being attenuated by processes which do not affect SO_4, Ca or Mg to the same degree. Since Se maintains its correlation with NO_3 suggests that the primary Se attenuation process also affects NO_3. The only processes that have the potential to attenuate both Se and NO_3 relate to anaerobic reduction mechanisms (*i.e*., selenate reduction and denitrification).

Nitrate as an Inhibitor to Selenium Reduction

As outlined in Chapter 2, a body of field and laboratory data supported by thermodynamic principles demonstrates that selenate reduction can be inhibited in the presence of NO_3. Supporting evidence of this mechanism is outlined below; however, there is considerable uncertainty in the findings. Specifically, the data do not provide direct, definitive evidence as to whether Se reduction is actually being inhibited or if anoxia in specific waste rock dumps simply does not exist.

- Gates Fm. drainages exhibit similar proportions of reduced N species as the Gething and Misty Mt. formations, implying the prevalence of minor suboxia. However, there is little evidence to indicate that Se is influenced by the inferred suboxic conditions as there is little or no relationship between Se and N speciation in Gates Fm. drainages. Gates Fm. drainages are unique in that the range of NO_3 concentrations are considerably higher than in the other two formations, with median NO_3 concentrations ranging from 15 mg/L to 133 mg/L. The lack of correlation between redox indicators and Se:SO_4 ratios in drainage from Gates Fm. facilities may be related to the inhibition of selenate reduction by NO_3. In other words, anaerobic zones may exist in Gates Fm. waste rock facilities similar to waste facilities in other formations; however, the high NO_3 concentrations limit Se reduction and attenuation.
- In northeastern B.C., the mine site (WCM) showing the lowest values for NO_3 in waste rock drainages also produces lower Se:SO_4 ratios compared to other mine sites in the region. Data for redox indicators do not differ significantly in comparison to other mine sites considered in this study, suggesting that the redox conditions in WCM waste facilities are similar to those of other mine sites. The lower Se:SO_4 ratios at WCM are inferred to reflect higher rates of Se attenuation, which may in part be facilitated by the lower NO_3 abundance (decreased inhibition effect).

Nitrate as an Oxidizer of Reduced Selenium and Sulfur

The potential for Se remobilization via direct oxidation pathways involving NO_3 has been demonstrated for anaerobic systems through both laboratory studies and field assessments of NO_3- and Se-contaminated groundwater systems (see Section 2.3.2). In these studies, NO_3 has been specifically inferred to oxidize both reduced Se and S (*e.g.*, pyrite). For the drainages assessed as part of this study, evaluating the relative importance of Se remobilization through the oxidation of Se-bearing phases by NO_3 is challenging. Such difficulties relate to the complexity in differentiating multiple oxidation pathways that share common reaction products, and the potential for auto-correlative effects relating to the flushing of soluble Se, N and S from freshly blasted rock surfaces. (*e.g.*, the relation between Se, N and S in spoil seepage is influenced by the rate of mine waste deposition). However, some interpretation can be put forth based on redox indicators as well as drainage chemistry relationships between Se, SO_4, NO_3 and major ions:

- Pore gas profiles for some facilities, as well as data for redox sensitive parameters, suggest that the drainage waters considered in this study are variably influenced by suboxic reactions occurring within the interiors of the waste rock facilities. Given the potential for suboxia on macro and/or micro-scales and the abundance of NO_3, Se/S oxidation may be influenced by NO_3 reduction pathways.
- In each of the geologic formations, elevated NO_3 concentrations are associated with elevated Se:SO_4 ratios. The mechanism responsible for this association is uncertain. However, it does suggest that elevated NO_3 loading is associated with elevated Se loading.

Effect of Powder Factor

- The abundance of NO_3 in mine waste is related to powder factor and % emulsion use. In this regard, explosive use is positively correlated with NO_3 and Se concentration in waste rock facility drainages in northeastern B.C., where the mine site with the lowest powder factor (WCM) shows considerably lower Se:SO_4 ratios compared to other mine sites in the northeast. The two mine sites in the Gates Fm. with relatively high powder factors exhibit the greatest range of NO_3 and Se concentrations. This relationship does not appear to extend to waste facilities in southeast B.C.

5.2 Implications for Water and Waste Management

The data presented in this assessment suggest that the management of Se can greatly benefit from mine planning measures that are designed to:

- Optimize Se attenuation potential of CCR; and
- Maximize saturated storage volumes.

CCR environments are believed to be more conducive to the development of suboxia, and hence Se attenuation, due to the relatively fine-grained nature of CCR compared to waste rock. In this regard, consideration should be given the location of storage in order to maximize the potential benefit with respect to Se loading reductions. For example, CCR materials could be placed at specific locations to intercept site contact flows, either as part of subsurface flow passive treatment systems or within preferential flow paths dictated by pre-mine topography so as to function as Se attenuation zones. It should be noted that the geometry and construction methods of CCR piles needs to be considered for site specific conditions. For example, placement of thin lifts of CCR may result in well oxygenated conditions and may exacerbate Se release due to the fine grained nature (*i.e*. high relative surface area) of the material.

Maximizing the saturated storage volume of waste rock as pit backfill serves several purposes that benefit Se management, including: 1) mitigation of sulfur/Se oxidation through waste rock storage in saturated zones; and 2) attenuation in saturated zones through Se reduction. Waste placement in permanently saturated environments is considered to represent best management practices for minimizing the potential for metal leaching and acid generation associated with sulfide-bearing mine waste (MEND, 1998). This relates to the fact that oxidation rates of sulfide minerals (*e.g.*, pyrite) are much lower in subaqueous environments than in subaerial settings. The principles of subaqueous deposition also apply to Se, as Se occurs in reduced forms in waste rock (in co-occurrence with pyrite or as discrete reduced Se compounds). Maximizing saturated storage can be achieved through the design of open pits (*e.g.,* spillway elevation). In some cases, this may necessitate the sterilization of coal resources or the placement of in-pit berms to increase the final water table elevation within the pit.

Saturated zones of backfilled pits can provide optimum environments for the attenuation of Se as well as NO_3 (Bianchin *et al.*, 2013; Martin *et al.*, 2013). Flooded pits can also serve as sites for the passive attenuation of Se in the absence of backfilling. For Se bioremediation to be effective in pit lakes, suboxic conditions must be achieved to allow precipitation of reduced species (*e.g.,* elemental Se). In this regard, flooded pits offer viable opportunities for the bioremediation of Se given that their geometry and water column density characteristics often make them conducive to stratification and the development of suboxic bottom waters. The depletion of oxygen and onset of Se reduction in pit lakes can also be accelerated through the addition of nutrients and/or organic amendments (Martin *et al*., 2013). In a recent study of a stratified flooded pit in Canada, Martin *et al*. (2013) showed evidence for Se attenuation within the suboxic bottom waters, with Se levels reduced from 12-20 µg/L in surface waters to <3 µg/L in the suboxic zone.

The case studies described above demonstrate that some mine waste facilities have a propensity to attenuate Se and NO_3. The potential also exists for these facilities to remove Se and NO_3 from other sources and highlight potential mitigation strategies that could be implemented to manage coal mine drainage. Further study is required as necessary to optimize their performance and integration into mine planning and mitigation design.

5.3 Recommendations for Further Study

5.3.1 Standard Monitoring Practices

Improving our understanding of Se release and the relationship between Se and other parameters in waste rock drainage will be dependent on the collection of high quality data from both operating and closed sites. In this regard, attention must be given to water quality sampling procedures and the parameters measured. The quality of data could be improved by incorporating the following recommendations into standard monitoring procedures:

- Filtration and preservation of samples in the field immediately following or during sample collection. This will minimize the potential for oxidation artifacts associated with the oxidation of redox sensitive parameters (Se, NH_3, NO_2, Fe, Mn);
- Collecting samples as close to sources as possible to minimize potential for dilution and geochemical changes that can occur with time (*e.g.*, solubility controls, oxidation artifacts); and
- Measurement of N and Se species in drainage. Nitrogen species that should be measured include NO_2, NO_3 and NH_3. Selenium species should ideally include selenate (SeO_4) and selenite (SeO_3) on a periodic basis.

5.3.2 Ancillary Studies

Currently, literature regarding the role of NO_3 in affecting the mobility and release of Se is limited. Most studies to date have focused on aquifers impacted by agricultural activity. The biogeochemical processes demonstrated in these environments have implications for mining environments, although direct comparisons are not possible. In this regard, further field and laboratory studies for mine-related settings are required to elucidate the nature of the relationships between Se and NO_3.

Recommended laboratory studies include:

- Most waste rock weathering experiments generally examine weathering rates in the presence of atmospheric concentrations of O_2 and CO_2 (*e.g.*, humidity cells and unsaturated columns). In the interior of waste rock dumps, concentrations of O_2 and CO_2 can vary widely, with regions of O_2 depletion commonly observed. It is within such regions that NO_3 may impact Se mobility and release. It is recommended that a series of waste rock weathering experiments be initiated in a controlled atmosphere setting (*e.g.*, glove box), specifically designed to examine the relationship between Se, NO_3 and pore gas composition. Specifically, this study should identify:
    - Minimum oxygen concentration at which NO_3 and selenate reduction will take place;
    - Conditions under which denitrification is coupled to sulfide oxidation, and Se release;
    - Conditions under which NO_3 reduction and selenate reduction take place simultaneously; and
    - Conditions under which NO_3 can inhibit selenate reduction.
- Based on thermodynamic principles, NO_3 has the potential to inhibit selenate reduction in anaerobic environments. It is unclear how such inhibitory processes apply to coal mine waste environments. It is recommended that this be explored in a laboratory setting using mine waste material (*e.g.*, waste rock or CCR).
- This study identified Se attenuation in saturated backfill settings. Laboratory experiments using saturated columns should be initiated to provide guidance on the sensitivities of this potential attenuation mechanism. Processes to be examined should include: rate of NO_3 reduction, rate of Se reduction; potential inhibitory effects of NO_3 on Se reduction; potential to facilitate attenuation reactions by addition of nutrients and substrate (organic carbon sources); temperature; and effect of flow rates and residence time.
- The speciation of solid-phase Se (*e.g.*, organics, carbonate minerals, sulfate minerals and sulfide minerals) is currently poorly defined for Gething Fm. and Gates Fm. lithologies. Further laboratory testwork should be initiated to develop quantitative estimates of Se speciation in waste rock and coal associated with these formations. Such testwork could involve chemical extractions similar to

those conducted by Lussier *et al.* (2003) or utilize other techniques such as X-ray absorption spectroscopy.

- The use of Se stable isotopes presents an emerging technique to define Se biogeochemical pathways. Specifically, isotopic fractionation can be expected to occur during Se oxidation and reduction, and therefore changes in the isotopic signature may be used to elucidate these processes. Efforts should be placed on method development for this technique, as well as quantifying the degree of Se isotopic fractionation associated with oxidation and reduction.

Recommended field studies are as follows:

- Results for saturated backfill facilities reported in this study show that Se and NO_3 can be removed by anaerobic reduction processes. Additional studies should be initiated to define conditions required for Se attenuation to take place and further explore the utility of saturated backfilled pits as sites for *in situ* bioremediation.
- The fine-grained nature of CCR in comparison to waste rock, and potentially its chemical composition, make CCR environments more conducive to the development of suboxia, and hence Se attenuation. In this regard, it is recommended that further field studies be initiated to examine how CCR can be utilized to reduce Se loadings at coal mines. These studies could examine conditions required for CCR to attenuate Se, including pile geometry; the potential for mixing waste rock and CCR to minimize Se loadings; and preferential placement of CCR to intercept and attenuate Se leaching from waste rock drainages.
- A number of unsaturated facilities presented in this report show anomalously low Se concentrations and low $Se:SO_4$ ratios. Most evidence points towards selenate reduction occurring commensurately with denitrification as being the mechanism leading to this desirable behaviour. However, it remains unclear as to what set of circumstances allow denitrification and selenate reduction to take place. Further studies should be initiated to identify dump characteristics that lead to these favourable Se and N signatures. Such studies may incorporate: 1) pore gas profiles to identify the prevalence of suboxia in waste rock interiors; 2) the use of nitrogen stable isotopes ($^{15}N/^{14}N$) to identify isotopic fractionation associated with denitrification; 3) microbiological studies to identify the relative abundance of nitrate and selenate reducing bacteria; and 4) a review of dump design and depositional history.

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Appendix A
Water Quality Database

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007	Rock Drain												
EVO-BC1	EVO-BC1	6/19/2007	Rock Drain												
EVO-BC1	EVO-BC1	7/3/2007	Rock Drain												
EVO-BC1	EVO-BC1	8/7/2007	Rock Drain												
EVO-BC1	EVO-BC1	9/5/2007	Rock Drain												
EVO-BC1	EVO-BC1	10/3/2007	Rock Drain												
EVO-BC1	EVO-BC1	11/6/2007	Rock Drain												
EVO-BC1	EVO-BC1	12/5/2007	Rock Drain												
EVO-BC1	EVO-BC1	1/3/2008	Rock Drain												
EVO-BC1	EVO-BC1	2/5/2008	Rock Drain	<0.00002		<0.005			<0.0005		0.176				
EVO-BC1	EVO-BC1	3/5/2008	Rock Drain	<0.00005		0.068					0.102				
EVO-BC1	EVO-BC1	3/11/2008	Rock Drain												
EVO-BC1	EVO-BC1	3/18/2008	Rock Drain												
EVO-BC1	EVO-BC1	3/20/2008	Rock Drain												
EVO-BC1	EVO-BC1	3/25/2008	Rock Drain												
EVO-BC1	EVO-BC1	3/28/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/1/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/3/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/8/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/15/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/22/2008	Rock Drain												
EVO-BC1	EVO-BC1	4/29/2008	Rock Drain												
EVO-BC1	EVO-BC1	5/6/2008	Rock Drain												
EVO-BC1	EVO-BC1	5/13/2008	Rock Drain												
EVO-BC1	EVO-BC1	5/20/2008	Rock Drain												
EVO-BC1	EVO-BC1	5/21/2008	Rock Drain												
EVO-BC1	EVO-BC1	5/28/2008	Rock Drain												
EVO-BC1	EVO-BC1	6/3/2008	Rock Drain												
EVO-BC1	EVO-BC1	6/11/2008	Rock Drain												
EVO-BC1	EVO-BC1	6/17/2008	Rock Drain												
EVO-BC1	EVO-BC1	6/26/2008	Rock Drain												
EVO-BC1	EVO-BC1	7/2/2008	Rock Drain												
EVO-BC1	EVO-BC1	7/6/2008	Rock Drain												
EVO-BC1	EVO-BC1	7/29/2008	Rock Drain												
EVO-BC1	EVO-BC1	8/5/2008	Rock Drain												
EVO-BC1	EVO-BC1	9/2/2008	Rock Drain												
EVO-BC1	EVO-BC1	9/12/2008	Rock Drain												
EVO-BC1	EVO-BC1	10/7/2008	Rock Drain												
EVO-BC1	EVO-BC1	11/4/2008	Rock Drain				265				0.234		<0.05		
EVO-BC1	EVO-BC1	12/3/2008	Rock Drain								0.239		<0.05		
EVO-BC1	EVO-BC1	1/7/2009	Rock Drain								0.227		<0.05		
EVO-BC1	EVO-BC1	2/4/2009	Rock Drain								0.201		<0.05		
EVO-BC1	EVO-BC1	3/3/2009	Rock Drain								0.244		<0.05		
EVO-BC1	EVO-BC1	3/10/2009	Rock Drain												
EVO-BC1	EVO-BC1	3/17/2009	Rock Drain												
EVO-BC1	EVO-BC1	3/24/2009	Rock Drain												
EVO-BC1	EVO-BC1	3/31/2009	Rock Drain												
EVO-BC1	EVO-BC1	4/7/2009	Rock Drain								0.153		<0.05		
EVO-BC1	EVO-BC1	4/15/2009	Rock Drain												
EVO-BC1	EVO-BC1	4/21/2009	Rock Drain												
EVO-BC1	EVO-BC1	4/28/2009	Rock Drain												
EVO-BC1	EVO-BC1	5/6/2009	Rock Drain												
EVO-BC1	EVO-BC1	5/12/2009	Rock Drain												
EVO-BC1	EVO-BC1	5/20/2009	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009	Rock Drain												
EVO-BC1	EVO-BC1	6/2/2009	Rock Drain								0.069		<0.05		
EVO-BC1	EVO-BC1	6/9/2009	Rock Drain												
EVO-BC1	EVO-BC1	6/16/2009	Rock Drain												
EVO-BC1	EVO-BC1	6/23/2009	Rock Drain												
EVO-BC1	EVO-BC1	6/30/2009	Rock Drain												
EVO-BC1	EVO-BC1	7/8/2009	Rock Drain				239								
EVO-BC1	EVO-BC1	8/5/2009	Rock Drain				238				0.124		<0.05		
EVO-BC1	EVO-BC1	9/1/2009	Rock Drain								0.101		<0.05		
EVO-BC1	EVO-BC1	10/7/2009	Rock Drain				237				0.177		<0.05		
EVO-BC1	EVO-BC1	11/5/2009	Rock Drain				218				0.246		<0.05		
EVO-BC1	EVO-BC1	11/6/2009	Rock Drain												
EVO-BC1	EVO-BC1	12/2/2009	Rock Drain				227								
EVO-BC1	EVO-BC1	12/3/2009	Rock Drain												
EVO-DC1	EVO-DC1	9/5/2007	Rock Drain												
EVO-DC1	EVO-DC1	11/4/2008	Rock Drain				320				0.029		<0.05		
EVO-DC1	EVO-DC1	5/25/2009	Rock Drain								0.025		<0.05		
EVO-DC1	EVO-DC1	6/2/2009	Rock Drain												
EVO-DC1	EVO-DC1	6/10/2009	Rock Drain												
EVO-DC1	EVO-DC1	6/23/2009	Rock Drain												
EVO-DC1	EVO-DC1	6/30/2009	Rock Drain												
EVO-DC1	EVO-DC1	7/7/2009	Rock Drain	<0.00001		0.0434			<0.0001		0.0283		<0.01		
EVO-DC1	EVO-DC1	7/31/2009	Rock Drain	<0.000005		0.0026	155		0.00018		0.147		0.011		
EVO-DC1	EVO-DC1	8/5/2009	Rock Drain								0.056		<0.05		
EVO-DC1	EVO-DC1	8/31/2009	Rock Drain	<0.000005		0.0016	156		0.00013		0.181		<0.005		
EVO-DC1	EVO-DC1	9/1/2009	Rock Drain								0.03		<0.05		
EVO-DC1	EVO-DC1	10/6/2009	Rock Drain								0.029		<0.05		
EVO-DC1	EVO-DC1	10/20/2009	Rock Drain	<0.000005		0.0038	177		0.00015		0.165		<0.005		
EVO-DC1	EVO-DC1	11/3/2009	Rock Drain								0.026		<0.05		
EVO-GC2	EVO-GC2	7/3/2007	Rock Drain												
EVO-GC2	EVO-GC2	8/7/2007	Rock Drain												
EVO-GC2	EVO-GC2	9/5/2007	Rock Drain												
EVO-GC2	EVO-GC2	10/3/2007	Rock Drain												
EVO-GC2	EVO-GC2	11/6/2007	Rock Drain												
EVO-GC2	EVO-GC2	12/4/2007	Rock Drain												
EVO-GC2	EVO-GC2	1/3/2008	Rock Drain												
EVO-GC2	EVO-GC2	2/5/2008	Rock Drain	<0.00001		0.262			0.00058		0.108				
EVO-GC2	EVO-GC2	3/5/2008	Rock Drain			0.267					0.0981				
EVO-GC2	EVO-GC2	4/1/2008	Rock Drain												
EVO-GC2	EVO-GC2	4/3/2008	Rock Drain												
EVO-GC2	EVO-GC2	5/6/2008	Rock Drain												
EVO-GC2	EVO-GC2	6/3/2008	Rock Drain												
EVO-GC2	EVO-GC2	7/2/2008	Rock Drain												
EVO-GC2	EVO-GC2	7/29/2008	Rock Drain												
EVO-GC2	EVO-GC2	8/6/2008	Rock Drain												
EVO-GC2	EVO-GC2	9/2/2008	Rock Drain												
EVO-GC2	EVO-GC2	9/3/2008	Rock Drain												
EVO-GC2	EVO-GC2	10/7/2008	Rock Drain												
EVO-GC2	EVO-GC2	11/4/2008	Rock Drain			0.26	242				0.128		<0.05		
EVO-GC2	EVO-GC2	12/3/2008	Rock Drain			0.33					0.139		<0.05		
EVO-GC2	EVO-GC2	1/7/2009	Rock Drain			0.22					0.118		<0.05		
EVO-GC2	EVO-GC2	2/4/2009	Rock Drain			0.63					0.111		<0.05		
EVO-GC2	EVO-GC2	3/3/2009	Rock Drain			3.47					0.149		<0.05		

				Ag-D	**Ag-T**	**Al-D**	**Alk-T**	**Al-T**	**As-D**	**As-T**	**Ba-D**	**Ba-T**	**B-D**	**Be-D**	**Be-T**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009	Rock Drain												
EVO-GC2	EVO-GC2	3/17/2009	Rock Drain												
EVO-GC2	EVO-GC2	3/24/2009	Rock Drain												
EVO-GC2	EVO-GC2	3/31/2009	Rock Drain												
EVO-GC2	EVO-GC2	4/7/2009	Rock Drain			1.73					0.104		<0.05		
EVO-GC2	EVO-GC2	4/14/2009	Rock Drain												
EVO-GC2	EVO-GC2	4/21/2009	Rock Drain												
EVO-GC2	EVO-GC2	4/29/2009	Rock Drain												
EVO-GC2	EVO-GC2	5/7/2009	Rock Drain	0.000011		0.518			0.00028		0.0833		0.024		
EVO-GC2	EVO-GC2	5/12/2009	Rock Drain	<0.000005		0.406			0.00032		0.136		0.028		
EVO-GC2	EVO-GC2	5/20/2009	Rock Drain												
EVO-GC2	EVO-GC2	5/26/2009	Rock Drain												
EVO-GC2	EVO-GC2	6/2/2009	Rock Drain	<0.000005		0.124			0.00028		0.123		0.032		
EVO-GC2	EVO-GC2	6/6/2009	Rock Drain												
EVO-GC2	EVO-GC2	6/8/2009	Rock Drain												
EVO-GC2	EVO-GC2	6/10/2009	Rock Drain												
EVO-GC2	EVO-GC2	6/16/2009	Rock Drain												
EVO-GC2	EVO-GC2	6/23/2009	Rock Drain												
EVO-GC2	EVO-GC2	7/2/2009	Rock Drain												
EVO-GC2	EVO-GC2	7/7/2009	Rock Drain	0.000034		1.17			0.00208		0.159		0.068		
EVO-GC2	EVO-GC2	7/14/2009	Rock Drain												
EVO-GC2	EVO-GC2	7/16/2009	Rock Drain												
EVO-GC2	EVO-GC2	7/21/2009	Rock Drain				200								
EVO-GC2	EVO-GC2	7/29/2009	Rock Drain												
EVO-GC2	EVO-GC2	8/5/2009	Rock Drain	0.000037		1.08	181		0.00086		0.107		0.045		
EVO-GC2	EVO-GC2	8/11/2009	Rock Drain												
EVO-GC2	EVO-GC2	8/18/2009	Rock Drain												
EVO-GC2	EVO-GC2	8/25/2009	Rock Drain												
EVO-GC2	EVO-GC2	9/1/2009	Rock Drain				204				0.098		<0.05		
EVO-GC2	EVO-GC2	9/8/2009	Rock Drain	<0.000005		0.258	213		0.00027		0.0949		0.038		
EVO-GC2	EVO-GC2	9/16/2009	Rock Drain				223								
EVO-GC2	EVO-GC2	9/22/2009	Rock Drain				222								
EVO-GC2	EVO-GC2	9/29/2009	Rock Drain												
EVO-GC2	EVO-GC2	10/6/2009	Rock Drain	<0.000005		0.233			0.00026		0.102		0.039		
EVO-GC2	EVO-GC2	11/3/2009	Rock Drain			0.36					0.088		<0.05		
EVO-GC2	EVO-GC2	12/1/2009	Rock Drain	<0.00001		0.301	249		0.00028		0.109		0.042		
FRO-CC1	FRO-CC1	7/3/2007	Pond												
FRO-CC1	FRO-CC1	8/7/2007	Pond												
FRO-CC1	FRO-CC1	9/4/2007	Pond												
FRO-CC1	FRO-CC1	10/1/2007	Pond												
FRO-CC1	FRO-CC1	11/5/2007	Pond												
FRO-CC1	FRO-CC1	12/3/2007	Pond												
FRO-CC1	FRO-CC1	1/8/2008	Pond												
FRO-CC1	FRO-CC1	2/4/2008	Pond												
FRO-CC1	FRO-CC1	3/17/2008	Pond												
FRO-CC1	FRO-CC1	4/7/2008	Pond												
FRO-CC1	FRO-CC1	5/5/2008	Pond												
FRO-CC1	FRO-CC1	6/4/2008	Pond												
FRO-CC1	FRO-CC1	7/7/2008	Pond												
FRO-CC1	FRO-CC1	8/6/2008	Pond												
FRO-CC1	FRO-CC1	9/9/2008	Pond												
FRO-CC1	FRO-CC1	10/7/2008	Pond												
FRO-CC1	FRO-CC1	11/3/2008	Pond												
FRO-CC1	FRO-CC1	12/1/2008	Pond												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009	Pond	<0.00005		<0.0025			0.00023		0.0686		<0.025		
FRO-CC1	FRO-CC1	2/2/2009	Pond												
FRO-CC1	FRO-CC1	2/3/2009	Pond												
FRO-CC1	FRO-CC1	3/17/2009	Pond	<0.00005		<0.0025			<0.0001		0.0583		<0.025		
FRO-CC1	FRO-CC1	4/6/2009	Pond	<0.00005		0.0179			<0.00035		0.0556		<0.025		
FRO-CC1	FRO-CC1	5/4/2009	Pond								0.059		<0.05		
FRO-CC1	FRO-CC1	6/1/2009	Pond	<0.000005		<0.0015			0.00013		0.0583		0.014		
FRO-CC1	FRO-CC1	7/6/2009	Pond	<0.000005		<0.0025			0.00016		0.0794		0.021		
FRO-CC1	FRO-CC1	8/3/2009	Pond	<0.000005		0.0147			0.00018		0.0755		0.02		
FRO-CC1	FRO-CC1	9/1/2009	Pond	<0.000005		<0.0035			0.00017		0.0692		0.021		
FRO-CC1	FRO-CC1	10/7/2009	Pond	<0.000005		0.0028			0.00015		0.0717		0.027		
FRO-CC1	FRO-CC1	11/2/2009	Pond	<0.000005		<0.0015			0.00015		0.0795		0.022		
FRO-CC1	FRO-CC1	12/7/2009	Pond	<0.000005		0.0025			0.00011		0.0693		0.016		
FRO-EC1	FRO-EC1	7/3/2007	Pond												
FRO-EC1	FRO-EC1	8/7/2007	Pond												
FRO-EC1	FRO-EC1	9/4/2007	Pond												
FRO-EC1	FRO-EC1	10/1/2007	Pond												
FRO-EC1	FRO-EC1	11/5/2007	Pond												
FRO-EC1	FRO-EC1	12/3/2007	Pond												
FRO-EC1	FRO-EC1	1/8/2008	Pond												
FRO-EC1	FRO-EC1	2/4/2008	Pond												
FRO-EC1	FRO-EC1	3/17/2008	Pond												
FRO-EC1	FRO-EC1	4/7/2008	Pond												
FRO-EC1	FRO-EC1	6/4/2008	Pond												
FRO-EC1	FRO-EC1	7/7/2008	Pond												
FRO-EC1	FRO-EC1	8/6/2008	Pond												
FRO-EC1	FRO-EC1	9/9/2008	Pond	<0.000025		0.0099			<0.00025		0.0149		<0.025		
FRO-EC1	FRO-EC1	10/7/2008	Pond												
FRO-EC1	FRO-EC1	11/3/2008	Pond												
FRO-EC1	FRO-EC1	12/1/2008	Pond												
FRO-EC1	FRO-EC1	1/5/2009	Pond			<0.0125			<0.0005		0.0132		0.125		
FRO-EC1	FRO-EC1	2/2/2009	Pond												
FRO-EC1	FRO-EC1	2/3/2009	Pond												
FRO-EC1	FRO-EC1	3/17/2009	Pond			<0.0125			<0.0005		0.0194		0.125		
FRO-EC1	FRO-EC1	4/6/2009	Pond			<0.0125			<0.002		0.0266		0.125		
FRO-EC1	FRO-EC1	5/4/2009	Pond								0.022		<0.05		
FRO-EC1	FRO-EC1	5/13/2009	Pond	<0.000025		0.0119			<0.00025		0.0191		<0.025		
FRO-EC1	FRO-EC1	5/19/2009	Pond	<0.000025		<0.0025			<0.00025		0.0183		<0.025		
FRO-EC1	FRO-EC1	5/26/2009	Pond	<0.000025		<0.0025			<0.00025		0.0162		<0.025		
FRO-EC1	FRO-EC1	6/1/2009	Pond	<0.000025		<0.0025			<0.00025		0.0144		<0.025		
FRO-EC1	FRO-EC1	6/8/2009	Pond	<0.000025		<0.0025			<0.00025		0.0141		<0.025		
FRO-EC1	FRO-EC1	7/6/2009	Pond	<0.000025		<0.0025			<0.00025		0.0148		<0.025		
FRO-EC1	FRO-EC1	8/3/2009	Pond	<0.000025		0.024			<0.00025		0.0209		<0.025		
FRO-EC1	FRO-EC1	9/1/2009	Pond	<0.000025		<0.0025			<0.00025		0.0182		<0.025		
FRO-EC1	FRO-EC1	10/7/2009	Pond	<0.000025		0.0147			<0.00025		0.0183		0.059		
FRO-EC1	FRO-EC1	11/2/2009	Pond	<0.000025		0.0082			<0.00025		0.0177		0.051		
FRO-EC1	FRO-EC1	12/7/2009	Pond	<0.000025		0.0059			<0.00025		0.0169		<0.025		
FRO-KC1	FRO-KC1	7/3/2007	Rock Drain												
FRO-KC1	FRO-KC1	8/7/2007	Rock Drain												
FRO-KC1	FRO-KC1	9/4/2007	Rock Drain												
FRO-KC1	FRO-KC1	10/1/2007	Rock Drain												
FRO-KC1	FRO-KC1	11/5/2007	Rock Drain												
FRO-KC1	FRO-KC1	12/3/2007	Rock Drain												
FRO-KC1	FRO-KC1	1/7/2008	Rock Drain												
FRO-KC1	FRO-KC1	2/4/2008	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008	Rock Drain												
FRO-KC1	FRO-KC1	4/7/2008	Rock Drain												
FRO-KC1	FRO-KC1	5/5/2008	Rock Drain												
FRO-KC1	FRO-KC1	6/4/2008	Rock Drain												
FRO-KC1	FRO-KC1	7/7/2008	Rock Drain												
FRO-KC1	FRO-KC1	8/6/2008	Rock Drain												
FRO-KC1	FRO-KC1	9/9/2008	Rock Drain	<0.00001		0.0031			<0.0001		0.0399		0.023		
FRO-KC1	FRO-KC1	10/7/2008	Rock Drain												
FRO-KC1	FRO-KC1	11/3/2008	Rock Drain												
FRO-KC1	FRO-KC1	12/1/2008	Rock Drain												
FRO-KC1	FRO-KC1	1/5/2009	Rock Drain			<0.0125			<0.0005		0.0425		<0.125		
FRO-KC1	FRO-KC1	2/2/2009	Rock Drain												
FRO-KC1	FRO-KC1	2/3/2009	Rock Drain												
FRO-KC1	FRO-KC1	3/17/2009	Rock Drain			<0.0125			<0.0005		0.0402		<0.125		
FRO-KC1	FRO-KC1	4/6/2009	Rock Drain			<0.0125			<0.0005		0.0378		<0.125		
FRO-KC1	FRO-KC1	5/4/2009	Rock Drain								0.031		<0.05		
FRO-KC1	FRO-KC1	6/1/2009	Rock Drain	<0.00001		<0.0025			<0.0001		0.0251		<0.01		
FRO-KC1	FRO-KC1	7/6/2009	Rock Drain	<0.00001		<0.001			<0.0001		0.0304		<0.01		
FRO-KC1	FRO-KC1	8/3/2009	Rock Drain	<0.00001		<0.001			<0.0001		0.0311		<0.01		
FRO-KC1	FRO-KC1	9/1/2009	Rock Drain												
FRO-KC1	FRO-KC1	9/2/2009	Rock Drain	<0.00001		<0.0035			<0.0001		0.0305		0.022		
FRO-KC1	FRO-KC1	10/7/2009	Rock Drain	<0.00001		<0.001			<0.0001		0.0386		0.025		
FRO-KC1	FRO-KC1	11/2/2009	Rock Drain	<0.00001		<0.001			<0.0001		0.0376		<0.01		
FRO-KC1	FRO-KC1	12/7/2009	Rock Drain	<0.00001		<0.001			<0.0001		0.0395		<0.01		
GHO-CC1	GHO-CC1	1/4/2007	Pond												
GHO-CC1	GHO-CC1	2/7/2007	Pond												
GHO-CC1	GHO-CC1	3/1/2007	Pond												
GHO-CC1	GHO-CC1	4/2/2007	Pond												
GHO-CC1	GHO-CC1	4/9/2007	Pond												
GHO-CC1	GHO-CC1	4/16/2007	Pond												
GHO-CC1	GHO-CC1	4/23/2007	Pond												
GHO-CC1	GHO-CC1	5/1/2007	Pond												
GHO-CC1	GHO-CC1	5/7/2007	Pond												
GHO-CC1	GHO-CC1	5/14/2007	Pond												
GHO-CC1	GHO-CC1	5/22/2007	Pond												
GHO-CC1	GHO-CC1	5/28/2007	Pond												
GHO-CC1	GHO-CC1	6/4/2007	Pond												
GHO-CC1	GHO-CC1	6/11/2007	Pond												
GHO-CC1	GHO-CC1	7/3/2007	Pond												
GHO-CC1	GHO-CC1	8/7/2007	Pond												
GHO-CC1	GHO-CC1	9/4/2007	Pond												
GHO-CC1	GHO-CC1	10/1/2007	Pond												
GHO-CC1	GHO-CC1	11/5/2007	Pond												
GHO-CC1	GHO-CC1	12/4/2007	Pond												
GHO-CC1	GHO-CC1	1/7/2008	Pond												
GHO-CC1	GHO-CC1	2/4/2008	Pond												
GHO-CC1	GHO-CC1	3/3/2008	Pond												
GHO-CC1	GHO-CC1	4/1/2008	Pond												
GHO-CC1	GHO-CC1	5/5/2008	Pond												
GHO-CC1	GHO-CC1	6/2/2008	Pond												
GHO-CC1	GHO-CC1	7/2/2008	Pond												
GHO-CC1	GHO-CC1	8/5/2008	Pond												
GHO-CC1	GHO-CC1	8/13/2008	Pond												
GHO-CC1	GHO-CC1	8/18/2008	Pond												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008	Pond												
GHO-CC1	GHO-CC1	9/29/2008	Pond												
GHO-CC1	GHO-CC1	11/3/2008	Pond												
GHO-CC1	GHO-CC1	12/1/2008	Pond								0.035		<0.05		
GHO-CC1	GHO-CC1	12/3/2008	Pond												
GHO-CC1	GHO-CC1	1/5/2009	Pond								0.035		<0.05		
GHO-CC1	GHO-CC1	1/6/2009	Pond												
GHO-CC1	GHO-CC1	2/3/2009	Pond								0.021		<0.05		
GHO-CC1	GHO-CC1	2/4/2009	Pond												
GHO-CC1	GHO-CC1	3/2/2009	Pond								0.021		<0.05		
GHO-CC1	GHO-CC1	3/3/2009	Pond												
GHO-CC1	GHO-CC1	4/1/2009	Pond								0.033		<0.05		
GHO-CC1	GHO-CC1	4/2/2009	Pond												
GHO-CC1	GHO-CC1	5/4/2009	Pond								0.051		<0.05		
GHO-CC1	GHO-CC1	5/5/2009	Pond												
GHO-CC1	GHO-CC1	6/1/2009	Pond								0.033		<0.05		
GHO-CC1	GHO-CC1	6/2/2009	Pond												
GHO-CC1	GHO-CC1	7/6/2009	Pond								0.027		<0.05		
GHO-CC1	GHO-CC1	7/7/2009	Pond												
GHO-CC1	GHO-CC1	8/4/2009	Pond								0.028		<0.05		
GHO-CC1	GHO-CC1	8/5/2009	Pond												
GHO-CC1	GHO-CC1	9/1/2009	Pond								0.027		<0.05		
GHO-CC1	GHO-CC1	9/2/2009	Pond												
GHO-CC1	GHO-CC1	10/5/2009	Pond								0.043		<0.05		
GHO-CC1	GHO-CC1	10/6/2009	Pond												
GHO-CC1	GHO-CC1	11/2/2009	Pond								0.027		<0.05		
GHO-CC1	GHO-CC1	11/3/2009	Pond												
GHO-CC1	GHO-CC1	12/1/2009	Pond								0.043		<0.05		
GHO-CC1	GHO-CC1	12/2/2009	Pond												
GHO-CC1	GHO-CC1	1/4/2010	Pond								0.028		<0.05		
GHO-CC1	GHO-CC1	1/5/2010	Pond												
GHO-GCS	GHO-GCSPD	2/7/1996	Rock Drain												
GHO-GCS	GHO-GCSPD	4/16/1996	Rock Drain												
GHO-GCS	GHO-GCSPD	5/21/1996	Rock Drain												
GHO-GCS	GHO-GCSPD	8/13/1996	Rock Drain												
GHO-GCS	GHO-GCSPD	12/3/1996	Rock Drain												
GHO-GCS	GHO-GCSPD	4/4/2002	Rock Drain												
GHO-GCS	GHO-GCSPD	11/2/2002	Rock Drain												
GHO-GCS	GHO-GCSPD	3/30/2003	Rock Drain												
GHO-GCS	GHO-GCSPD	6/29/2003	Rock Drain												
GHO-GCS	GHO-GCSPD	12/27/2003	Rock Drain												
GHO-GCS	GHO-GCSPD	4/4/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	5/2/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	6/6/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	7/4/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	8/1/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	9/2/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	10/3/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	11/2/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	12/5/2004	Rock Drain												
GHO-GCS	GHO-GCSPD	1/2/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	2/4/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	3/1/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	4/3/2005	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	6/12/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	7/3/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	8/1/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	9/4/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	10/2/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	11/2/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	12/8/2005	Rock Drain												
GHO-GCS	GHO-GCSPD	1/4/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	2/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	3/10/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	4/3/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	5/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	6/5/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	7/4/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	8/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	9/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	10/2/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	11/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	12/1/2006	Rock Drain												
GHO-GCS	GHO-GCSPD	1/4/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	2/6/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	3/1/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	4/2/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	5/1/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	6/4/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	7/3/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	8/7/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	9/4/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	10/1/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	11/5/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	12/4/2007	Rock Drain												
GHO-GCS	GHO-GCSPD	1/7/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	3/3/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	4/1/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	5/5/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	6/2/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	7/2/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	8/5/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	9/2/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	9/29/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	11/3/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	12/1/2008	Rock Drain												
GHO-GCS	GHO-GCSPD	1/5/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	2/3/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	3/2/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	4/1/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	5/4/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	6/1/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	7/6/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	8/4/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	9/1/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	10/5/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	11/2/2009	Rock Drain												
GHO-GCS	GHO-GCSPD	12/1/2009	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010	Rock Drain												
GHO-GCS	GHO-GCSPD	2/1/2010	Rock Drain												
GHO-GCS	GHO-GCSPD	3/2/2010	Rock Drain												
GHO-GCS	GHO-GCSPD	3/15/2010	Rock Drain				<1.0								
GHO-GCS	GHO-GCSPD	3/22/2010	Rock Drain				13.1								
GHO-GCS	GHO-GCSPD	3/29/2010	Rock Drain				8.3								
GHO-GCS	GHO-GCSPD	4/5/2010	Rock Drain				7.7								
GHO-GCS	GHO-GCSPD	4/12/2010	Rock Drain				7.0								
GHO-GCS	GHO-GCSPD	4/19/2010	Rock Drain				8.8								
GHO-GCS	GHO-GCSPD	4/26/2010	Rock Drain				5.6								
GHO-GCS	GHO-GCSPD	5/3/2010	Rock Drain				6.9								
GHO-GCS	GHO-GCSPD	5/10/2010	Rock Drain				11.6								
GHO-GCS	GHO-GCSPD	5/17/2010	Rock Drain				<2.0								
GHO-GCS	GHO-GCSPD	5/25/2010	Rock Drain				<1.0								
GHO-GCS	GHO-GCSPD	5/31/2010	Rock Drain				7.4								
GHO-GCS	GHO-GCSPD	6/7/2010	Rock Drain				<1.0								
GHO-GCS	GHO-GCSPD	6/14/2010	Rock Drain				13.0								
GHO-GCS	GHO-GCSPD	6/21/2010	Rock Drain				15.8								
GHO-GCS	GHO-GCSPD	6/28/2010	Rock Drain				17.2								
GHO-GCS	GHO-GCSPD	7/5/2010	Rock Drain				15.8								
GHO-GCS	GHO-GCSPD	7/12/2010	Rock Drain				9.3								
GHO-GCS	GHO-GCSPD	7/19/2010	Rock Drain				11.7								
GHO-GCS	GHO-GCSPD	7/26/2010	Rock Drain				12.1								
GHO-GCS	GHO-GCSPD	8/3/2010	Rock Drain				7.1								
GHO-GCS	GHO-GCSPD	9/7/2010	Rock Drain				8.9								
GHO-GCS	GHO-GCSPD	10/4/2010	Rock Drain				9.9								
GHO-GCS	GHO-GCSPD	11/1/2010	Rock Drain				5.3								
GHO-GCS	GHO-GCSPD	12/6/2010	Rock Drain				<1.0								
GHO-GCS	GHO-GCSPD	1/4/2011	Rock Drain				<2.0								
GHO-LTC	GHO-LTCSPD	2/7/1996	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/21/1996	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/13/1996	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/3/1996	Rock Drain												
GHO-LTC	GHO-LTCSPD	4/6/1997	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/15/1997	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/1/1997	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/26/1998	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/8/1998	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/5/1998	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/8/1999	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/9/1999	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/9/1999	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/4/1999	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/5/2000	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/4/2000	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/5/2000	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/8/2002	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/2/2002	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/30/2003	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/29/2003	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/27/2003	Rock Drain												
GHO-LTC	GHO-LTCSPD	1/2/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/4/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	4/4/2004	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	5/2/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/6/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/4/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/1/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/2/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/3/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/2/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/5/2004	Rock Drain												
GHO-LTC	GHO-LTCSPD	1/2/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	2/4/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/1/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	4/3/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/1/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/12/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/3/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/1/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/4/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/2/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/2/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/8/2005	Rock Drain												
GHO-LTC	GHO-LTCSPD	1/4/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	2/1/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	4/3/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/4/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/1/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/1/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/2/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/1/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/1/2006	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/1/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/4/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/3/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/7/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/4/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/1/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/5/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/4/2007	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/5/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/2/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/2/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/14/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/5/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/14/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/2/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	9/29/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/3/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/1/2008	Rock Drain												
GHO-LTC	GHO-LTCSPD	1/5/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	2/3/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/2/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	4/1/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	5/4/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	6/1/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	7/6/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	8/4/2009	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	10/5/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	11/2/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	12/1/2009	Rock Drain												
GHO-LTC	GHO-LTCSPD	1/4/2010	Rock Drain												
GHO-LTC	GHO-LTCSPD	2/2/2010	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/1/2010	Rock Drain												
GHO-LTC	GHO-LTCSPD	3/15/2010	Rock Drain				<2.0								
GHO-LTC	GHO-LTCSPD	3/22/2010	Rock Drain				8.3								
GHO-LTC	GHO-LTCSPD	3/29/2010	Rock Drain				3.0								
GHO-LTC	GHO-LTCSPD	4/6/2010	Rock Drain				5.1								
GHO-LTC	GHO-LTCSPD	4/12/2010	Rock Drain				3.0								
GHO-LTC	GHO-LTCSPD	4/19/2010	Rock Drain				<2.0								
GHO-LTC	GHO-LTCSPD	4/27/2010	Rock Drain				4.4								
GHO-LTC	GHO-LTCSPD	5/4/2010	Rock Drain				<2.0								
GHO-LTC	GHO-LTCSPD	5/11/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	5/18/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	5/26/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	6/1/2010	Rock Drain				1.3								
GHO-LTC	GHO-LTCSPD	6/8/2010	Rock Drain				6.8								
GHO-LTC	GHO-LTCSPD	6/16/2010	Rock Drain				5.2								
GHO-LTC	GHO-LTCSPD	6/22/2010	Rock Drain				8.3								
GHO-LTC	GHO-LTCSPD	6/29/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	7/6/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	7/13/2010	Rock Drain				4.8								
GHO-LTC	GHO-LTCSPD	7/20/2010	Rock Drain				1.9								
GHO-LTC	GHO-LTCSPD	7/27/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	8/4/2010	Rock Drain				2.0								
GHO-LTC	GHO-LTCSPD	9/8/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	10/5/2010	Rock Drain				8.2								
GHO-LTC	GHO-LTCSPD	11/2/2010	Rock Drain				6.5								
GHO-LTC	GHO-LTCSPD	12/7/2010	Rock Drain				<1.0								
GHO-LTC	GHO-LTCSPD	1/4/2011	Rock Drain				<2.0								
GHO-PC1	GHO-PC1	1/4/2007	Rock Drain												
GHO-PC1	GHO-PC1	2/7/2007	Rock Drain												
GHO-PC1	GHO-PC1	3/1/2007	Rock Drain												
GHO-PC1	GHO-PC1	4/2/2007	Rock Drain												
GHO-PC1	GHO-PC1	5/1/2007	Rock Drain												
GHO-PC1	GHO-PC1	6/4/2007	Rock Drain												
GHO-PC1	GHO-PC1	7/3/2007	Rock Drain												
GHO-PC1	GHO-PC1	8/7/2007	Rock Drain												
GHO-PC1	GHO-PC1	9/4/2007	Rock Drain												
GHO-PC1	GHO-PC1	10/1/2007	Rock Drain												
GHO-PC1	GHO-PC1	11/5/2007	Rock Drain												
GHO-PC1	GHO-PC1	12/4/2007	Rock Drain												
GHO-PC1	GHO-PC1	1/7/2008	Rock Drain												
GHO-PC1	GHO-PC1	2/4/2008	Rock Drain												
GHO-PC1	GHO-PC1	3/3/2008	Rock Drain												
GHO-PC1	GHO-PC1	4/1/2008	Rock Drain												
GHO-PC1	GHO-PC1	5/5/2008	Rock Drain												
GHO-PC1	GHO-PC1	6/2/2008	Rock Drain												
GHO-PC1	GHO-PC1	7/2/2008	Rock Drain												
GHO-PC1	GHO-PC1	8/5/2008	Rock Drain												
GHO-PC1	GHO-PC1	9/2/2008	Rock Drain												
GHO-PC1	GHO-PC1	9/29/2008	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008	Rock Drain												
GHO-PC1	GHO-PC1	12/1/2008	Rock Drain								0.101		<0.05		
GHO-PC1	GHO-PC1	12/3/2008	Rock Drain												
GHO-PC1	GHO-PC1	1/5/2009	Rock Drain								0.085		<0.05		
GHO-PC1	GHO-PC1	1/6/2009	Rock Drain												
GHO-PC1	GHO-PC1	2/3/2009	Rock Drain								0.085		<0.05		
GHO-PC1	GHO-PC1	2/4/2009	Rock Drain												
GHO-PC1	GHO-PC1	3/2/2009	Rock Drain								0.073		<0.05		
GHO-PC1	GHO-PC1	3/3/2009	Rock Drain												
GHO-PC1	GHO-PC1	4/1/2009	Rock Drain								0.093		<0.05		
GHO-PC1	GHO-PC1	4/2/2009	Rock Drain												
GHO-PC1	GHO-PC1	5/4/2009	Rock Drain								0.083		<0.05		
GHO-PC1	GHO-PC1	5/5/2009	Rock Drain												
GHO-PC1	GHO-PC1	6/1/2009	Rock Drain								0.066		<0.05		
GHO-PC1	GHO-PC1	6/2/2009	Rock Drain												
GHO-PC1	GHO-PC1	7/6/2009	Rock Drain								0.081		<0.05		
GHO-PC1	GHO-PC1	7/7/2009	Rock Drain												
GHO-PC1	GHO-PC1	8/4/2009	Rock Drain								0.082		<0.05		
GHO-PC1	GHO-PC1	8/5/2009	Rock Drain												
GHO-PC1	GHO-PC1	9/1/2009	Rock Drain								0.081		<0.05		
GHO-PC1	GHO-PC1	9/2/2009	Rock Drain												
GHO-PC1	GHO-PC1	10/5/2009	Rock Drain								0.089		<0.05		
GHO-PC1	GHO-PC1	10/6/2009	Rock Drain												
GHO-PC1	GHO-PC1	11/2/2009	Rock Drain								0.086		<0.05		
GHO-PC1	GHO-PC1	11/3/2009	Rock Drain												
GHO-PC1	GHO-PC1	12/1/2009	Rock Drain								0.096		<0.05		
GHO-PC1	GHO-PC1	12/2/2009	Rock Drain												
GHO-PC1	GHO-PC1	1/4/2010	Rock Drain								0.086		<0.05		
GHO-PC1	GHO-PC1	1/5/2010	Rock Drain												
GHO-WCP	GHO-WCPI	5/1/2005	Rock Drain												
GHO-WCP	GHO-WCPI	7/3/2005	Rock Drain												
GHO-WCP	GHO-WCPI	11/2/2005	Rock Drain												
GHO-WCP	GHO-WCPI	1/4/2006	Rock Drain												
GHO-WCP	GHO-WCPI	3/10/2006	Rock Drain												
GHO-WCP	GHO-WCPI	4/3/2006	Rock Drain												
GHO-WCP	GHO-WCPI	6/5/2006	Rock Drain												
GHO-WCP	GHO-WCPI	7/4/2006	Rock Drain												
GHO-WCP	GHO-WCPI	8/1/2006	Rock Drain												
GHO-WCP	GHO-WCPI	9/1/2006	Rock Drain												
GHO-WCP	GHO-WCPI	10/2/2006	Rock Drain												
GHO-WCP	GHO-WCPI	11/1/2006	Rock Drain												
GHO-WCP	GHO-WCPI	12/1/2006	Rock Drain												
GHO-WCP	GHO-WCPI	1/4/2007	Rock Drain												
GHO-WCP	GHO-WCPI	4/2/2007	Rock Drain												
GHO-WCP	GHO-WCPI	5/1/2007	Rock Drain												
GHO-WCP	GHO-WCPI	6/4/2007	Rock Drain												
GHO-WCP	GHO-WCPI	7/3/2007	Rock Drain												
GHO-WCP	GHO-WCPI	8/7/2007	Rock Drain												
GHO-WCP	GHO-WCPI	9/4/2007	Rock Drain												
GHO-WCP	GHO-WCPI	10/1/2007	Rock Drain												
GHO-WCP	GHO-WCPI	11/5/2007	Rock Drain												
GHO-WCP	GHO-WCPI	4/1/2008	Rock Drain												
GHO-WCP	GHO-WCPI	5/5/2008	Rock Drain												
GHO-WCP	GHO-WCPI	6/2/2008	Rock Drain												

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008	Rock Drain												
GHO-WCP	GHO-WCPI	7/14/2008	Rock Drain												
GHO-WCP	GHO-WCPI	8/5/2008	Rock Drain												
GHO-WCP	GHO-WCPI	8/7/2008	Rock Drain												
GHO-WCP	GHO-WCPI	8/18/2008	Rock Drain												
GHO-WCP	GHO-WCPI	9/2/2008	Rock Drain												
GHO-WCP	GHO-WCPI	9/29/2008	Rock Drain												
GHO-WCP	GHO-WCPI	11/3/2008	Rock Drain												
GHO-WCP	GHO-WCPI	12/1/2008	Rock Drain												
GHO-WCP	GHO-WCPI	1/5/2009	Rock Drain												
GHO-WCP	GHO-WCPI	4/1/2009	Rock Drain												
GHO-WCP	GHO-WCPI	5/4/2009	Rock Drain												
GHO-WCP	GHO-WCPI	6/1/2009	Rock Drain												
GHO-WCP	GHO-WCPI	7/6/2009	Rock Drain												
GHO-WCP	GHO-WCPI	8/4/2009	Rock Drain												
GHO-WCP	GHO-WCPI	9/1/2009	Rock Drain												
GHO-WCP	GHO-WCPI	10/5/2009	Rock Drain												
GHO-WCP	GHO-WCPI	11/2/2009	Rock Drain												
GHO-WCP	GHO-WCPI	12/1/2009	Rock Drain												
GHO-WCP	GHO-WCPI	3/1/2010	Rock Drain												
GHO-WCP	GHO-WCPI	4/6/2010	Rock Drain				<2.0								
GHO-WCP	GHO-WCPI	5/4/2010	Rock Drain				9.6								
GHO-WCP	GHO-WCPI	6/8/2010	Rock Drain				14.3								
GHO-WCP	GHO-WCPI	7/6/2010	Rock Drain				<1.0								
GHO-WCP	GHO-WCPI	8/4/2010	Rock Drain				<1.0								
GHO-WCP	GHO-WCPI	9/8/2010	Rock Drain				3.6								
GHO-WCP	GHO-WCPI	10/5/2010	Rock Drain				20.2								
GHO-WCP	GHO-WCPI	11/2/2010	Rock Drain				11.4								
LCO-WLC	LCO-WLC	4/15/2009	Rock Drain	<0.00005		<0.005			<0.0005		0.0282		<0.05	<0.0025	
LCO-WLC	LCO-WLC	9/23/2009	Rock Drain	<0.00005		<0.005	359		<0.0005		0.0302		<0.05	<0.0025	
LCO-WLC	LCO-WLC	11/4/2009	Rock Drain	<0.00005		<0.005	327		<0.0005		0.0291		<0.05	<0.0025	
LCO-WLC	LCO-WLC	11/16/2009	Rock Drain	<0.00005		<0.005	331		<0.0005		0.0287		<0.05	<0.0025	
LCO-WLC	LCO-WLC	1/18/2010	Rock Drain	<0.00005		<0.005	335		<0.0005		0.0294		<0.05	<0.0025	
LCO-WLC	LCO-WLC	2/17/2010	Rock Drain	<0.00005		<0.005	342		<0.0005		0.0317		<0.05	<0.0025	
LCO-WLC	LCO-WLC	3/15/2010	Rock Drain	<0.00005		<0.005	345		<0.0005		0.0297		<0.05	<0.0025	
LCO-WLC	LCO-WLC	4/29/2010	Rock Drain	<0.00005		<0.005	359		<0.0005		0.0284		<0.05	<0.0025	
LCO-WLC	LCO-WLC	6/1/2010	Rock Drain	<0.00002		<0.002	298		<0.0002		0.0179		<0.02	<0.001	
LCO-WLC	LCO-WLC	7/6/2010	Rock Drain	<0.00002		<0.002	306		<0.0002		0.0179		<0.02	<0.001	
LCO-WLC	LCO-WLC	8/3/2010	Rock Drain	<0.00001		<0.001	330		0.00012		0.0239		0.016	<0.0005	
LCO-WLC	LCO-WLC	9/7/2010	Rock Drain	<0.00001		<0.001	347		0.00013		0.0289		0.014	<0.0005	
LCO-WLC	LCO-WLC	10/8/2010	Rock Drain	<0.00001		<0.003	393		0.00013		0.0323		0.02	<0.0005	
LCO-WLC	LCO-WLC	11/2/2010	Rock Drain	<0.00002		<0.006	355		<0.0002		0.0299		<0.02	<0.001	
LCO-WLC	LCO-WLC	12/7/2010	Rock Drain	<0.00002		<0.006	334		0.00025		0.0289		<0.02	<0.001	
LCO-WLC	LCO-WLC	1/4/2011	Rock Drain	<0.00001		<0.003	326		0.00024		0.0272		0.014	<0.0005	
LCO-WLC	LCO-WLC	2/1/2011	Rock Drain	<0.00001		0.003	328		0.00028		0.0297		0.014	<0.0005	
LCO-WLC	LCO-WLC	3/1/2011	Rock Drain	<0.00001		<0.003	310		0.00028		0.0283		0.015	<0.0005	
LCO-WLC	LCO-WLC	4/4/2011	Rock Drain	<0.00002		<0.006	330		0.00031		0.0312		<0.02	<0.001	
LCO-WLC	LCO-WLC	5/3/2011	Rock Drain	<0.00002		<0.006	330		0.00029		0.0307		<0.02	<0.001	
LCO-WLC	LCO-WLC	6/7/2011	Rock Drain	<0.00001		<0.003	278		0.00016		0.0184		0.019	<0.0005	
LCO-WLC	LCO-WLC	7/5/2011	Rock Drain	<0.00001		<0.003	288		0.00014		0.0175		0.019	<0.0001	
LCO-WLC	LCO-WLC	7/12/2011	Rock Drain	<0.00001		<0.003	304		0.00015		0.0198		0.016	<0.0001	
LCO-WLC	LCO-WLC	8/2/2011	Rock Drain	<0.00002		<0.006	316		<0.0002		0.0247		<0.02	<0.0002	
LCO-WLC	LCO-WLC	9/6/2011	Rock Drain	<0.00002		<0.006	356		<0.0002		0.0309		<0.02	<0.0002	
LCO-WLC	LCO-WLC	10/4/2011	Rock Drain	<0.00002		<0.006	379		<0.0002		0.0337		<0.02	<0.0002	

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011	Rock Drain	<0.00002		<0.006	348		0.00021		0.0318		<0.02	<0.0002	
LCO-WLC	LCO-WLC	12/6/2011	Rock Drain	<0.00002		<0.006	330		0.00025		0.0292		<0.02	<0.0002	
TM-SBB	BT-11 seep	6/27/2007	Seep	<0.000010		0.0278	93.0		0.00028		0.127		<0.010	<0.00050	
TM-SBB	BT-11 seep	9/27/2007	Seep	<0.000020		0.0060	170		0.00041		0.186		<0.020	<0.0010	
TM-SBB	BT-11 seep	5/30/2008	Seep	0.000032		0.0111	85.3		0.00026		0.381		0.016	<0.00050	
TM-SBB	BT-11 seep	6/28/2009	Seep	<0.000050		0.0067	156		<0.00050		0.160		<0.050	<0.0025	
TM-SBB	BT-11 seep	9/8/2009	Seep	<0.000050		0.0060	161		<0.00050		0.163		<0.050	<0.0025	
TM-SBB	BT-11 seep	5/31/2010	Seep	<0.000050		0.0056	182		<0.00050		0.122		<0.050	<0.0025	
TM-SBB	BT-11 seep	7/5/2010	Seep	<0.000050		<0.0050	173		<0.00050		0.120		<0.050	<0.0025	
TM-SBB	BT-11 seep	8/18/2010	Seep	<0.000050		<0.0050	194		<0.00050		0.110		<0.050	<0.0025	
TM-SBB	BT-11 seep	9/20/2010	Seep	<0.000050		<0.0050	208		<0.00050		0.113		<0.050	<0.0025	
TM-SBB	BT-13 seep	6/27/2007	Seep	<0.000020		0.0060	155		0.00037		0.224		<0.020	<0.0010	
TM-SBB	BT-13 seep	9/27/2007	Seep	<0.000020		0.0038	172		0.00039		0.182		<0.020	<0.0010	
TM-SBB	BT-13 seep	5/30/2008	Seep	<0.000020		0.006	184		0.00033		0.144		<0.020	<0.0010	
TM-SBB	BT-13 seep	6/28/2009	Seep	<0.000050		0.0207	200		<0.00050		0.291		<0.050	<0.0025	
TM-SBB	BT-13 seep	9/8/2009	Seep	<0.000050		0.0169	176		<0.00050		0.237		<0.050	<0.0025	
TM-SBB	BT-13 seep	5/31/2010	Seep	<0.000050		0.0106	189		<0.00050		0.154		<0.050	<0.0025	
TM-SBB	BT-13 seep	7/5/2010	Seep	<0.000050		0.0052	177		<0.00050		0.185		<0.050	<0.0025	
TM-SBB	BT-13 seep	8/16/2010	Seep	<0.000050		<0.0050	198		<0.00050		0.152		<0.050	<0.0025	
TM-SBB	BT-13 seep	9/20/2010	Seep	<0.000050		0.0063	205		<0.00050		0.159		<0.050	<0.0025	
TM-SBG	GT42 seep	6/28/2009	Seep	<0.000020		0.0053	111		0.00024		0.264		<0.020	<0.0010	
TM-SBG	GT42 seep	7/7/2009	Seep												
TM-SBG	GT42 seep	9/8/2009	Seep	<0.000050		0.0054	111		<0.00050		0.143		<0.050	<0.0025	
TM-SBG	GT42 seep	5/31/2010	Seep	<0.000050		0.0127	163		<0.00050		0.0885		<0.050	<0.0025	
TM-SBG	GT42 seep	7/6/2010	Seep	<0.000050		<0.0050	134		<0.00050		0.0854		<0.050	<0.0025	
TM-SBG	GT42 seep	8/16/2010	Seep	0.000014		0.0149	134		0.00041		0.398		<0.010	<0.00050	
TM-SBG	GT42 seep	8/31/2010	Seep	<0.000050	<0.000050	0.0064	203	0.0867	0.00057	0.00069	0.0855	0.0916	<0.050	<0.0025	<0.0025
TM-SBG	GT42 seep	9/14/2010	Seep												
TM-SBG	GT42 seep	9/20/2010	Seep	<0.000050		0.0079	199		<0.00050		0.0831		<0.050	<0.0025	
TM-SBG	GT42 seep	4/13/2011	Seep				185								
TM-SBG	GT42 seep	4/13/2011	Seep				185								
TM-SBG	GT42 seep	4/28/2011	Seep				200								
TM-SBG	GT42 seep	5/1/2011	Seep	<0.000020	<0.000020	0.0082	206	0.331	0.00042	0.00064	0.0454	0.0566	0.023	<0.00020	<0.00020
TM-SBG	GT42 seep	5/12/2011	Seep				191								
TM-SBG	GT42 seep	5/26/2011	Seep				221								
TM-SBG	GT42 seep	5/31/2011	Seep				224								
TM-SBG	GT42 seep	6/7/2011	Seep												
TM-SBG	GT42 seep	6/7/2011	Seep				227								
TM-SBG	GT42 seep	6/14/2011	Seep				237								
TM-SBG	GT42 seep	6/29/2011	Seep	<0.000020	<0.000020	0.0122	219	0.245	0.00038	0.00046	0.05	0.0561	0.022	<0.00020	<0.00020
TM-SBG	GT42 seep	7/5/2011	Seep												
TM-SBG	GT42 seep	7/12/2011	Seep				207								
TM-SBG	GT42 seep	7/19/2011	Seep				216								
TM-SBG	GT42 seep	7/20/2011	Seep	<0.000050		<0.015	221		<0.00050		0.0625		<0.050	<0.00050	
TM-SBG	GT42 seep	8/3/2011	Seep				209								
TM-SBG	GT42 seep	8/8/2011	Seep				213								
TM-SBG	GT42 seep	8/16/2011	Seep												
TM-SBG	GT42 seep	8/23/2011	Seep				215								
TM-SBG	GT42 seep	8/31/2011	Seep	<0.000050		0.02	217		<0.00050		0.0365		<0.050	<0.00050	
TM-SBG	GT42 seep	9/13/2011	Seep												
TM-SBG	GT42 seep	9/20/2011	Seep												
TM-SBG	GT42 seep	10/5/2011	Seep												
TM-SBG	GT42 seep	10/11/2011	Seep	<0.000020		0.0088	198		0.00048		0.119		0.028	<0.00020	
TM-SBG	GT42 seep	4/16/2012	Seep				219								

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012	Seep	<0.000020	<0.000020	0.0072	210	0.135	0.0004	0.00054	0.0397	0.0454	0.024	<0.00020	<0.00020
TM-SBG	GT42 seep	6/4/2012	Seep	<0.000020	<0.000020	0.007	239	0.0331	0.00038	0.00045	0.0423	0.0444	0.024	<0.00020	<0.00020
TM-SBG	GT42 seep	6/4/2012	Seep												
TM-SBG	GT42 seep	6/19/2012	Seep												
TM-SBG	GT42 seep	6/25/2012	Seep				249								
TM-SBG	GT42 seep	6/25/2012	Seep												
TM-SBG	GT42 seep	7/10/2012	Seep	<0.000020		0.0291	199		0.00029		0.0727		0.026	<0.00020	
TM-SBG	GT42 seep	7/17/2012	Seep				225								
TM-SBG	GT42 seep	8/7/2012	Seep	<0.000050	<0.000050	<0.015	227	0.029	<0.00050	<0.00050	0.031	0.0308	<0.050	<0.00050	<0.00050
TM-SBG	GT42 seep	8/20/2012	Seep				219								
WM-ED	SEEP-9	3/23/2010	Seep	<0.000020		0.0043	257		0.00052		0.230		0.023	<0.0010	
WM-ED	SEEP-9	4/21/2010	Seep	<0.000020		0.0067	227		0.00045		0.210		<0.020	<0.0010	
WM-ED	SEEP-9	5/25/2010	Seep	<0.000020		0.0050	244		0.00046		0.294		<0.020	<0.0010	
WM-ED	SEEP-9	6/29/2010	Seep	<0.000050		<0.0050	266		0.00053		0.277		<0.050	<0.0025	
WM-ED	SEEP-9	7/21/2010	Seep	<0.000050		<0.0050	271		0.00053		0.245		<0.050	<0.0025	
WM-ED	SEEP-9	8/25/2010	Seep	<0.000050		<0.0050	262		0.00051		0.191		<0.050	<0.0025	
WM-ND	SEEP-1	5/25/2010	Seep	<0.000010		0.0106	95.3		0.00012		0.0780		<0.010	<0.00050	
WM-ND	SEEP-1	10/26/2010	Seep	<0.000050		<0.015	43.2		<0.00050		0.0794		<0.050	<0.0025	
WM-ND	SEEP-1	5/2/2011	Seep	<0.000010		0.0075	151		0.00025		0.102		0.014	<0.00050	
WM-ND	SEEP-12	5/25/2010	Seep	<0.000010		0.0124	139		0.00020		0.229		0.015	<0.00050	
WM-ND	SEEP-12	5/2/2011	Seep	<0.000010		0.0144	121		0.00011		0.167		0.014	<0.00050	
WM-ND	SEEP-2	6/13/2007	Seep	<0.000010		0.0131	118		0.00035		0.259		0.014	<0.00050	
WM-ND	SEEP-2	5/14/2008	Seep	0.000026	0.000158	0.0923	42	4.41	0.00099	0.00207	0.547	0.661	<0.010	<0.00050	<0.00050
WM-ND	SEEP-2	5/14/2008	Seep	<0.000010	0.000063	<0.0040	198	1.78	0.00058	0.00234	0.136	0.265	<0.010	<0.00050	<0.00050
WM-ND	SEEP-2	9/16/2008	Seep	0.000016	0.000134	0.0123	80.3	0.253	0.00041	0.00055	0.397	0.398	<0.010	<0.00050	<0.00050
WM-ND	SEEP-2	9/16/2008	Seep	0.000050	0.000068	0.0436	26.6	0.206	0.00020	0.00030	0.312	0.329	<0.010	<0.00050	<0.00050
WM-ND	SEEP-2	5/25/2010	Seep	<0.000020		0.0071	44.1		<0.00020		0.120		<0.020	<0.0010	
WM-ND	SEEP-2	10/26/2010	Seep	<0.000020		<0.0060	141		<0.00020		0.101		<0.020	<0.0010	
WM-ND	SEEP-3	5/25/2010	Seep	<0.000010		0.181	31.2		0.00027		0.117		<0.010	<0.00050	
WM-ND	SEEP-3	10/26/2010	Seep	0.000072		0.198	154		0.00099		0.149		0.019	<0.00050	
WM-ND	SEEP-3	5/2/2011	Seep	<0.000010		0.0107	76.4		0.00020		0.0639		0.017	<0.00050	
WM-ND	SEEP-4	5/25/2010	Seep	<0.000020		0.0185	120		<0.00020		0.0318		<0.020	<0.0010	
WM-ND	SEEP-4	10/26/2010	Seep	<0.000020		0.0150	127		<0.00020		0.0371		<0.020	<0.0010	
WM-ND	SEEP-4	5/2/2011	Seep	<0.000010		0.0307	129		0.00015		0.0461		0.019	<0.00050	
WM-ND	SEEP-5	6/13/2007	Seep	0.000011		0.0098	182		0.00082		0.155		0.039	<0.00050	
WM-ND	SEEP-5	5/25/2010	Seep	<0.000010		0.0106	173		0.00013		0.378		0.012	<0.00050	
WM-ND	SEEP-5	5/2/2011	Seep	<0.000010		0.0255	99.9		0.00014		0.181		0.011	<0.00050	
WM-SD	SD1	8/2/2006	Seep	<0.000020	0.000432	0.0368	234	28.7	0.00097	0.00770	0.502	1.22	0.021	<0.0010	0.0011
WM-SD	SD1	10/31/2007	Seep	0.00002	0.000077	0.598	89.1	6.13	0.00081	0.00218	0.0949	0.176	<0.010	<0.00050	<0.00050
WM-SD	SD1	4/2/2008	Seep	<0.000020	<0.000020	0.0029	309	0.0195	0.00044	0.0004	0.143	0.148	0.062	<0.0010	<0.0010
WM-SD	SD1	5/14/2008	Seep	0.000012	0.000114	0.117	77.6	5.8	0.00057	0.00214	0.205	0.354	0.01	<0.00050	<0.00050
WM-SD	SEEP-6	6/13/2007	Seep	<0.000010		0.0373	173		0.00033		0.305		0.024	<0.00050	
WM-SD	SEEP-6	5/25/2010	Seep	<0.000050		0.0062	259		<0.00050		0.0974		<0.050	<0.0025	
WM-SD	SEEP-6	10/26/2010	Seep	<0.000050		<0.015	324		<0.00050		0.0735		<0.050	<0.0025	
WM-SD	SEEP-6	5/2/2011	Seep	<0.000020		<0.0060	293		0.00026		0.0846		0.028	<0.0010	
WM-SD	SEEP-7	10/31/2007	Seep	<0.000050	0.000074	0.0191	212	4.84	<0.00050	0.00147	0.185	0.353	<0.050	<0.0025	<0.0025
WM-SD	SEEP-7	4/2/2008	Seep	<0.000020	<0.000020	0.0044	338	0.0425	0.00048	0.00046	0.203	0.2	0.045	<0.0010	<0.0010
WM-SD	SEEP-7	5/25/2010	Seep	<0.000050		<0.0050	345		<0.00050		0.228		<0.050	<0.0025	
WM-SD	SEEP-7	10/26/2010	Seep	<0.000050		<0.015	285		<0.00050		0.165		<0.050	<0.0025	
WM-SD	SEEP-7	5/2/2011	Seep	<0.000020		0.0074	173		0.00040		0.0621		0.030	<0.0010	
WM-SD	SEEP-8	5/25/2010	Seep	<0.000050		<0.0050	336		<0.00050		0.234		<0.050	<0.0025	
WM-SD	SEEP-8	10/26/2010	Seep	<0.000050		<0.015	473		<0.00050		0.143		<0.050	<0.0025	
WM-SD	SEEP-8	5/2/2011	Seep	<0.000020		<0.0060	250		<0.00020		0.0801		<0.020	<0.0010	
WCM-4C	SEEP A	5/8/2006	Seep	<0.000050	<0.000050	0.0123	408	0.0148	0.00063	0.00074	0.332	0.340	<0.050	<0.0025	<0.0025

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	Seep	<0.000050	<0.000050	<0.0050	308	0.0211	<0.00050	<0.00050	0.139	0.146	<0.050	<0.0025	<0.0025
WCM-7C	7C West Dump	march, 2012	Seep				330	0.05580	0.00038						
WCM-7C	7C West Dump	April, 2012	Seep				297	0.0765	0.00036						
WCM-7C	7C West Dump	May, 2012	Seep				322	0.07550	0.00043						
WCM-7C	7C West Dump	June, 2012	Seep				320	0.09920	<0.0005						
WCM-7C	7C West Dump	July, 2012	Seep				347	0.09750	0.00038						
WCM-7C	7C West Dump	August, 2012	Seep				365	0.06110	<0.0005						
WCM-7C	7C West Dump	September, 2012	Seep				347	0.04740	<0.0005						
WCM-7C	7C West Dump	October, 2012	Seep				347	0.03410	<0.0005						
WCM-7C	7C West Dump	November, 2012	Seep				352	0.0276	<0.0005						
WCM-7C	7C West Dump	December, 2012	Seep				353	0.024	<0.0005						
WCM-7P	7P SE	November, 2012	Seep				347	0.041	<0.0005						
WCM-7P	7P SE	December, 2012	Seep				341	0.0326	<0.0005						
BM-SED	SP2 SOUTH SEEP	6/3/2009	Seep	<0.000010		0.01470	215		0.00028		0.238			<0.00050	
BM-SED	SP2 SOUTH SEEP	4/10/2010	Seep	<0.000020		0.01070	272		0.00036		0.196			<0.0010	
BM-SED	SP2 SOUTH SEEP	6/10/2010	Seep	<0.000020		0.01110	325		0.00041		0.210			<0.0010	
BM-SED	SP2 SOUTH SEEP	4/11/2011	Seep	<0.000010		0.00480	241		0.00037		0.178			<0.00050	
BM-SED	SP2 SOUTH SEEP	5/31/2011	Seep	<0.000010		0.00580	260		0.00042		0.248			<0.00050	
BM-SED	SP2 SOUTH SEEP	6/11/2011	Seep	<0.000020		<0.0060	339		0.00046		0.322			<0.00020	
BM-SED	SP2 SOUTH SEEP	7/11/2011	Seep	<0.000020		0.01430	270		0.00040		0.177			<0.00020	
BM-SED	SP2 SOUTH SEEP	8/11/2011	Seep	<0.000020		<0.0060	380		0.00042		0.238			<0.00020	
BM-SED	SP2 SOUTH SEEP	9/11/2011	Seep	<0.000020		<0.0060	471		0.00047		0.257			<0.00020	
BM-SED	SP2 SOUTH SEEP	10/11/2011	Seep	<0.000020		<0.0060	500		0.00058		0.177			<0.00020	
BM-SED	SP2 SOUTH SEEP	11/11/2011	Seep	<0.000010		<0.0030	468		0.00062		0.200			<0.00010	
BM-SED	SP2 SOUTH SEEP	4/12/2012	Seep	<0.000020		<0.0060	282		0.00038		0.157			<0.00020	
BM-SED	SP2 SOUTH SEEP	5/12/2012	Seep	<0.000020		<0.0060	409		0.00053		0.149			<0.00020	
BM-SED	SP2 SOUTH SEEP	6/12/2012	Seep	<0.000020		<0.0060	444		0.00048		0.142			<0.0002	
BM-SED	SP2 SOUTH SEEP	7/12/2012	Seep	<0.000020		<0.0060	287		0.00038		0.164			<0.00020	
BM-SED	SP2 SOUTH SEEP	8/12/2012	Seep	<0.000020		<0.0060	869		0.00037		0.156			<0.00020	
BM-SED	SP2 SOUTH SEEP	9/12/2012	Seep												
BM-SED	SP2 SOUTH SEEP	10/12/2012	Seep												
BM-SED	SP2 EAST SEEP	6/3/2009	Seep	<0.000010		0.01470	273		0.00088		0.452			<0.00050	
BM-SED	SP2 EAST SEEP	9/8/2009	Seep	<0.000020		0.00910	336		0.00097		0.501			<0.0010	
BM-SED	SP2 EAST SEEP	4/10/2010	Seep	<0.000020		0.00500	379		0.00075		0.515			<0.0010	
BM-SED	SP2 EAST SEEP	6/10/2010	Seep	<0.000020		0.00300	305		0.00071		0.390			<0.0010	
BM-SED	SP2 EAST SEEP	10/1/2010	Seep	<0.000020		<0.0060	421		0.00093		0.451			<0.0010	
BM-SED	SP2 EAST SEEP	4/11/2011	Seep	<0.000010		0.00530	254		0.00041		0.152			<0.00050	
BM-SED	SP2 EAST SEEP	5/31/2011	Seep	<0.000010		0.00580	260		0.00042		0.248			<0.00050	
BM-SED	SP2 EAST SEEP	6/11/2011	Seep	<0.000010		0.00430	298		0.00049		0.266			<0.00010	
BM-SED	SP2 EAST SEEP	7/11/2011	Seep	<0.000010		0.00800	196		0.00027		0.278			<0.00010	
BM-SED	SP2 EAST SEEP	8/11/2011	Seep	<0.000010		0.00320	361		0.00056		0.301			<0.00010	
BM-SED	SP2 EAST SEEP	9/11/2011	Seep	<0.000010		<0.0030	374		0.00051		0.243			<0.00010	
BM-SED	SP2 EAST SEEP	10/11/2011	Seep	<0.000010		<0.0030	388		0.00047		0.270			<0.00010	
BM-SED	SP2 EAST SEEP	11/11/2011	Seep	<0.000010		0.00440	389		0.00050		0.258			<0.00010	
BM-SED	SP2 EAST SEEP	4/12/2012	Seep	<0.000020		<0.0060	372		0.00041		0.198			<0.00020	
BM-SED	SP2 EAST SEEP	5/12/2012	Seep	<0.000020		<0.0060	462		0.00048		0.200			<0.00020	
BM-SED	SP2 EAST SEEP	6/12/2012	Seep	<0.000020		<0.0060	437		0.00048		0.187			<0.00020	
BM-SED	SP2 EAST SEEP	7/12/2012	Seep	<0.000020		<0.0060	460		0.00047		0.199			<0.00020	
BM-SED	SP2 EAST SEEP	8/12/2012	Seep	<0.000020		<0.0060	465		0.00046		0.173			<0.00020	
EVO-F2	F2 WELL	4/8/2010	Borehole	<0.000010		<0.0010	768		<0.00010		0.011		0.068	<0.00050	
EVO-F2	F2 WELL	9/14/2010	Borehole	<0.000010		<0.0010	753		<0.00010		0.0109		0.074	<0.00050	
EVO-F2	F2 WELL	9/15/2011	Borehole	<0.000050		<0.015	762		<0.00050		0.0122		0.08	<0.00050	
EVO-F2	F2 WELL	7/26/2011	Borehole	<0.000050		<0.015	764		<0.00050		0.011		0.078	<0.00050	

				Ag-D	Ag-T	Al-D	Alk-T	Al-T	As-D	As-T	Ba-D	Ba-T	B-D	Be-D	Be-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**Station Type**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011	Borehole	<0.000050		<0.015	770		<0.00015		0.0111		0.074	<0.0010	
EVO-F2	F2 WELL	03/16/2012	Borehole	<0.000050		<0.015	735		<0.00015		0.00756		0.071	<0.0010	
BM-DPB	BM-11-01-A	5/28/2012	Borehole	*<0.000010*		0.0018	359		0.00015		0.0366		0.130	*<0.00010*	
BM-DPB	BM-11-01-B	5/29/2012	Borehole	*<0.000020*		0.0025	347		0.00061		0.0436		0.074	*<0.00020*	
BM-DPB	BM-11-01-C	5/28/2012	Borehole	*<0.000020*		0.0022	463		0.00118		0.0636		0.154	*<0.00020*	
BM-DPB	BM-11-02-B	5/30/2012	Borehole	*<0.000020*		0.0031	280		0.00078		0.0520		0.074	*<0.00020*	
BM-DPB	BM-11-02-C	5/29/2012	Borehole	*<0.000020*		0.0020	313		*<0.00020*		0.0203		0.082	*<0.00020*	
GHO-BH1	GHO-BH1	4/20/2009	Seep	<0.00005		0.0261	427		<0.0005		0.018		<0.05	<0.0025	
GHO-BH1	GHO-BH1	10/28/2009	Seep	<0.00005		<0.005	493		<0.0005		0.0184		<0.05	<0.0025	
GHO-BH1	GHO-BH1	6/15/2010	Seep	<0.00005		<0.005	445		<0.0005		0.0183		<0.05	<0.0025	
GHO-BH1	GHO-BH1	8/9/2010	Seep	<0.00001		<0.001	525		0.00046		0.0268		0.017	<0.0005	
GHO-BH1	GHO-BH1	9/20/2010	Seep	<0.00001		<0.001	451		0.00039		0.0244		0.015	<0.0005	
GHO-BH1	GHO-BH1	10/12/2010	Seep	<0.00001		<0.003	527		0.0005		0.0271		0.018	<0.0005	
GHO-BH1	GHO-BH1	11/15/2010	Seep	<0.00001		<0.003	576		0.00061		0.0317		0.017	<0.0005	
GHO-BH1	GHO-BH1	4/13/2011	Seep	<0.00002		<0.006	481		<0.0002		0.0214		<0.02	<0.001	
GHO-BH1	GHO-BH1	5/11/2011	Seep	<0.00002		<0.006	522		<0.0002		0.0273		0.031	<0.001	
GHO-BH1	GHO-BH1	6/8/2011	Seep	<0.00002		<0.006	426		<0.0002		0.0139		<0.02	<0.001	
GHO-BH1	GHO-BH1	7/13/2011	Seep	<0.00005		<0.015	482		<0.0005		0.0227		<0.05	<0.0005	
GHO-BH1	GHO-BH1	9/14/2011	Seep	<0.00005		<0.015	577		<0.0005		0.0234		<0.05	<0.0005	
GHO-BH1	GHO-BH1	10/5/2011	Seep	<0.00005		<0.015	573		<0.0005		0.0225		<0.05	<0.0005	
GHO-BH1	GHO-BH1	6/6/2012	Seep	<0.00001		<0.003	406		<0.0001		0.0143		0.019	<0.0001	
GHO-BH1	GHO-BH1	7/5/2012	Seep	<0.00001		<0.003	386		<0.0001		0.0152		0.02	<0.0001	
GHO-BH1	GHO-BH1	9/12/2012	Seep	<0.00002		<0.006	538		<0.0002		0.019		<0.02	<0.0002	
GHO-BH1	GHO-BH1	10/3/2012	Seep	<0.00005		<0.015	540		<0.0005		0.0195		<0.05	<0.0005	
GHO-BH1	GHO-BH1	11/7/2012	Seep	<0.00002		<0.006	420		<0.0002		0.0145		<0.02	<0.0002	
BM-NED	LOWER BLIND SEEP	6/3/2009	Seep	<0.000020		<0.0020	254		0.00029		0.184			<0.0010	
BM-NED	LOWER BLIND SEEP	9/8/2009	Seep	<0.000020		0.00210	261		0.00034		0.149			<0.0010	
BM-NED	LOWER BLIND SEEP	5/10/2010	Seep	<0.000020		<0.0020	262		0.00021		0.109			<0.0010	
BM-NED	LOWER BLIND SEEP	6/10/2010	Seep	<0.000020		<0.0020	265		0.00021		0.113			<0.0010	
BM-NED	LOWER BLIND SEEP	10/1/2010	Seep	<0.000020		<0.0060	263		0.00023		0.119			<0.0010	
BM-NED	LOWER BLIND SEEP	5/31/2011	Seep	<0.000010		<0.0030	231		0.00017		0.054			<0.00050	
BM-NED	LOWER BLIND SEEP	6/11/2011	Seep	<0.000010		<0.0030	245		0.00019		0.060			<0.00010	
BM-NED	LOWER BLIND SEEP	10/11/2011	Seep	<0.000020		<0.0060	267		<0.00020		0.086			<0.00020	
BM-NED	North Dump Seep N	5/12/2012	Seep	<0.000010		0.08450	211		0.00041		0.151			<0.00010	
BM-NED	North Dump Seep S	6/12/2012	Seep	0.00001		0.16200	259		0.00090		0.196			<0.00010	
BM-NED	North Dump Seep N	6/12/2012	Seep	<0.000010		0.00940	277		0.00076		0.172			<0.00010	
BM-NED	North Dump Seep N	7/12/2012	Seep	<0.000010		0.0069	315		0.00075		0.187			<0.00010	
BM-NED	North Dump Seep N	8/12/2012	Seep	<0.000010		0.0041	316		0.00074		0.160			<0.00010	
BM-NED	North Dump Seep S	7/12/2012	Seep	0.000014		0.631	336		0.00116		0.256			<0.00010	
BM-NED	North Dump Seep S	8/12/2012	Seep	<0.000010		0.0149	363.000		0.00203		0.255			<0.00010	

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007														
EVO-BC1	EVO-BC1	6/19/2007														
EVO-BC1	EVO-BC1	7/3/2007									21					
EVO-BC1	EVO-BC1	8/7/2007									21.4					
EVO-BC1	EVO-BC1	9/5/2007									24.6					
EVO-BC1	EVO-BC1	10/3/2007									25.1					
EVO-BC1	EVO-BC1	11/6/2007									30					
EVO-BC1	EVO-BC1	12/5/2007									33.6					
EVO-BC1	EVO-BC1	1/3/2008									26.6					
EVO-BC1	EVO-BC1	2/5/2008					177		0.000241		29.5	<0.0003			<0.001	
EVO-BC1	EVO-BC1	3/5/2008					210					0.0011	<0.0005		<0.0005	
EVO-BC1	EVO-BC1	3/11/2008														
EVO-BC1	EVO-BC1	3/18/2008														
EVO-BC1	EVO-BC1	3/20/2008														
EVO-BC1	EVO-BC1	3/25/2008														
EVO-BC1	EVO-BC1	3/28/2008														
EVO-BC1	EVO-BC1	4/1/2008														
EVO-BC1	EVO-BC1	4/3/2008														
EVO-BC1	EVO-BC1	4/8/2008														
EVO-BC1	EVO-BC1	4/15/2008														
EVO-BC1	EVO-BC1	4/22/2008														
EVO-BC1	EVO-BC1	4/29/2008														
EVO-BC1	EVO-BC1	5/6/2008									17.2					
EVO-BC1	EVO-BC1	5/13/2008														
EVO-BC1	EVO-BC1	5/20/2008														
EVO-BC1	EVO-BC1	5/21/2008														
EVO-BC1	EVO-BC1	5/28/2008														
EVO-BC1	EVO-BC1	6/3/2008									17.4					
EVO-BC1	EVO-BC1	6/11/2008														
EVO-BC1	EVO-BC1	6/17/2008														
EVO-BC1	EVO-BC1	6/26/2008														
EVO-BC1	EVO-BC1	7/2/2008														
EVO-BC1	EVO-BC1	7/6/2008									26.6					
EVO-BC1	EVO-BC1	7/29/2008														
EVO-BC1	EVO-BC1	8/5/2008									21.8					
EVO-BC1	EVO-BC1	9/2/2008									24.4					
EVO-BC1	EVO-BC1	9/12/2008														
EVO-BC1	EVO-BC1	10/7/2008									26.5					
EVO-BC1	EVO-BC1	11/4/2008					199				28.7					
EVO-BC1	EVO-BC1	12/3/2008					181				26.4					
EVO-BC1	EVO-BC1	1/7/2009					176				36.1					
EVO-BC1	EVO-BC1	2/4/2009					166				46.6					
EVO-BC1	EVO-BC1	3/3/2009					182				140					
EVO-BC1	EVO-BC1	3/10/2009									218					
EVO-BC1	EVO-BC1	3/17/2009														
EVO-BC1	EVO-BC1	3/24/2009														
EVO-BC1	EVO-BC1	3/31/2009														
EVO-BC1	EVO-BC1	4/7/2009					179				28.4					
EVO-BC1	EVO-BC1	4/15/2009														
EVO-BC1	EVO-BC1	4/21/2009														
EVO-BC1	EVO-BC1	4/28/2009														
EVO-BC1	EVO-BC1	5/6/2009									22					
EVO-BC1	EVO-BC1	5/12/2009														
EVO-BC1	EVO-BC1	5/20/2009														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009														
EVO-BC1	EVO-BC1	6/2/2009					145				19.4					
EVO-BC1	EVO-BC1	6/9/2009														
EVO-BC1	EVO-BC1	6/16/2009														
EVO-BC1	EVO-BC1	6/23/2009														
EVO-BC1	EVO-BC1	6/30/2009														
EVO-BC1	EVO-BC1	7/8/2009					172				38					
EVO-BC1	EVO-BC1	8/5/2009					191				25.2					
EVO-BC1	EVO-BC1	9/1/2009					199				26.8					
EVO-BC1	EVO-BC1	10/7/2009					207				24.4					
EVO-BC1	EVO-BC1	11/5/2009					180				20.3					
EVO-BC1	EVO-BC1	11/6/2009									21.2					
EVO-BC1	EVO-BC1	12/2/2009					197				24.8					
EVO-BC1	EVO-BC1	12/3/2009									23.8					
EVO-DC1	EVO-DC1	9/5/2007									11.5					
EVO-DC1	EVO-DC1	11/4/2008					232				6.62					
EVO-DC1	EVO-DC1	5/25/2009					155									
EVO-DC1	EVO-DC1	6/2/2009									5.69					
EVO-DC1	EVO-DC1	6/10/2009														
EVO-DC1	EVO-DC1	6/23/2009														
EVO-DC1	EVO-DC1	6/30/2009														
EVO-DC1	EVO-DC1	7/7/2009					169		0.00005		5.29	0.0001	0.0005		0.00064	
EVO-DC1	EVO-DC1	7/31/2009					39.8		0.000038		1.69	0.00005	0.00025		0.00036	
EVO-DC1	EVO-DC1	8/5/2009					51.1				5.68					
EVO-DC1	EVO-DC1	8/31/2009					45.3		0.000036		0.25	0.00005	0.00025		0.00017	
EVO-DC1	EVO-DC1	9/1/2009					183				6.6					
EVO-DC1	EVO-DC1	10/6/2009					189				7.21					
EVO-DC1	EVO-DC1	10/20/2009					50		0.000025		0.25	0.00005	0.00025		0.00022	
EVO-DC1	EVO-DC1	11/3/2009					205				6.57					
EVO-GC2	EVO-GC2	7/3/2007									6.53					
EVO-GC2	EVO-GC2	8/7/2007									5.69					
EVO-GC2	EVO-GC2	9/5/2007									6.95					
EVO-GC2	EVO-GC2	10/3/2007									6.34					
EVO-GC2	EVO-GC2	11/6/2007									5.76					
EVO-GC2	EVO-GC2	12/4/2007									12.2					
EVO-GC2	EVO-GC2	1/3/2008									5.76					
EVO-GC2	EVO-GC2	2/5/2008					91.9		0.000088		6.57	0.00015	0.0005		0.0021	
EVO-GC2	EVO-GC2	3/5/2008					90.9									
EVO-GC2	EVO-GC2	4/1/2008														
EVO-GC2	EVO-GC2	4/3/2008														
EVO-GC2	EVO-GC2	5/6/2008									5.22					
EVO-GC2	EVO-GC2	6/3/2008									6.58					
EVO-GC2	EVO-GC2	7/2/2008									8.17					
EVO-GC2	EVO-GC2	7/29/2008														
EVO-GC2	EVO-GC2	8/6/2008									6.1					
EVO-GC2	EVO-GC2	9/2/2008									5.28					
EVO-GC2	EVO-GC2	9/3/2008									5.59					
EVO-GC2	EVO-GC2	10/7/2008									6.9					
EVO-GC2	EVO-GC2	11/4/2008					92.5				5.18					
EVO-GC2	EVO-GC2	12/3/2008					89.9				6.09					
EVO-GC2	EVO-GC2	1/7/2009					94.2				6.6					
EVO-GC2	EVO-GC2	2/4/2009					85.6				11					
EVO-GC2	EVO-GC2	3/3/2009					89.1				55.1					

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009									37.4					
EVO-GC2	EVO-GC2	3/17/2009														
EVO-GC2	EVO-GC2	3/24/2009														
EVO-GC2	EVO-GC2	3/31/2009														
EVO-GC2	EVO-GC2	4/7/2009					82.4				16					
EVO-GC2	EVO-GC2	4/14/2009														
EVO-GC2	EVO-GC2	4/21/2009														
EVO-GC2	EVO-GC2	4/29/2009														
EVO-GC2	EVO-GC2	5/7/2009					82.5		<0.000025		10.8	0.00022	0.00089		<0.0006	
EVO-GC2	EVO-GC2	5/12/2009					84.6		<0.000025		10.8	0.00022	0.00085		0.00124	
EVO-GC2	EVO-GC2	5/20/2009									9.88					
EVO-GC2	EVO-GC2	5/26/2009									8.79					
EVO-GC2	EVO-GC2	6/2/2009					75.3		<0.000025		7.52	0.00011	<0.00025		0.00074	
EVO-GC2	EVO-GC2	6/6/2009									16.9					
EVO-GC2	EVO-GC2	6/8/2009									95.4					
EVO-GC2	EVO-GC2	6/10/2009														
EVO-GC2	EVO-GC2	6/16/2009									25.2					
EVO-GC2	EVO-GC2	6/23/2009									128					
EVO-GC2	EVO-GC2	7/2/2009									28.9					
EVO-GC2	EVO-GC2	7/7/2009					105		<0.00005		86.5	0.00094	0.0021		0.00283	
EVO-GC2	EVO-GC2	7/14/2009									160					
EVO-GC2	EVO-GC2	7/16/2009									137.766					
EVO-GC2	EVO-GC2	7/21/2009									54.1					
EVO-GC2	EVO-GC2	7/29/2009														
EVO-GC2	EVO-GC2	8/5/2009					98.2		0.00014		80.9	0.00076	0.0019		0.00333	
EVO-GC2	EVO-GC2	8/11/2009									43.2					
EVO-GC2	EVO-GC2	8/18/2009									28.7					
EVO-GC2	EVO-GC2	8/25/2009									20.2					
EVO-GC2	EVO-GC2	9/1/2009					79.2				11.3					
EVO-GC2	EVO-GC2	9/8/2009					79		<0.000025		11.2	0.00021	0.00064		0.00091	
EVO-GC2	EVO-GC2	9/16/2009									11.5					
EVO-GC2	EVO-GC2	9/22/2009									10.1					
EVO-GC2	EVO-GC2	9/29/2009									9					
EVO-GC2	EVO-GC2	10/6/2009					89		<0.000025		9.6	0.00018	0.0005		0.00081	
EVO-GC2	EVO-GC2	11/3/2009					98				19.4					
EVO-GC2	EVO-GC2	12/1/2009					89.1		<0.00005		19.6	0.00026	<0.0005		0.00108	
FRO-CC1	FRO-CC1	7/3/2007									0.6					
FRO-CC1	FRO-CC1	8/7/2007									0.6					
FRO-CC1	FRO-CC1	9/4/2007									0.5					
FRO-CC1	FRO-CC1	10/1/2007														
FRO-CC1	FRO-CC1	11/5/2007														
FRO-CC1	FRO-CC1	12/3/2007														
FRO-CC1	FRO-CC1	1/8/2008									0.6					
FRO-CC1	FRO-CC1	2/4/2008									0.6					
FRO-CC1	FRO-CC1	3/17/2008									0.9					
FRO-CC1	FRO-CC1	4/7/2008									1.1					
FRO-CC1	FRO-CC1	5/5/2008									0.9					
FRO-CC1	FRO-CC1	6/4/2008									1.1					
FRO-CC1	FRO-CC1	7/7/2008									0.7					
FRO-CC1	FRO-CC1	8/6/2008									0.8					
FRO-CC1	FRO-CC1	9/9/2008									0.7					
FRO-CC1	FRO-CC1	10/7/2008														
FRO-CC1	FRO-CC1	11/3/2008														
FRO-CC1	FRO-CC1	12/1/2008														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009					74.8				0.6	0.0026	<0.0005		<0.0005	
FRO-CC1	FRO-CC1	2/2/2009									1.2					
FRO-CC1	FRO-CC1	2/3/2009														
FRO-CC1	FRO-CC1	3/17/2009					67.4				0.9	0.0032	<0.0005		<0.0005	
FRO-CC1	FRO-CC1	4/6/2009					91.7				1	0.0033	<0.0005		<0.0005	
FRO-CC1	FRO-CC1	5/4/2009					99				1.3					
FRO-CC1	FRO-CC1	6/1/2009					91.4		0.000127		1	0.00262	<0.00025		0.00055	
FRO-CC1	FRO-CC1	7/6/2009					81.7		0.000153		0.9	0.00308	<0.00025		0.0004	
FRO-CC1	FRO-CC1	8/3/2009					79.1		0.000137		0.8	0.00268	<0.00025		<0.00025	
FRO-CC1	FRO-CC1	9/1/2009					102		0.000155		2.6	0.00303	<0.00025		0.0004	
FRO-CC1	FRO-CC1	10/7/2009					114		0.00013		1.4	0.00295	<0.00025		0.00052	
FRO-CC1	FRO-CC1	11/2/2009					103		0.000152		1.7	0.0047	<0.00025		0.00039	
FRO-CC1	FRO-CC1	12/7/2009					92.9		0.00016		1	0.00411	<0.00025		<0.00015	
FRO-EC1	FRO-EC1	7/3/2007									17.6					
FRO-EC1	FRO-EC1	8/7/2007									20.9					
FRO-EC1	FRO-EC1	9/4/2007									26					
FRO-EC1	FRO-EC1	10/1/2007														
FRO-EC1	FRO-EC1	11/5/2007														
FRO-EC1	FRO-EC1	12/3/2007														
FRO-EC1	FRO-EC1	1/8/2008									22.1					
FRO-EC1	FRO-EC1	2/4/2008									24					
FRO-EC1	FRO-EC1	3/17/2008									1.3					
FRO-EC1	FRO-EC1	4/7/2008									16.3					
FRO-EC1	FRO-EC1	6/4/2008									17.7					
FRO-EC1	FRO-EC1	7/7/2008									49.7					
FRO-EC1	FRO-EC1	8/6/2008									27.6					
FRO-EC1	FRO-EC1	9/9/2008					364				25.5	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	10/7/2008														
FRO-EC1	FRO-EC1	11/3/2008														
FRO-EC1	FRO-EC1	12/1/2008														
FRO-EC1	FRO-EC1	1/5/2009					409				34.9					
FRO-EC1	FRO-EC1	2/2/2009									33					
FRO-EC1	FRO-EC1	2/3/2009														
FRO-EC1	FRO-EC1	3/17/2009					321				29.2					
FRO-EC1	FRO-EC1	4/6/2009					300				14.8					
FRO-EC1	FRO-EC1	5/4/2009					268				16.2					
FRO-EC1	FRO-EC1	5/13/2009					272				16	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	5/19/2009					280				17.2	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	5/26/2009					312				21	<0.00025			<0.00035	
FRO-EC1	FRO-EC1	6/1/2009					325				28	<0.00025			0.00071	
FRO-EC1	FRO-EC1	6/8/2009					326				22.6	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	7/6/2009					310				20.5	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	8/3/2009					303				148	<0.00025			0.00051	
FRO-EC1	FRO-EC1	9/1/2009					292				24.7	<0.00025			<0.00025	
FRO-EC1	FRO-EC1	10/7/2009					315				27.7	<0.00025			0.00056	
FRO-EC1	FRO-EC1	11/2/2009					329				32.7	<0.00025			0.00061	
FRO-EC1	FRO-EC1	12/7/2009					352				28	<0.00025			<0.00045	
FRO-KC1	FRO-KC1	7/3/2007									0.2					
FRO-KC1	FRO-KC1	8/7/2007									0.2					
FRO-KC1	FRO-KC1	9/4/2007									0.7					
FRO-KC1	FRO-KC1	10/1/2007														
FRO-KC1	FRO-KC1	11/5/2007														
FRO-KC1	FRO-KC1	12/3/2007														
FRO-KC1	FRO-KC1	1/7/2008									1					
FRO-KC1	FRO-KC1	2/4/2008									1.5					

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008									1.7					
FRO-KC1	FRO-KC1	4/7/2008									1.8					
FRO-KC1	FRO-KC1	5/5/2008									2					
FRO-KC1	FRO-KC1	6/4/2008									0.7					
FRO-KC1	FRO-KC1	7/7/2008									0.9					
FRO-KC1	FRO-KC1	8/6/2008									0.7					
FRO-KC1	FRO-KC1	9/9/2008					149		0.00048		0.9	<0.0001	<0.0005		0.00039	
FRO-KC1	FRO-KC1	10/7/2008														
FRO-KC1	FRO-KC1	11/3/2008														
FRO-KC1	FRO-KC1	12/1/2008														
FRO-KC1	FRO-KC1	1/5/2009					176				1.5					
FRO-KC1	FRO-KC1	2/2/2009									2.8					
FRO-KC1	FRO-KC1	2/3/2009														
FRO-KC1	FRO-KC1	3/17/2009					226				2.5					
FRO-KC1	FRO-KC1	4/6/2009					228				2					
FRO-KC1	FRO-KC1	5/4/2009					228				1.9					
FRO-KC1	FRO-KC1	6/1/2009					131		0.00065		0.9	0.00065	<0.0005		0.00058	
FRO-KC1	FRO-KC1	7/6/2009					102		0.00041		0.7	<0.0001	<0.0005		0.00031	
FRO-KC1	FRO-KC1	8/3/2009					122		0.00045		23.5	<0.0001	<0.0005		0.00041	
FRO-KC1	FRO-KC1	9/1/2009									0.7					
FRO-KC1	FRO-KC1	9/2/2009					114		0.00042		2.5	<0.0001	<0.0005		0.00065	
FRO-KC1	FRO-KC1	10/7/2009					168		0.00049		0.9	<0.0001	<0.0005		0.00028	
FRO-KC1	FRO-KC1	11/2/2009					167		0.00048		1.2	<0.0001	<0.0007		0.00025	
FRO-KC1	FRO-KC1	12/7/2009					179		0.00046		1.1	<0.0001	<0.0005		<0.0001	
GHO-CC1	GHO-CC1	1/4/2007									7.1					
GHO-CC1	GHO-CC1	2/7/2007									7.6					
GHO-CC1	GHO-CC1	3/1/2007									6.9					
GHO-CC1	GHO-CC1	4/2/2007									8.1					
GHO-CC1	GHO-CC1	4/9/2007														
GHO-CC1	GHO-CC1	4/16/2007														
GHO-CC1	GHO-CC1	4/23/2007														
GHO-CC1	GHO-CC1	5/1/2007									5.4					
GHO-CC1	GHO-CC1	5/7/2007														
GHO-CC1	GHO-CC1	5/14/2007														
GHO-CC1	GHO-CC1	5/22/2007														
GHO-CC1	GHO-CC1	5/28/2007														
GHO-CC1	GHO-CC1	6/4/2007									5.1					
GHO-CC1	GHO-CC1	6/11/2007														
GHO-CC1	GHO-CC1	7/3/2007									4.8					
GHO-CC1	GHO-CC1	8/7/2007									4.5					
GHO-CC1	GHO-CC1	9/4/2007									6.8					
GHO-CC1	GHO-CC1	10/1/2007									6.6					
GHO-CC1	GHO-CC1	11/5/2007									5					
GHO-CC1	GHO-CC1	12/4/2007									5.2					
GHO-CC1	GHO-CC1	1/7/2008									5.4					
GHO-CC1	GHO-CC1	2/4/2008									5.1					
GHO-CC1	GHO-CC1	3/3/2008									7					
GHO-CC1	GHO-CC1	4/1/2008									6.5					
GHO-CC1	GHO-CC1	5/5/2008									8					
GHO-CC1	GHO-CC1	6/2/2008									5.1					
GHO-CC1	GHO-CC1	7/2/2008									5					
GHO-CC1	GHO-CC1	8/5/2008									4.9					
GHO-CC1	GHO-CC1	8/13/2008														
GHO-CC1	GHO-CC1	8/18/2008														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008									4.1					
GHO-CC1	GHO-CC1	9/29/2008									4.9					
GHO-CC1	GHO-CC1	11/3/2008					357				0.9					
GHO-CC1	GHO-CC1	12/1/2008					346									
GHO-CC1	GHO-CC1	12/3/2008									5.2					
GHO-CC1	GHO-CC1	1/5/2009					400									
GHO-CC1	GHO-CC1	1/6/2009									4.8					
GHO-CC1	GHO-CC1	2/3/2009					328									
GHO-CC1	GHO-CC1	2/4/2009									3.8					
GHO-CC1	GHO-CC1	3/2/2009					348									
GHO-CC1	GHO-CC1	3/3/2009									4.8					
GHO-CC1	GHO-CC1	4/1/2009					384									
GHO-CC1	GHO-CC1	4/2/2009									5.47					
GHO-CC1	GHO-CC1	5/4/2009					359									
GHO-CC1	GHO-CC1	5/5/2009									8.3					
GHO-CC1	GHO-CC1	6/1/2009					382									
GHO-CC1	GHO-CC1	6/2/2009									5.79					
GHO-CC1	GHO-CC1	7/6/2009					383									
GHO-CC1	GHO-CC1	7/7/2009									5.9					
GHO-CC1	GHO-CC1	8/4/2009					389									
GHO-CC1	GHO-CC1	8/5/2009									5.94					
GHO-CC1	GHO-CC1	9/1/2009					385									
GHO-CC1	GHO-CC1	9/2/2009									5.28					
GHO-CC1	GHO-CC1	10/5/2009					417									
GHO-CC1	GHO-CC1	10/6/2009									6.45					
GHO-CC1	GHO-CC1	11/2/2009					409									
GHO-CC1	GHO-CC1	11/3/2009									9.8					
GHO-CC1	GHO-CC1	12/1/2009					408									
GHO-CC1	GHO-CC1	12/2/2009									6.04					
GHO-CC1	GHO-CC1	1/4/2010					444									
GHO-CC1	GHO-CC1	1/5/2010									6.41					
GHO-GCS	GHO-GCSPD	2/7/1996														
GHO-GCS	GHO-GCSPD	4/16/1996														
GHO-GCS	GHO-GCSPD	5/21/1996														
GHO-GCS	GHO-GCSPD	8/13/1996														
GHO-GCS	GHO-GCSPD	12/3/1996														
GHO-GCS	GHO-GCSPD	4/4/2002														
GHO-GCS	GHO-GCSPD	11/2/2002														
GHO-GCS	GHO-GCSPD	3/30/2003														
GHO-GCS	GHO-GCSPD	6/29/2003														
GHO-GCS	GHO-GCSPD	12/27/2003														
GHO-GCS	GHO-GCSPD	4/4/2004														
GHO-GCS	GHO-GCSPD	5/2/2004														
GHO-GCS	GHO-GCSPD	6/6/2004														
GHO-GCS	GHO-GCSPD	7/4/2004														
GHO-GCS	GHO-GCSPD	8/1/2004														
GHO-GCS	GHO-GCSPD	9/2/2004														
GHO-GCS	GHO-GCSPD	10/3/2004														
GHO-GCS	GHO-GCSPD	11/2/2004														
GHO-GCS	GHO-GCSPD	12/5/2004														
GHO-GCS	GHO-GCSPD	1/2/2005														
GHO-GCS	GHO-GCSPD	2/4/2005														
GHO-GCS	GHO-GCSPD	3/1/2005														
GHO-GCS	GHO-GCSPD	4/3/2005														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005														
GHO-GCS	GHO-GCSPD	6/12/2005														
GHO-GCS	GHO-GCSPD	7/3/2005														
GHO-GCS	GHO-GCSPD	8/1/2005														
GHO-GCS	GHO-GCSPD	9/4/2005														
GHO-GCS	GHO-GCSPD	10/2/2005														
GHO-GCS	GHO-GCSPD	11/2/2005														
GHO-GCS	GHO-GCSPD	12/8/2005														
GHO-GCS	GHO-GCSPD	1/4/2006														
GHO-GCS	GHO-GCSPD	2/1/2006														
GHO-GCS	GHO-GCSPD	3/10/2006														
GHO-GCS	GHO-GCSPD	4/3/2006														
GHO-GCS	GHO-GCSPD	5/1/2006														
GHO-GCS	GHO-GCSPD	6/5/2006														
GHO-GCS	GHO-GCSPD	7/4/2006														
GHO-GCS	GHO-GCSPD	8/1/2006														
GHO-GCS	GHO-GCSPD	9/1/2006														
GHO-GCS	GHO-GCSPD	10/2/2006														
GHO-GCS	GHO-GCSPD	11/1/2006														
GHO-GCS	GHO-GCSPD	12/1/2006														
GHO-GCS	GHO-GCSPD	1/4/2007														
GHO-GCS	GHO-GCSPD	2/6/2007														
GHO-GCS	GHO-GCSPD	3/1/2007														
GHO-GCS	GHO-GCSPD	4/2/2007														
GHO-GCS	GHO-GCSPD	5/1/2007														
GHO-GCS	GHO-GCSPD	6/4/2007														
GHO-GCS	GHO-GCSPD	7/3/2007														
GHO-GCS	GHO-GCSPD	8/7/2007														
GHO-GCS	GHO-GCSPD	9/4/2007														
GHO-GCS	GHO-GCSPD	10/1/2007														
GHO-GCS	GHO-GCSPD	11/5/2007														
GHO-GCS	GHO-GCSPD	12/4/2007														
GHO-GCS	GHO-GCSPD	1/7/2008														
GHO-GCS	GHO-GCSPD	3/3/2008														
GHO-GCS	GHO-GCSPD	4/1/2008														
GHO-GCS	GHO-GCSPD	5/5/2008														
GHO-GCS	GHO-GCSPD	6/2/2008														
GHO-GCS	GHO-GCSPD	7/2/2008														
GHO-GCS	GHO-GCSPD	8/5/2008														
GHO-GCS	GHO-GCSPD	9/2/2008														
GHO-GCS	GHO-GCSPD	9/29/2008														
GHO-GCS	GHO-GCSPD	11/3/2008														
GHO-GCS	GHO-GCSPD	12/1/2008														
GHO-GCS	GHO-GCSPD	1/5/2009														
GHO-GCS	GHO-GCSPD	2/3/2009														
GHO-GCS	GHO-GCSPD	3/2/2009														
GHO-GCS	GHO-GCSPD	4/1/2009														
GHO-GCS	GHO-GCSPD	5/4/2009														
GHO-GCS	GHO-GCSPD	6/1/2009														
GHO-GCS	GHO-GCSPD	7/6/2009														
GHO-GCS	GHO-GCSPD	8/4/2009														
GHO-GCS	GHO-GCSPD	9/1/2009														
GHO-GCS	GHO-GCSPD	10/5/2009														
GHO-GCS	GHO-GCSPD	11/2/2009														
GHO-GCS	GHO-GCSPD	12/1/2009														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010														
GHO-GCS	GHO-GCSPD	2/1/2010														
GHO-GCS	GHO-GCSPD	3/2/2010														
GHO-GCS	GHO-GCSPD	3/15/2010														
GHO-GCS	GHO-GCSPD	3/22/2010														
GHO-GCS	GHO-GCSPD	3/29/2010														
GHO-GCS	GHO-GCSPD	4/5/2010														
GHO-GCS	GHO-GCSPD	4/12/2010														
GHO-GCS	GHO-GCSPD	4/19/2010														
GHO-GCS	GHO-GCSPD	4/26/2010														
GHO-GCS	GHO-GCSPD	5/3/2010														
GHO-GCS	GHO-GCSPD	5/10/2010														
GHO-GCS	GHO-GCSPD	5/17/2010														
GHO-GCS	GHO-GCSPD	5/25/2010														
GHO-GCS	GHO-GCSPD	5/31/2010														
GHO-GCS	GHO-GCSPD	6/7/2010														
GHO-GCS	GHO-GCSPD	6/14/2010														
GHO-GCS	GHO-GCSPD	6/21/2010														
GHO-GCS	GHO-GCSPD	6/28/2010														
GHO-GCS	GHO-GCSPD	7/5/2010														
GHO-GCS	GHO-GCSPD	7/12/2010														
GHO-GCS	GHO-GCSPD	7/19/2010														
GHO-GCS	GHO-GCSPD	7/26/2010														
GHO-GCS	GHO-GCSPD	8/3/2010														
GHO-GCS	GHO-GCSPD	9/7/2010														
GHO-GCS	GHO-GCSPD	10/4/2010														
GHO-GCS	GHO-GCSPD	11/1/2010														
GHO-GCS	GHO-GCSPD	12/6/2010														
GHO-GCS	GHO-GCSPD	1/4/2011														
GHO-LTC	GHO-LTCSPD	2/7/1996														
GHO-LTC	GHO-LTCSPD	5/21/1996														
GHO-LTC	GHO-LTCSPD	8/13/1996														
GHO-LTC	GHO-LTCSPD	12/3/1996														
GHO-LTC	GHO-LTCSPD	4/6/1997														
GHO-LTC	GHO-LTCSPD	6/15/1997														
GHO-LTC	GHO-LTCSPD	10/1/1997														
GHO-LTC	GHO-LTCSPD	5/26/1998														
GHO-LTC	GHO-LTCSPD	9/8/1998														
GHO-LTC	GHO-LTCSPD	12/5/1998														
GHO-LTC	GHO-LTCSPD	3/8/1999														
GHO-LTC	GHO-LTCSPD	6/9/1999														
GHO-LTC	GHO-LTCSPD	9/9/1999														
GHO-LTC	GHO-LTCSPD	12/4/1999														
GHO-LTC	GHO-LTCSPD	3/5/2000														
GHO-LTC	GHO-LTCSPD	6/4/2000														
GHO-LTC	GHO-LTCSPD	11/5/2000														
GHO-LTC	GHO-LTCSPD	6/8/2002														
GHO-LTC	GHO-LTCSPD	11/2/2002														
GHO-LTC	GHO-LTCSPD	3/30/2003														
GHO-LTC	GHO-LTCSPD	6/29/2003														
GHO-LTC	GHO-LTCSPD	12/27/2003														
GHO-LTC	GHO-LTCSPD	1/2/2004														
GHO-LTC	GHO-LTCSPD	3/4/2004														
GHO-LTC	GHO-LTCSPD	4/4/2004														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
GHO-LTC	GHO-LTCSPD	5/2/2004														
GHO-LTC	GHO-LTCSPD	6/6/2004														
GHO-LTC	GHO-LTCSPD	7/4/2004														
GHO-LTC	GHO-LTCSPD	8/1/2004														
GHO-LTC	GHO-LTCSPD	9/2/2004														
GHO-LTC	GHO-LTCSPD	10/3/2004														
GHO-LTC	GHO-LTCSPD	11/2/2004														
GHO-LTC	GHO-LTCSPD	12/5/2004														
GHO-LTC	GHO-LTCSPD	1/2/2005														
GHO-LTC	GHO-LTCSPD	2/4/2005														
GHO-LTC	GHO-LTCSPD	3/1/2005														
GHO-LTC	GHO-LTCSPD	4/3/2005														
GHO-LTC	GHO-LTCSPD	5/1/2005														
GHO-LTC	GHO-LTCSPD	6/12/2005														
GHO-LTC	GHO-LTCSPD	7/3/2005														
GHO-LTC	GHO-LTCSPD	8/1/2005														
GHO-LTC	GHO-LTCSPD	9/4/2005														
GHO-LTC	GHO-LTCSPD	10/2/2005														
GHO-LTC	GHO-LTCSPD	11/2/2005														
GHO-LTC	GHO-LTCSPD	12/8/2005														
GHO-LTC	GHO-LTCSPD	1/4/2006														
GHO-LTC	GHO-LTCSPD	2/1/2006														
GHO-LTC	GHO-LTCSPD	4/3/2006														
GHO-LTC	GHO-LTCSPD	7/4/2006														
GHO-LTC	GHO-LTCSPD	8/1/2006														
GHO-LTC	GHO-LTCSPD	9/1/2006														
GHO-LTC	GHO-LTCSPD	10/2/2006														
GHO-LTC	GHO-LTCSPD	11/1/2006														
GHO-LTC	GHO-LTCSPD	12/1/2006														
GHO-LTC	GHO-LTCSPD	5/1/2007														
GHO-LTC	GHO-LTCSPD	6/4/2007														
GHO-LTC	GHO-LTCSPD	7/3/2007														
GHO-LTC	GHO-LTCSPD	8/7/2007														
GHO-LTC	GHO-LTCSPD	9/4/2007														
GHO-LTC	GHO-LTCSPD	10/1/2007														
GHO-LTC	GHO-LTCSPD	11/5/2007														
GHO-LTC	GHO-LTCSPD	12/4/2007														
GHO-LTC	GHO-LTCSPD	5/5/2008														
GHO-LTC	GHO-LTCSPD	6/2/2008														
GHO-LTC	GHO-LTCSPD	7/2/2008														
GHO-LTC	GHO-LTCSPD	7/14/2008														
GHO-LTC	GHO-LTCSPD	8/5/2008														
GHO-LTC	GHO-LTCSPD	8/14/2008														
GHO-LTC	GHO-LTCSPD	9/2/2008														
GHO-LTC	GHO-LTCSPD	9/29/2008														
GHO-LTC	GHO-LTCSPD	11/3/2008														
GHO-LTC	GHO-LTCSPD	12/1/2008														
GHO-LTC	GHO-LTCSPD	1/5/2009														
GHO-LTC	GHO-LTCSPD	2/3/2009														
GHO-LTC	GHO-LTCSPD	3/2/2009														
GHO-LTC	GHO-LTCSPD	4/1/2009														
GHO-LTC	GHO-LTCSPD	5/4/2009														
GHO-LTC	GHO-LTCSPD	6/1/2009														
GHO-LTC	GHO-LTCSPD	7/6/2009														
GHO-LTC	GHO-LTCSPD	8/4/2009														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009														
GHO-LTC	GHO-LTCSPD	10/5/2009														
GHO-LTC	GHO-LTCSPD	11/2/2009														
GHO-LTC	GHO-LTCSPD	12/1/2009														
GHO-LTC	GHO-LTCSPD	1/4/2010														
GHO-LTC	GHO-LTCSPD	2/2/2010														
GHO-LTC	GHO-LTCSPD	3/1/2010														
GHO-LTC	GHO-LTCSPD	3/15/2010														
GHO-LTC	GHO-LTCSPD	3/22/2010														
GHO-LTC	GHO-LTCSPD	3/29/2010														
GHO-LTC	GHO-LTCSPD	4/6/2010														
GHO-LTC	GHO-LTCSPD	4/12/2010														
GHO-LTC	GHO-LTCSPD	4/19/2010														
GHO-LTC	GHO-LTCSPD	4/27/2010														
GHO-LTC	GHO-LTCSPD	5/4/2010														
GHO-LTC	GHO-LTCSPD	5/11/2010														
GHO-LTC	GHO-LTCSPD	5/18/2010														
GHO-LTC	GHO-LTCSPD	5/26/2010														
GHO-LTC	GHO-LTCSPD	6/1/2010														
GHO-LTC	GHO-LTCSPD	6/8/2010														
GHO-LTC	GHO-LTCSPD	6/16/2010														
GHO-LTC	GHO-LTCSPD	6/22/2010														
GHO-LTC	GHO-LTCSPD	6/29/2010														
GHO-LTC	GHO-LTCSPD	7/6/2010														
GHO-LTC	GHO-LTCSPD	7/13/2010														
GHO-LTC	GHO-LTCSPD	7/20/2010														
GHO-LTC	GHO-LTCSPD	7/27/2010														
GHO-LTC	GHO-LTCSPD	8/4/2010														
GHO-LTC	GHO-LTCSPD	9/8/2010														
GHO-LTC	GHO-LTCSPD	10/5/2010														
GHO-LTC	GHO-LTCSPD	11/2/2010														
GHO-LTC	GHO-LTCSPD	12/7/2010														
GHO-LTC	GHO-LTCSPD	1/4/2011														
GHO-PC1	GHO-PC1	1/4/2007									2					
GHO-PC1	GHO-PC1	2/7/2007									1.5					
GHO-PC1	GHO-PC1	3/1/2007									1.9					
GHO-PC1	GHO-PC1	4/2/2007									1.3					
GHO-PC1	GHO-PC1	5/1/2007									1.3					
GHO-PC1	GHO-PC1	6/4/2007									1.1					
GHO-PC1	GHO-PC1	7/3/2007									0.9					
GHO-PC1	GHO-PC1	8/7/2007									0.6					
GHO-PC1	GHO-PC1	9/4/2007									1					
GHO-PC1	GHO-PC1	10/1/2007									1.4					
GHO-PC1	GHO-PC1	11/5/2007									2					
GHO-PC1	GHO-PC1	12/4/2007									1.7					
GHO-PC1	GHO-PC1	1/7/2008									1.6					
GHO-PC1	GHO-PC1	2/4/2008									1.3					
GHO-PC1	GHO-PC1	3/3/2008									1.6					
GHO-PC1	GHO-PC1	4/1/2008									1.9					
GHO-PC1	GHO-PC1	5/5/2008									1.4					
GHO-PC1	GHO-PC1	6/2/2008									1.6					
GHO-PC1	GHO-PC1	7/2/2008									1.4					
GHO-PC1	GHO-PC1	8/5/2008									1.2					
GHO-PC1	GHO-PC1	9/2/2008									1					
GHO-PC1	GHO-PC1	9/29/2008									1.6					

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008					134				1.9					
GHO-PC1	GHO-PC1	12/1/2008					132									
GHO-PC1	GHO-PC1	12/3/2008									2.2					
GHO-PC1	GHO-PC1	1/5/2009					114									
GHO-PC1	GHO-PC1	1/6/2009									1.2					
GHO-PC1	GHO-PC1	2/3/2009					116									
GHO-PC1	GHO-PC1	2/4/2009									1.3					
GHO-PC1	GHO-PC1	3/2/2009					123									
GHO-PC1	GHO-PC1	3/3/2009									4.1					
GHO-PC1	GHO-PC1	4/1/2009					120									
GHO-PC1	GHO-PC1	4/2/2009									2.43					
GHO-PC1	GHO-PC1	5/4/2009					115									
GHO-PC1	GHO-PC1	5/5/2009									2.21					
GHO-PC1	GHO-PC1	6/1/2009					114									
GHO-PC1	GHO-PC1	6/2/2009									1.72					
GHO-PC1	GHO-PC1	7/6/2009					126									
GHO-PC1	GHO-PC1	7/7/2009									1.51					
GHO-PC1	GHO-PC1	8/4/2009					124									
GHO-PC1	GHO-PC1	8/5/2009									1.63					
GHO-PC1	GHO-PC1	9/1/2009					122									
GHO-PC1	GHO-PC1	9/2/2009									1.86					
GHO-PC1	GHO-PC1	10/5/2009					127									
GHO-PC1	GHO-PC1	10/6/2009									1.87					
GHO-PC1	GHO-PC1	11/2/2009					129									
GHO-PC1	GHO-PC1	11/3/2009									1.66					
GHO-PC1	GHO-PC1	12/1/2009					128									
GHO-PC1	GHO-PC1	12/2/2009									1.65					
GHO-PC1	GHO-PC1	1/4/2010					123									
GHO-PC1	GHO-PC1	1/5/2010									1.43					
GHO-WCP	GHO-WCPI	5/1/2005														
GHO-WCP	GHO-WCPI	7/3/2005														
GHO-WCP	GHO-WCPI	11/2/2005														
GHO-WCP	GHO-WCPI	1/4/2006														
GHO-WCP	GHO-WCPI	3/10/2006														
GHO-WCP	GHO-WCPI	4/3/2006														
GHO-WCP	GHO-WCPI	6/5/2006														
GHO-WCP	GHO-WCPI	7/4/2006														
GHO-WCP	GHO-WCPI	8/1/2006														
GHO-WCP	GHO-WCPI	9/1/2006														
GHO-WCP	GHO-WCPI	10/2/2006														
GHO-WCP	GHO-WCPI	11/1/2006														
GHO-WCP	GHO-WCPI	12/1/2006														
GHO-WCP	GHO-WCPI	1/4/2007														
GHO-WCP	GHO-WCPI	4/2/2007														
GHO-WCP	GHO-WCPI	5/1/2007														
GHO-WCP	GHO-WCPI	6/4/2007														
GHO-WCP	GHO-WCPI	7/3/2007														
GHO-WCP	GHO-WCPI	8/7/2007														
GHO-WCP	GHO-WCPI	9/4/2007														
GHO-WCP	GHO-WCPI	10/1/2007														
GHO-WCP	GHO-WCPI	11/5/2007														
GHO-WCP	GHO-WCPI	4/1/2008														
GHO-WCP	GHO-WCPI	5/5/2008														
GHO-WCP	GHO-WCPI	6/2/2008														

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008														
GHO-WCP	GHO-WCPI	7/14/2008														
GHO-WCP	GHO-WCPI	8/5/2008														
GHO-WCP	GHO-WCPI	8/7/2008														
GHO-WCP	GHO-WCPI	8/18/2008														
GHO-WCP	GHO-WCPI	9/2/2008														
GHO-WCP	GHO-WCPI	9/29/2008														
GHO-WCP	GHO-WCPI	11/3/2008														
GHO-WCP	GHO-WCPI	12/1/2008														
GHO-WCP	GHO-WCPI	1/5/2009														
GHO-WCP	GHO-WCPI	4/1/2009														
GHO-WCP	GHO-WCPI	5/4/2009														
GHO-WCP	GHO-WCPI	6/1/2009														
GHO-WCP	GHO-WCPI	7/6/2009														
GHO-WCP	GHO-WCPI	8/4/2009														
GHO-WCP	GHO-WCPI	9/1/2009														
GHO-WCP	GHO-WCPI	10/5/2009														
GHO-WCP	GHO-WCPI	11/2/2009														
GHO-WCP	GHO-WCPI	12/1/2009														
GHO-WCP	GHO-WCPI	3/1/2010														
GHO-WCP	GHO-WCPI	4/6/2010														
GHO-WCP	GHO-WCPI	5/4/2010														
GHO-WCP	GHO-WCPI	6/8/2010														
GHO-WCP	GHO-WCPI	7/6/2010														
GHO-WCP	GHO-WCPI	8/4/2010														
GHO-WCP	GHO-WCPI	9/8/2010														
GHO-WCP	GHO-WCPI	10/5/2010														
GHO-WCP	GHO-WCPI	11/2/2010														
LCO-WLC	LCO-WLC	4/15/2009	<0.0025		#N/A		332		0.000341		#N/A	<0.0005	<0.0025		0.00063	
LCO-WLC	LCO-WLC	9/23/2009	<0.0025		<1		278		0.00296		<10	<0.0005	<0.0025		0.00118	
LCO-WLC	LCO-WLC	11/4/2009	<0.0025		<1		281		0.00122		<10	<0.0005	<0.0025		0.00103	
LCO-WLC	LCO-WLC	11/16/2009	<0.0025		<0.5		293		0.00111		7.8	<0.0005	<0.0025		0.00112	
LCO-WLC	LCO-WLC	1/18/2010	<0.0025		<0.5		314		0.000664		<5	<0.0005	<0.0025		0.00057	
LCO-WLC	LCO-WLC	2/17/2010	<0.0025		<5		309		0.000409		<50	<0.0005	<0.0025		0.00125	
LCO-WLC	LCO-WLC	3/15/2010	<0.0025		<5.7		323		0.00017		7.2	<0.0005	<0.0025		0.00088	
LCO-WLC	LCO-WLC	4/29/2010	<0.0025		<1		323		0.000333		<10	<0.0005	<0.0025		0.00071	
LCO-WLC	LCO-WLC	6/1/2010	<0.001		<0.5		178		0.00092		2.3	<0.0002	<0.001		0.00067	
LCO-WLC	LCO-WLC	7/6/2010	<0.001		<0.25		182		0.00173		1.8	<0.0002	<0.001		0.00081	
LCO-WLC	LCO-WLC	8/3/2010	<0.0005		<5		240		0.00259		2.9	0.00011	<0.0005		0.00113	
LCO-WLC	LCO-WLC	9/7/2010	<0.0005		<1		274		0.00263		3.7	0.0001	<0.0005		0.00098	
LCO-WLC	LCO-WLC	10/8/2010	<0.0005		<1		288		0.00259		4.2	<0.0001	<0.0005		0.00112	
LCO-WLC	LCO-WLC	11/2/2010	<0.001		<1		304		0.00156		4	<0.0002	<0.001		0.001	
LCO-WLC	LCO-WLC	12/7/2010	<0.001		<1		308		0.000858		4.7	<0.0002	<0.001		0.0011	
LCO-WLC	LCO-WLC	1/4/2011	<0.0005		<0.5		307		0.000545		4.4	<0.0001	0.00013		0.00076	
LCO-WLC	LCO-WLC	2/1/2011	<0.0005		<1		317		0.000325		4.7	<0.0001	0.00016		0.00077	
LCO-WLC	LCO-WLC	3/1/2011	<0.0005		<1		316		0.000148		4.8	<0.0001	<0.0002		0.00065	
LCO-WLC	LCO-WLC	4/4/2011	<0.001		<5.8		331		0.000137		5	<0.0002	<0.0002		0.0012	
LCO-WLC	LCO-WLC	5/3/2011	<0.001		<1		336		0.000115		5.2	<0.0002	<0.0002		<0.001	
LCO-WLC	LCO-WLC	6/7/2011	<0.0005		<0.5		153		0.00102		1.7	0.00028	<0.0001		0.00071	
LCO-WLC	LCO-WLC	7/5/2011	<0.0005		<0.5		165		0.0015		1.8	0.00012	0.00018		0.00082	
LCO-WLC	LCO-WLC	7/12/2011	<0.0005		<0.5		189		0.00193		2.2	0.00011	0.00011		0.00089	
LCO-WLC	LCO-WLC	8/2/2011	<0.001		<0.5		226		0.00238		3	<0.0002	<0.0002		0.001	
LCO-WLC	LCO-WLC	9/6/2011	<0.001		<1		271		0.00269		4.4	<0.0002	<0.0002		0.0011	
LCO-WLC	LCO-WLC	10/4/2011	<0.001		<1		311		0.00294		4.7	<0.0002	<0.0002		0.0012	

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011	<0.001		<1		304		0.00127		3.8	<0.0002	<0.0002		<0.001	
LCO-WLC	LCO-WLC	12/6/2011	<0.001		<1		315		0.000802		4.8	<0.0002	<0.0002		<0.001	
TM-SBB	BT-11 seep	6/27/2007	<0.00050		<0.050		84.6		0.000215		1.67	0.00859	<0.00050		0.00073	
TM-SBB	BT-11 seep	9/27/2007	<0.0010				168		0.000339		7.57	0.00562	<0.0010		0.00089	
TM-SBB	BT-11 seep	5/30/2008	<0.00050				96.9		0.000212		2.2	0.00429	<0.00050		<0.00070	
TM-SBB	BT-11 seep	6/28/2009	<0.0025				202		0.000272		<25	0.00361	<0.0025		0.00088	
TM-SBB	BT-11 seep	9/8/2009	<0.0025				214		0.000273		11.2	0.00340	<0.0025		<0.0011	
TM-SBB	BT-11 seep	5/31/2010	<0.0025				249		0.000375		7.9	0.00354	<0.0025		0.0148	
TM-SBB	BT-11 seep	7/5/2010	<0.0025				226		0.000198		12	0.00111	<0.0025		0.00104	
TM-SBB	BT-11 seep	8/18/2010	<0.0025				248		0.000138		10	<0.00050	<0.0025		0.00102	
TM-SBB	BT-11 seep	9/20/2010	<0.0025				264		0.000127		9.7	0.00068	<0.0025		0.00052	
TM-SBB	BT-13 seep	6/27/2007	<0.0010		<0.050		124		0.000239		7.88	0.00801	<0.0010		0.00089	
TM-SBB	BT-13 seep	9/27/2007	<0.0010				136		0.000129		19.8	0.00044	<0.0010		0.00083	
TM-SBB	BT-13 seep	5/30/2008	<0.0010				151		0.000247		10.3	0.0056	<0.0010		<0.0010	
TM-SBB	BT-13 seep	6/28/2009	<0.0025				204		0.000288		<25	0.00356	<0.0025		0.00096	
TM-SBB	BT-13 seep	9/8/2009	<0.0025				236		0.000287		24.6	0.00370	<0.0025		<0.0011	
TM-SBB	BT-13 seep	5/31/2010	<0.0025				227		0.000339		12.1	0.00313	<0.0025		0.00077	
TM-SBB	BT-13 seep	7/5/2010	<0.0025				218		0.000193		18	<0.00050	<0.0025		0.00128	
TM-SBB	BT-13 seep	8/16/2010	<0.0025				234		0.000172		19.7	<0.00050	<0.0025		0.00118	
TM-SBB	BT-13 seep	9/20/2010	<0.0025				227		0.000214		20.4	0.00181	<0.0025		0.00052	
TM-SBG	GT42 seep	6/28/2009	<0.0010				161		0.000369		<25	0.00524	<0.0010		0.0005	
TM-SBG	GT42 seep	7/7/2009														
TM-SBG	GT42 seep	9/8/2009	<0.0025				232		0.00058		6.6	0.00347	<0.0025		<0.00090	
TM-SBG	GT42 seep	5/31/2010	<0.0025				362		0.00124		8.7	0.0193	<0.0025		0.00053	
TM-SBG	GT42 seep	7/6/2010	<0.0025				324		0.000751		15	0.00922	<0.0025		0.00102	
TM-SBG	GT42 seep	8/16/2010	<0.00050				53.9		0.000034		3.34	0.00104	<0.00050		0.00068	
TM-SBG	GT42 seep	8/31/2010	<0.0025	<0.0025		<0.050	375	357	0.000901	0.000835	11	0.0176	<0.0025	<0.0025	0.0009	0.00143
TM-SBG	GT42 seep	9/14/2010														
TM-SBG	GT42 seep	9/20/2010	<0.0025				374		0.000918		<10	0.0174	<0.0025		0.00079	
TM-SBG	GT42 seep	4/13/2011									17					
TM-SBG	GT42 seep	4/13/2011									17					
TM-SBG	GT42 seep	4/28/2011									11					
TM-SBG	GT42 seep	5/1/2011	<0.0010	<0.0010		0.023	340	329	0.00086	0.000967	17	0.0128	<0.00020	0.00055	<0.0010	0.0022
TM-SBG	GT42 seep	5/12/2011			<1.0						<10					
TM-SBG	GT42 seep	5/26/2011			<1.0						<10					
TM-SBG	GT42 seep	5/31/2011			<1.0						<10					
TM-SBG	GT42 seep	6/7/2011														
TM-SBG	GT42 seep	6/7/2011			<1.0						<10					
TM-SBG	GT42 seep	6/14/2011			<1.0						<10					
TM-SBG	GT42 seep	6/29/2011	<0.0010	<0.0010		0.023	418	404	0.00132	0.00133	10	0.0379	<0.00020	0.00076	<0.0010	0.0016
TM-SBG	GT42 seep	7/5/2011														
TM-SBG	GT42 seep	7/12/2011			<0.50						13.6					
TM-SBG	GT42 seep	7/19/2011			<1.0						15					
TM-SBG	GT42 seep	7/20/2011	<0.0025		<1.0		489		0.00145		11	0.0549	<0.00050		<0.0025	
TM-SBG	GT42 seep	8/3/2011			<1.0						16					
TM-SBG	GT42 seep	8/8/2011			<1.0						16					
TM-SBG	GT42 seep	8/16/2011														
TM-SBG	GT42 seep	8/23/2011														
TM-SBG	GT42 seep	8/31/2011	<0.0025		<1.0		510		0.00184		16	0.0276	<0.00050		<0.0025	
TM-SBG	GT42 seep	9/13/2011														
TM-SBG	GT42 seep	9/20/2011														
TM-SBG	GT42 seep	10/5/2011														
TM-SBG	GT42 seep	10/11/2011	<0.0010				348		0.000696		22	0.0128	<0.00020		0.001	
TM-SBG	GT42 seep	4/16/2012			<1.0						16					

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012	<0.0010	<0.0010		0.026	334	322	0.000723	0.000785	11	0.012	<0.00020	0.0003	0.0012	0.0022
TM-SBG	GT42 seep	6/4/2012	<0.0010	<0.0010		0.027	367	384	0.000991	0.001	<10	0.0224	<0.00020	<0.00020	<0.0010	0.0017
TM-SBG	GT42 seep	6/4/2012														
TM-SBG	GT42 seep	6/19/2012														
TM-SBG	GT42 seep	6/25/2012									<10					
TM-SBG	GT42 seep	6/25/2012														
TM-SBG	GT42 seep	7/10/2012	<0.0010				403		0.000878		21	0.00541	<0.00020		<0.0010	
TM-SBG	GT42 seep	7/17/2012									20					
TM-SBG	GT42 seep	8/7/2012	<0.0025	<0.0025		<0.050	466	446	0.00104	0.00102	15	0.00552	<0.00050	<0.00050	<0.0025	<0.0025
TM-SBG	GT42 seep	8/20/2012									15					
WM-ED	SEEP-9	3/23/2010	<0.0010		<0.25		159		0.000120		4.4	0.00171	<0.0010		0.00100	
WM-ED	SEEP-9	4/21/2010	<0.0010		<0.50		135		0.000119		<5.0	0.00220	<0.0010		0.00106	
WM-ED	SEEP-9	5/25/2010	<0.0010		<0.50		155		0.000132		<5.0	0.00197	<0.0010		0.00148	
WM-ED	SEEP-9	6/29/2010	<0.0025		<0.50		225		0.000220		<5.0	0.00246	<0.0025		0.00097	
WM-ED	SEEP-9	7/21/2010	<0.0025		<0.50		239		0.000275		5.6	0.00221	<0.0025		0.00216	
WM-ED	SEEP-9	8/25/2010	<0.0025		<0.50		243		0.000207		<5.0	0.00095	<0.0025		0.00077	
WM-ND	SEEP-1	5/25/2010	<0.00050		<0.050		97.1		0.000318		1.00	0.00272	<0.00050		0.00105	
WM-ND	SEEP-1	10/26/2010	<0.0025		<0.50		253		0.000238		<5.0	<0.00050	<0.0025		<0.0025	
WM-ND	SEEP-1	5/2/2011	<0.00050		<0.50		164		0.000171		<5.0	0.00848	0.00010		0.00100	
WM-ND	SEEP-12	5/25/2010	<0.00050		<0.050		110		0.000049		0.70	0.00040	<0.00050		0.00103	
WM-ND	SEEP-12	5/2/2011	<0.00050		<0.050		81.7		0.000049		<0.50	0.00024	0.00012		0.00065	
WM-ND	SEEP-2	6/13/2007	<0.00050		<0.050		109		0.000114		1.92	0.00360	<0.00050		0.00128	
WM-ND	SEEP-2	5/14/2008	<0.00050	<0.00050	<0.050	0.013	74.2	72.2	0.000148	0.000345	2.32	0.00832	0.00211	0.00753	0.00111	0.00573
WM-ND	SEEP-2	5/14/2008	<0.00050	<0.00050	<0.050	0.012	66.3	67.3	0.000023	0.000161	1.12	0.00129	<0.00050	0.00336	0.00088	0.00313
WM-ND	SEEP-2	9/16/2008	<0.00050	<0.00050	<0.050	<0.010	81.1	78.6	0.000141	0.000184	3.74	0.00495	<0.00050	<0.00050	0.00077	0.00180
WM-ND	SEEP-2	9/16/2008	<0.00050	<0.00050	<0.050	<0.010	34.6	34.0	0.000358	0.000379	1.74	0.00387	<0.00050	<0.00050	<0.0010	0.00123
WM-ND	SEEP-2	5/25/2010	<0.0010		<0.50		220		0.000212		<5.0	0.00050	<0.0010		<0.00060	
WM-ND	SEEP-2	10/26/2010	<0.0010		<0.50		196		0.000048		<5.0	<0.00020	<0.0010		<0.0015	
WM-ND	SEEP-3	5/25/2010	<0.00050		<0.050		42.9		0.000129		<0.50	0.00147	<0.00050		0.00281	
WM-ND	SEEP-3	10/26/2010	<0.00050		<0.25		52.0		0.000291		<2.5	0.0147	0.00150		<0.0050	
WM-ND	SEEP-3	5/2/2011	<0.00050		<0.25		128		0.000246		<2.5	0.00335	<0.00010		<0.00050	
WM-ND	SEEP-4	5/25/2010	<0.0010		<0.50		120		0.000223		<5.0	0.00077	<0.0010		0.00119	
WM-ND	SEEP-4	10/26/2010	<0.0010		<0.50		136		0.000180		<5.0	0.00032	<0.0010		<0.0010	
WM-ND	SEEP-4	5/2/2011	<0.00050		<0.50		207		0.000530		<5.0	0.00173	0.00012		<0.00050	
WM-ND	SEEP-5	6/13/2007	<0.00050		<0.050		71.7		0.000050		0.97	0.00378	<0.00050		0.00181	
WM-ND	SEEP-5	5/25/2010	<0.00050		<0.050		77.0		0.000052		<0.50	0.00011	<0.00050		0.00078	
WM-ND	SEEP-5	5/2/2011	<0.00050		<0.050		46.8		0.000028		<0.50	0.00012	0.00017		0.00080	
WM-SD	SD1	8/2/2006	<0.0010	<0.0010	<0.050	0.051	106	110	0.000060	0.000709	2.23	0.00270	<0.0010	0.0470	0.00207	0.0252
WM-SD	SD1	10/31/2007	<0.00050	<0.00050	<0.05	0.015	38.9	38.3	0.000055	0.000157	1.23	0.00044	0.00178	0.0107	0.00289	0.00762
WM-SD	SD1	4/2/2008	<0.0010	<0.0010	<0.050	0.063	99.6	95.7	0.000249	0.000244	1.48	0.00172	<0.0010	<0.0010	0.00074	0.00144
WM-SD	SD1	5/14/2008	<0.00050	<0.00050	<0.050	0.016	62.8	62.4	0.000065	0.000288	1.68	0.00036	<0.00050	0.00952	0.00189	0.00662
WM-SD	SEEP-6	6/13/2007	<0.00050		<0.050		104		0.000091		1.53	0.00105	<0.00050		0.00140	
WM-SD	SEEP-6	5/25/2010	<0.0025		<0.50		290		<0.000085		<5.0	0.00063	<0.0025		0.00108	
WM-SD	SEEP-6	10/26/2010	<0.0025		<1.0		324		<0.000085		<10	<0.00050	<0.0025		<0.0025	
WM-SD	SEEP-6	5/2/2011	<0.0010		<1.0		312		0.000040		<10	0.00030	<0.00020		0.0010	
WM-SD	SEEP-7	10/31/2007	<0.0025	<0.0025	<0.050	<0.050	204	202	0.000146	0.000317	2.65	0.00649	<0.0025	0.0093	0.00129	0.00573
WM-SD	SEEP-7	4/2/2008	<0.0010	<0.0010	<0.050	0.043	111	103	0.000121	0.000137	1.6	0.00179	<0.0010	<0.0010	0.00092	0.00101
WM-SD	SEEP-7	5/25/2010	<0.0025		<0.50		263		<0.000085		<5.0	<0.00050	<0.0025		<0.00060	
WM-SD	SEEP-7	10/26/2010	<0.0025		<1.0		433		0.000162		<10	<0.00050	<0.0025		<0.0025	
WM-SD	SEEP-7	5/2/2011	<0.0010		<1.0		259		0.000607		<10	0.0132	<0.00020		0.0014	
WM-SD	SEEP-8	5/25/2010	<0.0025		<0.50		258		<0.000085		<5.0	0.00109	<0.0025		0.00107	
WM-SD	SEEP-8	10/26/2010	<0.0025		<1.0		302		<0.000085		<10	0.00150	<0.0025		<0.0025	
WM-SD	SEEP-8	5/2/2011	<0.0010		<0.50		293		0.000072		6.5	0.00078	<0.00020		<0.0010	
WCM-4C	SEEP A	5/8/2006	<0.0025	<0.0025	<0.050	<0.050	208	209	<0.00010	<0.00010	2.48	0.00082	<0.0025	<0.0025	0.00075	0.00079

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	<0.0025	<0.0025	<0.050	<0.050	331	347	0.00019	0.00022	3.58	0.00119	<0.0025	<0.0025	0.00092	0.00082
WCM-7C	7C West Dump	march, 2012					388								<0.001	
WCM-7C	7C West Dump	April, 2012					424								<0.001	
WCM-7C	7C West Dump	May, 2012					461								0.00120	
WCM-7C	7C West Dump	June, 2012					435								<0.0025	
WCM-7C	7C West Dump	July, 2012					482								<0.001	
WCM-7C	7C West Dump	August, 2012					482								<0.0025	
WCM-7C	7C West Dump	September, 2012					498								<0.0025	
WCM-7C	7C West Dump	October, 2012					475								<0.0025	
WCM-7C	7C West Dump	November, 2012					467								<0.0025	
WCM-7C	7C West Dump	December, 2012					480								<0.0025	
WCM-7P	7P SE	November, 2012					441								0.0025	
WCM-7P	7P SE	December, 2012					450								0.0025	
BM-SED	SP2 SOUTH SEEP	6/3/2009	<0.00050		<0.050		72.0		0.00025		3.3	0.00208	0.00066		0.00397	
BM-SED	SP2 SOUTH SEEP	4/10/2010	<0.0010		<0.50		119.0		0.00033		5.9	0.00058	<0.0010		0.00547	
BM-SED	SP2 SOUTH SEEP	6/10/2010	<0.0010		<0.050		123.0		0.00053		3.8	0.00077	<0.0010		0.00822	
BM-SED	SP2 SOUTH SEEP	4/11/2011	<0.00050		<0.50		164.0		0.00051		<5.0	0.00079	0.00012		0.00301	
BM-SED	SP2 SOUTH SEEP	5/31/2011	<0.00050		<0.25		94.2		0.00017		5.0	0.00048	0.00013		0.00080	
BM-SED	SP2 SOUTH SEEP	6/11/2011	<0.0010		<0.50		209.0		0.00042		6.0	0.00036	<0.00020		0.00360	
BM-SED	SP2 SOUTH SEEP	7/11/2011	<0.0010		<0.50		201.0		0.00055		<5.0	0.00062	<0.00020		0.00190	
BM-SED	SP2 SOUTH SEEP	8/11/2011	<0.0010		<0.50		217.0		0.00044		6.4	0.00040	<0.00020		0.00290	
BM-SED	SP2 SOUTH SEEP	9/11/2011	<0.0010		<0.50		223.0		0.00043		6.8	0.00032	<0.00020		0.00370	
BM-SED	SP2 SOUTH SEEP	10/11/2011	<0.0010		<0.50		229.0		0.00046		7.0	0.00028	<0.00020		0.00430	
BM-SED	SP2 SOUTH SEEP	11/11/2011	<0.00050		<0.50		225.0		0.00021		6.9	0.00023	0.00020		0.00368	
BM-SED	SP2 SOUTH SEEP	4/12/2012	<0.0010		<1.0		290.0		0.00059		<10	0.00036	<0.00020		0.00160	
BM-SED	SP2 SOUTH SEEP	5/12/2012	<0.0010		<1.0		339.0		0.00075		<10	0.00037	<0.00020		0.00330	
BM-SED	SP2 SOUTH SEEP	6/12/2012	<0.001		<1.0		337.0		0.00075		<10	0.00030	0.00022		0.00310	
BM-SED	SP2 SOUTH SEEP	7/12/2012	<0.0010		<1.0		259		0.000160		<10	0.00031	<0.00020		<0.0010	
BM-SED	SP2 SOUTH SEEP	8/12/2012	<0.0010		<1.0		282		0.000331		11.0	0.00040	<0.00020		0.0011	
BM-SED	SP2 SOUTH SEEP	9/12/2012														
BM-SED	SP2 SOUTH SEEP	10/12/2012														
BM-SED	SP2 EAST SEEP	6/3/2009	<0.00050		<0.050		92.5		0.00014		5.1	0.00084	0.00063		0.00138	
BM-SED	SP2 EAST SEEP	9/8/2009	<0.0010		<0.50		118.0		0.00013		5.7	0.00153	<0.0010		0.00172	
BM-SED	SP2 EAST SEEP	4/10/2010	<0.0010		<0.50		139.0		<0.00010		8.4	0.00083	<0.0010		0.00093	
BM-SED	SP2 EAST SEEP	6/10/2010	<0.0010		<0.50		133.0		0.00011		7.4	0.00047	<0.0010		0.00092	
BM-SED	SP2 EAST SEEP	10/1/2010	<0.0010		<0.50		177.0		0.00013		9.8	0.00075	<0.0010		0.00100	
BM-SED	SP2 EAST SEEP	4/11/2011	<0.00050		<0.25		115.0		0.00036		4.4	0.00127	0.00013		0.00083	
BM-SED	SP2 EAST SEEP	5/31/2011	<0.00050		<0.25		94.2		0.00017		5.0	0.00048	0.00013		0.00080	
BM-SED	SP2 EAST SEEP	6/11/2011	<0.00050		<0.50		115.0		0.00018		5.2	0.00034	0.00013		0.00085	
BM-SED	SP2 EAST SEEP	7/11/2011	<0.00050		<0.050		93.1		0.00017		2.6	0.00037	0.00013		0.00059	
BM-SED	SP2 EAST SEEP	8/11/2011	<0.00050		<0.50		175.0		0.00029		9.0	0.00040	0.00012		0.00116	
BM-SED	SP2 EAST SEEP	9/11/2011	<0.00050		<0.50		141.0		0.00023		6.1	0.00025	0.00015		0.00095	
BM-SED	SP2 EAST SEEP	10/11/2011	<0.00050		<0.50		151.0		0.00029		6.0	0.00022	0.00014		0.00101	
BM-SED	SP2 EAST SEEP	11/11/2011	<0.00050		<0.50		151.0		0.00021		5.5	0.00017	0.00013		0.00092	
BM-SED	SP2 EAST SEEP	4/12/2012	<0.0010		<1.0		227.0		0.00045		13.0	0.00054	<0.00020		<0.0010	
BM-SED	SP2 EAST SEEP	5/12/2012	<0.0010		<0.50		239.0		0.00062		8.3	0.00035	<0.00020		0.00130	
BM-SED	SP2 EAST SEEP	6/12/2012	<0.0010		<1.0		241.0		0.00051		<10.0	0.00034	<0.00020		0.00120	
BM-SED	SP2 EAST SEEP	7/12/2012	<0.0010		<1.0		242		0.000524		10.0	0.00036	<0.00020		<0.0010	
BM-SED	SP2 EAST SEEP	8/12/2012	<0.0010		<1.0		252		0.000555		13.0	0.00037	<0.00020		0.0015	
EVO-F2	F2 WELL	4/8/2010	<0.00050				514		0.00254		24	0.0587	<0.00050		0.00046	
EVO-F2	F2 WELL	9/14/2010	<0.00050				505		0.00256		24.2	0.0581	<0.00050		0.00041	
EVO-F2	F2 WELL	9/15/2011	<0.0025				533		0.00252		25.1	0.0568	<0.00050		<0.0025	
EVO-F2	F2 WELL	7/26/2011	<0.0025				483		0.00293		22.5	0.0603	<0.00050		<0.0025	

			Bi-D	Bi-T	Br	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Cl	Co-D	Cr-D	Cr-T	Cu-D	Cu-T
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EVO-F2	F2 WELL	12/15/2011	<0.0025				491		0.00037		11	0.0488	<0.00050		<0.0025	
EVO-F2	F2 WELL	03/16/2012	<0.0025				449		<0.000050		11	0.0102	<0.00050		<0.0025	
BM-DPB	BM-11-01-A	5/28/2012	*<0.00050*				114		0.000035			0.00255	*<0.00010*		*<0.00020*	
BM-DPB	BM-11-01-B	5/29/2012	*<0.0010*				271		0.000059			0.00670	*<0.00020*		0.00058	
BM-DPB	BM-11-01-C	5/28/2012	*<0.0010*				280		*<0.000020*			0.00755	*<0.00020*		0.00048	
BM-DPB	BM-11-02-B	5/30/2012	*<0.0010*				311		0.000064			0.00820	*<0.00020*		0.00064	
BM-DPB	BM-11-02-C	5/29/2012	*<0.0010*				277		0.000064			0.00599	*<0.00020*		*<0.00040*	
GHO-BH1	GHO-BH1	4/20/2009	<0.0025		<2.5		200		<0.00025		<25	<0.0005	0.0049		0.0005	
GHO-BH1	GHO-BH1	10/28/2009	<0.0025		<1		312		<0.00025		32	0.00174	<0.0025		<0.0005	
GHO-BH1	GHO-BH1	6/15/2010	<0.0025		<0.5		248		<0.00025		26.6	0.00254	<0.0025		<0.0005	
GHO-BH1	GHO-BH1	8/9/2010	<0.0005		<1		360		0.000039		23.2	0.00582	<0.0005		0.00019	
GHO-BH1	GHO-BH1	9/20/2010	<0.0005		<1		309		0.000084		75.3	0.00492	<0.0005		<0.0001	
GHO-BH1	GHO-BH1	10/12/2010	<0.0005		<1		339		0.000048		46.3	0.00563	<0.0005		<0.0005	
GHO-BH1	GHO-BH1	11/15/2010	<0.0005		<1		412		0.000042		23.9	0.00845	<0.0005		<0.0005	
GHO-BH1	GHO-BH1	4/13/2011	<0.001		<1		304		0.000386		96.1	0.00117	<0.0002		<0.001	
GHO-BH1	GHO-BH1	5/11/2011	<0.001		<1		276		<0.00002		43.2	<0.0002	<0.0002		<0.001	
GHO-BH1	GHO-BH1	6/8/2011	<0.001		<1		230		0.000672		14.3	<0.0002	<0.0002		<0.001	
GHO-BH1	GHO-BH1	7/13/2011	<0.0025		<1		385		0.000283		11.8	0.00317	<0.0005		<0.0025	
GHO-BH1	GHO-BH1	9/14/2011	<0.0025		<1		463		0.000071		8.5	0.00559	<0.0005		<0.0025	
GHO-BH1	GHO-BH1	10/5/2011	<0.0025		<1		487		0.000068		8.1	0.00616	<0.0005		<0.0025	
GHO-BH1	GHO-BH1	6/6/2012	<0.0005		<0.5		263		0.000595		17.1	<0.0001	0.00015		0.00084	
GHO-BH1	GHO-BH1	7/5/2012	<0.0005		<1		220		0.000343		18.4	0.00109	<0.0001		<0.0005	
GHO-BH1	GHO-BH1	9/12/2012	<0.001		<1		395		0.000178		9.5	0.0024	<0.0002		<0.001	
GHO-BH1	GHO-BH1	10/3/2012	<0.0025		<1		426		0.000149		8.4	0.00294	<0.0005		<0.0025	
GHO-BH1	GHO-BH1	11/7/2012	<0.001		<1		269		0.000456		60.3	0.0009	<0.0002		<0.001	
BM-NED	LOWER BLIND SEEP	6/3/2009	<0.0010		<0.050		164.0		0.00032		1.0	0.00255	<0.0010		0.00046	
BM-NED	LOWER BLIND SEEP	9/8/2009	<0.0010		<0.50		156.0		0.00029		5.4	<0.00020	0.00190		0.00055	
BM-NED	LOWER BLIND SEEP	5/10/2010	<0.0010		<0.50		207.0		0.00027		<5.0	0.00021	<0.0010		<0.00040	
BM-NED	LOWER BLIND SEEP	6/10/2010	<0.0010		<0.50		195.0		0.00032		<5.0	0.00022	<0.0010		0.00036	
BM-NED	LOWER BLIND SEEP	10/1/2010	<0.0010		<0.50		174.0		0.00029		<5.0	<0.00020	<0.0010		<0.0010	
BM-NED	LOWER BLIND SEEP	5/31/2011	<0.00050		<0.50		191.0		0.00030		<5.0	0.00053	0.00015		<0.00050	
BM-NED	LOWER BLIND SEEP	6/11/2011	<0.00050		<0.50		185.0		0.00031		<5.0	0.00024	0.00012		<0.00050	
BM-NED	LOWER BLIND SEEP	10/11/2011	<0.0010		<0.50		205.0		0.00033		<5.0	<0.00020	<0.00020		<0.0010	
BM-NED	North Dump Seep N	5/12/2012	<0.00050		<0.050		85.6		0.00012		14.4	0.00077	0.00028		0.00149	
BM-NED	North Dump Seep S	6/12/2012	<0.00050		<0.050		146.0		0.00018		9.6	0.00259	0.00049		0.00321	
BM-NED	North Dump Seep N	6/12/2012	<0.00050		<0.50		175.0		0.00024		5.1	0.00111	0.00014		0.00120	
BM-NED	North Dump Seep N	7/12/2012	<0.00050		<0.50		184		0.000243		5.0	0.00092	0.00016		0.00097	
BM-NED	North Dump Seep N	8/12/2012	<0.00050		<0.50		191		0.000294		6.5	0.00090	0.00014		0.00082	
BM-NED	North Dump Seep S	7/12/2012	<0.00050		<0.50		171		0.000243		10.4	0.00381	0.00093		0.00313	
BM-NED	North Dump Seep S	8/12/2012	<0.00050		<0.50		185		0.000226		10.0	0.00444	0.00022		0.00180	

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007														
EVO-BC1	EVO-BC1	6/19/2007														
EVO-BC1	EVO-BC1	7/3/2007														
EVO-BC1	EVO-BC1	8/7/2007														
EVO-BC1	EVO-BC1	9/5/2007														
EVO-BC1	EVO-BC1	10/3/2007														
EVO-BC1	EVO-BC1	11/6/2007														
EVO-BC1	EVO-BC1	12/5/2007														
EVO-BC1	EVO-BC1	1/3/2008														
EVO-BC1	EVO-BC1	2/5/2008		0.037				5.7				102		0.0092		0.0128
EVO-BC1	EVO-BC1	3/5/2008		0.087				7.04				118		0.0144		0.0089
EVO-BC1	EVO-BC1	3/11/2008														
EVO-BC1	EVO-BC1	3/18/2008														
EVO-BC1	EVO-BC1	3/20/2008														
EVO-BC1	EVO-BC1	3/25/2008														
EVO-BC1	EVO-BC1	3/28/2008														
EVO-BC1	EVO-BC1	4/1/2008														
EVO-BC1	EVO-BC1	4/3/2008														
EVO-BC1	EVO-BC1	4/8/2008														
EVO-BC1	EVO-BC1	4/15/2008														
EVO-BC1	EVO-BC1	4/22/2008														
EVO-BC1	EVO-BC1	4/29/2008														
EVO-BC1	EVO-BC1	5/6/2008														
EVO-BC1	EVO-BC1	5/13/2008														
EVO-BC1	EVO-BC1	5/20/2008														
EVO-BC1	EVO-BC1	5/21/2008														
EVO-BC1	EVO-BC1	5/28/2008														
EVO-BC1	EVO-BC1	6/3/2008														
EVO-BC1	EVO-BC1	6/11/2008														
EVO-BC1	EVO-BC1	6/17/2008														
EVO-BC1	EVO-BC1	6/26/2008														
EVO-BC1	EVO-BC1	7/2/2008														
EVO-BC1	EVO-BC1	7/6/2008														
EVO-BC1	EVO-BC1	7/29/2008														
EVO-BC1	EVO-BC1	8/5/2008														
EVO-BC1	EVO-BC1	9/2/2008														
EVO-BC1	EVO-BC1	9/12/2008														
EVO-BC1	EVO-BC1	10/7/2008														
EVO-BC1	EVO-BC1	11/4/2008		0.033				6.5				100		<0.0025		
EVO-BC1	EVO-BC1	12/3/2008		<0.015				6.5				95.9		<0.0025		
EVO-BC1	EVO-BC1	1/7/2009		<0.015				5.8				103		0.0054		
EVO-BC1	EVO-BC1	2/4/2009		0.108				5.7				96		0.0127		
EVO-BC1	EVO-BC1	3/3/2009		0.238				7.5				93.4		0.0244		
EVO-BC1	EVO-BC1	3/10/2009														
EVO-BC1	EVO-BC1	3/17/2009														
EVO-BC1	EVO-BC1	3/24/2009														
EVO-BC1	EVO-BC1	3/31/2009														
EVO-BC1	EVO-BC1	4/7/2009		0.147				5.5				98.4		0.01		
EVO-BC1	EVO-BC1	4/15/2009														
EVO-BC1	EVO-BC1	4/21/2009														
EVO-BC1	EVO-BC1	4/28/2009														
EVO-BC1	EVO-BC1	5/6/2009														
EVO-BC1	EVO-BC1	5/12/2009														
EVO-BC1	EVO-BC1	5/20/2009														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009														
EVO-BC1	EVO-BC1	6/2/2009		<0.015				5				88.1		<0.0025		
EVO-BC1	EVO-BC1	6/9/2009														
EVO-BC1	EVO-BC1	6/16/2009														
EVO-BC1	EVO-BC1	6/23/2009														
EVO-BC1	EVO-BC1	6/30/2009														
EVO-BC1	EVO-BC1	7/8/2009	<0.2					5.9				98.4				
EVO-BC1	EVO-BC1	8/5/2009	0.39	0.078				6.3				108		0.0089		
EVO-BC1	EVO-BC1	9/1/2009		0.034				6.5				107		<0.0025		
EVO-BC1	EVO-BC1	10/7/2009	0.31	0.049				6.6				121		0.0071		
EVO-BC1	EVO-BC1	11/5/2009	0.34	0.111				6.2				98.9		0.0068		
EVO-BC1	EVO-BC1	11/6/2009														
EVO-BC1	EVO-BC1	12/2/2009	0.39					6				112				
EVO-BC1	EVO-BC1	12/3/2009														
EVO-DC1	EVO-DC1	9/5/2007														
EVO-DC1	EVO-DC1	11/4/2008		0.015				3.13				164		<0.0025		
EVO-DC1	EVO-DC1	5/25/2009		0.015				2.5				108		<0.0025		
EVO-DC1	EVO-DC1	6/2/2009														
EVO-DC1	EVO-DC1	6/10/2009														
EVO-DC1	EVO-DC1	6/23/2009														
EVO-DC1	EVO-DC1	6/30/2009														
EVO-DC1	EVO-DC1	7/7/2009		0.049				2.9				125		0.00329		0.0018
EVO-DC1	EVO-DC1	7/31/2009	0.121	0.015								14.4		0.00112		0.00115
EVO-DC1	EVO-DC1	8/5/2009		0.187								14.5		0.0153		
EVO-DC1	EVO-DC1	8/31/2009	0.105	0.015								15.2		0.0013		0.00116
EVO-DC1	EVO-DC1	9/1/2009		0.015				3				149		<0.0025		
EVO-DC1	EVO-DC1	10/6/2009		0.015				2.9				158		<0.0025		
EVO-DC1	EVO-DC1	10/20/2009	0.143	0.015								17.1		0.0012		0.00119
EVO-DC1	EVO-DC1	11/3/2009		0.015				2.8				155		<0.0025		
EVO-GC2	EVO-GC2	7/3/2007														
EVO-GC2	EVO-GC2	8/7/2007														
EVO-GC2	EVO-GC2	9/5/2007														
EVO-GC2	EVO-GC2	10/3/2007														
EVO-GC2	EVO-GC2	11/6/2007														
EVO-GC2	EVO-GC2	12/4/2007														
EVO-GC2	EVO-GC2	1/3/2008														
EVO-GC2	EVO-GC2	2/5/2008		0.082								42.3		0.0186		0.0014
EVO-GC2	EVO-GC2	3/5/2008		0.166				2.12				37.5		0.0315		
EVO-GC2	EVO-GC2	4/1/2008														
EVO-GC2	EVO-GC2	4/3/2008														
EVO-GC2	EVO-GC2	5/6/2008														
EVO-GC2	EVO-GC2	6/3/2008														
EVO-GC2	EVO-GC2	7/2/2008														
EVO-GC2	EVO-GC2	7/29/2008														
EVO-GC2	EVO-GC2	8/6/2008														
EVO-GC2	EVO-GC2	9/2/2008														
EVO-GC2	EVO-GC2	9/3/2008														
EVO-GC2	EVO-GC2	10/7/2008														
EVO-GC2	EVO-GC2	11/4/2008		0.119				2.21				37.9		0.0118		
EVO-GC2	EVO-GC2	12/3/2008		0.153								41.8		0.0157		
EVO-GC2	EVO-GC2	1/7/2009		0.132								46.4		0.0164		
EVO-GC2	EVO-GC2	2/4/2009		0.449								40.8		0.0207		
EVO-GC2	EVO-GC2	3/3/2009		1.64				2.9				36.8		0.0492		

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009														
EVO-GC2	EVO-GC2	3/17/2009														
EVO-GC2	EVO-GC2	3/24/2009														
EVO-GC2	EVO-GC2	3/31/2009														
EVO-GC2	EVO-GC2	4/7/2009		0.893				2.4				34.4		0.0222		
EVO-GC2	EVO-GC2	4/14/2009														
EVO-GC2	EVO-GC2	4/21/2009														
EVO-GC2	EVO-GC2	4/29/2009														
EVO-GC2	EVO-GC2	5/7/2009	0.2	0.322								33.4		0.0133		0.00115
EVO-GC2	EVO-GC2	5/12/2009	0.147	0.236								34.5		0.0135		0.00135
EVO-GC2	EVO-GC2	5/20/2009	0.177													
EVO-GC2	EVO-GC2	5/26/2009	0.18													
EVO-GC2	EVO-GC2	6/2/2009	0.188	0.081								38		0.00804		0.00127
EVO-GC2	EVO-GC2	6/6/2009														
EVO-GC2	EVO-GC2	6/8/2009														
EVO-GC2	EVO-GC2	6/10/2009														
EVO-GC2	EVO-GC2	6/16/2009	0.174													
EVO-GC2	EVO-GC2	6/23/2009	0.25													
EVO-GC2	EVO-GC2	7/2/2009	0.144													
EVO-GC2	EVO-GC2	7/7/2009	0.182	0.545				5.6				42.4		0.0735		0.0024
EVO-GC2	EVO-GC2	7/14/2009	0.226													
EVO-GC2	EVO-GC2	7/16/2009														
EVO-GC2	EVO-GC2	7/21/2009	0.198													
EVO-GC2	EVO-GC2	7/29/2009														
EVO-GC2	EVO-GC2	8/5/2009	0.268	0.655				3.8				40.2		0.0488		0.00405
EVO-GC2	EVO-GC2	8/11/2009	0.214													
EVO-GC2	EVO-GC2	8/18/2009	0.185													
EVO-GC2	EVO-GC2	8/25/2009	0.15													
EVO-GC2	EVO-GC2	9/1/2009	0.14	0.056								43		0.008		
EVO-GC2	EVO-GC2	9/8/2009	0.182	0.161								35.5		0.0142		0.00167
EVO-GC2	EVO-GC2	9/16/2009	0.16													
EVO-GC2	EVO-GC2	9/22/2009	0.16													
EVO-GC2	EVO-GC2	9/29/2009	0.18													
EVO-GC2	EVO-GC2	10/6/2009	0.13	0.132								38.1		0.0247		0.00147
EVO-GC2	EVO-GC2	11/3/2009		0.172								40.7		0.0231		
EVO-GC2	EVO-GC2	12/1/2009	0.181	0.166								35.6		0.0354		0.00165
FRO-CC1	FRO-CC1	7/3/2007														
FRO-CC1	FRO-CC1	8/7/2007														
FRO-CC1	FRO-CC1	9/4/2007														
FRO-CC1	FRO-CC1	10/1/2007														
FRO-CC1	FRO-CC1	11/5/2007														
FRO-CC1	FRO-CC1	12/3/2007														
FRO-CC1	FRO-CC1	1/8/2008														
FRO-CC1	FRO-CC1	2/4/2008														
FRO-CC1	FRO-CC1	3/17/2008														
FRO-CC1	FRO-CC1	4/7/2008														
FRO-CC1	FRO-CC1	5/5/2008														
FRO-CC1	FRO-CC1	6/4/2008														
FRO-CC1	FRO-CC1	7/7/2008														
FRO-CC1	FRO-CC1	8/6/2008														
FRO-CC1	FRO-CC1	9/9/2008														
FRO-CC1	FRO-CC1	10/7/2008														
FRO-CC1	FRO-CC1	11/3/2008														
FRO-CC1	FRO-CC1	12/1/2008														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009						1.9				24.4		0.0051		0.0037
FRO-CC1	FRO-CC1	2/2/2009														
FRO-CC1	FRO-CC1	2/3/2009														
FRO-CC1	FRO-CC1	3/17/2009						2.5				24		0.0081		0.0066
FRO-CC1	FRO-CC1	4/6/2009						2.84				31.9		0.0105		0.006
FRO-CC1	FRO-CC1	5/4/2009		<0.015				3.2				41		0.01		
FRO-CC1	FRO-CC1	6/1/2009	0.247	<0.015				2.6				39.9		0.00597		0.00398
FRO-CC1	FRO-CC1	7/6/2009	0.216	<0.015				3.2				36.8		0.00771		0.00565
FRO-CC1	FRO-CC1	8/3/2009	0.242	<0.015				2.9				33.8		0.00798		0.00543
FRO-CC1	FRO-CC1	9/1/2009	0.22	<0.015				3.8				48.6		0.00762		0.00622
FRO-CC1	FRO-CC1	10/7/2009	0.16	0.069				3.7				50.7		0.00568		0.00617
FRO-CC1	FRO-CC1	11/2/2009	0.21	<0.015				3.3				44		0.0106		0.00567
FRO-CC1	FRO-CC1	12/7/2009	0.1	<0.015				2.4				38.5		0.0103		0.00432
FRO-EC1	FRO-EC1	7/3/2007														
FRO-EC1	FRO-EC1	8/7/2007														
FRO-EC1	FRO-EC1	9/4/2007														
FRO-EC1	FRO-EC1	10/1/2007														
FRO-EC1	FRO-EC1	11/5/2007														
FRO-EC1	FRO-EC1	12/3/2007														
FRO-EC1	FRO-EC1	1/8/2008														
FRO-EC1	FRO-EC1	2/4/2008														
FRO-EC1	FRO-EC1	3/17/2008														
FRO-EC1	FRO-EC1	4/7/2008														
FRO-EC1	FRO-EC1	6/4/2008														
FRO-EC1	FRO-EC1	7/7/2008														
FRO-EC1	FRO-EC1	8/6/2008														
FRO-EC1	FRO-EC1	9/9/2008		<0.015				6.4				290		0.0018		0.00453
FRO-EC1	FRO-EC1	10/7/2008														
FRO-EC1	FRO-EC1	11/3/2008														
FRO-EC1	FRO-EC1	12/1/2008														
FRO-EC1	FRO-EC1	1/5/2009						6.03				314		<0.0025		
FRO-EC1	FRO-EC1	2/2/2009														
FRO-EC1	FRO-EC1	2/3/2009														
FRO-EC1	FRO-EC1	3/17/2009						5.33				255		<0.0025		
FRO-EC1	FRO-EC1	4/6/2009						5.43				222		0.0063		0.0072
FRO-EC1	FRO-EC1	5/4/2009		<0.015				5				219		<0.0025		
FRO-EC1	FRO-EC1	5/13/2009	<0.2	<0.015				5.3				229		0.00063		0.00629
FRO-EC1	FRO-EC1	5/19/2009	<0.1	<0.015				5.2				248		0.00065		0.00617
FRO-EC1	FRO-EC1	5/26/2009	<0.2	<0.015				5.5				275		0.00076		0.00545
FRO-EC1	FRO-EC1	6/1/2009	<0.1	<0.015				5.9				303		0.00111		0.00493
FRO-EC1	FRO-EC1	6/8/2009	<0.1	<0.015				5.7				299		0.00072		0.00443
FRO-EC1	FRO-EC1	7/6/2009	0.16	<0.015				5.9				284		0.00067		0.00487
FRO-EC1	FRO-EC1	8/3/2009	<0.2	<0.015				5.7				266		0.00313		0.00557
FRO-EC1	FRO-EC1	9/1/2009	<0.2	<0.015				6.2				279		0.00095		0.00527
FRO-EC1	FRO-EC1	10/7/2009	<0.2	<0.015				6.4				283		0.00201		0.00499
FRO-EC1	FRO-EC1	11/2/2009	<0.2	<0.015				6.7				300		0.00344		0.00486
FRO-EC1	FRO-EC1	12/7/2009	<0.2	<0.015				6.7				319		0.00221		0.00422
FRO-KC1	FRO-KC1	7/3/2007														
FRO-KC1	FRO-KC1	8/7/2007														
FRO-KC1	FRO-KC1	9/4/2007														
FRO-KC1	FRO-KC1	10/1/2007														
FRO-KC1	FRO-KC1	11/5/2007														
FRO-KC1	FRO-KC1	12/3/2007														
FRO-KC1	FRO-KC1	1/7/2008														
FRO-KC1	FRO-KC1	2/4/2008														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008														
FRO-KC1	FRO-KC1	4/7/2008														
FRO-KC1	FRO-KC1	5/5/2008														
FRO-KC1	FRO-KC1	6/4/2008														
FRO-KC1	FRO-KC1	7/7/2008														
FRO-KC1	FRO-KC1	8/6/2008														
FRO-KC1	FRO-KC1	9/9/2008		<0.015				3.6				52.7		0.00068		0.002
FRO-KC1	FRO-KC1	10/7/2008														
FRO-KC1	FRO-KC1	11/3/2008														
FRO-KC1	FRO-KC1	12/1/2008														
FRO-KC1	FRO-KC1	1/5/2009						3.64				83.7		<0.0025		
FRO-KC1	FRO-KC1	2/2/2009														
FRO-KC1	FRO-KC1	2/3/2009														
FRO-KC1	FRO-KC1	3/17/2009						3.59				86.4		<0.0025		
FRO-KC1	FRO-KC1	4/6/2009						3.54				96.8		<0.0025		
FRO-KC1	FRO-KC1	5/4/2009		<0.015				3.7				101		<0.0025		
FRO-KC1	FRO-KC1	6/1/2009	0.242	<0.015				3.1				59.6		0.00323		0.0029
FRO-KC1	FRO-KC1	7/6/2009	0.217	<0.015				3				40.9		0.00114		0.00239
FRO-KC1	FRO-KC1	8/3/2009	0.245	<0.015				3.2				47.7		0.00106		0.00231
FRO-KC1	FRO-KC1	9/1/2009														
FRO-KC1	FRO-KC1	9/2/2009	0.22	<0.015				3.2				47.6		0.00086		0.00236
FRO-KC1	FRO-KC1	10/7/2009	<0.1	<0.015				3.7				66.6		0.00018		0.00211
FRO-KC1	FRO-KC1	11/2/2009	<0.2	<0.015				3.7				72.2		0.00015		0.00203
FRO-KC1	FRO-KC1	12/7/2009	<0.3	<0.015				3.6				81.1		<0.00005		0.00187
GHO-CC1	GHO-CC1	1/4/2007														
GHO-CC1	GHO-CC1	2/7/2007														
GHO-CC1	GHO-CC1	3/1/2007														
GHO-CC1	GHO-CC1	4/2/2007														
GHO-CC1	GHO-CC1	4/9/2007														
GHO-CC1	GHO-CC1	4/16/2007														
GHO-CC1	GHO-CC1	4/23/2007														
GHO-CC1	GHO-CC1	5/1/2007														
GHO-CC1	GHO-CC1	5/7/2007														
GHO-CC1	GHO-CC1	5/14/2007														
GHO-CC1	GHO-CC1	5/22/2007														
GHO-CC1	GHO-CC1	5/28/2007														
GHO-CC1	GHO-CC1	6/4/2007														
GHO-CC1	GHO-CC1	6/11/2007														
GHO-CC1	GHO-CC1	7/3/2007														
GHO-CC1	GHO-CC1	8/7/2007														
GHO-CC1	GHO-CC1	9/4/2007														
GHO-CC1	GHO-CC1	10/1/2007														
GHO-CC1	GHO-CC1	11/5/2007														
GHO-CC1	GHO-CC1	12/4/2007														
GHO-CC1	GHO-CC1	1/7/2008														
GHO-CC1	GHO-CC1	2/4/2008														
GHO-CC1	GHO-CC1	3/3/2008														
GHO-CC1	GHO-CC1	4/1/2008														
GHO-CC1	GHO-CC1	5/5/2008														
GHO-CC1	GHO-CC1	6/2/2008														
GHO-CC1	GHO-CC1	7/2/2008														
GHO-CC1	GHO-CC1	8/5/2008														
GHO-CC1	GHO-CC1	8/13/2008														
GHO-CC1	GHO-CC1	8/18/2008														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008														
GHO-CC1	GHO-CC1	9/29/2008														
GHO-CC1	GHO-CC1	11/3/2008														
GHO-CC1	GHO-CC1	12/1/2008		<0.015				4.4				221		<0.0025		
GHO-CC1	GHO-CC1	12/3/2008														
GHO-CC1	GHO-CC1	1/5/2009		<0.015				4.6				258		<0.0025		
GHO-CC1	GHO-CC1	1/6/2009														
GHO-CC1	GHO-CC1	2/3/2009		<0.015				4.3				215		<0.0025		
GHO-CC1	GHO-CC1	2/4/2009														
GHO-CC1	GHO-CC1	3/2/2009		<0.015				4.4				237		<0.0025		
GHO-CC1	GHO-CC1	3/3/2009														
GHO-CC1	GHO-CC1	4/1/2009		<0.015				4.4				253		<0.0025		
GHO-CC1	GHO-CC1	4/2/2009														
GHO-CC1	GHO-CC1	5/4/2009		<0.015				4.3				238		<0.0025		
GHO-CC1	GHO-CC1	5/5/2009														
GHO-CC1	GHO-CC1	6/1/2009		<0.015				4.5				242		<0.0025		
GHO-CC1	GHO-CC1	6/2/2009														
GHO-CC1	GHO-CC1	7/6/2009		<0.015				4.4				247		<0.0025		
GHO-CC1	GHO-CC1	7/7/2009														
GHO-CC1	GHO-CC1	8/4/2009		<0.015				4.4				251		<0.0025		
GHO-CC1	GHO-CC1	8/5/2009														
GHO-CC1	GHO-CC1	9/1/2009		<0.015				4.4				245		<0.0025		
GHO-CC1	GHO-CC1	9/2/2009														
GHO-CC1	GHO-CC1	10/5/2009		<0.015				4.5				266		<0.0025		
GHO-CC1	GHO-CC1	10/6/2009														
GHO-CC1	GHO-CC1	11/2/2009		<0.015				4.5				246		<0.0025		
GHO-CC1	GHO-CC1	11/3/2009														
GHO-CC1	GHO-CC1	12/1/2009		<0.015				4.4				256		<0.0025		
GHO-CC1	GHO-CC1	12/2/2009														
GHO-CC1	GHO-CC1	1/4/2010		<0.015				4.4				265		<0.0025		
GHO-CC1	GHO-CC1	1/5/2010														
GHO-GCS	GHO-GCSPD	2/7/1996														
GHO-GCS	GHO-GCSPD	4/16/1996														
GHO-GCS	GHO-GCSPD	5/21/1996														
GHO-GCS	GHO-GCSPD	8/13/1996														
GHO-GCS	GHO-GCSPD	12/3/1996														
GHO-GCS	GHO-GCSPD	4/4/2002														
GHO-GCS	GHO-GCSPD	11/2/2002														
GHO-GCS	GHO-GCSPD	3/30/2003														
GHO-GCS	GHO-GCSPD	6/29/2003														
GHO-GCS	GHO-GCSPD	12/27/2003														
GHO-GCS	GHO-GCSPD	4/4/2004														
GHO-GCS	GHO-GCSPD	5/2/2004														
GHO-GCS	GHO-GCSPD	6/6/2004														
GHO-GCS	GHO-GCSPD	7/4/2004														
GHO-GCS	GHO-GCSPD	8/1/2004														
GHO-GCS	GHO-GCSPD	9/2/2004														
GHO-GCS	GHO-GCSPD	10/3/2004														
GHO-GCS	GHO-GCSPD	11/2/2004														
GHO-GCS	GHO-GCSPD	12/5/2004														
GHO-GCS	GHO-GCSPD	1/2/2005														
GHO-GCS	GHO-GCSPD	2/4/2005														
GHO-GCS	GHO-GCSPD	3/1/2005														
GHO-GCS	GHO-GCSPD	4/3/2005														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005														
GHO-GCS	GHO-GCSPD	6/12/2005														
GHO-GCS	GHO-GCSPD	7/3/2005														
GHO-GCS	GHO-GCSPD	8/1/2005														
GHO-GCS	GHO-GCSPD	9/4/2005														
GHO-GCS	GHO-GCSPD	10/2/2005														
GHO-GCS	GHO-GCSPD	11/2/2005														
GHO-GCS	GHO-GCSPD	12/8/2005														
GHO-GCS	GHO-GCSPD	1/4/2006														
GHO-GCS	GHO-GCSPD	2/1/2006														
GHO-GCS	GHO-GCSPD	3/10/2006														
GHO-GCS	GHO-GCSPD	4/3/2006														
GHO-GCS	GHO-GCSPD	5/1/2006														
GHO-GCS	GHO-GCSPD	6/5/2006														
GHO-GCS	GHO-GCSPD	7/4/2006														
GHO-GCS	GHO-GCSPD	8/1/2006														
GHO-GCS	GHO-GCSPD	9/1/2006														
GHO-GCS	GHO-GCSPD	10/2/2006														
GHO-GCS	GHO-GCSPD	11/1/2006														
GHO-GCS	GHO-GCSPD	12/1/2006														
GHO-GCS	GHO-GCSPD	1/4/2007														
GHO-GCS	GHO-GCSPD	2/6/2007														
GHO-GCS	GHO-GCSPD	3/1/2007														
GHO-GCS	GHO-GCSPD	4/2/2007														
GHO-GCS	GHO-GCSPD	5/1/2007														
GHO-GCS	GHO-GCSPD	6/4/2007														
GHO-GCS	GHO-GCSPD	7/3/2007														
GHO-GCS	GHO-GCSPD	8/7/2007														
GHO-GCS	GHO-GCSPD	9/4/2007														
GHO-GCS	GHO-GCSPD	10/1/2007														
GHO-GCS	GHO-GCSPD	11/5/2007														
GHO-GCS	GHO-GCSPD	12/4/2007														
GHO-GCS	GHO-GCSPD	1/7/2008														
GHO-GCS	GHO-GCSPD	3/3/2008														
GHO-GCS	GHO-GCSPD	4/1/2008														
GHO-GCS	GHO-GCSPD	5/5/2008														
GHO-GCS	GHO-GCSPD	6/2/2008														
GHO-GCS	GHO-GCSPD	7/2/2008														
GHO-GCS	GHO-GCSPD	8/5/2008														
GHO-GCS	GHO-GCSPD	9/2/2008														
GHO-GCS	GHO-GCSPD	9/29/2008														
GHO-GCS	GHO-GCSPD	11/3/2008														
GHO-GCS	GHO-GCSPD	12/1/2008														
GHO-GCS	GHO-GCSPD	1/5/2009														
GHO-GCS	GHO-GCSPD	2/3/2009														
GHO-GCS	GHO-GCSPD	3/2/2009														
GHO-GCS	GHO-GCSPD	4/1/2009														
GHO-GCS	GHO-GCSPD	5/4/2009														
GHO-GCS	GHO-GCSPD	6/1/2009														
GHO-GCS	GHO-GCSPD	7/6/2009														
GHO-GCS	GHO-GCSPD	8/4/2009														
GHO-GCS	GHO-GCSPD	9/1/2009														
GHO-GCS	GHO-GCSPD	10/5/2009														
GHO-GCS	GHO-GCSPD	11/2/2009														
GHO-GCS	GHO-GCSPD	12/1/2009														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010														
GHO-GCS	GHO-GCSPD	2/1/2010														
GHO-GCS	GHO-GCSPD	3/2/2010														
GHO-GCS	GHO-GCSPD	3/15/2010														
GHO-GCS	GHO-GCSPD	3/22/2010														
GHO-GCS	GHO-GCSPD	3/29/2010														
GHO-GCS	GHO-GCSPD	4/5/2010														
GHO-GCS	GHO-GCSPD	4/12/2010														
GHO-GCS	GHO-GCSPD	4/19/2010														
GHO-GCS	GHO-GCSPD	4/26/2010														
GHO-GCS	GHO-GCSPD	5/3/2010														
GHO-GCS	GHO-GCSPD	5/10/2010														
GHO-GCS	GHO-GCSPD	5/17/2010														
GHO-GCS	GHO-GCSPD	5/25/2010														
GHO-GCS	GHO-GCSPD	5/31/2010														
GHO-GCS	GHO-GCSPD	6/7/2010														
GHO-GCS	GHO-GCSPD	6/14/2010														
GHO-GCS	GHO-GCSPD	6/21/2010														
GHO-GCS	GHO-GCSPD	6/28/2010														
GHO-GCS	GHO-GCSPD	7/5/2010														
GHO-GCS	GHO-GCSPD	7/12/2010														
GHO-GCS	GHO-GCSPD	7/19/2010														
GHO-GCS	GHO-GCSPD	7/26/2010														
GHO-GCS	GHO-GCSPD	8/3/2010														
GHO-GCS	GHO-GCSPD	9/7/2010														
GHO-GCS	GHO-GCSPD	10/4/2010														
GHO-GCS	GHO-GCSPD	11/1/2010														
GHO-GCS	GHO-GCSPD	12/6/2010														
GHO-GCS	GHO-GCSPD	1/4/2011														
GHO-LTC	GHO-LTCSPD	2/7/1996														
GHO-LTC	GHO-LTCSPD	5/21/1996														
GHO-LTC	GHO-LTCSPD	8/13/1996														
GHO-LTC	GHO-LTCSPD	12/3/1996														
GHO-LTC	GHO-LTCSPD	4/6/1997														
GHO-LTC	GHO-LTCSPD	6/15/1997														
GHO-LTC	GHO-LTCSPD	10/1/1997														
GHO-LTC	GHO-LTCSPD	5/26/1998														
GHO-LTC	GHO-LTCSPD	9/8/1998														
GHO-LTC	GHO-LTCSPD	12/5/1998														
GHO-LTC	GHO-LTCSPD	3/8/1999														
GHO-LTC	GHO-LTCSPD	6/9/1999														
GHO-LTC	GHO-LTCSPD	9/9/1999														
GHO-LTC	GHO-LTCSPD	12/4/1999														
GHO-LTC	GHO-LTCSPD	3/5/2000														
GHO-LTC	GHO-LTCSPD	6/4/2000														
GHO-LTC	GHO-LTCSPD	11/5/2000														
GHO-LTC	GHO-LTCSPD	6/8/2002														
GHO-LTC	GHO-LTCSPD	11/2/2002														
GHO-LTC	GHO-LTCSPD	3/30/2003														
GHO-LTC	GHO-LTCSPD	6/29/2003														
GHO-LTC	GHO-LTCSPD	12/27/2003														
GHO-LTC	GHO-LTCSPD	1/2/2004														
GHO-LTC	GHO-LTCSPD	3/4/2004														
GHO-LTC	GHO-LTCSPD	4/4/2004														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	5/2/2004														
GHO-LTC	GHO-LTCSPD	6/6/2004														
GHO-LTC	GHO-LTCSPD	7/4/2004														
GHO-LTC	GHO-LTCSPD	8/1/2004														
GHO-LTC	GHO-LTCSPD	9/2/2004														
GHO-LTC	GHO-LTCSPD	10/3/2004														
GHO-LTC	GHO-LTCSPD	11/2/2004														
GHO-LTC	GHO-LTCSPD	12/5/2004														
GHO-LTC	GHO-LTCSPD	1/2/2005														
GHO-LTC	GHO-LTCSPD	2/4/2005														
GHO-LTC	GHO-LTCSPD	3/1/2005														
GHO-LTC	GHO-LTCSPD	4/3/2005														
GHO-LTC	GHO-LTCSPD	5/1/2005														
GHO-LTC	GHO-LTCSPD	6/12/2005														
GHO-LTC	GHO-LTCSPD	7/3/2005														
GHO-LTC	GHO-LTCSPD	8/1/2005														
GHO-LTC	GHO-LTCSPD	9/4/2005														
GHO-LTC	GHO-LTCSPD	10/2/2005														
GHO-LTC	GHO-LTCSPD	11/2/2005														
GHO-LTC	GHO-LTCSPD	12/8/2005														
GHO-LTC	GHO-LTCSPD	1/4/2006														
GHO-LTC	GHO-LTCSPD	2/1/2006														
GHO-LTC	GHO-LTCSPD	4/3/2006														
GHO-LTC	GHO-LTCSPD	7/4/2006														
GHO-LTC	GHO-LTCSPD	8/1/2006														
GHO-LTC	GHO-LTCSPD	9/1/2006														
GHO-LTC	GHO-LTCSPD	10/2/2006														
GHO-LTC	GHO-LTCSPD	11/1/2006														
GHO-LTC	GHO-LTCSPD	12/1/2006														
GHO-LTC	GHO-LTCSPD	5/1/2007														
GHO-LTC	GHO-LTCSPD	6/4/2007														
GHO-LTC	GHO-LTCSPD	7/3/2007														
GHO-LTC	GHO-LTCSPD	8/7/2007														
GHO-LTC	GHO-LTCSPD	9/4/2007														
GHO-LTC	GHO-LTCSPD	10/1/2007														
GHO-LTC	GHO-LTCSPD	11/5/2007														
GHO-LTC	GHO-LTCSPD	12/4/2007														
GHO-LTC	GHO-LTCSPD	5/5/2008														
GHO-LTC	GHO-LTCSPD	6/2/2008														
GHO-LTC	GHO-LTCSPD	7/2/2008														
GHO-LTC	GHO-LTCSPD	7/14/2008														
GHO-LTC	GHO-LTCSPD	8/5/2008														
GHO-LTC	GHO-LTCSPD	8/14/2008														
GHO-LTC	GHO-LTCSPD	9/2/2008														
GHO-LTC	GHO-LTCSPD	9/29/2008														
GHO-LTC	GHO-LTCSPD	11/3/2008														
GHO-LTC	GHO-LTCSPD	12/1/2008														
GHO-LTC	GHO-LTCSPD	1/5/2009														
GHO-LTC	GHO-LTCSPD	2/3/2009														
GHO-LTC	GHO-LTCSPD	3/2/2009														
GHO-LTC	GHO-LTCSPD	4/1/2009														
GHO-LTC	GHO-LTCSPD	5/4/2009														
GHO-LTC	GHO-LTCSPD	6/1/2009														
GHO-LTC	GHO-LTCSPD	7/6/2009														
GHO-LTC	GHO-LTCSPD	8/4/2009														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009														
GHO-LTC	GHO-LTCSPD	10/5/2009														
GHO-LTC	GHO-LTCSPD	11/2/2009														
GHO-LTC	GHO-LTCSPD	12/1/2009														
GHO-LTC	GHO-LTCSPD	1/4/2010														
GHO-LTC	GHO-LTCSPD	2/2/2010														
GHO-LTC	GHO-LTCSPD	3/1/2010														
GHO-LTC	GHO-LTCSPD	3/15/2010														
GHO-LTC	GHO-LTCSPD	3/22/2010														
GHO-LTC	GHO-LTCSPD	3/29/2010														
GHO-LTC	GHO-LTCSPD	4/6/2010														
GHO-LTC	GHO-LTCSPD	4/12/2010														
GHO-LTC	GHO-LTCSPD	4/19/2010														
GHO-LTC	GHO-LTCSPD	4/27/2010														
GHO-LTC	GHO-LTCSPD	5/4/2010														
GHO-LTC	GHO-LTCSPD	5/11/2010														
GHO-LTC	GHO-LTCSPD	5/18/2010														
GHO-LTC	GHO-LTCSPD	5/26/2010														
GHO-LTC	GHO-LTCSPD	6/1/2010														
GHO-LTC	GHO-LTCSPD	6/8/2010														
GHO-LTC	GHO-LTCSPD	6/16/2010														
GHO-LTC	GHO-LTCSPD	6/22/2010														
GHO-LTC	GHO-LTCSPD	6/29/2010														
GHO-LTC	GHO-LTCSPD	7/6/2010														
GHO-LTC	GHO-LTCSPD	7/13/2010														
GHO-LTC	GHO-LTCSPD	7/20/2010														
GHO-LTC	GHO-LTCSPD	7/27/2010														
GHO-LTC	GHO-LTCSPD	8/4/2010														
GHO-LTC	GHO-LTCSPD	9/8/2010														
GHO-LTC	GHO-LTCSPD	10/5/2010														
GHO-LTC	GHO-LTCSPD	11/2/2010														
GHO-LTC	GHO-LTCSPD	12/7/2010														
GHO-LTC	GHO-LTCSPD	1/4/2011														
GHO-PC1	GHO-PC1	1/4/2007														
GHO-PC1	GHO-PC1	2/7/2007														
GHO-PC1	GHO-PC1	3/1/2007														
GHO-PC1	GHO-PC1	4/2/2007														
GHO-PC1	GHO-PC1	5/1/2007														
GHO-PC1	GHO-PC1	6/4/2007														
GHO-PC1	GHO-PC1	7/3/2007														
GHO-PC1	GHO-PC1	8/7/2007														
GHO-PC1	GHO-PC1	9/4/2007														
GHO-PC1	GHO-PC1	10/1/2007														
GHO-PC1	GHO-PC1	11/5/2007														
GHO-PC1	GHO-PC1	12/4/2007														
GHO-PC1	GHO-PC1	1/7/2008														
GHO-PC1	GHO-PC1	2/4/2008														
GHO-PC1	GHO-PC1	3/3/2008														
GHO-PC1	GHO-PC1	4/1/2008														
GHO-PC1	GHO-PC1	5/5/2008														
GHO-PC1	GHO-PC1	6/2/2008														
GHO-PC1	GHO-PC1	7/2/2008														
GHO-PC1	GHO-PC1	8/5/2008														
GHO-PC1	GHO-PC1	9/2/2008														
GHO-PC1	GHO-PC1	9/29/2008														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008														
GHO-PC1	GHO-PC1	12/1/2008		<0.015								89.1		<0.0025		
GHO-PC1	GHO-PC1	12/3/2008														
GHO-PC1	GHO-PC1	1/5/2009		<0.015								82		<0.0025		
GHO-PC1	GHO-PC1	1/6/2009														
GHO-PC1	GHO-PC1	2/3/2009		<0.015								82.2		<0.0025		
GHO-PC1	GHO-PC1	2/4/2009														
GHO-PC1	GHO-PC1	3/2/2009		<0.015								100		<0.0025		
GHO-PC1	GHO-PC1	3/3/2009														
GHO-PC1	GHO-PC1	4/1/2009		<0.015								90		<0.0025		
GHO-PC1	GHO-PC1	4/2/2009														
GHO-PC1	GHO-PC1	5/4/2009		<0.015								79.5		<0.0025		
GHO-PC1	GHO-PC1	5/5/2009														
GHO-PC1	GHO-PC1	6/1/2009		<0.015								69.9		<0.0025		
GHO-PC1	GHO-PC1	6/2/2009														
GHO-PC1	GHO-PC1	7/6/2009		<0.015								86.2		<0.0025		
GHO-PC1	GHO-PC1	7/7/2009														
GHO-PC1	GHO-PC1	8/4/2009		<0.015								81.3		<0.0025		
GHO-PC1	GHO-PC1	8/5/2009														
GHO-PC1	GHO-PC1	9/1/2009		<0.015								80.8		<0.0025		
GHO-PC1	GHO-PC1	9/2/2009														
GHO-PC1	GHO-PC1	10/5/2009		<0.015								90.5		<0.0025		
GHO-PC1	GHO-PC1	10/6/2009														
GHO-PC1	GHO-PC1	11/2/2009		<0.015								83.9		<0.0025		
GHO-PC1	GHO-PC1	11/3/2009														
GHO-PC1	GHO-PC1	12/1/2009		<0.015								86.3		<0.0025		
GHO-PC1	GHO-PC1	12/2/2009														
GHO-PC1	GHO-PC1	1/4/2010		<0.015								85.3		<0.0025		
GHO-PC1	GHO-PC1	1/5/2010														
GHO-WCP	GHO-WCPI	5/1/2005														
GHO-WCP	GHO-WCPI	7/3/2005														
GHO-WCP	GHO-WCPI	11/2/2005														
GHO-WCP	GHO-WCPI	1/4/2006														
GHO-WCP	GHO-WCPI	3/10/2006														
GHO-WCP	GHO-WCPI	4/3/2006														
GHO-WCP	GHO-WCPI	6/5/2006														
GHO-WCP	GHO-WCPI	7/4/2006														
GHO-WCP	GHO-WCPI	8/1/2006														
GHO-WCP	GHO-WCPI	9/1/2006														
GHO-WCP	GHO-WCPI	10/2/2006														
GHO-WCP	GHO-WCPI	11/1/2006														
GHO-WCP	GHO-WCPI	12/1/2006														
GHO-WCP	GHO-WCPI	1/4/2007														
GHO-WCP	GHO-WCPI	4/2/2007														
GHO-WCP	GHO-WCPI	5/1/2007														
GHO-WCP	GHO-WCPI	6/4/2007														
GHO-WCP	GHO-WCPI	7/3/2007														
GHO-WCP	GHO-WCPI	8/7/2007														
GHO-WCP	GHO-WCPI	9/4/2007														
GHO-WCP	GHO-WCPI	10/1/2007														
GHO-WCP	GHO-WCPI	11/5/2007														
GHO-WCP	GHO-WCPI	4/1/2008														
GHO-WCP	GHO-WCPI	5/5/2008														
GHO-WCP	GHO-WCPI	6/2/2008														

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008														
GHO-WCP	GHO-WCPI	7/14/2008														
GHO-WCP	GHO-WCPI	8/5/2008														
GHO-WCP	GHO-WCPI	8/7/2008														
GHO-WCP	GHO-WCPI	8/18/2008														
GHO-WCP	GHO-WCPI	9/2/2008														
GHO-WCP	GHO-WCPI	9/29/2008														
GHO-WCP	GHO-WCPI	11/3/2008														
GHO-WCP	GHO-WCPI	12/1/2008														
GHO-WCP	GHO-WCPI	1/5/2009														
GHO-WCP	GHO-WCPI	4/1/2009														
GHO-WCP	GHO-WCPI	5/4/2009														
GHO-WCP	GHO-WCPI	6/1/2009														
GHO-WCP	GHO-WCPI	7/6/2009														
GHO-WCP	GHO-WCPI	8/4/2009														
GHO-WCP	GHO-WCPI	9/1/2009														
GHO-WCP	GHO-WCPI	10/5/2009														
GHO-WCP	GHO-WCPI	11/2/2009														
GHO-WCP	GHO-WCPI	12/1/2009														
GHO-WCP	GHO-WCPI	3/1/2010														
GHO-WCP	GHO-WCPI	4/6/2010														
GHO-WCP	GHO-WCPI	5/4/2010														
GHO-WCP	GHO-WCPI	6/8/2010														
GHO-WCP	GHO-WCPI	7/6/2010														
GHO-WCP	GHO-WCPI	8/4/2010														
GHO-WCP	GHO-WCPI	9/8/2010														
GHO-WCP	GHO-WCPI	10/5/2010														
GHO-WCP	GHO-WCPI	11/2/2010														
LCO-WLC	LCO-WLC	4/15/2009	0.217	<0.03				2.6		0.029		209		<0.00025		0.00596
LCO-WLC	LCO-WLC	9/23/2009	<0.4	<0.03				2.3		0.029		160		0.00199		0.00216
LCO-WLC	LCO-WLC	11/4/2009	<0.4	<0.03				2.4		0.029		172		<0.00025		0.00451
LCO-WLC	LCO-WLC	11/16/2009	<0.2	<0.03				2.3		0.025		191		0.00031		0.00474
LCO-WLC	LCO-WLC	1/18/2010	<0.2	<0.03				2.4		0.03		195		<0.00025		0.00544
LCO-WLC	LCO-WLC	2/17/2010	0.242	<0.03				2.8		0.03		206		<0.00025		0.00581
LCO-WLC	LCO-WLC	3/15/2010	<0.2	<0.03				2.6		0.031		197		<0.00025		0.00523
LCO-WLC	LCO-WLC	4/29/2010	<0.4	<0.03				2.7		0.03		213		<0.00025		0.00452
LCO-WLC	LCO-WLC	6/1/2010	<0.2	<0.03				<2		0.018		113		<0.0001		0.00285
LCO-WLC	LCO-WLC	7/6/2010	1.14	<0.03				2		0.018		98.5		0.00073		0.0017
LCO-WLC	LCO-WLC	8/3/2010	0.119	<0.03				2.2		0.0179		127		0.00166		0.00159
LCO-WLC	LCO-WLC	9/7/2010	<0.4	<0.03				2.3		0.0158		167		0.00152		0.0022
LCO-WLC	LCO-WLC	10/8/2010	<0.4	<0.03				2.4		0.0234		174		0.00129		0.00206
LCO-WLC	LCO-WLC	11/2/2010	<0.4	<0.03				2.5		0.026		189		0.00022		0.00322
LCO-WLC	LCO-WLC	12/7/2010	<0.4	<0.03				2.5		0.025		191		0.0001		0.00494
LCO-WLC	LCO-WLC	1/4/2011	<0.2	<0.03				2.5		0.0272		194		0.000094		0.00559
LCO-WLC	LCO-WLC	2/1/2011	<0.4	<0.03				2.4		0.0249		201		0.000149		0.00507
LCO-WLC	LCO-WLC	3/1/2011	<0.4	<0.03				2.5		0.0285		200		0.000099		0.00548
LCO-WLC	LCO-WLC	4/4/2011	<0.2	<0.03				2.7		0.031		212		<0.0001		0.00519
LCO-WLC	LCO-WLC	5/3/2011	<0.4	<0.03				2.7		0.033		210		0.00014		0.00541
LCO-WLC	LCO-WLC	6/7/2011	0.2	<0.03				<2		0.0204		91		0.000324		0.00264
LCO-WLC	LCO-WLC	7/5/2011	<0.2	<0.03				<2		0.0142		89.9		0.000723		0.00162
LCO-WLC	LCO-WLC	7/12/2011	<0.2	<0.03				2.1		0.0156		98.7		0.000852		0.00156
LCO-WLC	LCO-WLC	8/2/2011	0.28	<0.03				2.2		0.0198		125		0.00153		0.00178
LCO-WLC	LCO-WLC	9/6/2011	<0.4	<0.03				2.4		0.0277		172		0.00165		0.0021
LCO-WLC	LCO-WLC	10/4/2011	<0.4	<0.03				2.6		0.0297		192		0.00171		0.00239

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011	<0.4	<0.03				2.5		0.0285		192		0.00015		0.00393
LCO-WLC	LCO-WLC	12/6/2011	<0.4	<0.03				2.4		0.0273		203		<0.0001		0.00508
TM-SBB	BT-11 seep	6/27/2007	0.075	0.188				2.2		0.0052		33.4		0.440		0.00453
TM-SBB	BT-11 seep	9/27/2007		<0.030				5.1		0.012		68.6		0.640		0.00731
TM-SBB	BT-11 seep	5/30/2008		<0.030				4.4		0.0092		39.3		0.196		0.0103
TM-SBB	BT-11 seep	6/28/2009		<0.030				4.3		<0.025		92.1		0.269		0.00747
TM-SBB	BT-11 seep	9/8/2009		0.038				4.4		<0.025		97.9		0.265		0.00953
TM-SBB	BT-11 seep	5/31/2010		<0.030				4.7		<0.025		126		0.321		0.00655
TM-SBB	BT-11 seep	7/5/2010		<0.030				4.1		<0.025		109		0.112		0.00438
TM-SBB	BT-11 seep	8/18/2010		<0.030				4.4		<0.025		119		0.0373		0.00396
TM-SBB	BT-11 seep	9/20/2010		<0.030				4.5		<0.025		119		0.0436		0.00509
TM-SBB	BT-13 seep	6/27/2007	0.116	0.179				3.6		<0.010		46.9		0.689		0.00539
TM-SBB	BT-13 seep	9/27/2007		<0.030				4.5		<0.010		50.1		0.0813		0.00451
TM-SBB	BT-13 seep	5/30/2008		<0.030				4.6		<0.010		60		0.374		0.00421
TM-SBB	BT-13 seep	6/28/2009		<0.030				3.9		<0.025		83.7		0.175		0.00678
TM-SBB	BT-13 seep	9/8/2009		<0.030				4.1		<0.025		99.3		0.151		0.00695
TM-SBB	BT-13 seep	5/31/2010		<0.030				4.1		<0.025		102		0.115		0.00945
TM-SBB	BT-13 seep	7/5/2010		<0.030				3.7		<0.025		92.1		0.00429		0.00852
TM-SBB	BT-13 seep	8/16/2010		<0.030				3.9		<0.025		99.4		0.00599		0.00785
TM-SBB	BT-13 seep	9/20/2010		<0.030				3.6		<0.025		90.1		0.0539		0.00875
TM-SBG	GT42 seep	6/28/2009		<0.030				3		<0.010		57.5		0.133		0.00773
TM-SBG	GT42 seep	7/7/2009														
TM-SBG	GT42 seep	9/8/2009		<0.030				3.4		<0.025		87.1		0.151		0.00992
TM-SBG	GT42 seep	5/31/2010		<0.030				4.3		<0.025		147		0.409		0.0168
TM-SBG	GT42 seep	7/6/2010		<0.030				3.9		<0.025		128		0.203		0.0104
TM-SBG	GT42 seep	8/16/2010		0.07				2.2		<0.0050		17.2		0.00121		0.00122
TM-SBG	GT42 seep	8/31/2010		<0.030	0.219			5.8	5.5	<0.025	<0.025	153	146	0.33	0.336	0.0186
TM-SBG	GT42 seep	9/14/2010														
TM-SBG	GT42 seep	9/20/2010		<0.030				5.4		<0.025		149		0.245		0.0198
TM-SBG	GT42 seep	4/13/2011														
TM-SBG	GT42 seep	4/13/2011														
TM-SBG	GT42 seep	4/28/2011														
TM-SBG	GT42 seep	5/1/2011		<0.030	0.459			4.3	4.3	0.0224	0.0219	143	139	0.104	0.111	0.0194
TM-SBG	GT42 seep	5/12/2011	<0.40													
TM-SBG	GT42 seep	5/26/2011	<0.40													
TM-SBG	GT42 seep	5/31/2011	<0.40													
TM-SBG	GT42 seep	6/7/2011														
TM-SBG	GT42 seep	6/7/2011	<0.40													
TM-SBG	GT42 seep	6/14/2011	<0.40													
TM-SBG	GT42 seep	6/29/2011		<0.030	0.268			4.9	4.9	0.0217	0.0225	187	180	0.276	0.28	0.0202
TM-SBG	GT42 seep	7/5/2011														
TM-SBG	GT42 seep	7/12/2011	0.22													
TM-SBG	GT42 seep	7/19/2011	<0.40													
TM-SBG	GT42 seep	7/20/2011	<0.40	<0.030				5.6		0.0191		218		0.37		0.0192
TM-SBG	GT42 seep	8/3/2011	<0.40													
TM-SBG	GT42 seep	8/8/2011	<0.40													
TM-SBG	GT42 seep	8/16/2011														
TM-SBG	GT42 seep	8/23/2011														
TM-SBG	GT42 seep	8/31/2011	<0.40	<0.030				5.18		0.028		228		0.265		0.0161
TM-SBG	GT42 seep	9/13/2011														
TM-SBG	GT42 seep	9/20/2011														
TM-SBG	GT42 seep	10/5/2011														
TM-SBG	GT42 seep	10/11/2011		<0.030				5.8		0.0328		143		0.276		0.0306
TM-SBG	GT42 seep	4/16/2012	<0.40													

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012		<0.030	0.217			4.1	4.2	0.0208	0.022	147	140	0.0931	0.0995	0.0183
TM-SBG	GT42 seep	6/4/2012		<0.030	0.042			4.4	4.7	0.0289	0.029	172	182	0.154	0.163	0.0154
TM-SBG	GT42 seep	6/4/2012														
TM-SBG	GT42 seep	6/19/2012														
TM-SBG	GT42 seep	6/25/2012														
TM-SBG	GT42 seep	6/25/2012														
TM-SBG	GT42 seep	7/10/2012		<0.030				5.3		0.0287		184		0.144		0.013
TM-SBG	GT42 seep	7/17/2012														
TM-SBG	GT42 seep	8/7/2012		<0.030	0.034			4.7	4.9	0.0266	0.0263	214	219	0.0594	0.0594	0.0127
TM-SBG	GT42 seep	8/20/2012														
WM-ED	SEEP-9	3/23/2010	0.16	<0.030				3.5		0.012		54.4		0.139		0.00957
WM-ED	SEEP-9	4/21/2010	<0.20	<0.030				3.0		0.010		41.6		0.121		0.00970
WM-ED	SEEP-9	5/25/2010	<0.20	<0.030				2.9		<0.010		47.9		0.0785		0.00855
WM-ED	SEEP-9	6/29/2010	<0.20	<0.030				3.6		<0.025		77.9		0.112		0.0105
WM-ED	SEEP-9	7/21/2010	<0.20	<0.030				4.2		<0.025		87.5		0.130		0.0107
WM-ED	SEEP-9	8/25/2010	<0.20	<0.030				4.0		<0.025		92.5		0.0595		0.00921
WM-ND	SEEP-1	5/25/2010	0.094	0.073				2.2		<0.0050		32.0		0.403		0.00106
WM-ND	SEEP-1	10/26/2010	<0.20	<0.030				2.4		<0.025		103		0.0200		0.00169
WM-ND	SEEP-1	5/2/2011	<0.20	<0.030				2.8		0.0057		60.2		0.834		0.00428
WM-ND	SEEP-12	5/25/2010	0.112	<0.030				3.5		0.0085		44.0		0.0168		0.00215
WM-ND	SEEP-12	5/2/2011	0.117	<0.030				2.1		0.0075		33.2		0.0142		0.00257
WM-ND	SEEP-2	6/13/2007	0.137	<0.030				2.8		0.0110		41.9		0.253		0.0115
WM-ND	SEEP-2	5/14/2008	1.48	2.7	4.23			2.7	4.5	0.0124	0.0161	30.4	30.6	0.531	0.555	0.0166
WM-ND	SEEP-2	5/14/2008	0.145	0.122	23.4			2.1	2.6	<0.0050	<0.0050	23.1	23.2	0.663	2.8	0.00233
WM-ND	SEEP-2	9/16/2008	0.112	0.036	0.530			3.3	3.4	0.0070	0.0075	30.3	30.4	0.298	0.335	0.00639
WM-ND	SEEP-2	9/16/2008	0.132	0.300	0.753			<2.0	<2.0	<0.0050	<0.0050	10.9	10.7	1.05	1.09	0.000084
WM-ND	SEEP-2	5/25/2010	<0.20	<0.030				3.0		0.011		91.1		0.0239		0.00461
WM-ND	SEEP-2	10/26/2010	<0.20	<0.030				2.7		<0.010		72.6		0.00163		0.00069
WM-ND	SEEP-3	5/25/2010	0.107	0.171				<2.0		0.0061		17.9		0.0416		0.00282
WM-ND	SEEP-3	10/26/2010	<0.10	3.63				4.2		<0.0050		16.4		1.55		0.000642
WM-ND	SEEP-3	5/2/2011	0.16	<0.030				2.4		0.0204		57.1		0.0780		0.0109
WM-ND	SEEP-4	5/25/2010	0.24	<0.030				3.2		0.017		53.2		0.0275		0.00641
WM-ND	SEEP-4	10/26/2010	<0.20	<0.030				3.0		0.014		59.1		0.0118		0.00510
WM-ND	SEEP-4	5/2/2011	<0.20	<0.030				3.7		0.0220		89.0		0.0439		0.00612
WM-ND	SEEP-5	6/13/2007	0.258	<0.030				<2.0		0.0175		31.1		0.00604		0.0111
WM-ND	SEEP-5	5/25/2010	0.089	<0.030				<2.0		0.0067		24.1		0.00461		0.00141
WM-ND	SEEP-5	5/2/2011	0.082	0.050				<2.0		<0.0050		14.5		0.00626		0.00146
WM-SD	SD1	8/2/2006	0.177	<0.030	17.0			4.8	6.2	0.023	0.040	34.6	37.2	0.303	0.695	0.00793
WM-SD	SD1	10/31/2007	0.149	0.809	5.48			<2.0	3.2	<0.0050	<0.0050	8.06	8.5	0.0355	0.106	0.00371
WM-SD	SD1	4/2/2008	0.353	<0.030	0.073			3.2	3.1	0.102	0.107	41.7	40.3	0.0834	0.0884	0.0176
WM-SD	SD1	5/14/2008	0.163	0.217	4.47			<2.0	3.5	<0.0050	0.0092	20	20.6	0.00149	0.142	0.026
WM-SD	SEEP-6	6/13/2007	0.157	0.031				2.6		0.0186		39.1		0.0309		0.00604
WM-SD	SEEP-6	5/25/2010	<0.20	<0.030				4.5		0.053		127		0.150		0.00991
WM-SD	SEEP-6	10/26/2010	<0.40	<0.030				3.0		0.026		130		0.0208		0.00611
WM-SD	SEEP-6	5/2/2011	<0.40	<0.030				3.5		0.034		124		0.0474		0.00616
WM-SD	SEEP-7	10/31/2007	0.13	<0.030	3.24			5.1	6.7	<0.025	<0.025	73.6	72.6	0.443	0.482	0.0155
WM-SD	SEEP-7	4/2/2008	0.28	<0.030	0.106			3.2	3.1	0.071	0.072	41.3	39.7	0.131	0.132	0.0131
WM-SD	SEEP-7	5/25/2010	<0.20	<0.030				5.4		<0.025		102		0.0148		0.00950
WM-SD	SEEP-7	10/26/2010	<0.40	<0.030				5.7		0.039		188		0.00797		0.00957
WM-SD	SEEP-7	5/2/2011	<0.40	<0.030				5.4		0.044		112		0.0720		0.0158
WM-SD	SEEP-8	5/25/2010	<0.20	<0.030				5.6		<0.025		99.6		0.351		0.00641
WM-SD	SEEP-8	10/26/2010	<0.40	<0.030				4.1		<0.025		103		1.38		0.00218
WM-SD	SEEP-8	5/2/2011	<0.20	<0.030				4.3		0.014		118		0.172		0.00561
WCM-4C	SEEP A	5/8/2006	0.235	<0.030	0.055	<0.000010	<0.000010	3.4	3.4	0.029	0.028	50.2	50.4	0.0769	0.0783	0.00688

			F	Fe-D	Fe-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	0.191	<0.030	<0.030	<0.000010	<0.000010	3.0	3.2	0.042	0.046	80.1	84.6	0.0627	0.0674	0.00712
WCM-7C	7C West Dump	march, 2012		<0.03				3.7				160.0		0.01000		
WCM-7C	7C West Dump	April, 2012		<0.03				3.9				177		0.00027		
WCM-7C	7C West Dump	May, 2012		<0.03				3.9				191.0		0.00033		
WCM-7C	7C West Dump	June, 2012		<0.03				3.6				190.0		0.00063		
WCM-7C	7C West Dump	July, 2012		<0.03				4.1				201.0		0.00076		
WCM-7C	7C West Dump	August, 2012		<0.03				4.4				205.0		0.0008		
WCM-7C	7C West Dump	September, 2012		<0.03				4.6				218.0		0.0005		
WCM-7C	7C West Dump	October, 2012		<0.03				4.5				230.0		0.0006		
WCM-7C	7C West Dump	November, 2012		<0.03				4.3						0.00045		
WCM-7C	7C West Dump	December, 2012		<0.03				4.7				198.0		0.00044		
WCM-7P	7P SE	November, 2012		<0.03				2.4						0.00829		
WCM-7P	7P SE	December, 2012		<0.03				2.4				154		0.0144		
BM-SED	SP2 SOUTH SEEP	6/3/2009	0.177	0.03400				2.4				16.7		0.01140		0.01200
BM-SED	SP2 SOUTH SEEP	4/10/2010	<0.20	0.06200				3.6				32.6		0.01750		0.00653
BM-SED	SP2 SOUTH SEEP	6/10/2010	0.165	0.06600				3.1				32.5		0.04280		0.00687
BM-SED	SP2 SOUTH SEEP	4/11/2011	<0.20	<0.030				3.4				49.4		0.06060		0.00506
BM-SED	SP2 SOUTH SEEP	5/31/2011	0.290	<0.030				2.7				23.2		0.01190		0.02890
BM-SED	SP2 SOUTH SEEP	6/11/2011	0.220	<0.030				4.4				61.9		0.01300		0.00532
BM-SED	SP2 SOUTH SEEP	7/11/2011	0.260	<0.030				3.9				53.7		0.03350		0.00581
BM-SED	SP2 SOUTH SEEP	8/11/2011	<0.20	<0.030				4.3				55.6		0.00997		0.00541
BM-SED	SP2 SOUTH SEEP	9/11/2011	0.290	<0.030				4.7				63.5		0.00491		0.00664
BM-SED	SP2 SOUTH SEEP	10/11/2011	0.220	<0.030				4.7				60.3		0.00172		0.00870
BM-SED	SP2 SOUTH SEEP	11/11/2011	0.240	<0.030				4.6				59.5		0.00124		0.01010
BM-SED	SP2 SOUTH SEEP	4/12/2012	<0.40	<0.030				4.1				82.7		0.01230		0.00369
BM-SED	SP2 SOUTH SEEP	5/12/2012	<0.40	<0.030				4.8				88.6		0.00506		0.00972
BM-SED	SP2 SOUTH SEEP	6/12/2012	<0.10	<0.030				4.9				89.6		0.00740		0.00889
BM-SED	SP2 SOUTH SEEP	7/12/2012	<0.40	<0.030				5.5				92.4		0.00231		0.0119
BM-SED	SP2 SOUTH SEEP	8/12/2012	<0.40	<0.030				5.5				93.1		0.0222		0.0109
BM-SED	SP2 SOUTH SEEP	9/12/2012														
BM-SED	SP2 SOUTH SEEP	10/12/2012														
BM-SED	SP2 EAST SEEP	6/3/2009	0.171	0.10100				5.5				17.8		0.11800		0.00603
BM-SED	SP2 EAST SEEP	9/8/2009	<0.20	0.07600				5.4				22.5		0.13300		0.00990
BM-SED	SP2 EAST SEEP	4/10/2010	<0.20	0.08700				5.3				29.9		0.08970		0.00610
BM-SED	SP2 EAST SEEP	6/10/2010	<0.20	0.03500				3.9				28.9		0.03010		0.01160
BM-SED	SP2 EAST SEEP	10/1/2010	<0.20	0.04400				5.0				40.6		0.04180		0.00822
BM-SED	SP2 EAST SEEP	4/11/2011	0.160	<0.030				2.5				30.1		0.01610		0.02380
BM-SED	SP2 EAST SEEP	5/31/2011	0.290	<0.030				2.7				23.2		0.01190		0.02890
BM-SED	SP2 EAST SEEP	6/11/2011	0.360	<0.030				3.0				29.1		0.01530		0.02320
BM-SED	SP2 EAST SEEP	7/11/2011	0.219	<0.030				2.1				21.6		0.02610		0.01810
BM-SED	SP2 EAST SEEP	8/11/2011	0.270	<0.030				3.5				43.5		0.03160		0.01380
BM-SED	SP2 EAST SEEP	9/11/2011	0.350	<0.030				3.2				38.9		0.02590		0.01430
BM-SED	SP2 EAST SEEP	10/11/2011	0.250	<0.030				3.2				37.7		0.02900		0.01190
BM-SED	SP2 EAST SEEP	11/11/2011	0.270	<0.030				3.0				38.0		0.01940		0.01130
BM-SED	SP2 EAST SEEP	4/12/2012	<0.40	<0.030				3.4				67.8		0.02240		0.00867
BM-SED	SP2 EAST SEEP	5/12/2012	<0.20	<0.030				3.7				66.8		0.03700		0.00691
BM-SED	SP2 EAST SEEP	6/12/2012	<0.40	<0.030				3.6				68.7		0.02880		0.00911
BM-SED	SP2 EAST SEEP	7/12/2012	<0.40	<0.030				3.6				73.1		0.0342		0.00835
BM-SED	SP2 EAST SEEP	8/12/2012	<0.40	<0.030				3.7				73.0		0.0263		0.00844
EVO-F2	F2 WELL	4/8/2010	<0.40	<0.030		-		6.1		0.104		267		0.972		0.00239
EVO-F2	F2 WELL	9/14/2010	<0.40	<0.030		-		6.1		0.11		240		0.939		0.00248
EVO-F2	F2 WELL	9/15/2011	<0.40	<0.030		<0.000010		6.1		0.129		262		0.994		0.00218
EVO-F2	F2 WELL	7/26/2011	<0.40	0.036		-		6.8		0.131		255		0.948		0.00243

			F	**Fe-D**	**Fe-T**	**Hg-D**	**Hg-T**	**K-D**	**K-T**	**Li-D**	**Li-T**	**Mg-D**	**Mg-T**	**Mn-D**	**Mn-T**	**Mo-D**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011	<0.40	13.6		<0.000010		6.42		0.125		236		1.15		0.00139
EVO-F2	F2 WELL	03/16/2012	<0.40	<0.010		<0.000010		5.58		0.12		205		1.18		0.00117
BM-DPB	BM-11-01-A	5/28/2012		0.051				1.81				30.1		0.128		0.00267
BM-DPB	BM-11-01-B	5/29/2012		0.338				1.92				72.4		0.616		0.00338
BM-DPB	BM-11-01-C	5/28/2012		1.26				3.88				83.8		0.690		0.00658
BM-DPB	BM-11-02-B	5/30/2012		0.261				2.15				90.8		1.21		0.00732
BM-DPB	BM-11-02-C	5/29/2012		0.256				1.92				70.0		0.418		0.00599
GHO-BH1	GHO-BH1	4/20/2009	0.185	0.214				4.7		0.027		105		0.0868		0.00078
GHO-BH1	GHO-BH1	10/28/2009	<0.4	0.03				5.21		0.029		169		0.522		0.00099
GHO-BH1	GHO-BH1	6/15/2010	<0.2	3.34				5.5		0.026		134		0.874		0.0008
GHO-BH1	GHO-BH1	8/9/2010	<0.4	9.3				6.2		0.029		199		2.15		0.00162
GHO-BH1	GHO-BH1	9/20/2010	<0.4	6.85				5.9		0.0486		164		1.82		0.00127
GHO-BH1	GHO-BH1	10/12/2010	<0.4	8.08				5.7		0.0488		192		2.29		0.00152
GHO-BH1	GHO-BH1	11/15/2010	<0.4	11.3				6.1		0.0385		229		3.16		0.0019
GHO-BH1	GHO-BH1	4/13/2011	<0.4	0.726				5.8		0.043		174		0.404		0.0009
GHO-BH1	GHO-BH1	5/11/2011	<0.4	<0.03				6		0.04		162		0.0229		0.00066
GHO-BH1	GHO-BH1	6/8/2011	<0.4	<0.03				4.8		0.032		119		0.0353		0.00022
GHO-BH1	GHO-BH1	7/13/2011	<0.4	3.89				5.7		0.0322		209		1.18		0.00101
GHO-BH1	GHO-BH1	9/14/2011	<0.4	<0.03				6.4		0.0324		290		2.3		0.00191
GHO-BH1	GHO-BH1	10/5/2011	<0.4	<0.03				6.5		0.0338		287		2.44		0.00209
GHO-BH1	GHO-BH1	6/6/2012	<0.2	<0.03				4.9		0.034		153				0.000342
GHO-BH1	GHO-BH1	7/5/2012	<0.4	<0.03				4.4		0.0329		115				0.000368
GHO-BH1	GHO-BH1	9/12/2012	<0.4	<0.03				6.1		0.0408		261				0.00129
GHO-BH1	GHO-BH1	10/3/2012	<0.4	<0.03				5.7		0.0395		272				0.0016
GHO-BH1	GHO-BH1	11/7/2012	<0.4	<0.03				5		0.0356		140		0.331		0.00046
BM-NED	LOWER BLIND SEEP	6/3/2009	0.357	<0.030				<2.0				46.2		0.01090		0.02150
BM-NED	LOWER BLIND SEEP	9/8/2009	0.300	<0.030				2.2				45.5		0.00432		0.01500
BM-NED	LOWER BLIND SEEP	5/10/2010	0.240	<0.030				2.1				59.2		0.00860		0.00923
BM-NED	LOWER BLIND SEEP	6/10/2010	0.250	<0.030				2.0				58.6		0.00604		0.01050
BM-NED	LOWER BLIND SEEP	10/1/2010	0.330	<0.030				<2.0				54.3		0.00347		0.01000
BM-NED	LOWER BLIND SEEP	5/31/2011	0.340	<0.030				<2.0				57.9		0.01070		0.00839
BM-NED	LOWER BLIND SEEP	6/11/2011	0.350	<0.030				1.8				57.0		0.00606		0.00825
BM-NED	LOWER BLIND SEEP	10/11/2011	0.330	<0.030				<2.0				63.2		0.00456		0.00762
BM-NED	North Dump Seep N	5/12/2012	0.168	0.09600				<2.0				23.6		0.05050		0.00361
BM-NED	North Dump Seep S	6/12/2012	0.210	0.09500				4.3				42.8		0.21400		0.01140
BM-NED	North Dump Seep N	6/12/2012	0.270	0.07300				3.0				53.9		0.05140		0.00848
BM-NED	North Dump Seep N	7/12/2012	0.270	0.063				2.8				58.3		0.0658		0.00808
BM-NED	North Dump Seep N	8/12/2012	0.290	0.040				2.9				59.8		0.0546		0.00802
BM-NED	North Dump Seep S	7/12/2012	0.220	0.315				4.9				52.6		0.346		0.0113
BM-NED	North Dump Seep S	8/12/2012	0.260	0.134				5.2				56.1		0.420		0.0127

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007														
EVO-BC1	EVO-BC1	6/19/2007														
EVO-BC1	EVO-BC1	7/3/2007				0.024			0.031	32.4						
EVO-BC1	EVO-BC1	8/7/2007				0.003			0.015	39						
EVO-BC1	EVO-BC1	9/5/2007				0.047			0.014	77.7						
EVO-BC1	EVO-BC1	10/3/2007				<0.0205			<0.0015	27.4						
EVO-BC1	EVO-BC1	11/6/2007				<0.0205			1.023	39.6						
EVO-BC1	EVO-BC1	12/5/2007				<0.0205			0.021	49.976						
EVO-BC1	EVO-BC1	1/3/2008				0.069			0.061	32						
EVO-BC1	EVO-BC1	2/5/2008		10		<0.0205	0.0382		0.046	42.4				<0.0005		
EVO-BC1	EVO-BC1	3/5/2008		20.1		0.231	0.0271		0.09	59.2				<0.0005		
EVO-BC1	EVO-BC1	3/11/2008														
EVO-BC1	EVO-BC1	3/18/2008														
EVO-BC1	EVO-BC1	3/20/2008														
EVO-BC1	EVO-BC1	3/25/2008														
EVO-BC1	EVO-BC1	3/28/2008														
EVO-BC1	EVO-BC1	4/1/2008														
EVO-BC1	EVO-BC1	4/3/2008				0.049			0.025	28.1						
EVO-BC1	EVO-BC1	4/8/2008														
EVO-BC1	EVO-BC1	4/15/2008														
EVO-BC1	EVO-BC1	4/22/2008														
EVO-BC1	EVO-BC1	4/29/2008														
EVO-BC1	EVO-BC1	5/6/2008				0.046			<0.0015	15.5						
EVO-BC1	EVO-BC1	5/13/2008														
EVO-BC1	EVO-BC1	5/20/2008														
EVO-BC1	EVO-BC1	5/21/2008														
EVO-BC1	EVO-BC1	5/28/2008														
EVO-BC1	EVO-BC1	6/3/2008				0.072			0.008	14.8						
EVO-BC1	EVO-BC1	6/11/2008														
EVO-BC1	EVO-BC1	6/17/2008														
EVO-BC1	EVO-BC1	6/26/2008														
EVO-BC1	EVO-BC1	7/2/2008														
EVO-BC1	EVO-BC1	7/6/2008				0.096				22.1						
EVO-BC1	EVO-BC1	7/29/2008														
EVO-BC1	EVO-BC1	8/5/2008				0.157			0.058	27.7						
EVO-BC1	EVO-BC1	9/2/2008				0.267			0.024	35						
EVO-BC1	EVO-BC1	9/12/2008				0.338			0.045	34.6						
EVO-BC1	EVO-BC1	10/7/2008				0.381				37.5						
EVO-BC1	EVO-BC1	11/4/2008		9.4		0.214			0.016	31.7						
EVO-BC1	EVO-BC1	12/3/2008		10.2		0.056			0.009	32.7						
EVO-BC1	EVO-BC1	1/7/2009		10.7		0.118			0.024	32.2						
EVO-BC1	EVO-BC1	2/4/2009		23.2		0.187			0.015	29.8						
EVO-BC1	EVO-BC1	3/3/2009		67.6		0.189			0.04	35.8						
EVO-BC1	EVO-BC1	3/10/2009														
EVO-BC1	EVO-BC1	3/17/2009														
EVO-BC1	EVO-BC1	3/24/2009														
EVO-BC1	EVO-BC1	3/31/2009														
EVO-BC1	EVO-BC1	4/7/2009		13.3		0.062			0.097	32.5						
EVO-BC1	EVO-BC1	4/15/2009														
EVO-BC1	EVO-BC1	4/21/2009														
EVO-BC1	EVO-BC1	4/28/2009														
EVO-BC1	EVO-BC1	5/6/2009				0.0218			0.011	16.2						
EVO-BC1	EVO-BC1	5/12/2009														
EVO-BC1	EVO-BC1	5/20/2009														

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009														
EVO-BC1	EVO-BC1	6/2/2009		10.5						17.2						
EVO-BC1	EVO-BC1	6/9/2009														
EVO-BC1	EVO-BC1	6/16/2009														
EVO-BC1	EVO-BC1	6/23/2009														
EVO-BC1	EVO-BC1	6/30/2009														
EVO-BC1	EVO-BC1	7/8/2009		14.5		0.087			0.031	26.3						
EVO-BC1	EVO-BC1	8/5/2009		9.4		0.137			0.105	28.7						
EVO-BC1	EVO-BC1	9/1/2009		9.5		0.014			0.082	28.2						
EVO-BC1	EVO-BC1	10/7/2009		8.8		0.123			0.026	40.6						
EVO-BC1	EVO-BC1	11/5/2009		9.1					0.078	31.7						
EVO-BC1	EVO-BC1	11/6/2009				0.004			0.047	33.1						
EVO-BC1	EVO-BC1	12/2/2009		9.9					<0.005	32.5						
EVO-BC1	EVO-BC1	12/3/2009				<0.0005			0.024	31.7						
EVO-DC1	EVO-DC1	9/5/2007				<0.0205			0.008	3.72						
EVO-DC1	EVO-DC1	11/4/2008		4.6		<0.0205			<0.001	4.13						
EVO-DC1	EVO-DC1	5/25/2009		3.7												
EVO-DC1	EVO-DC1	6/2/2009								3.08						
EVO-DC1	EVO-DC1	6/10/2009														
EVO-DC1	EVO-DC1	6/23/2009														
EVO-DC1	EVO-DC1	6/30/2009														
EVO-DC1	EVO-DC1	7/7/2009		4.4		<0.0005	0.0053		0	2.61				<0.00005		
EVO-DC1	EVO-DC1	7/31/2009		2.8		<0.01	0.00025		0.0075					<0.000025		
EVO-DC1	EVO-DC1	8/5/2009				<0.0005			0.016	3.38						
EVO-DC1	EVO-DC1	8/31/2009				<0.01	0.00025		<0.0005					<0.000025		
EVO-DC1	EVO-DC1	9/1/2009		4.4		<0.0005			0.043	3.73						
EVO-DC1	EVO-DC1	10/6/2009		4.9		<0.0005			0.006	4.75						
EVO-DC1	EVO-DC1	10/20/2009				<0.01	0.00025							<0.000025		
EVO-DC1	EVO-DC1	11/3/2009		4.8		0.002			0.001	3.75						
EVO-GC2	EVO-GC2	7/3/2007				<0.0005			0.017	1.42						
EVO-GC2	EVO-GC2	8/7/2007				0.003			0.08	1.99						
EVO-GC2	EVO-GC2	9/5/2007				<0.0205			0.006	1.12						
EVO-GC2	EVO-GC2	10/3/2007				<0.0205			<0.0015	0.875						
EVO-GC2	EVO-GC2	11/6/2007				0.05			0.101	1.11						
EVO-GC2	EVO-GC2	12/4/2007				<0.0205			0.026	1.109						
EVO-GC2	EVO-GC2	1/3/2008				0.042			0.029	1.04						
EVO-GC2	EVO-GC2	2/5/2008		10.1		<0.0205	0.0013		0.024	0.671				<0.00025		
EVO-GC2	EVO-GC2	3/5/2008		15.9		0.074	0.0025		0.016	0.634						
EVO-GC2	EVO-GC2	4/1/2008														
EVO-GC2	EVO-GC2	4/3/2008				0.071			0.005	0.656						
EVO-GC2	EVO-GC2	5/6/2008				<0.01			<0.0015	0.479						
EVO-GC2	EVO-GC2	6/3/2008				<0.0205			<0.0015	1.66						
EVO-GC2	EVO-GC2	7/2/2008				0.081			0.049	0.768						
EVO-GC2	EVO-GC2	7/29/2008														
EVO-GC2	EVO-GC2	8/6/2008				<0.01			0.004	1.08						
EVO-GC2	EVO-GC2	9/2/2008				0.054			0.158	1.03						
EVO-GC2	EVO-GC2	9/3/2008				0.046			0.201	1.13						
EVO-GC2	EVO-GC2	10/7/2008				<0.0205				0.604						
EVO-GC2	EVO-GC2	11/4/2008		8.3		0.401			0.048	0.763						
EVO-GC2	EVO-GC2	12/3/2008		8.8		0.014			0.009	0.638						
EVO-GC2	EVO-GC2	1/7/2009		9.1		<0.0005			0.007	0.654						
EVO-GC2	EVO-GC2	2/4/2009		12.4		<0.0005			0.002	0.474						
EVO-GC2	EVO-GC2	3/3/2009		26.8		0.0249			0.035	0.567						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009														
EVO-GC2	EVO-GC2	3/17/2009														
EVO-GC2	EVO-GC2	3/24/2009														
EVO-GC2	EVO-GC2	3/31/2009														
EVO-GC2	EVO-GC2	4/7/2009		13.7		<0.0005			<0.0005	0.404						
EVO-GC2	EVO-GC2	4/14/2009														
EVO-GC2	EVO-GC2	4/21/2009														
EVO-GC2	EVO-GC2	4/29/2009														
EVO-GC2	EVO-GC2	5/7/2009		9.2		<0.0005	0.00198		0.007	0.706				0.00028		
EVO-GC2	EVO-GC2	5/12/2009		9.6			0.00161		0.009	0.56				0.000279		
EVO-GC2	EVO-GC2	5/20/2009							0.0072	0.563						
EVO-GC2	EVO-GC2	5/26/2009							0.0022	0.606						
EVO-GC2	EVO-GC2	6/2/2009		8.1			0.00264		0.0065	0.728				0.000111		
EVO-GC2	EVO-GC2	6/6/2009														
EVO-GC2	EVO-GC2	6/8/2009														
EVO-GC2	EVO-GC2	6/10/2009														
EVO-GC2	EVO-GC2	6/16/2009							0.0089	1.11						
EVO-GC2	EVO-GC2	6/23/2009							0.0198	0.748						
EVO-GC2	EVO-GC2	7/2/2009							0.0178	0.856						
EVO-GC2	EVO-GC2	7/7/2009		14.9		0.725	0.0047		0.0127	0.87				0.00052		
EVO-GC2	EVO-GC2	7/14/2009							0.0219	0.881						
EVO-GC2	EVO-GC2	7/16/2009							0.0316	0.8814						
EVO-GC2	EVO-GC2	7/21/2009							0.0165	0.848						
EVO-GC2	EVO-GC2	7/29/2009														
EVO-GC2	EVO-GC2	8/5/2009		13.3		0.048	0.0039		0.0227	0.878				0.0006		
EVO-GC2	EVO-GC2	8/11/2009							0.0066	0.704						
EVO-GC2	EVO-GC2	8/18/2009							<0.0005	0.612						
EVO-GC2	EVO-GC2	8/25/2009							<0.0025	0.581						
EVO-GC2	EVO-GC2	9/1/2009		8.9		<0.0005			<0.0025	0.643						
EVO-GC2	EVO-GC2	9/8/2009		9.2			0.00159		0.0044	0.804				0.000164		
EVO-GC2	EVO-GC2	9/16/2009				<0.0025			<0.0025	0.775						
EVO-GC2	EVO-GC2	9/22/2009				<0.0025			<0.0025	0.749						
EVO-GC2	EVO-GC2	9/29/2009				<0.0025			0.0154	0.78						
EVO-GC2	EVO-GC2	10/6/2009		10.1		0.037	0.0012		<0.0025	0.695				0.000155		
EVO-GC2	EVO-GC2	11/3/2009		11.3		<0.0005			0.016	0.894						
EVO-GC2	EVO-GC2	12/1/2009		14.5		0.006	0.0016		0.005	0.573				0.00016		
FRO-CC1	FRO-CC1	7/3/2007				<0.005			0.027	8.8						
FRO-CC1	FRO-CC1	8/7/2007				<0.005			0.024	7.6						
FRO-CC1	FRO-CC1	9/4/2007				<0.005			0.049	6.66						
FRO-CC1	FRO-CC1	10/1/2007				<0.005			<0.0025	6.21						
FRO-CC1	FRO-CC1	11/5/2007				0.05			<0.0025	10.13						
FRO-CC1	FRO-CC1	12/3/2007				0.03			<0.0025	7.82						
FRO-CC1	FRO-CC1	1/8/2008				<0.005			<0.0025	6.31						
FRO-CC1	FRO-CC1	2/4/2008				0.03			<0.0025	5.63						
FRO-CC1	FRO-CC1	3/17/2008				0.01			<0.0025	9.25						
FRO-CC1	FRO-CC1	4/7/2008				0.01			<0.0025	9.28						
FRO-CC1	FRO-CC1	5/5/2008				0.01			<0.0025	8.02						
FRO-CC1	FRO-CC1	6/4/2008				<0.005			<0.0025	15.43						
FRO-CC1	FRO-CC1	7/7/2008				0.02			<0.0025	11.29						
FRO-CC1	FRO-CC1	8/6/2008				0.02			<0.0025	12.05						
FRO-CC1	FRO-CC1	9/9/2008				0.01			<0.0025	9.35						
FRO-CC1	FRO-CC1	10/7/2008														
FRO-CC1	FRO-CC1	11/3/2008														
FRO-CC1	FRO-CC1	12/1/2008														

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009		1.12		0.41	0.0221		0.018	5.15				<0.0005		
FRO-CC1	FRO-CC1	2/2/2009				0.02			0.015	4.97						
FRO-CC1	FRO-CC1	2/3/2009														
FRO-CC1	FRO-CC1	3/17/2009		1.33		0.64	0.0295		0.045	4.59				<0.0005		
FRO-CC1	FRO-CC1	4/6/2009		1.51		0.6	0.0314		0.075	9.71				<0.0005		
FRO-CC1	FRO-CC1	5/4/2009				0.42			0.055	6.18						
FRO-CC1	FRO-CC1	6/1/2009				0.04	0.0315		0.068	7.17				<0.000025		
FRO-CC1	FRO-CC1	7/6/2009				0.57	0.042		0.046	7.13				<0.000025		
FRO-CC1	FRO-CC1	8/3/2009				0.15	0.0383		0.086	6.37				<0.000075		
FRO-CC1	FRO-CC1	9/1/2009				0.12	0.0508		0.071	12.25				<0.000025		
FRO-CC1	FRO-CC1	10/7/2009				0.15	0.0584		0.054	12.88				<0.000025		
FRO-CC1	FRO-CC1	11/2/2009				0.23	0.0593		0.122	10.77				<0.000025		
FRO-CC1	FRO-CC1	12/7/2009				0.28	0.0447		0.071	8.4				<0.000025		
FRO-EC1	FRO-EC1	7/3/2007				<0.005			<0.0025	50.3						
FRO-EC1	FRO-EC1	8/7/2007				0.07			<0.0025	49.89						
FRO-EC1	FRO-EC1	9/4/2007				0.16			0.226	58.8						
FRO-EC1	FRO-EC1	10/1/2007				0.03			<0.0025	55.75						
FRO-EC1	FRO-EC1	11/5/2007				0.06			<0.0025	67.47						
FRO-EC1	FRO-EC1	12/3/2007				0.02			<0.0025	69.34						
FRO-EC1	FRO-EC1	1/8/2008				<0.005			<0.0025	62.64						
FRO-EC1	FRO-EC1	2/4/2008				0.04			<0.0025	66.78						
FRO-EC1	FRO-EC1	3/17/2008				0.25			<0.0025	3.41						
FRO-EC1	FRO-EC1	4/7/2008				0.7			<0.0025	41.52						
FRO-EC1	FRO-EC1	6/4/2008				0.01			<0.0025	48.3						
FRO-EC1	FRO-EC1	7/7/2008				<0.005			<0.0025	68.21						
FRO-EC1	FRO-EC1	8/6/2008				<0.005			<0.0025	79.96						
FRO-EC1	FRO-EC1	9/9/2008		14		<0.005	0.0443		<0.0025	69.7				0.00029		
FRO-EC1	FRO-EC1	10/7/2008														
FRO-EC1	FRO-EC1	11/3/2008														
FRO-EC1	FRO-EC1	12/1/2008														
FRO-EC1	FRO-EC1	1/5/2009		14.2		<0.005	0.0528		0.008	61.97						
FRO-EC1	FRO-EC1	2/2/2009				0.02			0.022	70.7						
FRO-EC1	FRO-EC1	2/3/2009														
FRO-EC1	FRO-EC1	3/17/2009		12.7		0.01	0.0466		0.025	54.72						
FRO-EC1	FRO-EC1	4/6/2009		11.8		0.02	0.0341		0.037	63.1						
FRO-EC1	FRO-EC1	5/4/2009		13.2		0.09			0.108	28.2						
FRO-EC1	FRO-EC1	5/13/2009		14.1		0.0147	0.0271		0.099	37				<0.000125		
FRO-EC1	FRO-EC1	5/19/2009		13.8		<0.0025	0.0315		0.095	41				<0.000125		
FRO-EC1	FRO-EC1	5/26/2009		14.1			0.04		0.118	47.6				<0.000125		
FRO-EC1	FRO-EC1	6/1/2009		14.9		<0.005	0.0436		0.092	60.32				<0.000125		
FRO-EC1	FRO-EC1	6/8/2009		14.9			0.0366		0.097	53.3				<0.000125		
FRO-EC1	FRO-EC1	7/6/2009		15.5		<0.005	0.0368		0.147	48.4				<0.000125		
FRO-EC1	FRO-EC1	8/3/2009		13.7		<0.005	0.0352		0.267	50.82				<0.000125		
FRO-EC1	FRO-EC1	9/1/2009		15.4		0.03	0.0387		0.174	49.6				<0.000125		
FRO-EC1	FRO-EC1	10/7/2009		16.4		<0.005	0.0489		0.171	45.9				<0.000125		
FRO-EC1	FRO-EC1	11/2/2009		16.1		<0.005	0.0535		0.362	48.6				<0.000125		
FRO-EC1	FRO-EC1	12/7/2009		15.4		<0.005	0.0536		0.065	58.93				<0.000125		
FRO-KC1	FRO-KC1	7/3/2007				<0.005			<0.0025	12.29						
FRO-KC1	FRO-KC1	8/7/2007				<0.005			<0.0025	13.07						
FRO-KC1	FRO-KC1	9/4/2007				<0.005			0.073	24.67						
FRO-KC1	FRO-KC1	10/1/2007				<0.005			<0.0025	9.79						
FRO-KC1	FRO-KC1	11/5/2007				0.04			<0.0025	34.79						
FRO-KC1	FRO-KC1	12/3/2007				0.02			<0.0025	37.08						
FRO-KC1	FRO-KC1	1/7/2008				<0.005			<0.0025	38.88						
FRO-KC1	FRO-KC1	2/4/2008				0.03			<0.0025	47.02						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008				<0.005			<0.0025	54.37						
FRO-KC1	FRO-KC1	4/7/2008				<0.005			<0.0025	69.74						
FRO-KC1	FRO-KC1	5/5/2008				<0.005			<0.0025	54.63						
FRO-KC1	FRO-KC1	6/4/2008				<0.005			<0.0025	23.26						
FRO-KC1	FRO-KC1	7/7/2008				<0.005			<0.0025	14.95						
FRO-KC1	FRO-KC1	8/6/2008				<0.005			<0.0025	23.43						
FRO-KC1	FRO-KC1	9/9/2008				<0.005	0.0086		<0.0025	29.25				0.0007		
FRO-KC1	FRO-KC1	10/7/2008														
FRO-KC1	FRO-KC1	11/3/2008														
FRO-KC1	FRO-KC1	12/1/2008														
FRO-KC1	FRO-KC1	1/5/2009		2.26		<0.005	<0.0113		<0.0025	55.67						
FRO-KC1	FRO-KC1	2/2/2009				<0.005			<0.0025	64.81						
FRO-KC1	FRO-KC1	2/3/2009														
FRO-KC1	FRO-KC1	3/17/2009		2.49		0.01	0.0151		0.013	66						
FRO-KC1	FRO-KC1	4/6/2009		2.67		<0.005	0.0156		0.008	53.36						
FRO-KC1	FRO-KC1	5/4/2009		2.7		<0.005			0.008	56.38						
FRO-KC1	FRO-KC1	6/1/2009				0.01	0.0199		0.005	39				<0.00005		
FRO-KC1	FRO-KC1	7/6/2009				0.01	0.0089		<0.0005	18.7				<0.00005		
FRO-KC1	FRO-KC1	8/3/2009				<0.005	0.0082		<0.0005	22				<0.00005		
FRO-KC1	FRO-KC1	9/1/2009				<0.005			<0.0025	25						
FRO-KC1	FRO-KC1	9/2/2009					0.008		0.0062	21.7				<0.00005		
FRO-KC1	FRO-KC1	10/7/2009				<0.005	<0.0098		<0.0025	36.8				<0.00005		
FRO-KC1	FRO-KC1	11/2/2009				<0.005	0.0096		0.039	41.5				<0.00005		
FRO-KC1	FRO-KC1	12/7/2009				<0.005	0.01		<0.0025	49.3				<0.00005		
GHO-CC1	GHO-CC1	1/4/2007				<0.005			<0.0025	36.54						
GHO-CC1	GHO-CC1	2/7/2007				<0.005			<0.0025	38.14						
GHO-CC1	GHO-CC1	3/1/2007				0.01			<0.0025	34.69						
GHO-CC1	GHO-CC1	4/2/2007				<0.005			<0.0025	30.49						
GHO-CC1	GHO-CC1	4/9/2007														
GHO-CC1	GHO-CC1	4/16/2007														
GHO-CC1	GHO-CC1	4/23/2007														
GHO-CC1	GHO-CC1	5/1/2007				<0.005			<0.0025	27.9						
GHO-CC1	GHO-CC1	5/7/2007														
GHO-CC1	GHO-CC1	5/14/2007														
GHO-CC1	GHO-CC1	5/22/2007														
GHO-CC1	GHO-CC1	5/28/2007														
GHO-CC1	GHO-CC1	6/4/2007				<0.005			<0.0025	26.4						
GHO-CC1	GHO-CC1	6/11/2007														
GHO-CC1	GHO-CC1	7/3/2007				<0.005			<0.0025	26						
GHO-CC1	GHO-CC1	8/7/2007				<0.005			<0.0025	26.6						
GHO-CC1	GHO-CC1	9/4/2007				<0.005			<0.0025	36.2						
GHO-CC1	GHO-CC1	10/1/2007				<0.005			<0.0025	35.5						
GHO-CC1	GHO-CC1	11/5/2007				<0.005			<0.0025	44.9						
GHO-CC1	GHO-CC1	12/4/2007				0.01			<0.0025	45.5						
GHO-CC1	GHO-CC1	1/7/2008				<0.005			<0.0025	39.9						
GHO-CC1	GHO-CC1	2/4/2008				0.03			<0.0025	35.2						
GHO-CC1	GHO-CC1	3/3/2008				<0.005			<0.0025	36.3						
GHO-CC1	GHO-CC1	4/1/2008				<0.005			<0.0025	31.3						
GHO-CC1	GHO-CC1	5/5/2008				<0.005			<0.0025	40.6						
GHO-CC1	GHO-CC1	6/2/2008				<0.005			<0.0025	30.8						
GHO-CC1	GHO-CC1	7/2/2008				<0.005			<0.0025	37.9						
GHO-CC1	GHO-CC1	8/5/2008				<0.005			0.026	36.12						
GHO-CC1	GHO-CC1	8/13/2008														
GHO-CC1	GHO-CC1	8/18/2008														

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008				<0.025				29.8						
GHO-CC1	GHO-CC1	9/29/2008				<0.025				34.3						
GHO-CC1	GHO-CC1	11/3/2008				<0.025				37.9						
GHO-CC1	GHO-CC1	12/1/2008														<0.0005
GHO-CC1	GHO-CC1	12/3/2008				<0.025				38.6						
GHO-CC1	GHO-CC1	1/5/2009														<0.0005
GHO-CC1	GHO-CC1	1/6/2009				<0.025				44.2						
GHO-CC1	GHO-CC1	2/3/2009														0.0019
GHO-CC1	GHO-CC1	2/4/2009				<0.025				31.6						
GHO-CC1	GHO-CC1	3/2/2009														0.0015
GHO-CC1	GHO-CC1	3/3/2009				<0.025				35.4						
GHO-CC1	GHO-CC1	4/1/2009					0.05									<0.0005
GHO-CC1	GHO-CC1	4/2/2009				<0.025				39.9						
GHO-CC1	GHO-CC1	5/4/2009														<0.0005
GHO-CC1	GHO-CC1	5/5/2009				<0.025				37.6						
GHO-CC1	GHO-CC1	6/1/2009					0.052									<0.0005
GHO-CC1	GHO-CC1	6/2/2009				<0.025				37.5						
GHO-CC1	GHO-CC1	7/6/2009					0.055									<0.0005
GHO-CC1	GHO-CC1	7/7/2009				<0.025			0.057	36.2						
GHO-CC1	GHO-CC1	8/4/2009					0.059									<0.0005
GHO-CC1	GHO-CC1	8/5/2009				<0.025				36.1						
GHO-CC1	GHO-CC1	9/1/2009					0.059									<0.0005
GHO-CC1	GHO-CC1	9/2/2009				<0.025				37.7						
GHO-CC1	GHO-CC1	10/5/2009					0.064									<0.0005
GHO-CC1	GHO-CC1	10/6/2009				<0.025			0.085	43.7						
GHO-CC1	GHO-CC1	11/2/2009					0.056									<0.0005
GHO-CC1	GHO-CC1	11/3/2009				<0.0025			0.0071	37.6						
GHO-CC1	GHO-CC1	12/1/2009					0.051									<0.0005
GHO-CC1	GHO-CC1	12/2/2009				<0.0025			0.0037	40						
GHO-CC1	GHO-CC1	1/4/2010					0.052									<0.0005
GHO-CC1	GHO-CC1	1/5/2010				<0.0025			0.0031	42						
GHO-GCS	GHO-GCSPD	2/7/1996														
GHO-GCS	GHO-GCSPD	4/16/1996														
GHO-GCS	GHO-GCSPD	5/21/1996														
GHO-GCS	GHO-GCSPD	8/13/1996														
GHO-GCS	GHO-GCSPD	12/3/1996														
GHO-GCS	GHO-GCSPD	4/4/2002														
GHO-GCS	GHO-GCSPD	11/2/2002														
GHO-GCS	GHO-GCSPD	3/30/2003														
GHO-GCS	GHO-GCSPD	6/29/2003														
GHO-GCS	GHO-GCSPD	12/27/2003														
GHO-GCS	GHO-GCSPD	4/4/2004							<.005	0.25						
GHO-GCS	GHO-GCSPD	5/2/2004							<.005	0.10						
GHO-GCS	GHO-GCSPD	6/6/2004							<.005	<.02						
GHO-GCS	GHO-GCSPD	7/4/2004							<.005	0.03						
GHO-GCS	GHO-GCSPD	8/1/2004							<.005	0.06						
GHO-GCS	GHO-GCSPD	9/2/2004							<.005	0.11						
GHO-GCS	GHO-GCSPD	10/3/2004							<.005	0.18						
GHO-GCS	GHO-GCSPD	11/2/2004							<.005	0.34						
GHO-GCS	GHO-GCSPD	12/5/2004							<.005	0.59						
GHO-GCS	GHO-GCSPD	1/2/2005							<0.005	0.77						
GHO-GCS	GHO-GCSPD	2/4/2005							<0.005	0.55						
GHO-GCS	GHO-GCSPD	3/1/2005							<0.005	0.62						
GHO-GCS	GHO-GCSPD	4/3/2005							<.005	0.45						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005							<.005	0.21						
GHO-GCS	GHO-GCSPD	6/12/2005							<.005	0.29						
GHO-GCS	GHO-GCSPD	7/3/2005							0.006	0.18						
GHO-GCS	GHO-GCSPD	8/1/2005							<.005	0.03						
GHO-GCS	GHO-GCSPD	9/4/2005							<.005	0.17						
GHO-GCS	GHO-GCSPD	10/2/2005							<.005	0.28						
GHO-GCS	GHO-GCSPD	11/2/2005							<.005	0.65						
GHO-GCS	GHO-GCSPD	12/8/2005							<.005	1.21						
GHO-GCS	GHO-GCSPD	1/4/2006							<.005	1.29						
GHO-GCS	GHO-GCSPD	2/1/2006							<.005	1.29						
GHO-GCS	GHO-GCSPD	3/10/2006							<.005	1.32						
GHO-GCS	GHO-GCSPD	4/3/2006							<.005	0.93						
GHO-GCS	GHO-GCSPD	5/1/2006							<.005	0.44						
GHO-GCS	GHO-GCSPD	6/5/2006							<.005	0.40						
GHO-GCS	GHO-GCSPD	7/4/2006							<.005	1.14						
GHO-GCS	GHO-GCSPD	8/1/2006							0.016	1.50						
GHO-GCS	GHO-GCSPD	9/1/2006							<.005	1.57						
GHO-GCS	GHO-GCSPD	10/2/2006							<.005	1.69						
GHO-GCS	GHO-GCSPD	11/1/2006							<.005	2.01						
GHO-GCS	GHO-GCSPD	12/1/2006							<.005	2.15						
GHO-GCS	GHO-GCSPD	1/4/2007							<.005	2.24						
GHO-GCS	GHO-GCSPD	2/6/2007							0.029	2.25						
GHO-GCS	GHO-GCSPD	3/1/2007							<.005	2.11						
GHO-GCS	GHO-GCSPD	4/2/2007							<.005	0.60						
GHO-GCS	GHO-GCSPD	5/1/2007							<0.005	0.30						
GHO-GCS	GHO-GCSPD	6/4/2007							<.005	1.70						
GHO-GCS	GHO-GCSPD	7/3/2007							<.005	3.40						
GHO-GCS	GHO-GCSPD	8/7/2007							<.005	4.10						
GHO-GCS	GHO-GCSPD	9/4/2007							<.005	3.80						
GHO-GCS	GHO-GCSPD	10/1/2007							<.005	3.50						
GHO-GCS	GHO-GCSPD	11/5/2007							<.005	3.60						
GHO-GCS	GHO-GCSPD	12/4/2007							<.005	3.90						
GHO-GCS	GHO-GCSPD	1/7/2008							<.005	4.10						
GHO-GCS	GHO-GCSPD	3/3/2008							<.005	3.60						
GHO-GCS	GHO-GCSPD	4/1/2008							<.005	3.10						
GHO-GCS	GHO-GCSPD	5/5/2008							<.005	0.90						
GHO-GCS	GHO-GCSPD	6/2/2008							<.005	1.60						
GHO-GCS	GHO-GCSPD	7/2/2008							<.005	4.70						
GHO-GCS	GHO-GCSPD	8/5/2008							0.021	4.95						
GHO-GCS	GHO-GCSPD	9/2/2008							<0.05	4.17						
GHO-GCS	GHO-GCSPD	9/29/2008							<0.05	4.04						
GHO-GCS	GHO-GCSPD	11/3/2008							<0.05	3.87						
GHO-GCS	GHO-GCSPD	12/1/2008														
GHO-GCS	GHO-GCSPD	1/5/2009											178			
GHO-GCS	GHO-GCSPD	2/3/2009											198			
GHO-GCS	GHO-GCSPD	3/2/2009											235			
GHO-GCS	GHO-GCSPD	4/1/2009											169			
GHO-GCS	GHO-GCSPD	5/4/2009											236.4			
GHO-GCS	GHO-GCSPD	6/1/2009											71.0			
GHO-GCS	GHO-GCSPD	7/6/2009											100			
GHO-GCS	GHO-GCSPD	8/4/2009											90			
GHO-GCS	GHO-GCSPD	9/1/2009											103			
GHO-GCS	GHO-GCSPD	10/5/2009											89			
GHO-GCS	GHO-GCSPD	11/2/2009											213			
GHO-GCS	GHO-GCSPD	12/1/2009											209			

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010											198			
GHO-GCS	GHO-GCSPD	2/1/2010							0.029	5.22			249			
GHO-GCS	GHO-GCSPD	3/2/2010							0.012	5.08			179			
GHO-GCS	GHO-GCSPD	3/15/2010							<0.010	3.39			173			
GHO-GCS	GHO-GCSPD	3/22/2010							0.0038	2.97			150			
GHO-GCS	GHO-GCSPD	3/29/2010							0.0414	2.19						
GHO-GCS	GHO-GCSPD	4/5/2010							<0.010	2.13			185			
GHO-GCS	GHO-GCSPD	4/12/2010							<0.020	2.25			164			
GHO-GCS	GHO-GCSPD	4/19/2010							<0.010	1.99						
GHO-GCS	GHO-GCSPD	4/26/2010							0.0018	1.89			245			
GHO-GCS	GHO-GCSPD	5/3/2010							0.0074	1.77			195			
GHO-GCS	GHO-GCSPD	5/10/2010							<0.010	1.74			337			
GHO-GCS	GHO-GCSPD	5/17/2010							<0.010	1.65			238			
GHO-GCS	GHO-GCSPD	5/25/2010							0.0023	1.68			250			
GHO-GCS	GHO-GCSPD	5/31/2010							0.0017	1.69			183			
GHO-GCS	GHO-GCSPD	6/7/2010							0.0014	1.52			215			
GHO-GCS	GHO-GCSPD	6/14/2010							0.0032	1.60			223			
GHO-GCS	GHO-GCSPD	6/21/2010							0.0026	1.18			46.4			
GHO-GCS	GHO-GCSPD	6/28/2010							<0.010	2.09			-5.6			
GHO-GCS	GHO-GCSPD	7/5/2010							0.029	2.20			97			
GHO-GCS	GHO-GCSPD	7/12/2010							<0.010	2.34			103			
GHO-GCS	GHO-GCSPD	7/19/2010							0.016	2.73			87			
GHO-GCS	GHO-GCSPD	7/26/2010							0.010	3.07			158			
GHO-GCS	GHO-GCSPD	8/3/2010							<0.010	3.50			180			
GHO-GCS	GHO-GCSPD	9/7/2010							<0.010	4.27			161			
GHO-GCS	GHO-GCSPD	10/4/2010							0.013	3.98			-68			
GHO-GCS	GHO-GCSPD	11/1/2010							<0.010	4.23			157			
GHO-GCS	GHO-GCSPD	12/6/2010							<0.010	4.68			172			
GHO-GCS	GHO-GCSPD	1/4/2011							<0.010	5.15			194			
GHO-LTC	GHO-LTCSPD	2/7/1996														
GHO-LTC	GHO-LTCSPD	5/21/1996														
GHO-LTC	GHO-LTCSPD	8/13/1996														
GHO-LTC	GHO-LTCSPD	12/3/1996														
GHO-LTC	GHO-LTCSPD	4/6/1997														
GHO-LTC	GHO-LTCSPD	6/15/1997														
GHO-LTC	GHO-LTCSPD	10/1/1997														
GHO-LTC	GHO-LTCSPD	5/26/1998														
GHO-LTC	GHO-LTCSPD	9/8/1998														
GHO-LTC	GHO-LTCSPD	12/5/1998														
GHO-LTC	GHO-LTCSPD	3/8/1999														
GHO-LTC	GHO-LTCSPD	6/9/1999														
GHO-LTC	GHO-LTCSPD	9/9/1999														
GHO-LTC	GHO-LTCSPD	12/4/1999														
GHO-LTC	GHO-LTCSPD	3/5/2000														
GHO-LTC	GHO-LTCSPD	6/4/2000														
GHO-LTC	GHO-LTCSPD	11/5/2000														
GHO-LTC	GHO-LTCSPD	6/8/2002														
GHO-LTC	GHO-LTCSPD	11/2/2002														
GHO-LTC	GHO-LTCSPD	3/30/2003														
GHO-LTC	GHO-LTCSPD	6/29/2003														
GHO-LTC	GHO-LTCSPD	12/27/2003														
GHO-LTC	GHO-LTCSPD	1/2/2004							0.007	0.670						
GHO-LTC	GHO-LTCSPD	3/4/2004							<0.005	0.490						
GHO-LTC	GHO-LTCSPD	4/4/2004							<.005	0.500						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	5/2/2004							<.005	0.12						
GHO-LTC	GHO-LTCSPD	6/6/2004							<.005	0.090						
GHO-LTC	GHO-LTCSPD	7/4/2004							<.005	0.08						
GHO-LTC	GHO-LTCSPD	8/1/2004							<.005	0.08						
GHO-LTC	GHO-LTCSPD	9/2/2004							<.005	<.02						
GHO-LTC	GHO-LTCSPD	10/3/2004														
GHO-LTC	GHO-LTCSPD	11/2/2004							<.005	1.03						
GHO-LTC	GHO-LTCSPD	12/5/2004							<.005	1.22						
GHO-LTC	GHO-LTCSPD	1/2/2005							<0.005	1.25						
GHO-LTC	GHO-LTCSPD	2/4/2005							<0.005	0.43						
GHO-LTC	GHO-LTCSPD	3/1/2005							<0.005	1.22						
GHO-LTC	GHO-LTCSPD	4/3/2005							<.005	0.82						
GHO-LTC	GHO-LTCSPD	5/1/2005							<.005	0.40						
GHO-LTC	GHO-LTCSPD	6/12/2005							<.005	1.27						
GHO-LTC	GHO-LTCSPD	7/3/2005							<.005	1.79						
GHO-LTC	GHO-LTCSPD	8/1/2005							0.011	1.70						
GHO-LTC	GHO-LTCSPD	9/4/2005							<.005	0.96						
GHO-LTC	GHO-LTCSPD	10/2/2005							<.005	1.26						
GHO-LTC	GHO-LTCSPD	11/2/2005							<.005	2.07						
GHO-LTC	GHO-LTCSPD	12/8/2005							<.005	2.24						
GHO-LTC	GHO-LTCSPD	1/4/2006							<.005	1.91						
GHO-LTC	GHO-LTCSPD	2/1/2006							<.005	1.87						
GHO-LTC	GHO-LTCSPD	4/3/2006							<.005	1.87						
GHO-LTC	GHO-LTCSPD	7/4/2006							<.005	2.06						
GHO-LTC	GHO-LTCSPD	8/1/2006							<.005	2.49						
GHO-LTC	GHO-LTCSPD	9/1/2006							<.005	2.81						
GHO-LTC	GHO-LTCSPD	10/2/2006							<.005	3.27						
GHO-LTC	GHO-LTCSPD	11/1/2006							<.005	3.86						
GHO-LTC	GHO-LTCSPD	12/1/2006							<.005	4.18						
GHO-LTC	GHO-LTCSPD	5/1/2007							<0.005	1.00						
GHO-LTC	GHO-LTCSPD	6/4/2007							<.005	1.60						
GHO-LTC	GHO-LTCSPD	7/3/2007							<.005	1.90						
GHO-LTC	GHO-LTCSPD	8/7/2007							<.005	1.30						
GHO-LTC	GHO-LTCSPD	9/4/2007							<.005	1.90						
GHO-LTC	GHO-LTCSPD	10/1/2007							<.005	3.10						
GHO-LTC	GHO-LTCSPD	11/5/2007							<.005	3.90						
GHO-LTC	GHO-LTCSPD	12/4/2007							<.005	3.70						
GHO-LTC	GHO-LTCSPD	5/5/2008							<.005	1.01						
GHO-LTC	GHO-LTCSPD	6/2/2008							<.005	1.80						
GHO-LTC	GHO-LTCSPD	7/2/2008							<.005	2.10						
GHO-LTC	GHO-LTCSPD	7/14/2008														
GHO-LTC	GHO-LTCSPD	8/5/2008							0.020	1.23						
GHO-LTC	GHO-LTCSPD	8/14/2008							<0.05	2.01						
GHO-LTC	GHO-LTCSPD	9/2/2008							<0.05	1.25						
GHO-LTC	GHO-LTCSPD	9/29/2008							<0.05	1.82						
GHO-LTC	GHO-LTCSPD	11/3/2008							<0.05	2.20						
GHO-LTC	GHO-LTCSPD	12/1/2008														
GHO-LTC	GHO-LTCSPD	1/5/2009											234			
GHO-LTC	GHO-LTCSPD	2/3/2009											227			
GHO-LTC	GHO-LTCSPD	3/2/2009											216			
GHO-LTC	GHO-LTCSPD	4/1/2009											158			
GHO-LTC	GHO-LTCSPD	5/4/2009											255.5			
GHO-LTC	GHO-LTCSPD	6/1/2009											101.0			
GHO-LTC	GHO-LTCSPD	7/6/2009											117			
GHO-LTC	GHO-LTCSPD	8/4/2009											103			

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009											77			
GHO-LTC	GHO-LTCSPD	10/5/2009											101			
GHO-LTC	GHO-LTCSPD	11/2/2009											188			
GHO-LTC	GHO-LTCSPD	12/1/2009											174			
GHO-LTC	GHO-LTCSPD	1/4/2010											191			
GHO-LTC	GHO-LTCSPD	2/2/2010							<0.010	3.67			210			
GHO-LTC	GHO-LTCSPD	3/1/2010							0.011	3.99			202			
GHO-LTC	GHO-LTCSPD	3/15/2010							<0.010	4.20			169			
GHO-LTC	GHO-LTCSPD	3/22/2010							0.0023	3.83			128			
GHO-LTC	GHO-LTCSPD	3/29/2010							0.0275	2.58						
GHO-LTC	GHO-LTCSPD	4/6/2010							<0.0050	2.80			173			
GHO-LTC	GHO-LTCSPD	4/12/2010							<0.020	3.06			144			
GHO-LTC	GHO-LTCSPD	4/19/2010							0.0015	1.60						
GHO-LTC	GHO-LTCSPD	4/27/2010							0.0029	1.97			161			
GHO-LTC	GHO-LTCSPD	5/4/2010							0.0021	1.95			234			
GHO-LTC	GHO-LTCSPD	5/11/2010							0.0025	1.96			214			
GHO-LTC	GHO-LTCSPD	5/18/2010							0.0030	1.57			155			
GHO-LTC	GHO-LTCSPD	5/26/2010							0.0019	1.88			221			
GHO-LTC	GHO-LTCSPD	6/1/2010							0.0023	1.97			209			
GHO-LTC	GHO-LTCSPD	6/8/2010							0.0044	2.02			189			
GHO-LTC	GHO-LTCSPD	6/16/2010							0.0060	1.97			120			
GHO-LTC	GHO-LTCSPD	6/22/2010							0.012	2.22			58			
GHO-LTC	GHO-LTCSPD	6/29/2010							0.013	2.35			105			
GHO-LTC	GHO-LTCSPD	7/6/2010							0.011	2.61			103			
GHO-LTC	GHO-LTCSPD	7/13/2010							0.017	2.79			127			
GHO-LTC	GHO-LTCSPD	7/20/2010							0.023	2.93			80			
GHO-LTC	GHO-LTCSPD	7/27/2010							0.017	2.82			44			
GHO-LTC	GHO-LTCSPD	8/4/2010							0.023	3.19			73			
GHO-LTC	GHO-LTCSPD	9/8/2010							0.017	4.79			181			
GHO-LTC	GHO-LTCSPD	10/5/2010							0.022	5.95			-24			
GHO-LTC	GHO-LTCSPD	11/2/2010							0.012	6.95			260			
GHO-LTC	GHO-LTCSPD	12/7/2010							0.110	7.55			225			
GHO-LTC	GHO-LTCSPD	1/4/2011							0.025	8.19			203			
GHO-PC1	GHO-PC1	1/4/2007				<0.005			<0.0025	1.91						
GHO-PC1	GHO-PC1	2/7/2007				0.01			<0.0025	3.41						
GHO-PC1	GHO-PC1	3/1/2007				<0.005			<0.0025	1.95						
GHO-PC1	GHO-PC1	4/2/2007				<0.005			<0.0025	1.8						
GHO-PC1	GHO-PC1	5/1/2007				<0.005			<0.0025	1.8						
GHO-PC1	GHO-PC1	6/4/2007				<0.005			<0.0025	1.4						
GHO-PC1	GHO-PC1	7/3/2007				<0.005			<0.0025	1.3						
GHO-PC1	GHO-PC1	8/7/2007				<0.005			0.01	1.1						
GHO-PC1	GHO-PC1	9/4/2007				<0.005			<0.0025	1.2						
GHO-PC1	GHO-PC1	10/1/2007				<0.005			<0.0025	1.3						
GHO-PC1	GHO-PC1	11/5/2007				<0.005			<0.0025	1.7						
GHO-PC1	GHO-PC1	12/4/2007				0.01			<0.0025	1.7						
GHO-PC1	GHO-PC1	1/7/2008				<0.005			<0.0025	1.7						
GHO-PC1	GHO-PC1	2/4/2008				0.09			<0.0025	1.5						
GHO-PC1	GHO-PC1	3/3/2008				<0.005			<0.0025	1.6						
GHO-PC1	GHO-PC1	4/1/2008				<0.005			<0.0025	1.9						
GHO-PC1	GHO-PC1	5/5/2008				<0.005			<0.0025	1.6						
GHO-PC1	GHO-PC1	6/2/2008				<0.005			<0.0025	1.9						
GHO-PC1	GHO-PC1	7/2/2008				<0.005			<0.0025	2						
GHO-PC1	GHO-PC1	8/5/2008				<0.005			<0.0025	1.41						
GHO-PC1	GHO-PC1	9/2/2008				<0.025				1.03						
GHO-PC1	GHO-PC1	9/29/2008				<0.025				1.33						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008				<0.025				5.06						
GHO-PC1	GHO-PC1	12/1/2008														0.0024
GHO-PC1	GHO-PC1	12/3/2008				<0.025				3.46						
GHO-PC1	GHO-PC1	1/5/2009														0.0046
GHO-PC1	GHO-PC1	1/6/2009				<0.025				2.72						
GHO-PC1	GHO-PC1	2/3/2009														0.0058
GHO-PC1	GHO-PC1	2/4/2009				<0.025				2.02						
GHO-PC1	GHO-PC1	3/2/2009														0.0043
GHO-PC1	GHO-PC1	3/3/2009				<0.025				16.5						
GHO-PC1	GHO-PC1	4/1/2009														0.004
GHO-PC1	GHO-PC1	4/2/2009				<0.025				5.35						
GHO-PC1	GHO-PC1	5/4/2009														0.0021
GHO-PC1	GHO-PC1	5/5/2009				<0.025				5.18						
GHO-PC1	GHO-PC1	6/1/2009														0.002
GHO-PC1	GHO-PC1	6/2/2009				<0.025				1.79						
GHO-PC1	GHO-PC1	7/6/2009														0.0032
GHO-PC1	GHO-PC1	7/7/2009				<0.025				1.61						
GHO-PC1	GHO-PC1	8/4/2009														0.0024
GHO-PC1	GHO-PC1	8/5/2009				<0.025				1.63						
GHO-PC1	GHO-PC1	9/1/2009														0.0014
GHO-PC1	GHO-PC1	9/2/2009				<0.025				1.67						
GHO-PC1	GHO-PC1	10/5/2009														0.0033
GHO-PC1	GHO-PC1	10/6/2009				<0.025				1.84						
GHO-PC1	GHO-PC1	11/2/2009														0.0033
GHO-PC1	GHO-PC1	11/3/2009				<0.0025			<0.001	1.63						
GHO-PC1	GHO-PC1	12/1/2009														0.0036
GHO-PC1	GHO-PC1	12/2/2009				<0.0025			<0.001	1.68						
GHO-PC1	GHO-PC1	1/4/2010														0.0048
GHO-PC1	GHO-PC1	1/5/2010				<0.0025			<0.001	1.33						
GHO-WCP	GHO-WCPI	5/1/2005							<.005	1.36						
GHO-WCP	GHO-WCPI	7/3/2005							<.005	1.92						
GHO-WCP	GHO-WCPI	11/2/2005							0.009	3.10						
GHO-WCP	GHO-WCPI	1/4/2006							<.005	2.00						
GHO-WCP	GHO-WCPI	3/10/2006							<.005	1.1						
GHO-WCP	GHO-WCPI	4/3/2006							<.005	1.6						
GHO-WCP	GHO-WCPI	6/5/2006							<.005	1.1						
GHO-WCP	GHO-WCPI	7/4/2006							<.005	1.3						
GHO-WCP	GHO-WCPI	8/1/2006							<.005	2.5						
GHO-WCP	GHO-WCPI	9/1/2006							<.005	4.3						
GHO-WCP	GHO-WCPI	10/2/2006							<.005	3.5						
GHO-WCP	GHO-WCPI	11/1/2006							<.005	4.8						
GHO-WCP	GHO-WCPI	12/1/2006							<.005	2.1						
GHO-WCP	GHO-WCPI	1/4/2007							<.005	1.4						
GHO-WCP	GHO-WCPI	4/2/2007							<.005	1.0						
GHO-WCP	GHO-WCPI	5/1/2007							<0.005	1.1						
GHO-WCP	GHO-WCPI	6/4/2007							0.02	1.2						
GHO-WCP	GHO-WCPI	7/3/2007							<.005	1.8						
GHO-WCP	GHO-WCPI	8/7/2007							<.005	3.4						
GHO-WCP	GHO-WCPI	9/4/2007							<.005	3.2						
GHO-WCP	GHO-WCPI	10/1/2007							<.005	2.5						
GHO-WCP	GHO-WCPI	11/5/2007							<.005	2.4						
GHO-WCP	GHO-WCPI	4/1/2008							<.005	8.8						
GHO-WCP	GHO-WCPI	5/5/2008							<.005	1.7						
GHO-WCP	GHO-WCPI	6/2/2008							<.005	1.40						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008							<.005	8.2						
GHO-WCP	GHO-WCPI	7/14/2008														
GHO-WCP	GHO-WCPI	8/5/2008							<.005	8.94						
GHO-WCP	GHO-WCPI	8/7/2008														
GHO-WCP	GHO-WCPI	8/18/2008														
GHO-WCP	GHO-WCPI	9/2/2008							<0.05	10.2						
GHO-WCP	GHO-WCPI	9/29/2008							<0.05	10.6						
GHO-WCP	GHO-WCPI	11/3/2008							<0.05	8.33						
GHO-WCP	GHO-WCPI	12/1/2008														
GHO-WCP	GHO-WCPI	1/5/2009											238			
GHO-WCP	GHO-WCPI	4/1/2009											158.0			
GHO-WCP	GHO-WCPI	5/4/2009											192.6			
GHO-WCP	GHO-WCPI	6/1/2009											111.0			
GHO-WCP	GHO-WCPI	7/6/2009											104			
GHO-WCP	GHO-WCPI	8/4/2009											93			
GHO-WCP	GHO-WCPI	9/1/2009											85			
GHO-WCP	GHO-WCPI	10/5/2009											72			
GHO-WCP	GHO-WCPI	11/2/2009											198			
GHO-WCP	GHO-WCPI	12/1/2009											207			
GHO-WCP	GHO-WCPI	3/1/2010							0.016	18.5			203			
GHO-WCP	GHO-WCPI	4/6/2010							0.148	19.3			184			
GHO-WCP	GHO-WCPI	5/4/2010							0.156	12.0			244			
GHO-WCP	GHO-WCPI	6/8/2010							0.098	20.2			174			
GHO-WCP	GHO-WCPI	7/6/2010							0.128	25.9			120			
GHO-WCP	GHO-WCPI	8/4/2010							0.486	13.4			64			
GHO-WCP	GHO-WCPI	9/8/2010							0.151	21.7			173			
GHO-WCP	GHO-WCPI	10/5/2010							<0.010	28.8			-62.0			
GHO-WCP	GHO-WCPI	11/2/2010							<0.010	27.3			191			
LCO-WLC	LCO-WLC	4/15/2009		2.2			0.03		0.062	42.1				<0.00025		<0.3
LCO-WLC	LCO-WLC	9/23/2009		<2		<0.005	0.0621		<0.02	31.8				<0.00025		<0.3
LCO-WLC	LCO-WLC	11/4/2009		<2		<0.005	0.0357		<0.02	34.7				<0.00025		<0.3
LCO-WLC	LCO-WLC	11/16/2009		<2		<0.005	0.0317		0.011	36.2				<0.00025		<0.3
LCO-WLC	LCO-WLC	1/18/2010		2.1		<0.005	0.0273		<0.01	37.8				<0.00025		<0.3
LCO-WLC	LCO-WLC	2/17/2010		2.5		<0.005	0.0284		<0.1	33.8				<0.00025		<0.3
LCO-WLC	LCO-WLC	3/15/2010		2.2		<0.005	0.0272		0.022	41.6				<0.00025		<0.3
LCO-WLC	LCO-WLC	4/29/2010		2.2		<0.005	0.0293		<0.02	42.9				<0.00025		<0.3
LCO-WLC	LCO-WLC	6/1/2010		<2		<0.005	0.0234		<0.01	19.3				<0.0001		<0.3
LCO-WLC	LCO-WLC	7/6/2010		<2		0.0052	0.0361		0.0127	20.7				<0.0001		<0.3
LCO-WLC	LCO-WLC	8/3/2010		<2		<0.005	0.0509		<0.1	23.6				<0.00005		<0.3
LCO-WLC	LCO-WLC	9/7/2010		<2		<0.005	0.0521		<0.02	29.1				<0.00005		<0.3
LCO-WLC	LCO-WLC	10/8/2010		<2		<0.005	0.0567		<0.02	31.1				<0.00005		<0.3
LCO-WLC	LCO-WLC	11/2/2010		2		<0.005	0.0418		<0.02	32.5				<0.0001		<0.3
LCO-WLC	LCO-WLC	12/7/2010		2.1		<0.005	0.0287		<0.02	36.8				<0.0001		<0.3
LCO-WLC	LCO-WLC	1/4/2011		2.1		<0.005	0.0238		<0.01	37.4				<0.00005		<0.3
LCO-WLC	LCO-WLC	2/1/2011		2		<0.005	0.0255		<0.02	39.5				<0.00005		<0.3
LCO-WLC	LCO-WLC	3/1/2011		2.1		<0.005	0.0236		<0.02	39.6				<0.00005		<0.3
LCO-WLC	LCO-WLC	4/4/2011		2.3		<0.005	0.0275		<0.01	38.8				<0.0001		<0.3
LCO-WLC	LCO-WLC	5/3/2011		2.4		0.009	0.0275		<0.02	38				<0.0001		<0.3
LCO-WLC	LCO-WLC	6/7/2011		<2		<0.005	0.0255		<0.01	14.3				<0.00005		<0.3
LCO-WLC	LCO-WLC	7/5/2011		<2		<0.005	0.0308		<0.01	15.2				<0.00005		<0.3
LCO-WLC	LCO-WLC	7/12/2011		<2		<0.005	0.0365		<0.01	18.4				<0.00005		<0.3
LCO-WLC	LCO-WLC	8/2/2011		<2		<0.005	0.0481		<0.01	25.6				<0.0001		<0.3
LCO-WLC	LCO-WLC	9/6/2011		<2		0.0083	0.056		<0.02	31.9				<0.0001		<0.3
LCO-WLC	LCO-WLC	10/4/2011		2		<0.005	0.0625		<0.02	34.1				<0.0001		<0.3

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011		2		<0.005	0.0345		<0.02	36.5				<0.0001		<0.3
LCO-WLC	LCO-WLC	12/6/2011		2.1		<0.005	0.0299		<0.02	36.9				<0.0001		<0.3
TM-SBB	BT-11 seep	6/27/2007		<2.0		0.058	0.0447		0.106	11.1				<0.000050		<0.30
TM-SBB	BT-11 seep	9/27/2007		<2.0		0.0183	0.0609		0.0934	24.9				<0.00010		<0.30
TM-SBB	BT-11 seep	5/30/2008		<2.0			0.0228		0.205	34.3				<0.000050		<0.30
TM-SBB	BT-11 seep	6/28/2009		2.3		0.098	0.0376		0.118	43.2				<0.00025		<0.30
TM-SBB	BT-11 seep	9/8/2009		2.6			0.0415		0.031	44.9				<0.00025		<0.30
TM-SBB	BT-11 seep	5/31/2010		2.5		0.027	0.0461		0.039	52.1				0.00365		<0.30
TM-SBB	BT-11 seep	7/5/2010		2.2		<0.010	0.0277		<0.020	51.1				<0.00025		<0.30
TM-SBB	BT-11 seep	8/18/2010		2.2		<0.0050	0.0212		<0.020	41.6				<0.00025		<0.30
TM-SBB	BT-11 seep	9/20/2010		2.5		0.0051	0.0226		0.016	51.5				<0.00025		<0.30
TM-SBB	BT-13 seep	6/27/2007		<2.0		0.298	0.0353		0.243	13.4				<0.00010		<0.30
TM-SBB	BT-13 seep	9/27/2007		<2.0		0.0440	0.0221		0.172	27.0				<0.00010		<0.30
TM-SBB	BT-13 seep	5/30/2008		<2.0			0.0297		0.0579	28.9				<0.00010		<0.30
TM-SBB	BT-13 seep	6/28/2009		2.2		0.295	0.0285		0.126	39.9				<0.00025		<0.30
TM-SBB	BT-13 seep	9/8/2009		2.6			0.0295		0.112	52.4				<0.00025		<0.30
TM-SBB	BT-13 seep	5/31/2010		2.9		0.063	0.0394		0.054	52.0				<0.00025		<0.30
TM-SBB	BT-13 seep	7/5/2010		3.0		0.041	0.0296		0.068	57.5				<0.00025		<0.30
TM-SBB	BT-13 seep	8/16/2010		2.6		0.0118	0.0255		0.038	55.7				<0.00025		<0.30
TM-SBB	BT-13 seep	9/20/2010		3.1		0.0333	0.0247		0.060	52.9				<0.00025		<0.30
TM-SBG	GT42 seep	6/28/2009		<2.0		0.915	0.0516		0.182	79				<0.00010		<0.30
TM-SBG	GT42 seep	7/7/2009														
TM-SBG	GT42 seep	9/8/2009		2.3			0.0813		0.54	110				<0.00025		<0.30
TM-SBG	GT42 seep	5/31/2010		2.5		0.066	0.192		0.187	167				<0.00025		<0.30
TM-SBG	GT42 seep	7/6/2010		2.4		<0.010	0.128		0.158	162				<0.00025		<0.30
TM-SBG	GT42 seep	8/16/2010		2.4		0.0289	0.00295		0.0653	14.3				<0.000050		<0.30
TM-SBG	GT42 seep	8/31/2010	0.0183	2.8	2.7	0.0189	0.269	0.278	0.366	148				<0.00025	<0.00025	<0.30
TM-SBG	GT42 seep	9/14/2010								149						
TM-SBG	GT42 seep	9/20/2010		2.9		0.0123	0.287		0.229	142		147		<0.00025		<0.30
TM-SBG	GT42 seep	4/13/2011								120						
TM-SBG	GT42 seep	4/13/2011								120						
TM-SBG	GT42 seep	4/28/2011								100						
TM-SBG	GT42 seep	5/1/2011	0.0186	2.9	2.8	0.0412	0.282	0.283	0.041	83.3				<0.00010	0.00042	<0.30
TM-SBG	GT42 seep	5/12/2011							0.1	95						
TM-SBG	GT42 seep	5/26/2011							0.095	145						
TM-SBG	GT42 seep	5/31/2011							0.143	137						
TM-SBG	GT42 seep	6/7/2011														
TM-SBG	GT42 seep	6/7/2011							0.072	147						
TM-SBG	GT42 seep	6/14/2011							0.117	146						
TM-SBG	GT42 seep	6/29/2011	0.0199	3	2.9	0.0339	0.565	0.565	0.113	140				<0.00010	0.00017	<0.30
TM-SBG	GT42 seep	7/5/2011														
TM-SBG	GT42 seep	7/12/2011							0.141	139						
TM-SBG	GT42 seep	7/19/2011							0.196	160						
TM-SBG	GT42 seep	7/20/2011		3.5		0.126	0.588		0.227	169				<0.00025		<0.30
TM-SBG	GT42 seep	8/3/2011							0.107	186						
TM-SBG	GT42 seep	8/8/2011							0.136	196						
TM-SBG	GT42 seep	8/16/2011														
TM-SBG	GT42 seep	8/23/2011														
TM-SBG	GT42 seep	8/31/2011		3.16			0.629		0.073	166				<0.00025		<0.30
TM-SBG	GT42 seep	9/13/2011														
TM-SBG	GT42 seep	9/20/2011														
TM-SBG	GT42 seep	10/5/2011														
TM-SBG	GT42 seep	10/11/2011		4.6		<0.0050	0.233		0.265	127				<0.00010		<0.30
TM-SBG	GT42 seep	4/16/2012							0.022	129						

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012	0.0183	2.8	2.8	0.0124	0.251	0.257	0.022	71				<0.00010	0.00019	<0.30
TM-SBG	GT42 seep	6/4/2012	0.0158	2.7	2.8	<0.0050	0.395	0.41	0.053	91.2				<0.00010	<0.00010	<0.30
TM-SBG	GT42 seep	6/4/2012														
TM-SBG	GT42 seep	6/19/2012														
TM-SBG	GT42 seep	6/25/2012							0.048	86.6						
TM-SBG	GT42 seep	6/25/2012														
TM-SBG	GT42 seep	7/10/2012		3.9		0.0068	0.248		0.098	116				<0.00010		<0.30
TM-SBG	GT42 seep	7/17/2012							0.028	114						
TM-SBG	GT42 seep	8/7/2012	0.0125	3.3	3.7	<0.0050	0.378	0.371	0.025	120				<0.00025	<0.00025	<0.30
TM-SBG	GT42 seep	8/20/2012							0.035	115						
WM-ED	SEEP-9	3/23/2010		2.6		0.189	0.0239		0.964	27.7				<0.00010		<0.30
WM-ED	SEEP-9	4/21/2010		2.3		0.156	0.0208		0.467	21.3				<0.00010		<0.30
WM-ED	SEEP-9	5/25/2010		2.6		0.074	0.0217		0.155	21.1				<0.00010		<0.30
WM-ED	SEEP-9	6/29/2010		2.8		0.023	0.0400		0.111	47.9				<0.00025		<0.30
WM-ED	SEEP-9	7/21/2010		3.1		0.012	0.0453		0.118	53.4				<0.00025		<0.30
WM-ED	SEEP-9	8/25/2010		3.2		<0.0050	0.0419		0.082	55.0				<0.00025		<0.30
WM-ND	SEEP-1	5/25/2010		2.5		0.013	0.0232		0.0629	15.4				<0.000050		<0.30
WM-ND	SEEP-1	10/26/2010		5.9		<0.0050	0.0162		0.032	84.5				<0.00025		<0.30
WM-ND	SEEP-1	5/2/2011		3.7		0.0458	0.0341		0.015	15.0				<0.000050		<0.30
WM-ND	SEEP-12	5/25/2010		7.2		<0.010	0.00476		0.0049	12.6				<0.000050		<0.30
WM-ND	SEEP-12	5/2/2011		6.0		0.0056	0.00322		0.0019	7.43				<0.000050		<0.30
WM-ND	SEEP-2	6/13/2007		8.6			0.0170		0.174	36.7				<0.000050		<0.30
WM-ND	SEEP-2	5/14/2008	0.017	3.2	3.2	0.252	0.0258	0.0373	0.62	9.38				0.000135	0.00275	<0.30
WM-ND	SEEP-2	5/14/2008	0.00378	2.3	2.6	0.121	0.0109	0.0209	0.0389	2.62				<0.000050	0.00118	<0.30
WM-ND	SEEP-2	9/16/2008	0.00641	3.6	3.8	0.028	0.0282	0.0312	0.685	15.5				0.000071	0.000240	<0.30
WM-ND	SEEP-2	9/16/2008	0.000106	2.1	2.1	0.022	0.00728	0.00797	0.162	1.97				<0.000050	0.000186	<0.30
WM-ND	SEEP-2	5/25/2010		5.3		<0.010	0.0222		0.045	70.8				<0.00010		<0.30
WM-ND	SEEP-2	10/26/2010		4.9		0.0055	0.0057		<0.010	33.0				<0.00010		<0.30
WM-ND	SEEP-3	5/25/2010		<2.0		<0.010	0.00957		0.0023	7.48				0.000112		<0.30
WM-ND	SEEP-3	10/26/2010		<2.0		<0.0050	0.0256		<0.0050	0.025				0.000238		<0.30
WM-ND	SEEP-3	5/2/2011		2.6		0.0329	0.0194		0.0073	14.5				<0.000050		<0.30
WM-ND	SEEP-4	5/25/2010		5.5		<0.010	0.0155		<0.010	26.2				<0.00010		<0.30
WM-ND	SEEP-4	10/26/2010		5.7		<0.0050	0.0115		<0.010	31.0				<0.00010		<0.30
WM-ND	SEEP-4	5/2/2011		7.6		<0.0050	0.0261		<0.010	43.9				<0.000050		<0.30
WM-ND	SEEP-5	6/13/2007		<2.0			0.0251		0.134	13.2				<0.000050		<0.30
WM-ND	SEEP-5	5/25/2010		9.0		<0.010	0.00431		<0.0010	6.15				<0.000050		<0.30
WM-ND	SEEP-5	5/2/2011		3.9		0.0059	0.00207		0.0010	2.11				<0.000050		<0.30
WM-SD	SD1	8/2/2006	0.00943	11.7	11.4	3.37	0.0079	0.0521	0.772	34.6				<0.00010	0.0137	<0.30
WM-SD	SD1	10/31/2007	0.004	<2.0	<2.0	0.034	0.0044	0.012	0.0064	1.25				0.000299	0.00192	<0.30
WM-SD	SD1	4/2/2008	0.0186	57.6	55.9	0.141	0.0338	0.0354	0.0445	12.7				<0.00010	<0.00010	<0.30
WM-SD	SD1	5/14/2008	0.027	<2.0	<2.0	0.239	0.0284	0.0526	0.0548	10.9				0.000124	0.0022	<0.30
WM-SD	SEEP-6	6/13/2007		10.2			0.0116		0.105	24.1				<0.000050		<0.30
WM-SD	SEEP-6	5/25/2010		22.4		0.011	0.0210		0.022	50.6				<0.00025		<0.30
WM-SD	SEEP-6	10/26/2010		19.3		0.0069	0.0079		<0.020	58.1				<0.00025		<0.30
WM-SD	SEEP-6	5/2/2011		18.2		<0.0050	0.0093		<0.020	42.4	11.5			<0.00010		<0.30
WM-SD	SEEP-7	10/31/2007	0.0157	8.5	8.3	0.301	0.0436	0.0526	0.155	59.6				<0.00025	0.00275	<0.30
WM-SD	SEEP-7	4/2/2008	0.0131	47.6	47.3	0.071	0.0194	0.0203	0.0283	12.1				<0.00010	0.00011	<0.30
WM-SD	SEEP-7	5/25/2010		8.2		0.015	0.0065		0.011	52.6				<0.00025		<0.30
WM-SD	SEEP-7	10/26/2010		8.8		0.0106	0.0195		0.025	132				<0.00025		<0.30
WM-SD	SEEP-7	5/2/2011		6.6		0.302	0.104		0.026	63.8				<0.00010		<0.30
WM-SD	SEEP-8	5/25/2010		8.0		0.241	0.0167		0.313	37.9				<0.00025		<0.30
WM-SD	SEEP-8	10/26/2010		6.8		0.211	0.0130		0.062	46.2				<0.00025		<0.30
WM-SD	SEEP-8	5/2/2011		10.2		0.0256	0.0203		0.071	71.4				<0.00010		<0.30
WCM-4C	SEEP A	5/8/2006	0.00739	2.0	<2.0	0.087	0.0172	0.0171	0.307	5.23				<0.00025	<0.00025	<0.30

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	0.00756	2.7	2.8	<0.020	0.0537	0.0566	0.0654	12.6				<0.00025	<0.00025	<0.30
WCM-7C	7C West Dump	march, 2012		5.4					<0.02	2.53						
WCM-7C	7C West Dump	April, 2012		5.2					<0.02	5.67						
WCM-7C	7C West Dump	May, 2012		5.2					<0.02	5.08						
WCM-7C	7C West Dump	June, 2012		5.1					<0.02	5.61						
WCM-7C	7C West Dump	July, 2012		5.5					<0.02	5.50						
WCM-7C	7C West Dump	August, 2012		5.4					<0.02	3.79						
WCM-7C	7C West Dump	September, 2012		5.6					<0.02	4.71						
WCM-7C	7C West Dump	October, 2012		5.9					<0.02	2.82						
WCM-7C	7C West Dump	November, 2012		5.0					0000	2.660						
WCM-7C	7C West Dump	December, 2012		5.7					0.0220	2.140						
WCM-7P	7P SE	November, 2012		3.4					<0.02	1.09						
WCM-7P	7P SE	December, 2012		3.6					<0.02	0.97						
BM-SED	SP2 SOUTH SEEP	6/3/2009		9.0			0.06310		0.021	5.4100				<0.000050		<0.30
BM-SED	SP2 SOUTH SEEP	4/10/2010		18.5			0.06050		<0.010	25.4000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	6/10/2010		18.7			0.06700		0.044	14.3000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	4/11/2011		21.1			0.04340		<0.010	16.0000				<0.000050		<0.30
BM-SED	SP2 SOUTH SEEP	5/31/2011		34.6			0.03030		<0.0050	18.1000				<0.000050		<0.30
BM-SED	SP2 SOUTH SEEP	6/11/2011		29.3			0.05680		<0.010	30.1000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	7/11/2011		32.0			0.05020		<0.010	41.4000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	8/11/2011		45.8			0.04810		<0.010	42.4000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	9/11/2011		56.2			0.05170		0.015	31.7000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	10/11/2011		55.9			0.04950		<0.010	23.3000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	11/11/2011		57.5			0.03730		<0.010	19.6000				<0.000050		<0.30
BM-SED	SP2 SOUTH SEEP	4/12/2012		82.2			0.04240		<0.020	89.8000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	5/12/2012		123.0			0.05950		<0.020	128.0000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	6/12/2012		127.0			0.06600		<0.020	117.0000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	7/12/2012		85.9			0.0546		0.104	101.0000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	8/12/2012		93.3			0.0763		0.055	109.0000				<0.00010		<0.30
BM-SED	SP2 SOUTH SEEP	9/12/2012														
BM-SED	SP2 SOUTH SEEP	10/12/2012														
BM-SED	SP2 EAST SEEP	6/3/2009		12.9			0.01210		0.071	4.0200				0.00006		<0.30
BM-SED	SP2 EAST SEEP	9/8/2009		26.0			0.01520		0.311	16.1000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	4/10/2010		25.4			0.02180		0.042	13.0000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	6/10/2010		33.9			0.02500		0.030	17.0000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	10/1/2010		40.8			0.03130		0.021	21.9000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	4/11/2011		27.3			0.05410		0.039	19.0000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	5/31/2011		34.6			0.03030		<0.0050	18.1000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	6/11/2011		36.2			0.03480		<0.010	21.2000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	7/11/2011		22.1			0.00554		0.012	17.5000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	8/11/2011		40.6			0.05760		0.012	33.2000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	9/11/2011		42.1			0.04740		0.011	21.0000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	10/11/2011		39.5			0.05590		<0.010	18.3000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	11/11/2011		41.8			0.04600		<0.010	17.4000				<0.000050		<0.30
BM-SED	SP2 EAST SEEP	4/12/2012		50.2			0.10800		0.023	47.8000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	5/12/2012		56.1			0.11800		<0.010	41.4000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	6/12/2012		57.6			0.10500		<0.020	44.9000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	7/12/2012		59.6			0.102		<0.020	45.6000				<0.00010		<0.30
BM-SED	SP2 EAST SEEP	8/12/2012		61.8			0.111		<0.020	48.8000				<0.00010		<0.30
EVO-F2	F2 WELL	4/8/2010		4.9		-	0.431		<0.020	12.9				<0.000050		<0.30
EVO-F2	F2 WELL	9/14/2010		4.8		-	0.404		<0.020	12.3				<0.000050		<0.30
EVO-F2	F2 WELL	9/15/2011		5.2		0.75	0.39		0.107	8.03				<0.00025		<0.30
EVO-F2	F2 WELL	7/26/2011		5.4		0.97	0.406		<0.020	8.46				<0.00025		<0.30

			Mo-T	Na-D	Na-T	NH3-N	Ni-D	Ni-T	NO2-N	NO3-N	NO3NO2-N	N-T	ORP-F	Pb-D	Pb-T	P-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mV**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011		4.75		0.624	0.237		0.054	0.54				<0.00025		<0.30
EVO-F2	F2 WELL	03/16/2012		4.46			0.0443		<0.020	<0.10				<0.00025		<0.30
BM-DPB	BM-11-01-A	5/28/2012		8.22		0.87	0.0186		*<0.0050*	*<0.025*				0.000054		*<0.30*
BM-DPB	BM-11-01-B	5/29/2012		10.7		0.33	0.0284		*<0.010*	*<0.050*				*<0.00010*		*<0.60*
BM-DPB	BM-11-01-C	5/28/2012		17.9		3.58	0.0516		*<0.020*	0.11				*<0.00010*		*<0.60*
BM-DPB	BM-11-02-B	5/30/2012		38.1		0.390	0.0541		0.043	0.37				*<0.00010*		*<0.050*
BM-DPB	BM-11-02-C	5/29/2012		7.05		0.359	0.0674		*<0.010*	*<0.050*				*<0.00010*		*<0.60*
GHO-BH1	GHO-BH1	4/20/2009		9.77		0.0050	0.0031		0.0010	0.0050				<0.00025		
GHO-BH1	GHO-BH1	10/28/2009		9.62		<0.005	0.0055		<0.05	<0.25				<0.00025		
GHO-BH1	GHO-BH1	6/15/2010		12.7		0.139	0.0065		<0.02	<0.1				<0.00025		<0.3
GHO-BH1	GHO-BH1	8/9/2010		11		0.282	0.011		<0.01	0.051				<0.00005		<0.3
GHO-BH1	GHO-BH1	9/20/2010		13		0.494	0.00954		<0.02	<0.1				<0.00005		<0.3
GHO-BH1	GHO-BH1	10/12/2010		10.7		0.484	0.012		<0.02	<0.1				<0.00005		<0.3
GHO-BH1	GHO-BH1	11/15/2010		9.3		0.543	0.0143		<0.02	<0.1				<0.00005		<0.3
GHO-BH1	GHO-BH1	4/13/2011		17.3		0.617	0.0049		<0.02	<0.1				<0.0001		<0.3
GHO-BH1	GHO-BH1	5/11/2011		8.1		0.121	0.0013		<0.02	0.19				<0.0001		<0.3
GHO-BH1	GHO-BH1	6/8/2011		15.7		0.0084	0.0031		<0.02	<0.1				<0.0001		<0.3
GHO-BH1	GHO-BH1	7/13/2011		13		0.112	0.0101		<0.02	<0.1				<0.00025		<0.3
GHO-BH1	GHO-BH1	9/14/2011		9.9		0.258	0.0124		<0.02	<0.1				<0.00025		<0.3
GHO-BH1	GHO-BH1	10/5/2011		9.3		0.454	0.0133		<0.02	0.17				<0.00025		<0.3
GHO-BH1	GHO-BH1	6/6/2012		9.9		0.539	0.00304		<0.02	<0.1				<0.00005		<0.3
GHO-BH1	GHO-BH1	7/5/2012		10.3		<0.005	0.00478		<0.01	0.216				<0.00005		<0.3
GHO-BH1	GHO-BH1	9/12/2012		9.2		0.0888	0.0069		<0.02	0.13				<0.0001		<0.3
GHO-BH1	GHO-BH1	10/3/2012		8.2		0.212	0.0074		<0.02	<0.1				<0.00025		<0.3
GHO-BH1	GHO-BH1	11/7/2012		10.1		0.264	0.0049		<0.02	<0.1				<0.0001		<0.3
BM-NED	LOWER BLIND SEEP	6/3/2009		6.0			0.09080		0.008	4.4800				<0.00010		<0.30
BM-NED	LOWER BLIND SEEP	9/8/2009		8.9			0.05280		<0.010	3.4200				<0.00010		<0.30
BM-NED	LOWER BLIND SEEP	5/10/2010		8.6			0.04730		<0.010	2.9400				<0.00010		<0.30
BM-NED	LOWER BLIND SEEP	6/10/2010		7.5			0.05430		<0.010	3.1300				<0.00010		<0.30
BM-NED	LOWER BLIND SEEP	10/1/2010		9.3			0.04030		<0.010	2.3200				<0.00010		<0.30
BM-NED	LOWER BLIND SEEP	5/31/2011		4.8			0.07200		<0.010	2.4500	2.4500			<0.000050		<0.30
BM-NED	LOWER BLIND SEEP	6/11/2011		5.4			0.06230		<0.010	2.3500				<0.000050		<0.30
BM-NED	LOWER BLIND SEEP	10/11/2011		7.2			0.05540		<0.010	1.6700				<0.00010		<0.30
BM-NED	North Dump Seep N	5/12/2012		5.2			0.01520		0.022	1.6200				0.00008		<0.30
BM-NED	North Dump Seep S	6/12/2012		19.2			0.03690		0.194	12.8000				0.00011		<0.30
BM-NED	North Dump Seep N	6/12/2012		7.0			0.05430		<0.010	1.6000				<0.000050		<0.30
BM-NED	North Dump Seep N	7/12/2012		7.1			0.0565		<0.010	1.3900				<0.000050		<0.30
BM-NED	North Dump Seep N	8/12/2012		7.4			0.0600		0.011	2.1000				<0.000050		<0.30
BM-NED	North Dump Seep S	7/12/2012		20.4			0.0486		0.157	13.4000				0.000269		<0.30
BM-NED	North Dump Seep S	8/12/2012		22.3			0.0544		0.325	15.1000				0.000058		<0.30

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007														
EVO-BC1	EVO-BC1	6/19/2007														
EVO-BC1	EVO-BC1	7/3/2007											0.094			
EVO-BC1	EVO-BC1	8/7/2007											0.0531			
EVO-BC1	EVO-BC1	9/5/2007											0.0459			
EVO-BC1	EVO-BC1	10/3/2007											0.0607			
EVO-BC1	EVO-BC1	11/6/2007											0.0656			
EVO-BC1	EVO-BC1	12/5/2007											0.138			
EVO-BC1	EVO-BC1	1/3/2008											0.0712			
EVO-BC1	EVO-BC1	2/5/2008								0.0028			0.113			
EVO-BC1	EVO-BC1	3/5/2008											0.0911			
EVO-BC1	EVO-BC1	3/11/2008														
EVO-BC1	EVO-BC1	3/18/2008														
EVO-BC1	EVO-BC1	3/20/2008														
EVO-BC1	EVO-BC1	3/25/2008														
EVO-BC1	EVO-BC1	3/28/2008														
EVO-BC1	EVO-BC1	4/1/2008											0.0883			
EVO-BC1	EVO-BC1	4/3/2008														
EVO-BC1	EVO-BC1	4/8/2008														
EVO-BC1	EVO-BC1	4/15/2008														
EVO-BC1	EVO-BC1	4/22/2008														
EVO-BC1	EVO-BC1	4/29/2008														
EVO-BC1	EVO-BC1	5/6/2008											0.101			
EVO-BC1	EVO-BC1	5/13/2008														
EVO-BC1	EVO-BC1	5/20/2008														
EVO-BC1	EVO-BC1	5/21/2008														
EVO-BC1	EVO-BC1	5/28/2008														
EVO-BC1	EVO-BC1	6/3/2008											0.0984			
EVO-BC1	EVO-BC1	6/11/2008														
EVO-BC1	EVO-BC1	6/17/2008														
EVO-BC1	EVO-BC1	6/26/2008														
EVO-BC1	EVO-BC1	7/2/2008											0.105			
EVO-BC1	EVO-BC1	7/6/2008														
EVO-BC1	EVO-BC1	7/29/2008											0.0211			
EVO-BC1	EVO-BC1	8/5/2008											0.105			
EVO-BC1	EVO-BC1	9/2/2008											0.0992			
EVO-BC1	EVO-BC1	9/12/2008											0.0956			
EVO-BC1	EVO-BC1	10/7/2008											0.0713			
EVO-BC1	EVO-BC1	11/4/2008											0.0572			
EVO-BC1	EVO-BC1	12/3/2008											0.073			
EVO-BC1	EVO-BC1	1/7/2009											0.07			
EVO-BC1	EVO-BC1	2/4/2009											0.0847			
EVO-BC1	EVO-BC1	3/3/2009											0.104			
EVO-BC1	EVO-BC1	3/10/2009											0.165			
EVO-BC1	EVO-BC1	3/17/2009											0.142			
EVO-BC1	EVO-BC1	3/24/2009											0.221			
EVO-BC1	EVO-BC1	3/31/2009											0.196			
EVO-BC1	EVO-BC1	4/7/2009											0.091			
EVO-BC1	EVO-BC1	4/15/2009											0.0924			
EVO-BC1	EVO-BC1	4/21/2009											0.0879			
EVO-BC1	EVO-BC1	4/28/2009											0.0886			
EVO-BC1	EVO-BC1	5/6/2009											0.0944			
EVO-BC1	EVO-BC1	5/12/2009											0.093			
EVO-BC1	EVO-BC1	5/20/2009											0.0757			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009											0.00842			
EVO-BC1	EVO-BC1	6/2/2009											0.106			
EVO-BC1	EVO-BC1	6/9/2009											0.0875			
EVO-BC1	EVO-BC1	6/16/2009											0.0912			
EVO-BC1	EVO-BC1	6/23/2009											0.0803			
EVO-BC1	EVO-BC1	6/30/2009											0.104			
EVO-BC1	EVO-BC1	7/8/2009											0.119			
EVO-BC1	EVO-BC1	8/5/2009											0.0945			
EVO-BC1	EVO-BC1	9/1/2009											0.091			
EVO-BC1	EVO-BC1	10/7/2009											0.12			
EVO-BC1	EVO-BC1	11/5/2009											0.106			
EVO-BC1	EVO-BC1	11/6/2009														
EVO-BC1	EVO-BC1	12/2/2009											0.114			
EVO-BC1	EVO-BC1	12/3/2009														
EVO-DC1	EVO-DC1	9/5/2007											0.138			
EVO-DC1	EVO-DC1	11/4/2008											0.126			
EVO-DC1	EVO-DC1	5/25/2009											0.101			
EVO-DC1	EVO-DC1	6/2/2009											0.107			
EVO-DC1	EVO-DC1	6/10/2009											0.102			
EVO-DC1	EVO-DC1	6/23/2009											0.0998			
EVO-DC1	EVO-DC1	6/30/2009											0.108			
EVO-DC1	EVO-DC1	7/7/2009								0.00032			0.125			
EVO-DC1	EVO-DC1	7/31/2009								0.00014						
EVO-DC1	EVO-DC1	8/5/2009														
EVO-DC1	EVO-DC1	8/31/2009								0.00014						
EVO-DC1	EVO-DC1	9/1/2009											0.0987			
EVO-DC1	EVO-DC1	10/6/2009											0.105			
EVO-DC1	EVO-DC1	10/20/2009								0.0001						
EVO-DC1	EVO-DC1	11/3/2009											0.104			
EVO-GC2	EVO-GC2	7/3/2007											0.0326			
EVO-GC2	EVO-GC2	8/7/2007											0.025			
EVO-GC2	EVO-GC2	9/5/2007											0.0274			
EVO-GC2	EVO-GC2	10/3/2007											0.0229			
EVO-GC2	EVO-GC2	11/6/2007											0.0135			
EVO-GC2	EVO-GC2	12/4/2007											0.0171			
EVO-GC2	EVO-GC2	1/3/2008											0.0216			
EVO-GC2	EVO-GC2	2/5/2008								0.00064			0.0182			
EVO-GC2	EVO-GC2	3/5/2008											0.0219			
EVO-GC2	EVO-GC2	4/1/2008											0.0139			
EVO-GC2	EVO-GC2	4/3/2008														
EVO-GC2	EVO-GC2	5/6/2008											0.011			
EVO-GC2	EVO-GC2	6/3/2008											0.0353			
EVO-GC2	EVO-GC2	7/2/2008											0.0237			
EVO-GC2	EVO-GC2	7/29/2008											0.0248			
EVO-GC2	EVO-GC2	8/6/2008											0.0209			
EVO-GC2	EVO-GC2	9/2/2008											0.02			
EVO-GC2	EVO-GC2	9/3/2008														
EVO-GC2	EVO-GC2	10/7/2008											0.0158			
EVO-GC2	EVO-GC2	11/4/2008											0.0167			
EVO-GC2	EVO-GC2	12/3/2008											0.0153			
EVO-GC2	EVO-GC2	1/7/2009											0.017			
EVO-GC2	EVO-GC2	2/4/2009											0.0158			
EVO-GC2	EVO-GC2	3/3/2009											0.0138			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009											0.0149			
EVO-GC2	EVO-GC2	3/17/2009											0.0115			
EVO-GC2	EVO-GC2	3/24/2009											0.0133			
EVO-GC2	EVO-GC2	3/31/2009											0.0102			
EVO-GC2	EVO-GC2	4/7/2009											0.0094			
EVO-GC2	EVO-GC2	4/14/2009											0.00986			
EVO-GC2	EVO-GC2	4/21/2009											0.00952			
EVO-GC2	EVO-GC2	4/29/2009											0.00957			
EVO-GC2	EVO-GC2	5/7/2009								0.00038			0.0119			
EVO-GC2	EVO-GC2	5/12/2009								0.00041			0.0109			
EVO-GC2	EVO-GC2	5/20/2009											0.0109			
EVO-GC2	EVO-GC2	5/26/2009											0.0131			
EVO-GC2	EVO-GC2	6/2/2009								0.00045			0.0169			
EVO-GC2	EVO-GC2	6/6/2009														
EVO-GC2	EVO-GC2	6/8/2009														
EVO-GC2	EVO-GC2	6/10/2009											0.0197			
EVO-GC2	EVO-GC2	6/16/2009											0.0271			
EVO-GC2	EVO-GC2	6/23/2009											0.0176			
EVO-GC2	EVO-GC2	7/2/2009											0.021			
EVO-GC2	EVO-GC2	7/7/2009								0.00083			0.0172			
EVO-GC2	EVO-GC2	7/14/2009											0.0155			
EVO-GC2	EVO-GC2	7/16/2009														
EVO-GC2	EVO-GC2	7/21/2009											0.0175			
EVO-GC2	EVO-GC2	7/29/2009											0.0158			
EVO-GC2	EVO-GC2	8/5/2009								0.00069			0.018			
EVO-GC2	EVO-GC2	8/11/2009											0.0134			
EVO-GC2	EVO-GC2	8/18/2009											0.0112			
EVO-GC2	EVO-GC2	8/25/2009											0.0124			
EVO-GC2	EVO-GC2	9/1/2009											0.015			
EVO-GC2	EVO-GC2	9/8/2009								0.00041			0.0158			
EVO-GC2	EVO-GC2	9/16/2009											0.0145			
EVO-GC2	EVO-GC2	9/22/2009											0.0149			
EVO-GC2	EVO-GC2	9/29/2009											0.0151			
EVO-GC2	EVO-GC2	10/6/2009								0.0004			0.0121			
EVO-GC2	EVO-GC2	11/3/2009											0.0129			
EVO-GC2	EVO-GC2	12/1/2009								0.0004			0.00953			
FRO-CC1	FRO-CC1	7/3/2007											0.0492			
FRO-CC1	FRO-CC1	8/7/2007											0.0397			
FRO-CC1	FRO-CC1	9/4/2007											0.0323			
FRO-CC1	FRO-CC1	10/1/2007											0.0305			
FRO-CC1	FRO-CC1	11/5/2007											0.0383			
FRO-CC1	FRO-CC1	12/3/2007											0.0313			
FRO-CC1	FRO-CC1	1/8/2008											0.0309			
FRO-CC1	FRO-CC1	2/4/2008											0.0285			
FRO-CC1	FRO-CC1	3/17/2008											0.0459			
FRO-CC1	FRO-CC1	4/7/2008											0.0477			
FRO-CC1	FRO-CC1	5/5/2008											0.0466			
FRO-CC1	FRO-CC1	6/4/2008											0.099			
FRO-CC1	FRO-CC1	7/7/2008											0.0521			
FRO-CC1	FRO-CC1	8/6/2008											0.0361			
FRO-CC1	FRO-CC1	9/9/2008											0.0322			
FRO-CC1	FRO-CC1	10/7/2008											0.0343			
FRO-CC1	FRO-CC1	11/3/2008											0.028			
FRO-CC1	FRO-CC1	12/1/2008											0.0182			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009								0.00134			0.0255			
FRO-CC1	FRO-CC1	2/2/2009														
FRO-CC1	FRO-CC1	2/3/2009											0.0221			
FRO-CC1	FRO-CC1	3/17/2009								0.00215			0.0219			
FRO-CC1	FRO-CC1	4/6/2009								0.00196			0.0301			
FRO-CC1	FRO-CC1	5/4/2009											0.0303			
FRO-CC1	FRO-CC1	6/1/2009								0.00144			0.0392			
FRO-CC1	FRO-CC1	7/6/2009								0.00226			0.0419			
FRO-CC1	FRO-CC1	8/3/2009								0.00217			0.032			
FRO-CC1	FRO-CC1	9/1/2009								0.00256			0.0514			
FRO-CC1	FRO-CC1	10/7/2009								0.00257			0.0568			
FRO-CC1	FRO-CC1	11/2/2009								0.00254			0.0441			
FRO-CC1	FRO-CC1	12/7/2009								0.0019			0.0359			
FRO-EC1	FRO-EC1	7/3/2007											0.287			
FRO-EC1	FRO-EC1	8/7/2007											0.334			
FRO-EC1	FRO-EC1	9/4/2007											0.353			
FRO-EC1	FRO-EC1	10/1/2007											0.371			
FRO-EC1	FRO-EC1	11/5/2007											0.406			
FRO-EC1	FRO-EC1	12/3/2007											0.232			
FRO-EC1	FRO-EC1	1/8/2008											0.222			
FRO-EC1	FRO-EC1	2/4/2008											0.341			
FRO-EC1	FRO-EC1	3/17/2008											0.216			
FRO-EC1	FRO-EC1	4/7/2008											0.265			
FRO-EC1	FRO-EC1	6/4/2008											0.23			
FRO-EC1	FRO-EC1	7/7/2008											0.3			
FRO-EC1	FRO-EC1	8/6/2008											0.31			
FRO-EC1	FRO-EC1	9/9/2008								0.00092			0.327			
FRO-EC1	FRO-EC1	10/7/2008											0.336			
FRO-EC1	FRO-EC1	11/3/2008											0.303			
FRO-EC1	FRO-EC1	12/1/2008											0.369			
FRO-EC1	FRO-EC1	1/5/2009								<0.0005			0.436			
FRO-EC1	FRO-EC1	2/2/2009														
FRO-EC1	FRO-EC1	2/3/2009											0.397			
FRO-EC1	FRO-EC1	3/17/2009								<0.0005			0.43			
FRO-EC1	FRO-EC1	4/6/2009								<0.0005			0.231			
FRO-EC1	FRO-EC1	5/4/2009											0.179			
FRO-EC1	FRO-EC1	5/13/2009								0.0008			0.233			
FRO-EC1	FRO-EC1	5/19/2009								0.00082			0.236			
FRO-EC1	FRO-EC1	5/26/2009								0.00068			0.275			
FRO-EC1	FRO-EC1	6/1/2009								0.00065			0.291			
FRO-EC1	FRO-EC1	6/8/2009								0.00077			0.307			
FRO-EC1	FRO-EC1	7/6/2009								0.00077			0.313			
FRO-EC1	FRO-EC1	8/3/2009								0.00089			0.275			
FRO-EC1	FRO-EC1	9/1/2009								0.00087			0.28			
FRO-EC1	FRO-EC1	10/7/2009								0.00074			0.332			
FRO-EC1	FRO-EC1	11/2/2009								0.00092			0.356			
FRO-EC1	FRO-EC1	12/7/2009								0.00081			0.371			
FRO-KC1	FRO-KC1	7/3/2007											0.0239			
FRO-KC1	FRO-KC1	8/7/2007											0.0248			
FRO-KC1	FRO-KC1	9/4/2007											0.0295			
FRO-KC1	FRO-KC1	10/1/2007											0.0386			
FRO-KC1	FRO-KC1	11/5/2007											0.0422			
FRO-KC1	FRO-KC1	12/3/2007											0.0489			
FRO-KC1	FRO-KC1	1/7/2008											0.0565			
FRO-KC1	FRO-KC1	2/4/2008											0.0575			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008											0.0655			
FRO-KC1	FRO-KC1	4/7/2008											0.0732			
FRO-KC1	FRO-KC1	5/5/2008											0.0799			
FRO-KC1	FRO-KC1	6/4/2008											0.0482			
FRO-KC1	FRO-KC1	7/7/2008											0.0313			
FRO-KC1	FRO-KC1	8/6/2008											0.0388			
FRO-KC1	FRO-KC1	9/9/2008								0.00065			0.0452			
FRO-KC1	FRO-KC1	10/7/2008											0.0452			
FRO-KC1	FRO-KC1	11/3/2008											0.0523			
FRO-KC1	FRO-KC1	12/1/2008											0.0682			
FRO-KC1	FRO-KC1	1/5/2009								<0.0005			0.0854			
FRO-KC1	FRO-KC1	2/2/2009														
FRO-KC1	FRO-KC1	2/3/2009											0.0896			
FRO-KC1	FRO-KC1	3/17/2009								<0.0005			0.0978			
FRO-KC1	FRO-KC1	4/6/2009								<0.0005			0.104			
FRO-KC1	FRO-KC1	5/4/2009											0.11			
FRO-KC1	FRO-KC1	6/1/2009								0.00055			0.0721			
FRO-KC1	FRO-KC1	7/6/2009								0.00064			0.0508			
FRO-KC1	FRO-KC1	8/3/2009								0.00068			0.0449			
FRO-KC1	FRO-KC1	9/1/2009														
FRO-KC1	FRO-KC1	9/2/2009								0.00064			0.0421			
FRO-KC1	FRO-KC1	10/7/2009								0.00058			0.072			
FRO-KC1	FRO-KC1	11/2/2009								0.00052			0.0866			
FRO-KC1	FRO-KC1	12/7/2009								0.00046			0.0804			
GHO-CC1	GHO-CC1	1/4/2007											0.29			
GHO-CC1	GHO-CC1	2/7/2007											0.355			
GHO-CC1	GHO-CC1	3/1/2007											0.346			
GHO-CC1	GHO-CC1	4/2/2007											0.195			
GHO-CC1	GHO-CC1	4/9/2007														
GHO-CC1	GHO-CC1	4/16/2007														
GHO-CC1	GHO-CC1	4/23/2007														
GHO-CC1	GHO-CC1	5/1/2007											0.198			
GHO-CC1	GHO-CC1	5/7/2007														
GHO-CC1	GHO-CC1	5/14/2007														
GHO-CC1	GHO-CC1	5/22/2007														
GHO-CC1	GHO-CC1	5/28/2007														
GHO-CC1	GHO-CC1	6/4/2007											0.242			
GHO-CC1	GHO-CC1	6/11/2007														
GHO-CC1	GHO-CC1	7/3/2007											0.229			
GHO-CC1	GHO-CC1	8/7/2007											0.241			
GHO-CC1	GHO-CC1	9/4/2007											0.405			
GHO-CC1	GHO-CC1	10/1/2007											0.402			
GHO-CC1	GHO-CC1	11/5/2007											0.325			
GHO-CC1	GHO-CC1	12/4/2007														
GHO-CC1	GHO-CC1	1/7/2008														
GHO-CC1	GHO-CC1	2/4/2008											0.204			
GHO-CC1	GHO-CC1	3/3/2008											0.403			
GHO-CC1	GHO-CC1	4/1/2008											0.367			
GHO-CC1	GHO-CC1	5/5/2008											0.366			
GHO-CC1	GHO-CC1	6/2/2008											0.31			
GHO-CC1	GHO-CC1	7/2/2008											0.385			
GHO-CC1	GHO-CC1	8/5/2008											0.4			
GHO-CC1	GHO-CC1	8/13/2008											0.355			
GHO-CC1	GHO-CC1	8/18/2008											0.39			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008											0.174			
GHO-CC1	GHO-CC1	9/29/2008											0.455			
GHO-CC1	GHO-CC1	11/3/2008											0.42			
GHO-CC1	GHO-CC1	12/1/2008											0.364			
GHO-CC1	GHO-CC1	12/3/2008														
GHO-CC1	GHO-CC1	1/5/2009											0.579			
GHO-CC1	GHO-CC1	1/6/2009														
GHO-CC1	GHO-CC1	2/3/2009											0.281			
GHO-CC1	GHO-CC1	2/4/2009														
GHO-CC1	GHO-CC1	3/2/2009											0.357			
GHO-CC1	GHO-CC1	3/3/2009														
GHO-CC1	GHO-CC1	4/1/2009											0.465			
GHO-CC1	GHO-CC1	4/2/2009														
GHO-CC1	GHO-CC1	5/4/2009											0.205			
GHO-CC1	GHO-CC1	5/5/2009														
GHO-CC1	GHO-CC1	6/1/2009											0.49			
GHO-CC1	GHO-CC1	6/2/2009														
GHO-CC1	GHO-CC1	7/6/2009											0.605			
GHO-CC1	GHO-CC1	7/7/2009														
GHO-CC1	GHO-CC1	8/4/2009											0.491			
GHO-CC1	GHO-CC1	8/5/2009														
GHO-CC1	GHO-CC1	9/1/2009											0.562			
GHO-CC1	GHO-CC1	9/2/2009														
GHO-CC1	GHO-CC1	10/5/2009											0.5			
GHO-CC1	GHO-CC1	10/6/2009														
GHO-CC1	GHO-CC1	11/2/2009											0.636			
GHO-CC1	GHO-CC1	11/3/2009														
GHO-CC1	GHO-CC1	12/1/2009											0.58			
GHO-CC1	GHO-CC1	12/2/2009														
GHO-CC1	GHO-CC1	1/4/2010											0.525			
GHO-CC1	GHO-CC1	1/5/2010														
GHO-GCS	GHO-GCSPD	2/7/1996											0.0210			
GHO-GCS	GHO-GCSPD	4/16/1996											0.0130			
GHO-GCS	GHO-GCSPD	5/21/1996											0.0080			
GHO-GCS	GHO-GCSPD	8/13/1996											0.0110			
GHO-GCS	GHO-GCSPD	12/3/1996											0.0180			
GHO-GCS	GHO-GCSPD	4/4/2002											0.0078			
GHO-GCS	GHO-GCSPD	11/2/2002											0.0289			
GHO-GCS	GHO-GCSPD	3/30/2003											0.0143			
GHO-GCS	GHO-GCSPD	6/29/2003											0.0230			
GHO-GCS	GHO-GCSPD	12/27/2003											0.0350			
GHO-GCS	GHO-GCSPD	4/4/2004		8.1									0.0137			
GHO-GCS	GHO-GCSPD	5/2/2004		8.4									0.0142			
GHO-GCS	GHO-GCSPD	6/6/2004		8.4									0.0176			
GHO-GCS	GHO-GCSPD	7/4/2004		8.4									0.0176			
GHO-GCS	GHO-GCSPD	8/1/2004		8.4									0.0158			
GHO-GCS	GHO-GCSPD	9/2/2004		8.4									0.0168			
GHO-GCS	GHO-GCSPD	10/3/2004		8.5									0.0174			
GHO-GCS	GHO-GCSPD	11/2/2004		8.4									0.0193			
GHO-GCS	GHO-GCSPD	12/5/2004		8.4									0.0255			
GHO-GCS	GHO-GCSPD	1/2/2005		8.4									0.0252			
GHO-GCS	GHO-GCSPD	2/4/2005		8.4									0.0195			
GHO-GCS	GHO-GCSPD	3/1/2005		8.2									0.0194			
GHO-GCS	GHO-GCSPD	4/3/2005		8.4									0.0176			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005		8.4									0.0109			
GHO-GCS	GHO-GCSPD	6/12/2005		8.2									0.0066			
GHO-GCS	GHO-GCSPD	7/3/2005		8.4									0.00752			
GHO-GCS	GHO-GCSPD	8/1/2005		8.5									0.0144			
GHO-GCS	GHO-GCSPD	9/4/2005		8.4									0.0173			
GHO-GCS	GHO-GCSPD	10/2/2005		8.5									0.01960			
GHO-GCS	GHO-GCSPD	11/2/2005		8.5									0.02450			
GHO-GCS	GHO-GCSPD	12/8/2005		8.5									0.03250			
GHO-GCS	GHO-GCSPD	1/4/2006		8.3									0.04240			
GHO-GCS	GHO-GCSPD	2/1/2006		8.5									0.04600			
GHO-GCS	GHO-GCSPD	3/10/2006		8.42									0.0429			
GHO-GCS	GHO-GCSPD	4/3/2006		8.5									0.0304			
GHO-GCS	GHO-GCSPD	5/1/2006		8.2									0.0108			
GHO-GCS	GHO-GCSPD	6/5/2006		8.4									0.0174			
GHO-GCS	GHO-GCSPD	7/4/2006		8.5									0.0318			
GHO-GCS	GHO-GCSPD	8/1/2006		8.5									0.0419			
GHO-GCS	GHO-GCSPD	9/1/2006		8.3									0.0497			
GHO-GCS	GHO-GCSPD	10/2/2006		8.4									0.0544			
GHO-GCS	GHO-GCSPD	11/1/2006		8.4									0.0638			
GHO-GCS	GHO-GCSPD	12/1/2006		8.5									0.0531			
GHO-GCS	GHO-GCSPD	1/4/2007		8.4									0.0574			
GHO-GCS	GHO-GCSPD	2/6/2007		8.2									0.0657			
GHO-GCS	GHO-GCSPD	3/1/2007		8.4									0.0593			
GHO-GCS	GHO-GCSPD	4/2/2007		8.3									0.0194			
GHO-GCS	GHO-GCSPD	5/1/2007		8.5									0.0124			
GHO-GCS	GHO-GCSPD	6/4/2007		8.7									0.0255			
GHO-GCS	GHO-GCSPD	7/3/2007		8.5									0.0560			
GHO-GCS	GHO-GCSPD	8/7/2007		8.5									0.0787			
GHO-GCS	GHO-GCSPD	9/4/2007		8.8									0.0930			
GHO-GCS	GHO-GCSPD	10/1/2007		8.5									0.1000			
GHO-GCS	GHO-GCSPD	11/5/2007		8.1									0.0952			
GHO-GCS	GHO-GCSPD	12/4/2007		8.2									0.1030			
GHO-GCS	GHO-GCSPD	1/7/2008		8.2									0.1120			
GHO-GCS	GHO-GCSPD	3/3/2008		8.2									0.0867			
GHO-GCS	GHO-GCSPD	4/1/2008		8.1									0.0644			
GHO-GCS	GHO-GCSPD	5/5/2008		8.2									0.0208			
GHO-GCS	GHO-GCSPD	6/2/2008		8.3									0.0208			
GHO-GCS	GHO-GCSPD	7/2/2008		8.5									0.0612			
GHO-GCS	GHO-GCSPD	8/5/2008		8.3												
GHO-GCS	GHO-GCSPD	9/2/2008		8.4									0.0376			
GHO-GCS	GHO-GCSPD	9/29/2008		8.4									0.128			
GHO-GCS	GHO-GCSPD	11/3/2008		8.3									0.0938			
GHO-GCS	GHO-GCSPD	12/1/2008											0.119			
GHO-GCS	GHO-GCSPD	1/5/2009											0.118			
GHO-GCS	GHO-GCSPD	2/3/2009	8.46										0.126			
GHO-GCS	GHO-GCSPD	3/2/2009	8.44										0.116			
GHO-GCS	GHO-GCSPD	4/1/2009	8.42										0.097			
GHO-GCS	GHO-GCSPD	5/4/2009	8.10										0.0312			
GHO-GCS	GHO-GCSPD	6/1/2009	8.82										0.0339			
GHO-GCS	GHO-GCSPD	7/6/2009	8.77										0.0417			
GHO-GCS	GHO-GCSPD	8/4/2009	8.70										0.0569			
GHO-GCS	GHO-GCSPD	9/1/2009											0.0655			
GHO-GCS	GHO-GCSPD	10/5/2009	8.36										0.0852			
GHO-GCS	GHO-GCSPD	11/2/2009	9.12										0.119			
GHO-GCS	GHO-GCSPD	12/1/2009	8.41										0.103			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010	8.46										0.119			
GHO-GCS	GHO-GCSPD	2/1/2010	8.51	8.23									0.124			
GHO-GCS	GHO-GCSPD	3/2/2010	8.52	8.24									0.102			
GHO-GCS	GHO-GCSPD	3/15/2010	8.67	8.38									0.0798			
GHO-GCS	GHO-GCSPD	3/22/2010	8.7	8.47									0.0681			
GHO-GCS	GHO-GCSPD	3/29/2010	8.66	8.36									0.0513			
GHO-GCS	GHO-GCSPD	4/5/2010	8.78	8.43									0.0493			
GHO-GCS	GHO-GCSPD	4/12/2010	8.77	8.54									0.0517			
GHO-GCS	GHO-GCSPD	4/19/2010	8.69	8.34									0.0380			
GHO-GCS	GHO-GCSPD	4/26/2010	8.79	8.37									0.0419			
GHO-GCS	GHO-GCSPD	5/3/2010	8.67	8.32									0.0346			
GHO-GCS	GHO-GCSPD	5/10/2010	8.55	8.43									0.0387			
GHO-GCS	GHO-GCSPD	5/17/2010	8.65	8.19									0.0329			
GHO-GCS	GHO-GCSPD	5/25/2010	8.78	8.46									0.0357			
GHO-GCS	GHO-GCSPD	5/31/2010	8.76	8.32									0.0337			
GHO-GCS	GHO-GCSPD	6/7/2010	8.7	8.45									0.0296			
GHO-GCS	GHO-GCSPD	6/14/2010	8.9	8.52									0.0329			
GHO-GCS	GHO-GCSPD	6/21/2010	8.41	8.48									0.0388			
GHO-GCS	GHO-GCSPD	6/28/2010	8.49	8.57									0.0428			
GHO-GCS	GHO-GCSPD	7/5/2010	8.65	8.43									0.0462			
GHO-GCS	GHO-GCSPD	7/12/2010	8.36	8.41									0.0532			
GHO-GCS	GHO-GCSPD	7/19/2010	8.34	8.44									0.0602			
GHO-GCS	GHO-GCSPD	7/26/2010	8.34	8.42									0.0639			
GHO-GCS	GHO-GCSPD	8/3/2010	8.25	8.39									0.0765			
GHO-GCS	GHO-GCSPD	9/7/2010	8.33	8.37									0.0944			
GHO-GCS	GHO-GCSPD	10/4/2010	8.3	8.39									0.0905			
GHO-GCS	GHO-GCSPD	11/1/2010	8.29	8.31									0.0866			
GHO-GCS	GHO-GCSPD	12/6/2010	8.31	8.32									0.104			
GHO-GCS	GHO-GCSPD	1/4/2011	8.39	8.24									0.11			
GHO-LTC	GHO-LTCSPD	2/7/1996											0.0040			
GHO-LTC	GHO-LTCSPD	5/21/1996											0.0030			
GHO-LTC	GHO-LTCSPD	8/13/1996											0.0030			
GHO-LTC	GHO-LTCSPD	12/3/1996											0.0050			
GHO-LTC	GHO-LTCSPD	4/6/1997											0.0030			
GHO-LTC	GHO-LTCSPD	6/15/1997											0.0050			
GHO-LTC	GHO-LTCSPD	10/1/1997											0.0020			
GHO-LTC	GHO-LTCSPD	5/26/1998											0.0022			
GHO-LTC	GHO-LTCSPD	9/8/1998											0.0034			
GHO-LTC	GHO-LTCSPD	12/5/1998											0.0027			
GHO-LTC	GHO-LTCSPD	3/8/1999											0.0025			
GHO-LTC	GHO-LTCSPD	6/9/1999											0.0060			
GHO-LTC	GHO-LTCSPD	9/9/1999											0.0031			
GHO-LTC	GHO-LTCSPD	12/4/1999											0.0038			
GHO-LTC	GHO-LTCSPD	3/5/2000											0.0029			
GHO-LTC	GHO-LTCSPD	6/4/2000											0.0035			
GHO-LTC	GHO-LTCSPD	11/5/2000											0.0014			
GHO-LTC	GHO-LTCSPD	6/8/2002											0.0033			
GHO-LTC	GHO-LTCSPD	11/2/2002											0.0023			
GHO-LTC	GHO-LTCSPD	3/30/2003											0.0038			
GHO-LTC	GHO-LTCSPD	6/29/2003											0.0060			
GHO-LTC	GHO-LTCSPD	12/27/2003											0.0060			
GHO-LTC	GHO-LTCSPD	1/2/2004		8.1									0.0053			
GHO-LTC	GHO-LTCSPD	3/4/2004		8.2									0.0053			
GHO-LTC	GHO-LTCSPD	4/4/2004		8.2									0.0070			

			pH-F	**pH-L**	**PO4-O**	**PO4-T**	**PO4-TD**	**P-T**	**S2**	**Sb-D**	**Sb-T**	**S-D**	**Se-D**	**Se-T**	**Si-D**	**Si-T**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	5/2/2004		8.4									0.0057			
GHO-LTC	GHO-LTCSPD	6/6/2004		8.3									0.0050			
GHO-LTC	GHO-LTCSPD	7/4/2004		8.2									0.00479			
GHO-LTC	GHO-LTCSPD	8/1/2004		8.2									0.00455			
GHO-LTC	GHO-LTCSPD	9/2/2004		8.4									0.00658			
GHO-LTC	GHO-LTCSPD	10/3/2004											0.00838			
GHO-LTC	GHO-LTCSPD	11/2/2004		8.4									0.0121			
GHO-LTC	GHO-LTCSPD	12/5/2004		8.2									0.0111			
GHO-LTC	GHO-LTCSPD	1/2/2005		8.3									0.0099			
GHO-LTC	GHO-LTCSPD	2/4/2005		8.4									0.0095			
GHO-LTC	GHO-LTCSPD	3/1/2005		8.2									0.0102			
GHO-LTC	GHO-LTCSPD	4/3/2005		8.4									0.00915			
GHO-LTC	GHO-LTCSPD	5/1/2005		8.4									0.0105			
GHO-LTC	GHO-LTCSPD	6/12/2005		8.2									0.0120			
GHO-LTC	GHO-LTCSPD	7/3/2005		8.5									0.0153			
GHO-LTC	GHO-LTCSPD	8/1/2005		8.4									0.0194			
GHO-LTC	GHO-LTCSPD	9/4/2005		8.4									0.0193			
GHO-LTC	GHO-LTCSPD	10/2/2005		8.4									0.01980			
GHO-LTC	GHO-LTCSPD	11/2/2005		8.4									0.02100			
GHO-LTC	GHO-LTCSPD	12/8/2005		8.3									0.01690			
GHO-LTC	GHO-LTCSPD	1/4/2006		8.4									0.01820			
GHO-LTC	GHO-LTCSPD	2/1/2006		8.4									0.01910			
GHO-LTC	GHO-LTCSPD	4/3/2006		8.1									0.0171			
GHO-LTC	GHO-LTCSPD	7/4/2006		8.4									0.0258			
GHO-LTC	GHO-LTCSPD	8/1/2006		8.4									0.0287			
GHO-LTC	GHO-LTCSPD	9/1/2006		8.5									0.0250			
GHO-LTC	GHO-LTCSPD	10/2/2006		8.5									0.0253			
GHO-LTC	GHO-LTCSPD	11/1/2006		8.4									0.0311			
GHO-LTC	GHO-LTCSPD	12/1/2006		8.3									0.0239			
GHO-LTC	GHO-LTCSPD	5/1/2007		8.4									0.0116			
GHO-LTC	GHO-LTCSPD	6/4/2007		8.7									0.0249			
GHO-LTC	GHO-LTCSPD	7/3/2007		8.4									0.0316			
GHO-LTC	GHO-LTCSPD	8/7/2007		8.2									0.0272			
GHO-LTC	GHO-LTCSPD	9/4/2007		8.5									0.0297			
GHO-LTC	GHO-LTCSPD	10/1/2007		8.4									0.0353			
GHO-LTC	GHO-LTCSPD	11/5/2007		8.2									0.0496			
GHO-LTC	GHO-LTCSPD	12/4/2007		8.2									0.0390			
GHO-LTC	GHO-LTCSPD	5/5/2008		8.1									0.0133			
GHO-LTC	GHO-LTCSPD	6/2/2008		8.3									0.0247			
GHO-LTC	GHO-LTCSPD	7/2/2008		8.4									0.0338			
GHO-LTC	GHO-LTCSPD	7/14/2008											0.0323			
GHO-LTC	GHO-LTCSPD	8/5/2008		8.2									0.00530			
GHO-LTC	GHO-LTCSPD	8/14/2008		8.3									0.0189			
GHO-LTC	GHO-LTCSPD	9/2/2008		8.3									0.0235			
GHO-LTC	GHO-LTCSPD	9/29/2008		8.4									0.0311			
GHO-LTC	GHO-LTCSPD	11/3/2008		8.3									0.0314			
GHO-LTC	GHO-LTCSPD	12/1/2008											0.0309			
GHO-LTC	GHO-LTCSPD	1/5/2009											0.0321			
GHO-LTC	GHO-LTCSPD	2/3/2009	8.38										0.0302			
GHO-LTC	GHO-LTCSPD	3/2/2009	8.32										0.0322			
GHO-LTC	GHO-LTCSPD	4/1/2009	8.38										0.0314			
GHO-LTC	GHO-LTCSPD	5/4/2009	8.21										0.0183			
GHO-LTC	GHO-LTCSPD	6/1/2009	8.74										0.0202			
GHO-LTC	GHO-LTCSPD	7/6/2009	8.68										0.0284			
GHO-LTC	GHO-LTCSPD	8/4/2009	8.44										0.0317			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009	8.83										0.0331			
GHO-LTC	GHO-LTCSPD	10/5/2009	8.43										0.0340			
GHO-LTC	GHO-LTCSPD	11/2/2009	9.22										0.0509			
GHO-LTC	GHO-LTCSPD	12/1/2009	8.45										0.0498			
GHO-LTC	GHO-LTCSPD	1/4/2010	8.34										0.0411			
GHO-LTC	GHO-LTCSPD	2/2/2010	8.46	7.98									0.0423			
GHO-LTC	GHO-LTCSPD	3/1/2010	8.47	8.19									0.0407			
GHO-LTC	GHO-LTCSPD	3/15/2010	8.58	8.28									0.0357			
GHO-LTC	GHO-LTCSPD	3/22/2010	8.67	8.42									0.0437			
GHO-LTC	GHO-LTCSPD	3/29/2010	8.61	8.32									0.0309			
GHO-LTC	GHO-LTCSPD	4/6/2010	8.82	8.31									0.0336			
GHO-LTC	GHO-LTCSPD	4/12/2010	5.1	8.53									0.0389			
GHO-LTC	GHO-LTCSPD	4/19/2010	8.69	8.29									0.0222			
GHO-LTC	GHO-LTCSPD	4/27/2010	8.79	8.35									0.0219			
GHO-LTC	GHO-LTCSPD	5/4/2010	8.69	8.28									0.0247			
GHO-LTC	GHO-LTCSPD	5/11/2010	8.7	8.32									0.0269			
GHO-LTC	GHO-LTCSPD	5/18/2010	8.7	8.47									0.0231			
GHO-LTC	GHO-LTCSPD	5/26/2010	8.75	8.44									0.0264			
GHO-LTC	GHO-LTCSPD	6/1/2010	8.68	8.36									0.0231			
GHO-LTC	GHO-LTCSPD	6/8/2010	8.71	8.41									0.0261			
GHO-LTC	GHO-LTCSPD	6/16/2010	8.08	8.41									0.0249			
GHO-LTC	GHO-LTCSPD	6/22/2010	8.59	8.34									0.0260			
GHO-LTC	GHO-LTCSPD	6/29/2010	8.39	8.35									0.0274			
GHO-LTC	GHO-LTCSPD	7/6/2010	8.41	8.24									0.0302			
GHO-LTC	GHO-LTCSPD	7/13/2010	8.25	8.33									0.0329			
GHO-LTC	GHO-LTCSPD	7/20/2010	8.3	8.37									0.0334			
GHO-LTC	GHO-LTCSPD	7/27/2010	8.55	8.46									0.0325			
GHO-LTC	GHO-LTCSPD	8/4/2010	8.35	8.24									0.0359			
GHO-LTC	GHO-LTCSPD	9/8/2010	8.48	8.27									0.0448			
GHO-LTC	GHO-LTCSPD	10/5/2010	8.36	8.39									0.0464			
GHO-LTC	GHO-LTCSPD	11/2/2010	8.37	8.34									0.0481			
GHO-LTC	GHO-LTCSPD	12/7/2010	8.39	8.20									0.0565			
GHO-LTC	GHO-LTCSPD	1/4/2011	7.42	8.23									0.0548			
GHO-PC1	GHO-PC1	1/4/2007											0.0739			
GHO-PC1	GHO-PC1	2/7/2007											0.079			
GHO-PC1	GHO-PC1	3/1/2007											0.0728			
GHO-PC1	GHO-PC1	4/2/2007											0.065			
GHO-PC1	GHO-PC1	5/1/2007											0.0569			
GHO-PC1	GHO-PC1	6/4/2007											0.0601			
GHO-PC1	GHO-PC1	7/3/2007											0.0437			
GHO-PC1	GHO-PC1	8/7/2007														
GHO-PC1	GHO-PC1	9/4/2007											0.0472			
GHO-PC1	GHO-PC1	10/1/2007											0.0552			
GHO-PC1	GHO-PC1	11/5/2007											0.0828			
GHO-PC1	GHO-PC1	12/4/2007											0.0766			
GHO-PC1	GHO-PC1	1/7/2008														
GHO-PC1	GHO-PC1	2/4/2008											0.0787			
GHO-PC1	GHO-PC1	3/3/2008											0.0809			
GHO-PC1	GHO-PC1	4/1/2008											0.0648			
GHO-PC1	GHO-PC1	5/5/2008											0.0718			
GHO-PC1	GHO-PC1	6/2/2008											0.0839			
GHO-PC1	GHO-PC1	7/2/2008											0.0878			
GHO-PC1	GHO-PC1	8/5/2008														
GHO-PC1	GHO-PC1	9/2/2008											0.0367			
GHO-PC1	GHO-PC1	9/29/2008											0.102			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008											0.0685			
GHO-PC1	GHO-PC1	12/1/2008											0.0662			
GHO-PC1	GHO-PC1	12/3/2008														
GHO-PC1	GHO-PC1	1/5/2009											0.0609			
GHO-PC1	GHO-PC1	1/6/2009														
GHO-PC1	GHO-PC1	2/3/2009											0.0614			
GHO-PC1	GHO-PC1	2/4/2009														
GHO-PC1	GHO-PC1	3/2/2009											0.0691			
GHO-PC1	GHO-PC1	3/3/2009														
GHO-PC1	GHO-PC1	4/1/2009											0.074			
GHO-PC1	GHO-PC1	4/2/2009														
GHO-PC1	GHO-PC1	5/4/2009											0.0977			
GHO-PC1	GHO-PC1	5/5/2009														
GHO-PC1	GHO-PC1	6/1/2009											0.0772			
GHO-PC1	GHO-PC1	6/2/2009														
GHO-PC1	GHO-PC1	7/6/2009											0.0654			
GHO-PC1	GHO-PC1	7/7/2009														
GHO-PC1	GHO-PC1	8/4/2009											0.0685			
GHO-PC1	GHO-PC1	8/5/2009														
GHO-PC1	GHO-PC1	9/1/2009											0.0751			
GHO-PC1	GHO-PC1	9/2/2009														
GHO-PC1	GHO-PC1	10/5/2009											0.0658			
GHO-PC1	GHO-PC1	10/6/2009														
GHO-PC1	GHO-PC1	11/2/2009											0.0874			
GHO-PC1	GHO-PC1	11/3/2009														
GHO-PC1	GHO-PC1	12/1/2009											0.0744			
GHO-PC1	GHO-PC1	12/2/2009														
GHO-PC1	GHO-PC1	1/4/2010											0.069			
GHO-PC1	GHO-PC1	1/5/2010														
GHO-WCP	GHO-WCPI	5/1/2005		8.4												
GHO-WCP	GHO-WCPI	7/3/2005		8.2									0.0073			
GHO-WCP	GHO-WCPI	11/2/2005		8.4									0.00902			
GHO-WCP	GHO-WCPI	1/4/2006		8.3									0.000			
GHO-WCP	GHO-WCPI	3/10/2006		8.51									0.0041			
GHO-WCP	GHO-WCPI	4/3/2006		8.4									0.0069			
GHO-WCP	GHO-WCPI	6/5/2006		8.4									0.0071			
GHO-WCP	GHO-WCPI	7/4/2006		8.5									0.0094			
GHO-WCP	GHO-WCPI	8/1/2006		8.4									0.0159			
GHO-WCP	GHO-WCPI	9/1/2006		8.5									0.0095			
GHO-WCP	GHO-WCPI	10/2/2006		8.4									0.0058			
GHO-WCP	GHO-WCPI	11/1/2006		8.3									0.0196			
GHO-WCP	GHO-WCPI	12/1/2006		8.4									0.0048			
GHO-WCP	GHO-WCPI	1/4/2007		8.2									0.0048			
GHO-WCP	GHO-WCPI	4/2/2007		8.1									0.0050			
GHO-WCP	GHO-WCPI	5/1/2007		8.4									0.0071			
GHO-WCP	GHO-WCPI	6/4/2007		8.7									0.0077			
GHO-WCP	GHO-WCPI	7/3/2007		8.7									0.0118			
GHO-WCP	GHO-WCPI	8/7/2007		8.5									0.0195			
GHO-WCP	GHO-WCPI	9/4/2007		8.7									0.0184			
GHO-WCP	GHO-WCPI	10/1/2007		8.6									0.0152			
GHO-WCP	GHO-WCPI	11/5/2007		8.3									0.0128			
GHO-WCP	GHO-WCPI	4/1/2008		8.4									0.0154			
GHO-WCP	GHO-WCPI	5/5/2008		8.3									0.0047			
GHO-WCP	GHO-WCPI	6/2/2008		8.4									0.00703			

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008		8.5									0.0158			
GHO-WCP	GHO-WCPI	7/14/2008											0.0119			
GHO-WCP	GHO-WCPI	8/5/2008		8.4									0.00121			
GHO-WCP	GHO-WCPI	8/7/2008											0.00992			
GHO-WCP	GHO-WCPI	8/18/2008											0.00972			
GHO-WCP	GHO-WCPI	9/2/2008		8.3									0.00703			
GHO-WCP	GHO-WCPI	9/29/2008		8.4									0.00626			
GHO-WCP	GHO-WCPI	11/3/2008		8.3									0.00798			
GHO-WCP	GHO-WCPI	12/1/2008											0.00276			
GHO-WCP	GHO-WCPI	1/5/2009											0.00574			
GHO-WCP	GHO-WCPI	4/1/2009	8.52										0.00758			
GHO-WCP	GHO-WCPI	5/4/2009	8.11										0.00813			
GHO-WCP	GHO-WCPI	6/1/2009	8.76										0.0105			
GHO-WCP	GHO-WCPI	7/6/2009	8.72										0.0341			
GHO-WCP	GHO-WCPI	8/4/2009	8.89										0.0107			
GHO-WCP	GHO-WCPI	9/1/2009	8.8										0.0263			
GHO-WCP	GHO-WCPI	10/5/2009	7.88										0.0128			
GHO-WCP	GHO-WCPI	11/2/2009	8.28										0.0174			
GHO-WCP	GHO-WCPI	12/1/2009	8.56										0.0249			
GHO-WCP	GHO-WCPI	3/1/2010	8.69	8.10									0.0137			
GHO-WCP	GHO-WCPI	4/6/2010	8.91	8.24									0.0143			
GHO-WCP	GHO-WCPI	5/4/2010	8.77	8.46									0.0109			
GHO-WCP	GHO-WCPI	6/8/2010	8.81	8.48									0.0228			
GHO-WCP	GHO-WCPI	7/6/2010	8.63	8.19									0.0241			
GHO-WCP	GHO-WCPI	8/4/2010	8.44	8.04									0.00799			
GHO-WCP	GHO-WCPI	9/8/2010	8.55	8.30									0.0210			
GHO-WCP	GHO-WCPI	10/5/2010	8.4	8.47									0.0379			
GHO-WCP	GHO-WCPI	11/2/2010	8.48	8.42									0.0336			
LCO-WLC	LCO-WLC	4/15/2009	#N/A	#N/A						<0.0005			0.611		2.26	
LCO-WLC	LCO-WLC	9/23/2009	7.57	8.16						0.00051			0.414		2.61	
LCO-WLC	LCO-WLC	11/4/2009	#N/A	8.14						0.00058			0.485		2.07	
LCO-WLC	LCO-WLC	11/16/2009	#N/A	8.35						0.00057			0.487		2.09	
LCO-WLC	LCO-WLC	1/18/2010	8.33	8.16						0.00057			0.526		2.09	
LCO-WLC	LCO-WLC	2/17/2010	7.79	8.23						0.00073			0.565		2.17	
LCO-WLC	LCO-WLC	3/15/2010	8	8.1						0.00061			0.541		2.17	
LCO-WLC	LCO-WLC	4/29/2010	8.46	8.16						0.0006			0.536		2.38	
LCO-WLC	LCO-WLC	6/1/2010	8.05	8.18						0.00056			0.282		2.16	
LCO-WLC	LCO-WLC	7/6/2010	9.32	8.13						0.00041			0.228		2.44	
LCO-WLC	LCO-WLC	8/3/2010	8.92	7.97						0.00043			0.327		2.64	
LCO-WLC	LCO-WLC	9/7/2010	7.72	8.12						0.00048			0.41		2.46	
LCO-WLC	LCO-WLC	10/8/2010	7.95	8.07						0.00051			0.433		2.7	
LCO-WLC	LCO-WLC	11/2/2010	7.9	8.17						0.00053			0.452		2.38	
LCO-WLC	LCO-WLC	12/7/2010	8.7	8.11						0.00054			0.49		2.15	
LCO-WLC	LCO-WLC	1/4/2011	9.97	8.18						0.00066			0.525		2.06	
LCO-WLC	LCO-WLC	2/1/2011	#N/A	8.2						0.00057			0.542		2.14	
LCO-WLC	LCO-WLC	3/1/2011	8.29	8.18						0.00058			0.539		2.08	
LCO-WLC	LCO-WLC	4/4/2011	8.17	8.24						0.00058			0.578		2.35	
LCO-WLC	LCO-WLC	5/3/2011	8.16	8.26						0.0006			0.591		2.37	
LCO-WLC	LCO-WLC	6/7/2011	#N/A	8.14						0.00063			0.234		2.14	
LCO-WLC	LCO-WLC	7/5/2011	7.13	8.14						0.0004			0.201		2.21	
LCO-WLC	LCO-WLC	7/12/2011	7.69	8.14						0.00043			0.246		2.36	
LCO-WLC	LCO-WLC	8/2/2011	7.99	8.16						0.00043			0.341		2.52	
LCO-WLC	LCO-WLC	9/6/2011	8.9	8.13						0.00049			0.45		2.6	
LCO-WLC	LCO-WLC	10/4/2011	7.47	8.13						0.00049			0.488		2.7	

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011	8.26	8.25						0.00055			0.545		2.26	
LCO-WLC	LCO-WLC	12/6/2011	8.24	8.21						0.00058			0.571		2.1	
TM-SBB	BT-11 seep	6/27/2007		7.92	0.0042			0.0305		0.00064			0.0286		1.51	
TM-SBB	BT-11 seep	9/27/2007		8.13	0.0048	0.0125				0.00087			0.0597		1.73	
TM-SBB	BT-11 seep	5/30/2008		7.38	0.0067	0.0137				0.00184			0.0314		1.28	
TM-SBB	BT-11 seep	6/28/2009		8.09	0.0107	0.0166				0.00088			0.0399		1.63	
TM-SBB	BT-11 seep	9/8/2009		7.99	0.0176	0.0203				0.00105			0.0380		1.75	
TM-SBB	BT-11 seep	5/31/2010		7.94	0.0151	0.0198				0.00093			0.0617		1.38	
TM-SBB	BT-11 seep	7/5/2010		7.95	0.0173	0.0231				0.00111					1.67	
TM-SBB	BT-11 seep	8/18/2010		8.01	0.0169	0.0202				0.00060			0.0483		1.69	
TM-SBB	BT-11 seep	9/20/2010		8.09	0.0197	0.0258		0.0297		0.00072					1.58	
TM-SBB	BT-13 seep	6/27/2007		7.99	0.0013			0.0263		0.00100			0.0340		1.54	
TM-SBB	BT-13 seep	9/27/2007		8.11	<0.0010	0.0058				0.00076			0.0358		1.62	
TM-SBB	BT-13 seep	5/30/2008		7.81	0.0011	0.0079				0.00071			0.0383		1.58	
TM-SBB	BT-13 seep	6/28/2009		8.09	0.0033	0.0084				0.00084			0.0562		1.56	
TM-SBB	BT-13 seep	9/8/2009		7.87	0.0024	0.0048				0.00083			0.0465		1.58	
TM-SBB	BT-13 seep	5/31/2010		7.99	<0.0010	0.0050				0.00096			0.0626		1.48	
TM-SBB	BT-13 seep	7/5/2010		7.99	0.0050	0.0095				0.00153					1.54	
TM-SBB	BT-13 seep	8/16/2010		7.98	0.0059	0.0092				0.00087			0.0516		1.61	
TM-SBB	BT-13 seep	9/20/2010		8.12	0.0047	0.0089		0.0148		0.00097			0.0479		1.64	
TM-SBG	GT42 seep	6/28/2009				0.0043				0.00116			0.0969		1.66	
TM-SBG	GT42 seep	7/7/2009														
TM-SBG	GT42 seep	9/8/2009				0.0037				0.00162			0.114		1.67	
TM-SBG	GT42 seep	5/31/2010				0.0047				0.00185			0.242		1.47	
TM-SBG	GT42 seep	7/6/2010				0.0196				0.00177					1.53	
TM-SBG	GT42 seep	8/16/2010				0.0132				0.00019					1.53	
TM-SBG	GT42 seep	8/31/2010				0.0439		<0.30		0.00262	0.00248		0.175	0.19	1.69	1.88
TM-SBG	GT42 seep	9/14/2010														
TM-SBG	GT42 seep	9/20/2010				0.0244		0.0316		0.00273			0.183		1.68	
TM-SBG	GT42 seep	4/13/2011														
TM-SBG	GT42 seep	4/13/2011														
TM-SBG	GT42 seep	4/28/2011														
TM-SBG	GT42 seep	5/1/2011				0.0157		<0.30		0.00267	0.00249		0.15	0.147	1.34	2.08
TM-SBG	GT42 seep	5/12/2011														
TM-SBG	GT42 seep	5/26/2011														
TM-SBG	GT42 seep	5/31/2011														
TM-SBG	GT42 seep	6/7/2011														
TM-SBG	GT42 seep	6/7/2011														
TM-SBG	GT42 seep	6/14/2011														
TM-SBG	GT42 seep	6/29/2011				0.0147		<0.30		0.00296	0.00281		0.228	0.221	1.56	2.15
TM-SBG	GT42 seep	7/5/2011														
TM-SBG	GT42 seep	7/12/2011														
TM-SBG	GT42 seep	7/19/2011														
TM-SBG	GT42 seep	7/20/2011				0.0055				0.00278			0.249		1.56	
TM-SBG	GT42 seep	8/3/2011														
TM-SBG	GT42 seep	8/8/2011														
TM-SBG	GT42 seep	8/16/2011														
TM-SBG	GT42 seep	8/23/2011														
TM-SBG	GT42 seep	8/31/2011								0.00244			0.28		1.65	
TM-SBG	GT42 seep	9/13/2011														
TM-SBG	GT42 seep	9/20/2011														
TM-SBG	GT42 seep	10/5/2011														
TM-SBG	GT42 seep	10/11/2011				0.0267				0.0027			0.173		1.68	
TM-SBG	GT42 seep	4/16/2012														

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012				0.0137		<0.30		0.0025	0.00251		0.152	0.153	1.28	1.64
TM-SBG	GT42 seep	6/4/2012				0.0091		<0.30		0.00251	0.00253		0.213	0.219	1.32	1.46
TM-SBG	GT42 seep	6/4/2012														
TM-SBG	GT42 seep	6/19/2012														
TM-SBG	GT42 seep	6/25/2012				0.0125										
TM-SBG	GT42 seep	6/25/2012														
TM-SBG	GT42 seep	7/10/2012				0.0144				0.00178			0.172		1.47	
TM-SBG	GT42 seep	7/17/2012				0.0149										
TM-SBG	GT42 seep	8/7/2012				0.0147		<0.30		0.0022	0.00221		0.206	0.206	1.46	1.58
TM-SBG	GT42 seep	8/20/2012				0.0096										
WM-ED	SEEP-9	3/23/2010		8.26	0.0015	0.0175				0.00204			0.0275		2.10	
WM-ED	SEEP-9	4/21/2010		8.21	<0.0010	0.0293				0.00178			0.0374		2.15	
WM-ED	SEEP-9	5/25/2010		8.33	0.0017	0.0117				0.00138			0.0455		2.35	
WM-ED	SEEP-9	6/29/2010		8.28	0.0014	0.0072				0.00193			0.0950		2.21	
WM-ED	SEEP-9	7/21/2010		8.22	<0.0010	0.0066				0.00218			0.0951		2.52	
WM-ED	SEEP-9	8/25/2010		8.03	<0.0010	0.0069				0.00205			0.0826		2.34	
WM-ND	SEEP-1	5/25/2010		7.91	0.0015	0.0109				0.00018			0.0233		1.87	
WM-ND	SEEP-1	10/26/2010		7.61	<0.0010	0.0050				<0.00050			0.0673		1.27	
WM-ND	SEEP-1	5/2/2011		7.95	0.0013			0.0377		0.00046			0.0346		1.76	
WM-ND	SEEP-12	5/25/2010		8.31	0.0010	0.247				0.00036			0.0224		1.85	
WM-ND	SEEP-12	5/2/2011		8.17	0.0026			0.175		0.00037			0.0185		1.87	
WM-ND	SEEP-2	6/13/2007		8.03						0.00173			0.0469		2.13	
WM-ND	SEEP-2	5/14/2008		7.32	0.0019	0.153		<0.30		0.00172	0.00133		0.0546	0.0543	2.12	14.6
WM-ND	SEEP-2	5/14/2008		7.4	<0.0010	0.103		<0.30		0.00019	0.00041		0.00939	0.0105	1.54	4.82
WM-ND	SEEP-2	9/16/2008		7.92	<0.0010	0.036		<0.30		0.00080	0.00078		0.0235	0.0248	1.69	2.16
WM-ND	SEEP-2	9/16/2008		7.02	0.0029	0.0263		<0.30		<0.00010	<0.00010		0.00783	0.00810	2.53	2.73
WM-ND	SEEP-2	5/25/2010		7.71	0.0019	0.0146				0.00050			0.0820		1.21	
WM-ND	SEEP-2	10/26/2010		8.06	<0.0010	0.0080				<0.00020			0.0296		0.641	
WM-ND	SEEP-3	5/25/2010		7.94	0.0163	0.0693				0.00032			0.0210		2.25	
WM-ND	SEEP-3	10/26/2010		7.16	0.0140	0.082				0.00029			<0.00040		4.91	
WM-ND	SEEP-3	5/2/2011		7.98	0.0051			0.0210		0.00097			0.0517		1.16	
WM-ND	SEEP-4	5/25/2010		8.05	0.0039	0.0087				0.00106			0.0480		1.62	
WM-ND	SEEP-4	10/26/2010		8.19	0.0031	0.0092				0.00088			0.0523		1.57	
WM-ND	SEEP-4	5/2/2011		8.10	0.0048			0.0128		0.00082			0.0887		1.49	
WM-ND	SEEP-5	6/13/2007		8.34						0.00385			0.0119		1.92	
WM-ND	SEEP-5	5/25/2010		8.31	0.0018	0.0161				0.00032			0.00870		3.14	
WM-ND	SEEP-5	5/2/2011		8.17	0.0023			0.0624		0.00030			0.00625		2.36	
WM-SD	SD1	8/2/2006		8.21	0.0203	0.570		0.37		0.00224	0.00288		0.0174	0.0170	2.99	12.0
WM-SD	SD1	10/31/2007		7.92	0.0165	0.186		<0.30		0.00039	0.0005		0.00317	0.00278	2.41	11.2
WM-SD	SD1	4/2/2008		8.3	<0.0010	<0.0020		<0.30		0.00379	0.00368		0.022	0.0213	2.61	2.54
WM-SD	SD1	5/14/2008		7.63	0.0072	0.151		<0.30		0.0013	0.00128		0.0218	0.0216	1.35	11.8
WM-SD	SEEP-6	6/13/2007		8.21						0.00139			0.0305		2.72	
WM-SD	SEEP-6	5/25/2010		8.20	0.0013	0.0194				0.00166			0.0721		2.50	
WM-SD	SEEP-6	10/26/2010		8.25	0.0022	0.0052				0.00069			0.0548		2.39	
WM-SD	SEEP-6	5/2/2011		8.21	0.0013			0.0107		0.00090			0.0794		1.99	
WM-SD	SEEP-7	10/31/2007		8.03	<0.0010	0.0988		<0.30		0.00181	0.00186		0.0662	0.067	2.66	14.2
WM-SD	SEEP-7	4/2/2008		8.35	<0.0010	<0.0020		<0.30		0.00241	0.00232		0.0158	0.0152	2.76	2.66
WM-SD	SEEP-7	5/25/2010		8.05	0.0251	0.0393				0.00134			0.0501		2.98	
WM-SD	SEEP-7	10/26/2010		7.39	0.0179	0.0267				0.00150			0.159		2.46	
WM-SD	SEEP-7	5/2/2011		8.12	0.0128			0.0613		0.00181			0.0975		1.87	
WM-SD	SEEP-8	5/25/2010		8.22	<0.0010	0.0313				0.00090			0.0689		1.41	
WM-SD	SEEP-8	10/26/2010		8.02	<0.0010	0.0156				<0.00050			0.0397		2.72	
WM-SD	SEEP-8	5/2/2011		8.16	<0.0010			0.0093		0.00067			0.133		1.67	
WCM-4C	SEEP A	5/8/2006		8.25	0.0198	0.0437		<0.30		0.00189	0.00190		0.0164	0.0164	2.75	2.79

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007		8.10	0.0060		0.0104	<0.30		0.00187	0.00189		0.142	0.151	1.66	1.75
WCM-7C	7C West Dump	march, 2012		8.23									0.05580			
WCM-7C	7C West Dump	April, 2012		8.26									0.0765			
WCM-7C	7C West Dump	May, 2012		8.22									0.07550			
WCM-7C	7C West Dump	June, 2012		8.19									0.09920			
WCM-7C	7C West Dump	July, 2012		8.20									0.09750			
WCM-7C	7C West Dump	August, 2012		8.20									0.06110			
WCM-7C	7C West Dump	September, 2012		8.18									0.04740			
WCM-7C	7C West Dump	October, 2012		8.21									0.03410			
WCM-7C	7C West Dump	November, 2012		8.240									0.0276			
WCM-7C	7C West Dump	December, 2012		8.26									0.024			
WCM-7P	7P SE	November, 2012		8.12									0.041			
WCM-7P	7P SE	December, 2012		8.09									0.0326			
BM-SED	SP2 SOUTH SEEP	6/3/2009		8.28						0.00395			0.03290		1.89	
BM-SED	SP2 SOUTH SEEP	4/10/2010		8.05						0.00281			0.03310		1.79	
BM-SED	SP2 SOUTH SEEP	6/10/2010		8.34						0.00392			0.04470		2.07	
BM-SED	SP2 SOUTH SEEP	4/11/2011		7.92						0.00194			0.14300		1.69	
BM-SED	SP2 SOUTH SEEP	5/31/2011		8.02						0.00625			0.03590		1.99	
BM-SED	SP2 SOUTH SEEP	6/11/2011		8.01						0.00251			0.22200		1.89	
BM-SED	SP2 SOUTH SEEP	7/11/2011		8.12						0.00214			0.24800		1.58	
BM-SED	SP2 SOUTH SEEP	8/11/2011		8.11						0.00240			0.21500		1.93	
BM-SED	SP2 SOUTH SEEP	9/11/2011		8.10						0.00331			0.15600		2.24	
BM-SED	SP2 SOUTH SEEP	10/11/2011		8.18						0.00370			0.10300		2.15	
BM-SED	SP2 SOUTH SEEP	11/11/2011		8.24						0.00374			0.08240		1.95	
BM-SED	SP2 SOUTH SEEP	4/12/2012		8.27						0.00165			0.24300		1.49	
BM-SED	SP2 SOUTH SEEP	5/12/2012		8.04						0.00291			0.24400		1.88	
BM-SED	SP2 SOUTH SEEP	6/12/2012		7.83						0.00314			0.22300		2.06	
BM-SED	SP2 SOUTH SEEP	7/12/2012		8.28						0.00269			0.190		0.795	
BM-SED	SP2 SOUTH SEEP	8/12/2012		8.23						0.00256			0.199		0.829	
BM-SED	SP2 SOUTH SEEP	9/12/2012														
BM-SED	SP2 SOUTH SEEP	10/12/2012														
BM-SED	SP2 EAST SEEP	6/3/2009		8.30						0.00144			0.02000		3.10	
BM-SED	SP2 EAST SEEP	9/8/2009		8.30						0.00194			0.01720		3.47	
BM-SED	SP2 EAST SEEP	4/10/2010		8.09						0.00152			0.02450		3.33	
BM-SED	SP2 EAST SEEP	6/10/2010		8.29						0.00285			0.03680		2.67	
BM-SED	SP2 EAST SEEP	10/1/2010		8.21						0.00194			0.06740		3.27	
BM-SED	SP2 EAST SEEP	4/11/2011		7.98						0.00438			0.06760		1.65	
BM-SED	SP2 EAST SEEP	5/31/2011		8.00						0.00625			0.03590		1.99	
BM-SED	SP2 EAST SEEP	6/11/2011		7.97						0.00520			0.03840		2.32	
BM-SED	SP2 EAST SEEP	7/11/2011		7.98						0.00336			0.04300		1.49	
BM-SED	SP2 EAST SEEP	8/11/2011		8.26						0.00314			0.07720		2.37	
BM-SED	SP2 EAST SEEP	9/11/2011		7.95						0.00348			0.03950		2.50	
BM-SED	SP2 EAST SEEP	10/11/2011		8.26						0.00316			0.03470		2.61	
BM-SED	SP2 EAST SEEP	11/11/2011		8.37						0.00305			0.02990		2.47	
BM-SED	SP2 EAST SEEP	4/12/2012		8.36						0.00303			0.12100		2.22	
BM-SED	SP2 EAST SEEP	5/12/2012		8.14						0.00268			0.08840		2.54	
BM-SED	SP2 EAST SEEP	6/12/2012		7.97						0.00292			0.10000		2.34	
BM-SED	SP2 EAST SEEP	7/12/2012		8.00						0.00267			0.101		2.44	
BM-SED	SP2 EAST SEEP	8/12/2012		7.89						0.00273			0.108		2.31	
EVO-F2	F2 WELL	4/8/2010								0.00188			0.00161		3.09	
EVO-F2	F2 WELL	9/14/2010								0.00186			0.00146		2.91	
EVO-F2	F2 WELL	9/15/2011								0.00172			0.00136		3.21	
EVO-F2	F2 WELL	7/26/2011								0.00178			0.00144		3.34	

			pH-F	pH-L	PO4-O	PO4-T	PO4-TD	P-T	S2	Sb-D	Sb-T	S-D	Se-D	Se-T	Si-D	Si-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**s.u.**	**s.u.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011								0.00058			<0.00050		2.73	
EVO-F2	F2 WELL	03/16/2012								<0.00025			<0.00050		2.45	
BM-DPB	BM-11-01-A	5/28/2012		7.71									<0.00010		2.71	
BM-DPB	BM-11-01-B	5/29/2012		7.76									<0.00020		2.52	
BM-DPB	BM-11-01-C	5/28/2012		7.75									<0.00020		3.51	
BM-DPB	BM-11-02-B	5/30/2012		8.02									0.00089		2.46	
BM-DPB	BM-11-02-C	5/29/2012		8.02									0.00054		2.72	
GHO-BH1	GHO-BH1	4/20/2009	6.77	6.77						<0.0005			0.00474			
GHO-BH1	GHO-BH1	10/28/2009	6.37	6.37						<0.0005			0.00866			
GHO-BH1	GHO-BH1	6/15/2010	6.21	7.50						<0.0005			0.00318		2.6	
GHO-BH1	GHO-BH1	8/9/2010	6.7	7.55						<0.0001			0.00177		3.01	
GHO-BH1	GHO-BH1	9/20/2010	6.61	7.28						<0.0001			0.00179		2.95	
GHO-BH1	GHO-BH1	10/12/2010	6.64	7.60						<0.0001			<0.0005		2.92	
GHO-BH1	GHO-BH1	11/15/2010	6.74	7.43						<0.0001			0.00065		3.24	
GHO-BH1	GHO-BH1	4/13/2011	4.55	7.79						0.00021					2.4	
GHO-BH1	GHO-BH1	5/11/2011	7.58	8.06						<0.0002			0.00367		4.16	
GHO-BH1	GHO-BH1	6/8/2011	6.66	7.35						<0.0002			0.00172		2.18	
GHO-BH1	GHO-BH1	7/13/2011	6.34	7.84						<0.0005			0.0179		2.67	
GHO-BH1	GHO-BH1	9/14/2011	6.55	7.6						<0.0005			0.0145		2.99	
GHO-BH1	GHO-BH1	10/5/2011	6.88	7.53						<0.0005			0.011		3.08	
GHO-BH1	GHO-BH1	6/6/2012	6.9	7.96						0.00019			0.0153		2.14	
GHO-BH1	GHO-BH1	7/5/2012	6.9	7.74						0.00013			0.00389		2.23	
GHO-BH1	GHO-BH1	9/12/2012	7.0	7.79						<0.0002			0.0665		2.76	
GHO-BH1	GHO-BH1	10/3/2012	7.0	8.10						<0.0005			0.0536		2.59	
GHO-BH1	GHO-BH1	11/7/2012		8.01						<0.0002			0.0135		2.33	
BM-NED	LOWER BLIND SEEP	6/3/2009		8.21						0.00589			0.03000		1.88	
BM-NED	LOWER BLIND SEEP	9/8/2009		8.16						0.00430			0.01180		1.97	
BM-NED	LOWER BLIND SEEP	5/10/2010		8.24						0.00248			0.02630		1.83	
BM-NED	LOWER BLIND SEEP	6/10/2010		8.20						0.00294			0.02260		1.83	
BM-NED	LOWER BLIND SEEP	10/1/2010		8.26						0.00242			0.01510		1.74	
BM-NED	LOWER BLIND SEEP	5/31/2011		8.15						0.00214			0.04830		1.70	
BM-NED	LOWER BLIND SEEP	6/11/2011		8.04						0.00216			0.04030		1.70	
BM-NED	LOWER BLIND SEEP	10/11/2011		8.30						0.00190			0.02080		1.71	
BM-NED	North Dump Seep N	5/12/2012		8.17						0.00136			0.01420		2.01	
BM-NED	North Dump Seep S	6/12/2012		8.07						0.00265			0.05260		2.59	
BM-NED	North Dump Seep N	6/12/2012		8.02						0.00245			0.0301		2.05	
BM-NED	North Dump Seep N	7/12/2012		8.11						0.00250			0.0260		2.20	
BM-NED	North Dump Seep N	8/12/2012		8.09						0.00233			0.0273		2.08	
BM-NED	North Dump Seep S	7/12/2012		8.21						0.00261			0.0476		5.04	
BM-NED	North Dump Seep S	8/12/2012		8.24						0.00235			0.0551		2.70	

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007												
EVO-BC1	EVO-BC1	6/19/2007												
EVO-BC1	EVO-BC1	7/3/2007			468									
EVO-BC1	EVO-BC1	8/7/2007			363									
EVO-BC1	EVO-BC1	9/5/2007			348									
EVO-BC1	EVO-BC1	10/3/2007			334									
EVO-BC1	EVO-BC1	11/6/2007			531									
EVO-BC1	EVO-BC1	12/5/2007			363									
EVO-BC1	EVO-BC1	1/3/2008			341									
EVO-BC1	EVO-BC1	2/5/2008			468									<0.0002
EVO-BC1	EVO-BC1	3/5/2008			568							0.0115		<0.0005
EVO-BC1	EVO-BC1	3/11/2008												
EVO-BC1	EVO-BC1	3/18/2008												
EVO-BC1	EVO-BC1	3/20/2008												
EVO-BC1	EVO-BC1	3/25/2008												
EVO-BC1	EVO-BC1	3/28/2008												
EVO-BC1	EVO-BC1	4/1/2008			424									
EVO-BC1	EVO-BC1	4/3/2008												
EVO-BC1	EVO-BC1	4/8/2008												
EVO-BC1	EVO-BC1	4/15/2008												
EVO-BC1	EVO-BC1	4/22/2008												
EVO-BC1	EVO-BC1	4/29/2008												
EVO-BC1	EVO-BC1	5/6/2008			361									
EVO-BC1	EVO-BC1	5/13/2008												
EVO-BC1	EVO-BC1	5/20/2008												
EVO-BC1	EVO-BC1	5/21/2008												
EVO-BC1	EVO-BC1	5/28/2008												
EVO-BC1	EVO-BC1	6/3/2008			339									
EVO-BC1	EVO-BC1	6/11/2008												
EVO-BC1	EVO-BC1	6/17/2008												
EVO-BC1	EVO-BC1	6/26/2008												
EVO-BC1	EVO-BC1	7/2/2008			361									
EVO-BC1	EVO-BC1	7/6/2008												
EVO-BC1	EVO-BC1	7/29/2008												
EVO-BC1	EVO-BC1	8/5/2008			394									
EVO-BC1	EVO-BC1	9/2/2008			460									
EVO-BC1	EVO-BC1	9/12/2008			476									
EVO-BC1	EVO-BC1	10/7/2008			401									
EVO-BC1	EVO-BC1	11/4/2008			423									
EVO-BC1	EVO-BC1	12/3/2008			417									
EVO-BC1	EVO-BC1	1/7/2009			411							0.019		
EVO-BC1	EVO-BC1	2/4/2009			398									
EVO-BC1	EVO-BC1	3/3/2009			392									
EVO-BC1	EVO-BC1	3/10/2009			498									
EVO-BC1	EVO-BC1	3/17/2009			486									
EVO-BC1	EVO-BC1	3/24/2009			637									
EVO-BC1	EVO-BC1	3/31/2009			495									
EVO-BC1	EVO-BC1	4/7/2009			439							0.011		
EVO-BC1	EVO-BC1	4/15/2009			470									
EVO-BC1	EVO-BC1	4/21/2009			407									
EVO-BC1	EVO-BC1	4/28/2009			357									
EVO-BC1	EVO-BC1	5/6/2009			388									
EVO-BC1	EVO-BC1	5/12/2009			390									
EVO-BC1	EVO-BC1	5/20/2009			376									

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009			364									
EVO-BC1	EVO-BC1	6/2/2009			418									
EVO-BC1	EVO-BC1	6/9/2009			458									
EVO-BC1	EVO-BC1	6/16/2009			433									
EVO-BC1	EVO-BC1	6/23/2009			407									
EVO-BC1	EVO-BC1	6/30/2009			416									
EVO-BC1	EVO-BC1	7/8/2009			442									
EVO-BC1	EVO-BC1	8/5/2009			532							0.015		
EVO-BC1	EVO-BC1	9/1/2009			492							0.013		
EVO-BC1	EVO-BC1	10/7/2009			584							0.014		
EVO-BC1	EVO-BC1	11/5/2009			497							0.014		
EVO-BC1	EVO-BC1	11/6/2009												
EVO-BC1	EVO-BC1	12/2/2009			578									
EVO-BC1	EVO-BC1	12/3/2009												
EVO-DC1	EVO-DC1	9/5/2007			760									
EVO-DC1	EVO-DC1	11/4/2008			790									
EVO-DC1	EVO-DC1	5/25/2009			491									
EVO-DC1	EVO-DC1	6/2/2009			585									
EVO-DC1	EVO-DC1	6/10/2009			543									
EVO-DC1	EVO-DC1	6/23/2009			534									
EVO-DC1	EVO-DC1	6/30/2009			567									
EVO-DC1	EVO-DC1	7/7/2009			530									<0.0001
EVO-DC1	EVO-DC1	7/31/2009												<0.00005
EVO-DC1	EVO-DC1	8/5/2009			36.9									
EVO-DC1	EVO-DC1	8/31/2009												<0.00005
EVO-DC1	EVO-DC1	9/1/2009			672									
EVO-DC1	EVO-DC1	10/6/2009			719									
EVO-DC1	EVO-DC1	10/20/2009												<0.00005
EVO-DC1	EVO-DC1	11/3/2009			735									
EVO-GC2	EVO-GC2	7/3/2007			185									
EVO-GC2	EVO-GC2	8/7/2007			127									
EVO-GC2	EVO-GC2	9/5/2007			132									
EVO-GC2	EVO-GC2	10/3/2007			211									
EVO-GC2	EVO-GC2	11/6/2007			130									
EVO-GC2	EVO-GC2	12/4/2007			117									
EVO-GC2	EVO-GC2	1/3/2008			165									
EVO-GC2	EVO-GC2	2/5/2008			168							0.01		<0.0001
EVO-GC2	EVO-GC2	3/5/2008			154							0.0078		
EVO-GC2	EVO-GC2	4/1/2008			152									
EVO-GC2	EVO-GC2	4/3/2008												
EVO-GC2	EVO-GC2	5/6/2008			114									
EVO-GC2	EVO-GC2	6/3/2008			146									
EVO-GC2	EVO-GC2	7/2/2008			137									
EVO-GC2	EVO-GC2	7/29/2008												
EVO-GC2	EVO-GC2	8/6/2008			145									
EVO-GC2	EVO-GC2	9/2/2008			151									
EVO-GC2	EVO-GC2	9/3/2008												
EVO-GC2	EVO-GC2	10/7/2008			142									
EVO-GC2	EVO-GC2	11/4/2008			126									
EVO-GC2	EVO-GC2	12/3/2008			134							0.015		
EVO-GC2	EVO-GC2	1/7/2009			151							0.019		
EVO-GC2	EVO-GC2	2/4/2009			138							0.019		
EVO-GC2	EVO-GC2	3/3/2009			119							0.137		

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009			130									
EVO-GC2	EVO-GC2	3/17/2009			124									
EVO-GC2	EVO-GC2	3/24/2009			104									
EVO-GC2	EVO-GC2	3/31/2009			120									
EVO-GC2	EVO-GC2	4/7/2009			113							0.065		
EVO-GC2	EVO-GC2	4/14/2009			99.3									
EVO-GC2	EVO-GC2	4/21/2009			93.2									
EVO-GC2	EVO-GC2	4/29/2009			103									
EVO-GC2	EVO-GC2	5/7/2009			108							0.018		<0.00005
EVO-GC2	EVO-GC2	5/12/2009			109							0.017		<0.00005
EVO-GC2	EVO-GC2	5/20/2009			110									
EVO-GC2	EVO-GC2	5/26/2009			113									
EVO-GC2	EVO-GC2	6/2/2009			124									<0.00005
EVO-GC2	EVO-GC2	6/6/2009												
EVO-GC2	EVO-GC2	6/8/2009												
EVO-GC2	EVO-GC2	6/10/2009			147									
EVO-GC2	EVO-GC2	6/16/2009			137									
EVO-GC2	EVO-GC2	6/23/2009			128									
EVO-GC2	EVO-GC2	7/2/2009			138									
EVO-GC2	EVO-GC2	7/7/2009			129							0.042		<0.0001
EVO-GC2	EVO-GC2	7/14/2009			116									
EVO-GC2	EVO-GC2	7/16/2009												
EVO-GC2	EVO-GC2	7/21/2009			125									
EVO-GC2	EVO-GC2	7/29/2009			122									
EVO-GC2	EVO-GC2	8/5/2009			115							0.051		<0.0001
EVO-GC2	EVO-GC2	8/11/2009			123									
EVO-GC2	EVO-GC2	8/18/2009			114									
EVO-GC2	EVO-GC2	8/25/2009			136									
EVO-GC2	EVO-GC2	9/1/2009			137									
EVO-GC2	EVO-GC2	9/8/2009			131							0.013		<0.00005
EVO-GC2	EVO-GC2	9/16/2009			146									
EVO-GC2	EVO-GC2	9/22/2009			148									
EVO-GC2	EVO-GC2	9/29/2009			140									
EVO-GC2	EVO-GC2	10/6/2009			131							0.012		<0.00005
EVO-GC2	EVO-GC2	11/3/2009			137									
EVO-GC2	EVO-GC2	12/1/2009			111									<0.0001
FRO-CC1	FRO-CC1	7/3/2007			186									
FRO-CC1	FRO-CC1	8/7/2007			175									
FRO-CC1	FRO-CC1	9/4/2007			152									
FRO-CC1	FRO-CC1	10/1/2007			149									
FRO-CC1	FRO-CC1	11/5/2007			188									
FRO-CC1	FRO-CC1	12/3/2007			172									
FRO-CC1	FRO-CC1	1/8/2008			168									
FRO-CC1	FRO-CC1	2/4/2008			153									
FRO-CC1	FRO-CC1	3/17/2008			233									
FRO-CC1	FRO-CC1	4/7/2008			224									
FRO-CC1	FRO-CC1	5/5/2008			205									
FRO-CC1	FRO-CC1	6/4/2008			240									
FRO-CC1	FRO-CC1	7/7/2008			162									
FRO-CC1	FRO-CC1	8/6/2008			165									
FRO-CC1	FRO-CC1	9/9/2008			159									
FRO-CC1	FRO-CC1	10/7/2008												
FRO-CC1	FRO-CC1	11/3/2008			175									
FRO-CC1	FRO-CC1	12/1/2008			119									

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009			129									<0.0005
FRO-CC1	FRO-CC1	2/2/2009												
FRO-CC1	FRO-CC1	2/3/2009			126									
FRO-CC1	FRO-CC1	3/17/2009			153									<0.0005
FRO-CC1	FRO-CC1	4/6/2009			171									<0.0005
FRO-CC1	FRO-CC1	5/4/2009			195									
FRO-CC1	FRO-CC1	6/1/2009			162									<0.00005
FRO-CC1	FRO-CC1	7/6/2009			155									<0.00005
FRO-CC1	FRO-CC1	8/3/2009			144									<0.00005
FRO-CC1	FRO-CC1	9/1/2009			209									<0.00005
FRO-CC1	FRO-CC1	10/7/2009			220									<0.00005
FRO-CC1	FRO-CC1	11/2/2009			197									<0.00005
FRO-CC1	FRO-CC1	12/7/2009			186									<0.00005
FRO-EC1	FRO-EC1	7/3/2007			1330									
FRO-EC1	FRO-EC1	8/7/2007			1550									
FRO-EC1	FRO-EC1	9/4/2007			1640									
FRO-EC1	FRO-EC1	10/1/2007			1610									
FRO-EC1	FRO-EC1	11/5/2007			1640									
FRO-EC1	FRO-EC1	12/3/2007			1900									
FRO-EC1	FRO-EC1	1/8/2008			1990									
FRO-EC1	FRO-EC1	2/4/2008			1980									
FRO-EC1	FRO-EC1	3/17/2008			915									
FRO-EC1	FRO-EC1	4/7/2008			1150									
FRO-EC1	FRO-EC1	6/4/2008			1090									
FRO-EC1	FRO-EC1	7/7/2008			1330									
FRO-EC1	FRO-EC1	8/6/2008			1540									
FRO-EC1	FRO-EC1	9/9/2008			1550							0.01		<0.00025
FRO-EC1	FRO-EC1	10/7/2008			1670									
FRO-EC1	FRO-EC1	11/3/2008			1570									
FRO-EC1	FRO-EC1	12/1/2008			1670									
FRO-EC1	FRO-EC1	1/5/2009			1780									
FRO-EC1	FRO-EC1	2/2/2009												
FRO-EC1	FRO-EC1	2/3/2009			1800									
FRO-EC1	FRO-EC1	3/17/2009			1620									
FRO-EC1	FRO-EC1	4/6/2009			1160									
FRO-EC1	FRO-EC1	5/4/2009			1070							0.013		
FRO-EC1	FRO-EC1	5/13/2009			1120									<0.00025
FRO-EC1	FRO-EC1	5/19/2009			1210							0.011		<0.00025
FRO-EC1	FRO-EC1	5/26/2009			1360									<0.00025
FRO-EC1	FRO-EC1	6/1/2009			1500							0.011		<0.00025
FRO-EC1	FRO-EC1	6/8/2009			1480									<0.00025
FRO-EC1	FRO-EC1	7/6/2009			1360									<0.00025
FRO-EC1	FRO-EC1	8/3/2009			1340							0.012		<0.00025
FRO-EC1	FRO-EC1	9/1/2009			1380									<0.00025
FRO-EC1	FRO-EC1	10/7/2009			1410									<0.00025
FRO-EC1	FRO-EC1	11/2/2009			1500							0.014		<0.00025
FRO-EC1	FRO-EC1	12/7/2009			1650									<0.00025
FRO-KC1	FRO-KC1	7/3/2007			93.6									
FRO-KC1	FRO-KC1	8/7/2007			141									
FRO-KC1	FRO-KC1	9/4/2007			195									
FRO-KC1	FRO-KC1	10/1/2007			240									
FRO-KC1	FRO-KC1	11/5/2007												
FRO-KC1	FRO-KC1	12/3/2007			282									
FRO-KC1	FRO-KC1	1/7/2008			345									
FRO-KC1	FRO-KC1	2/4/2008			376									

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-KC1	FRO-KC1	3/17/2008			403									
FRO-KC1	FRO-KC1	4/7/2008			407									
FRO-KC1	FRO-KC1	5/5/2008			370									
FRO-KC1	FRO-KC1	6/4/2008			115									
FRO-KC1	FRO-KC1	7/7/2008			93.3									
FRO-KC1	FRO-KC1	8/6/2008			152									
FRO-KC1	FRO-KC1	9/9/2008			192									<0.0001
FRO-KC1	FRO-KC1	10/7/2008			218									
FRO-KC1	FRO-KC1	11/3/2008			257									
FRO-KC1	FRO-KC1	12/1/2008			300									
FRO-KC1	FRO-KC1	1/5/2009			328									
FRO-KC1	FRO-KC1	2/2/2009												
FRO-KC1	FRO-KC1	2/3/2009			361									
FRO-KC1	FRO-KC1	3/17/2009			404									
FRO-KC1	FRO-KC1	4/6/2009			433									
FRO-KC1	FRO-KC1	5/4/2009			336							0.013		
FRO-KC1	FRO-KC1	6/1/2009			180									<0.0001
FRO-KC1	FRO-KC1	7/6/2009			111									<0.0001
FRO-KC1	FRO-KC1	8/3/2009			139									<0.0001
FRO-KC1	FRO-KC1	9/1/2009												
FRO-KC1	FRO-KC1	9/2/2009			132									<0.0001
FRO-KC1	FRO-KC1	10/7/2009			213									<0.0001
FRO-KC1	FRO-KC1	11/2/2009			255									<0.0001
FRO-KC1	FRO-KC1	12/7/2009			309									<0.0001
GHO-CC1	GHO-CC1	1/4/2007			585.4									
GHO-CC1	GHO-CC1	2/7/2007			806.7									
GHO-CC1	GHO-CC1	3/1/2007			878.6									
GHO-CC1	GHO-CC1	4/2/2007			566.4									
GHO-CC1	GHO-CC1	4/9/2007												
GHO-CC1	GHO-CC1	4/16/2007												
GHO-CC1	GHO-CC1	4/23/2007												
GHO-CC1	GHO-CC1	5/1/2007			718.7									
GHO-CC1	GHO-CC1	5/7/2007												
GHO-CC1	GHO-CC1	5/14/2007												
GHO-CC1	GHO-CC1	5/22/2007												
GHO-CC1	GHO-CC1	5/28/2007												
GHO-CC1	GHO-CC1	6/4/2007			741.3									
GHO-CC1	GHO-CC1	6/11/2007												
GHO-CC1	GHO-CC1	7/3/2007			755									
GHO-CC1	GHO-CC1	8/7/2007			787.3									
GHO-CC1	GHO-CC1	9/4/2007			1046.8									
GHO-CC1	GHO-CC1	10/1/2007			1094.5									
GHO-CC1	GHO-CC1	11/5/2007			1017.9									
GHO-CC1	GHO-CC1	12/4/2007			952.3									
GHO-CC1	GHO-CC1	1/7/2008			984.7									
GHO-CC1	GHO-CC1	2/4/2008			977.2									
GHO-CC1	GHO-CC1	3/3/2008			1143.4									
GHO-CC1	GHO-CC1	4/1/2008			905.5									
GHO-CC1	GHO-CC1	5/5/2008			1404.1									
GHO-CC1	GHO-CC1	6/2/2008			1118.2									
GHO-CC1	GHO-CC1	7/2/2008			969.1									
GHO-CC1	GHO-CC1	8/5/2008			1181.3									
GHO-CC1	GHO-CC1	8/13/2008												
GHO-CC1	GHO-CC1	8/18/2008												

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008			1100									
GHO-CC1	GHO-CC1	9/29/2008			1220									
GHO-CC1	GHO-CC1	11/3/2008												
GHO-CC1	GHO-CC1	12/1/2008			1100							0.014		
GHO-CC1	GHO-CC1	12/3/2008			1160									
GHO-CC1	GHO-CC1	1/5/2009			1380							0.019		
GHO-CC1	GHO-CC1	1/6/2009			1420									
GHO-CC1	GHO-CC1	2/3/2009			1090									
GHO-CC1	GHO-CC1	2/4/2009			913									
GHO-CC1	GHO-CC1	3/2/2009			1090									
GHO-CC1	GHO-CC1	3/3/2009			1160									
GHO-CC1	GHO-CC1	4/1/2009			1430									
GHO-CC1	GHO-CC1	4/2/2009			1460									
GHO-CC1	GHO-CC1	5/4/2009			1300									
GHO-CC1	GHO-CC1	5/5/2009			1310									
GHO-CC1	GHO-CC1	6/1/2009			1350							0.018		
GHO-CC1	GHO-CC1	6/2/2009			1380									
GHO-CC1	GHO-CC1	7/6/2009			1360							0.017		
GHO-CC1	GHO-CC1	7/7/2009												
GHO-CC1	GHO-CC1	8/4/2009			1360									
GHO-CC1	GHO-CC1	8/5/2009			1360									
GHO-CC1	GHO-CC1	9/1/2009			1430							0.012		
GHO-CC1	GHO-CC1	9/2/2009			1470									
GHO-CC1	GHO-CC1	10/5/2009			1430									
GHO-CC1	GHO-CC1	10/6/2009			1650									
GHO-CC1	GHO-CC1	11/2/2009			1400							0.014		
GHO-CC1	GHO-CC1	11/3/2009			1430									
GHO-CC1	GHO-CC1	12/1/2009			1410									
GHO-CC1	GHO-CC1	12/2/2009			1550									
GHO-CC1	GHO-CC1	1/4/2010			1460									
GHO-CC1	GHO-CC1	1/5/2010												
GHO-GCS	GHO-GCSPD	2/7/1996												
GHO-GCS	GHO-GCSPD	4/16/1996												
GHO-GCS	GHO-GCSPD	5/21/1996												
GHO-GCS	GHO-GCSPD	8/13/1996												
GHO-GCS	GHO-GCSPD	12/3/1996												
GHO-GCS	GHO-GCSPD	4/4/2002												
GHO-GCS	GHO-GCSPD	11/2/2002												
GHO-GCS	GHO-GCSPD	3/30/2003												
GHO-GCS	GHO-GCSPD	6/29/2003												
GHO-GCS	GHO-GCSPD	12/27/2003												
GHO-GCS	GHO-GCSPD	4/4/2004							2					
GHO-GCS	GHO-GCSPD	5/2/2004							9					
GHO-GCS	GHO-GCSPD	6/6/2004							13					
GHO-GCS	GHO-GCSPD	7/4/2004							17					
GHO-GCS	GHO-GCSPD	8/1/2004							20					
GHO-GCS	GHO-GCSPD	9/2/2004							14					
GHO-GCS	GHO-GCSPD	10/3/2004												
GHO-GCS	GHO-GCSPD	11/2/2004							2					
GHO-GCS	GHO-GCSPD	12/5/2004							2					
GHO-GCS	GHO-GCSPD	1/2/2005							0					
GHO-GCS	GHO-GCSPD	2/4/2005							2.0					
GHO-GCS	GHO-GCSPD	3/1/2005							1.0					
GHO-GCS	GHO-GCSPD	4/3/2005			180.871				2.0					

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005			126.38				6.0					
GHO-GCS	GHO-GCSPD	6/12/2005			70.2				7.0					
GHO-GCS	GHO-GCSPD	7/3/2005			89				10.0					
GHO-GCS	GHO-GCSPD	8/1/2005			250.00				18					
GHO-GCS	GHO-GCSPD	9/4/2005			152.51				13					
GHO-GCS	GHO-GCSPD	10/2/2005			172.6				7.0					
GHO-GCS	GHO-GCSPD	11/2/2005			240.0				2.0					
GHO-GCS	GHO-GCSPD	12/8/2005			291.2				0					
GHO-GCS	GHO-GCSPD	1/4/2006			310.0				0.9					
GHO-GCS	GHO-GCSPD	2/1/2006			320.8				0					
GHO-GCS	GHO-GCSPD	3/10/2006			308.8				0					
GHO-GCS	GHO-GCSPD	4/3/2006			266.8				0					
GHO-GCS	GHO-GCSPD	5/1/2006			95.0				4.0					
GHO-GCS	GHO-GCSPD	6/5/2006			182.1				10.0					
GHO-GCS	GHO-GCSPD	7/4/2006			226.5				18.0					
GHO-GCS	GHO-GCSPD	8/1/2006			320.4				17.0					
GHO-GCS	GHO-GCSPD	9/1/2006			360.6				15.0					
GHO-GCS	GHO-GCSPD	10/2/2006			397.3				11.0					
GHO-GCS	GHO-GCSPD	11/1/2006			413.1				3.0					
GHO-GCS	GHO-GCSPD	12/1/2006			381.6				0					
GHO-GCS	GHO-GCSPD	1/4/2007			393.0				3.0					
GHO-GCS	GHO-GCSPD	2/6/2007			373.0				2.0					
GHO-GCS	GHO-GCSPD	3/1/2007			370.3				2.0					
GHO-GCS	GHO-GCSPD	4/2/2007			207.1				4.0					
GHO-GCS	GHO-GCSPD	5/1/2007			88.6				5.0					
GHO-GCS	GHO-GCSPD	6/4/2007			200.0				15.0					
GHO-GCS	GHO-GCSPD	7/3/2007			270.7				16.0					
GHO-GCS	GHO-GCSPD	8/7/2007			359.6				7.0					
GHO-GCS	GHO-GCSPD	9/4/2007			399.0				16.0					
GHO-GCS	GHO-GCSPD	10/1/2007							16.0					
GHO-GCS	GHO-GCSPD	11/5/2007			407.4				3.2					
GHO-GCS	GHO-GCSPD	12/4/2007			418.5				2.0					
GHO-GCS	GHO-GCSPD	1/7/2008			409.6				1.0					
GHO-GCS	GHO-GCSPD	3/3/2008			396.7				2.0					
GHO-GCS	GHO-GCSPD	4/1/2008			520.2				2.0					
GHO-GCS	GHO-GCSPD	5/5/2008			131.7				4.0					
GHO-GCS	GHO-GCSPD	6/2/2008			147.0				5.0					
GHO-GCS	GHO-GCSPD	7/2/2008			271.0				14.0					
GHO-GCS	GHO-GCSPD	8/5/2008			421.1				17.0					
GHO-GCS	GHO-GCSPD	9/2/2008			539				13.0					
GHO-GCS	GHO-GCSPD	9/29/2008			575				15.0					
GHO-GCS	GHO-GCSPD	11/3/2008			592				9					
GHO-GCS	GHO-GCSPD	12/1/2008			553				4					
GHO-GCS	GHO-GCSPD	1/5/2009			602				0.2					
GHO-GCS	GHO-GCSPD	2/3/2009			577				0.5					
GHO-GCS	GHO-GCSPD	3/2/2009			560				0.8					
GHO-GCS	GHO-GCSPD	4/1/2009			497				1.2					
GHO-GCS	GHO-GCSPD	5/4/2009			188				4.6					
GHO-GCS	GHO-GCSPD	6/1/2009			178				11.9					
GHO-GCS	GHO-GCSPD	7/6/2009			259				15.8					
GHO-GCS	GHO-GCSPD	8/4/2009			285				16.6					
GHO-GCS	GHO-GCSPD	9/1/2009			384				17.1					
GHO-GCS	GHO-GCSPD	10/5/2009			455				9.0					
GHO-GCS	GHO-GCSPD	11/2/2009			463				3.0					
GHO-GCS	GHO-GCSPD	12/1/2009			509				1.9					

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010			556				0.4					
GHO-GCS	GHO-GCSPD	2/1/2010			555				0.2					
GHO-GCS	GHO-GCSPD	3/2/2010			610				0.6					
GHO-GCS	GHO-GCSPD	3/15/2010			415				1.4					
GHO-GCS	GHO-GCSPD	3/22/2010			369				1.8					
GHO-GCS	GHO-GCSPD	3/29/2010			289				2.2					
GHO-GCS	GHO-GCSPD	4/5/2010			276				4.8					
GHO-GCS	GHO-GCSPD	4/12/2010			292				3.8					
GHO-GCS	GHO-GCSPD	4/19/2010			246				6.2					
GHO-GCS	GHO-GCSPD	4/26/2010			208				5.5					
GHO-GCS	GHO-GCSPD	5/3/2010			200				5.1					
GHO-GCS	GHO-GCSPD	5/10/2010			199				5.7					
GHO-GCS	GHO-GCSPD	5/17/2010			185				9.4					
GHO-GCS	GHO-GCSPD	5/25/2010			198				7.8					
GHO-GCS	GHO-GCSPD	5/31/2010			198				6					
GHO-GCS	GHO-GCSPD	6/7/2010			174				9.1					
GHO-GCS	GHO-GCSPD	6/14/2010			187				12.5					
GHO-GCS	GHO-GCSPD	6/21/2010			139				5.5					
GHO-GCS	GHO-GCSPD	6/28/2010			243				14.1					
GHO-GCS	GHO-GCSPD	7/5/2010			268				12.5					
GHO-GCS	GHO-GCSPD	7/12/2010			300				16.3					
GHO-GCS	GHO-GCSPD	7/19/2010			331				15.5					
GHO-GCS	GHO-GCSPD	7/26/2010			368				17.2					
GHO-GCS	GHO-GCSPD	8/3/2010			420				16					
GHO-GCS	GHO-GCSPD	9/7/2010			509				11.2					
GHO-GCS	GHO-GCSPD	10/4/2010			487				10.2					
GHO-GCS	GHO-GCSPD	11/1/2010			505				3.5					
GHO-GCS	GHO-GCSPD	12/6/2010			554				0.4					
GHO-GCS	GHO-GCSPD	1/4/2011			585				0.1					
GHO-LTC	GHO-LTCSPD	2/7/1996												
GHO-LTC	GHO-LTCSPD	5/21/1996												
GHO-LTC	GHO-LTCSPD	8/13/1996												
GHO-LTC	GHO-LTCSPD	12/3/1996												
GHO-LTC	GHO-LTCSPD	4/6/1997												
GHO-LTC	GHO-LTCSPD	6/15/1997												
GHO-LTC	GHO-LTCSPD	10/1/1997												
GHO-LTC	GHO-LTCSPD	5/26/1998												
GHO-LTC	GHO-LTCSPD	9/8/1998												
GHO-LTC	GHO-LTCSPD	12/5/1998												
GHO-LTC	GHO-LTCSPD	3/8/1999												
GHO-LTC	GHO-LTCSPD	6/9/1999												
GHO-LTC	GHO-LTCSPD	9/9/1999												
GHO-LTC	GHO-LTCSPD	12/4/1999												
GHO-LTC	GHO-LTCSPD	3/5/2000												
GHO-LTC	GHO-LTCSPD	6/4/2000												
GHO-LTC	GHO-LTCSPD	11/5/2000												
GHO-LTC	GHO-LTCSPD	6/8/2002												
GHO-LTC	GHO-LTCSPD	11/2/2002												
GHO-LTC	GHO-LTCSPD	3/30/2003												
GHO-LTC	GHO-LTCSPD	6/29/2003												
GHO-LTC	GHO-LTCSPD	12/27/2003												
GHO-LTC	GHO-LTCSPD	1/2/2004							1					
GHO-LTC	GHO-LTCSPD	3/4/2004							1					
GHO-LTC	GHO-LTCSPD	4/4/2004							2					

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	degrees C	mg/L	mg/L	mg/L	mg/L	mg/L
GHO-LTC	GHO-LTCSPD	5/2/2004							11					
GHO-LTC	GHO-LTCSPD	6/6/2004							11					
GHO-LTC	GHO-LTCSPD	7/4/2004							15					
GHO-LTC	GHO-LTCSPD	8/1/2004							19					
GHO-LTC	GHO-LTCSPD	9/2/2004							12					
GHO-LTC	GHO-LTCSPD	10/3/2004												
GHO-LTC	GHO-LTCSPD	11/2/2004							2					
GHO-LTC	GHO-LTCSPD	12/5/2004							1					
GHO-LTC	GHO-LTCSPD	1/2/2005							0					
GHO-LTC	GHO-LTCSPD	2/4/2005							1					
GHO-LTC	GHO-LTCSPD	3/1/2005							0					
GHO-LTC	GHO-LTCSPD	4/3/2005			115.571				2					
GHO-LTC	GHO-LTCSPD	5/1/2005			75.291				5.0					
GHO-LTC	GHO-LTCSPD	6/12/2005			77.8				10					
GHO-LTC	GHO-LTCSPD	7/3/2005			102				12.0					
GHO-LTC	GHO-LTCSPD	8/1/2005			146.15				18					
GHO-LTC	GHO-LTCSPD	9/4/2005			137.74				13					
GHO-LTC	GHO-LTCSPD	10/2/2005			112.9				8					
GHO-LTC	GHO-LTCSPD	11/2/2005			153.5				2.0					
GHO-LTC	GHO-LTCSPD	12/8/2005			160.5				0					
GHO-LTC	GHO-LTCSPD	1/4/2006			162.2				0.9					
GHO-LTC	GHO-LTCSPD	2/1/2006			170.1				0					
GHO-LTC	GHO-LTCSPD	4/3/2006			146.7				0.4					
GHO-LTC	GHO-LTCSPD	7/4/2006			158.9				19.0					
GHO-LTC	GHO-LTCSPD	8/1/2006			204.1				19.0					
GHO-LTC	GHO-LTCSPD	9/1/2006			235.5				14.0					
GHO-LTC	GHO-LTCSPD	10/2/2006			238.8				10.0					
GHO-LTC	GHO-LTCSPD	11/1/2006			254.2				2.0					
GHO-LTC	GHO-LTCSPD	12/1/2006			224.2				0					
GHO-LTC	GHO-LTCSPD	5/1/2007							5.0					
GHO-LTC	GHO-LTCSPD	6/4/2007			163.3				16.0					
GHO-LTC	GHO-LTCSPD	7/3/2007			192.8				16.0					
GHO-LTC	GHO-LTCSPD	8/7/2007			243.1				18.0					
GHO-LTC	GHO-LTCSPD	9/4/2007			255.8				18.0					
GHO-LTC	GHO-LTCSPD	10/1/2007			258.0				18.0					
GHO-LTC	GHO-LTCSPD	11/5/2007			264.7				3.3					
GHO-LTC	GHO-LTCSPD	12/4/2007			270.0				1.0					
GHO-LTC	GHO-LTCSPD	5/5/2008			105.8				2.0					
GHO-LTC	GHO-LTCSPD	6/2/2008			151.5				5.0					
GHO-LTC	GHO-LTCSPD	7/2/2008			209.6				15.0					
GHO-LTC	GHO-LTCSPD	7/14/2008												
GHO-LTC	GHO-LTCSPD	8/5/2008			259.4				17.0					
GHO-LTC	GHO-LTCSPD	8/14/2008			284									
GHO-LTC	GHO-LTCSPD	9/2/2008			300				15.0					
GHO-LTC	GHO-LTCSPD	9/29/2008			313				5.0					
GHO-LTC	GHO-LTCSPD	11/3/2008			308				4					
GHO-LTC	GHO-LTCSPD	12/1/2008			267				1					
GHO-LTC	GHO-LTCSPD	1/5/2009			292				0.1					
GHO-LTC	GHO-LTCSPD	2/3/2009			290				0.6					
GHO-LTC	GHO-LTCSPD	3/2/2009			286				0.6					
GHO-LTC	GHO-LTCSPD	4/1/2009			275				0.7					
GHO-LTC	GHO-LTCSPD	5/4/2009			162				5.3					
GHO-LTC	GHO-LTCSPD	6/1/2009			166				13.7					
GHO-LTC	GHO-LTCSPD	7/6/2009			219				17.7					
GHO-LTC	GHO-LTCSPD	8/4/2009			265				16.5					

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	9/1/2009			318				16.6					
GHO-LTC	GHO-LTCSPD	10/5/2009			352				5.7					
GHO-LTC	GHO-LTCSPD	11/2/2009			328				3.1					
GHO-LTC	GHO-LTCSPD	12/1/2009			360				0.4					
GHO-LTC	GHO-LTCSPD	1/4/2010			349				0.7					
GHO-LTC	GHO-LTCSPD	2/2/2010			343				0.1					
GHO-LTC	GHO-LTCSPD	3/1/2010			358				0.6					
GHO-LTC	GHO-LTCSPD	3/15/2010			373				0.4					
GHO-LTC	GHO-LTCSPD	3/22/2010			329				1.0					
GHO-LTC	GHO-LTCSPD	3/29/2010			263				1.0					
GHO-LTC	GHO-LTCSPD	4/6/2010			282				1.2					
GHO-LTC	GHO-LTCSPD	4/12/2010			289				1.2					
GHO-LTC	GHO-LTCSPD	4/19/2010			156				4.6					
GHO-LTC	GHO-LTCSPD	4/27/2010			196				5					
GHO-LTC	GHO-LTCSPD	5/4/2010			187				5.1					
GHO-LTC	GHO-LTCSPD	5/11/2010			199				6.1					
GHO-LTC	GHO-LTCSPD	5/18/2010			185				10.6					
GHO-LTC	GHO-LTCSPD	5/26/2010			210				8.3					
GHO-LTC	GHO-LTCSPD	6/1/2010			184				8					
GHO-LTC	GHO-LTCSPD	6/8/2010			206				12.4					
GHO-LTC	GHO-LTCSPD	6/16/2010			208				11.3					
GHO-LTC	GHO-LTCSPD	6/22/2010			214				14.8					
GHO-LTC	GHO-LTCSPD	6/29/2010			247				17					
GHO-LTC	GHO-LTCSPD	7/6/2010			266				15.6					
GHO-LTC	GHO-LTCSPD	7/13/2010			290				15.7					
GHO-LTC	GHO-LTCSPD	7/20/2010			309				17.8					
GHO-LTC	GHO-LTCSPD	7/27/2010			314				20.5					
GHO-LTC	GHO-LTCSPD	8/4/2010			352				17.2					
GHO-LTC	GHO-LTCSPD	9/8/2010			410				10.7					
GHO-LTC	GHO-LTCSPD	10/5/2010			372				11.6					
GHO-LTC	GHO-LTCSPD	11/2/2010			380				4.2					
GHO-LTC	GHO-LTCSPD	12/7/2010			410				0.2					
GHO-LTC	GHO-LTCSPD	1/4/2011			424				0.1					
GHO-PC1	GHO-PC1	1/4/2007			355.4									
GHO-PC1	GHO-PC1	2/7/2007			451.3									
GHO-PC1	GHO-PC1	3/1/2007			457.2									
GHO-PC1	GHO-PC1	4/2/2007			380.8									
GHO-PC1	GHO-PC1	5/1/2007			269.2									
GHO-PC1	GHO-PC1	6/4/2007			254.7									
GHO-PC1	GHO-PC1	7/3/2007			197.1									
GHO-PC1	GHO-PC1	8/7/2007			136.6									
GHO-PC1	GHO-PC1	9/4/2007			219									
GHO-PC1	GHO-PC1	10/1/2007			267.1									
GHO-PC1	GHO-PC1	11/5/2007			326.7									
GHO-PC1	GHO-PC1	12/4/2007			326.8									
GHO-PC1	GHO-PC1	1/7/2008			321.3									
GHO-PC1	GHO-PC1	2/4/2008			315.4									
GHO-PC1	GHO-PC1	3/3/2008			332.9									
GHO-PC1	GHO-PC1	4/1/2008			438.2									
GHO-PC1	GHO-PC1	5/5/2008			281.5									
GHO-PC1	GHO-PC1	6/2/2008			376.1									
GHO-PC1	GHO-PC1	7/2/2008			319.3									
GHO-PC1	GHO-PC1	8/5/2008			281.4									
GHO-PC1	GHO-PC1	9/2/2008			223									
GHO-PC1	GHO-PC1	9/29/2008			400									

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008			421									
GHO-PC1	GHO-PC1	12/1/2008			344							0.01		
GHO-PC1	GHO-PC1	12/3/2008			558									
GHO-PC1	GHO-PC1	1/5/2009			357							0.012		
GHO-PC1	GHO-PC1	1/6/2009			372									
GHO-PC1	GHO-PC1	2/3/2009			340									
GHO-PC1	GHO-PC1	2/4/2009			384									
GHO-PC1	GHO-PC1	3/2/2009			323									
GHO-PC1	GHO-PC1	3/3/2009			377									
GHO-PC1	GHO-PC1	4/1/2009			404									
GHO-PC1	GHO-PC1	4/2/2009			422									
GHO-PC1	GHO-PC1	5/4/2009			301									
GHO-PC1	GHO-PC1	5/5/2009			345									
GHO-PC1	GHO-PC1	6/1/2009			323									
GHO-PC1	GHO-PC1	6/2/2009			364									
GHO-PC1	GHO-PC1	7/6/2009			359							0.01		
GHO-PC1	GHO-PC1	7/7/2009												
GHO-PC1	GHO-PC1	8/4/2009			316									
GHO-PC1	GHO-PC1	8/5/2009			391									
GHO-PC1	GHO-PC1	9/1/2009			358									
GHO-PC1	GHO-PC1	9/2/2009			407									
GHO-PC1	GHO-PC1	10/5/2009			390									
GHO-PC1	GHO-PC1	10/6/2009			460									
GHO-PC1	GHO-PC1	11/2/2009			379							0.01		
GHO-PC1	GHO-PC1	11/3/2009			424									
GHO-PC1	GHO-PC1	12/1/2009			415									
GHO-PC1	GHO-PC1	12/2/2009			446									
GHO-PC1	GHO-PC1	1/4/2010			425									
GHO-PC1	GHO-PC1	1/5/2010			469									
GHO-WCP	GHO-WCPI	5/1/2005			59.024				2.0					
GHO-WCP	GHO-WCPI	7/3/2005			75				10.0					
GHO-WCP	GHO-WCPI	11/2/2005			123.0				1.5					
GHO-WCP	GHO-WCPI	1/4/2006			87.0				1.1					
GHO-WCP	GHO-WCPI	3/10/2006			72.7				0					
GHO-WCP	GHO-WCPI	4/3/2006			69.5				1.7					
GHO-WCP	GHO-WCPI	6/5/2006			63.1				8.6					
GHO-WCP	GHO-WCPI	7/4/2006			70.2				12.0					
GHO-WCP	GHO-WCPI	8/1/2006			103.4				10.0					
GHO-WCP	GHO-WCPI	9/1/2006			229.9				8.0					
GHO-WCP	GHO-WCPI	10/2/2006			234.8				5.0					
GHO-WCP	GHO-WCPI	11/1/2006			253.6				1.0					
GHO-WCP	GHO-WCPI	12/1/2006			172.3				0					
GHO-WCP	GHO-WCPI	1/4/2007			106.7				1.0					
GHO-WCP	GHO-WCPI	4/2/2007			47.3				3.0					
GHO-WCP	GHO-WCPI	5/1/2007			63.9				4.0					
GHO-WCP	GHO-WCPI	6/4/2007			78.4				11.0					
GHO-WCP	GHO-WCPI	7/3/2007			102.4				11.0					
GHO-WCP	GHO-WCPI	8/7/2007			155.7				10.0					
GHO-WCP	GHO-WCPI	9/4/2007			158.8				11.0					
GHO-WCP	GHO-WCPI	10/1/2007			147.2				11.0					
GHO-WCP	GHO-WCPI	11/5/2007			137.6				1.0					
GHO-WCP	GHO-WCPI	4/1/2008			271.5				1.0					
GHO-WCP	GHO-WCPI	5/5/2008			58.1				2.0					
GHO-WCP	GHO-WCPI	6/2/2008			70.7				4.0					

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-WCP	GHO-WCPI	7/2/2008			209.5				10.0					
GHO-WCP	GHO-WCPI	7/14/2008												
GHO-WCP	GHO-WCPI	8/5/2008			244.0				10.0					
GHO-WCP	GHO-WCPI	8/7/2008												
GHO-WCP	GHO-WCPI	8/18/2008												
GHO-WCP	GHO-WCPI	9/2/2008			331				11.0					
GHO-WCP	GHO-WCPI	9/29/2008			309				4.0					
GHO-WCP	GHO-WCPI	11/3/2008			357				1					
GHO-WCP	GHO-WCPI	12/1/2008			329				3					
GHO-WCP	GHO-WCPI	1/5/2009			216				0.8					
GHO-WCP	GHO-WCPI	4/1/2009			136				0.5					
GHO-WCP	GHO-WCPI	5/4/2009			79.3				2.8					
GHO-WCP	GHO-WCPI	6/1/2009			172				7.5					
GHO-WCP	GHO-WCPI	7/6/2009			262				11.2					
GHO-WCP	GHO-WCPI	8/4/2009			209				9.1					
GHO-WCP	GHO-WCPI	9/1/2009			236				9.9					
GHO-WCP	GHO-WCPI	10/5/2009			268				2.5					
GHO-WCP	GHO-WCPI	11/2/2009			226				1.1					
GHO-WCP	GHO-WCPI	12/1/2009			296				0.1					
GHO-WCP	GHO-WCPI	3/1/2010			111				8.69					
GHO-WCP	GHO-WCPI	4/6/2010			108				1.1					
GHO-WCP	GHO-WCPI	5/4/2010			157				3					
GHO-WCP	GHO-WCPI	6/8/2010			132				7.2					
GHO-WCP	GHO-WCPI	7/6/2010			142				9.5					
GHO-WCP	GHO-WCPI	8/4/2010			152				11.4					
GHO-WCP	GHO-WCPI	9/8/2010			210				7					
GHO-WCP	GHO-WCPI	10/5/2010			251				7					
GHO-WCP	GHO-WCPI	11/2/2010			247				3.2					
LCO-WLC	LCO-WLC	4/15/2009	<0.0005		1120	0.219						<0.01		<0.0005
LCO-WLC	LCO-WLC	9/23/2009	<0.0005		857	0.195			3.4			0.014		<0.0005
LCO-WLC	LCO-WLC	11/4/2009	<0.0005		960	0.2						<0.01		<0.0005
LCO-WLC	LCO-WLC	11/16/2009	<0.0005		990	0.196						0.018		<0.0005
LCO-WLC	LCO-WLC	1/18/2010	<0.0005		1020	0.211			2			<0.01		<0.0005
LCO-WLC	LCO-WLC	2/17/2010	<0.0005		914	0.222			2.9			<0.01		<0.0005
LCO-WLC	LCO-WLC	3/15/2010	<0.0005		1130	0.223			2.9			<0.01		<0.0005
LCO-WLC	LCO-WLC	4/29/2010	<0.0005		1090	0.206			3.1			<0.01		<0.0005
LCO-WLC	LCO-WLC	6/1/2010	<0.0002		525	0.131			3			<0.01		<0.0002
LCO-WLC	LCO-WLC	7/6/2010	<0.0002		372	0.122			3.2			<0.01		<0.0002
LCO-WLC	LCO-WLC	8/3/2010	<0.0001		642	0.164			3.2			<0.01		<0.0001
LCO-WLC	LCO-WLC	9/7/2010	<0.0001		845	0.191			3.2			0.012		<0.0001
LCO-WLC	LCO-WLC	10/8/2010	<0.0001		884	0.197			3.6			<0.01		<0.0001
LCO-WLC	LCO-WLC	11/2/2010	<0.0002		950	0.198			3.3			<0.01		<0.0002
LCO-WLC	LCO-WLC	12/7/2010	<0.0002		1070	0.196			3			<0.01		<0.0002
LCO-WLC	LCO-WLC	1/4/2011	<0.0001		1080	0.227			2.8			<0.01		<0.0001
LCO-WLC	LCO-WLC	2/1/2011	<0.0001		1160	0.207			2.6			0.015		<0.0001
LCO-WLC	LCO-WLC	3/1/2011	<0.0001		1170	0.206			2.6			0.021		<0.0001
LCO-WLC	LCO-WLC	4/4/2011	<0.0002		1160	0.226			3			0.012		<0.0002
LCO-WLC	LCO-WLC	5/3/2011	<0.0002		1160	0.227			3.2			0.011		<0.0002
LCO-WLC	LCO-WLC	6/7/2011	<0.0001		422	0.118			3.2			<0.01		<0.0001
LCO-WLC	LCO-WLC	7/5/2011	<0.0001		429	0.104			3.3			<0.01		0.000024
LCO-WLC	LCO-WLC	7/12/2011	<0.0001		503	0.128			3.4			<0.01		0.000025
LCO-WLC	LCO-WLC	8/2/2011	<0.0002		670	0.163			3.6			<0.01		0.000026
LCO-WLC	LCO-WLC	9/6/2011	<0.0002		941	0.184			3.6			<0.01		0.000027
LCO-WLC	LCO-WLC	10/4/2011	<0.0002		1030	0.202			3.4			<0.01		0.000034

			Sn-D	**Sn-T**	**SO4**	**Sr-D**	**Sr-T**	**TDS-L**	**Temp-F**	**Th-D**	**Th-T**	**Ti-D**	**Ti-T**	**Tl-D**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011	<0.0002		1060	0.207			3.1			<0.01		0.000028
LCO-WLC	LCO-WLC	12/6/2011	<0.0002		1140	0.201			3			<0.01		0.000028
TM-SBB	BT-11 seep	6/27/2007	<0.00010		182	0.0732		448				<0.010		<0.00010
TM-SBB	BT-11 seep	9/27/2007	<0.00020		436	0.148						<0.010		<0.00020
TM-SBB	BT-11 seep	5/30/2008	<0.00010		181	0.105						<0.010		<0.00010
TM-SBB	BT-11 seep	6/28/2009	<0.00050		505	0.159						0.011		<0.00050
TM-SBB	BT-11 seep	9/8/2009	<0.00050		545	0.194						<0.010		<0.00050
TM-SBB	BT-11 seep	5/31/2010	0.00168		732	0.199		1560				<0.010		<0.00050
TM-SBB	BT-11 seep	7/5/2010	<0.00050		677	0.188						<0.010		<0.00050
TM-SBB	BT-11 seep	8/18/2010	<0.00050		609	0.199						<0.010		<0.00050
TM-SBB	BT-11 seep	9/20/2010	<0.00050		728	0.197						0.012		<0.00050
TM-SBB	BT-13 seep	6/27/2007	<0.00020		237	0.132		616				<0.010		<0.00020
TM-SBB	BT-13 seep	9/27/2007	<0.00020		255	0.160						<0.010		<0.00020
TM-SBB	BT-13 seep	5/30/2008	<0.00020		318	0.159						<0.010		<0.00020
TM-SBB	BT-13 seep	6/28/2009	<0.00050		451	0.171						0.012		<0.00050
TM-SBB	BT-13 seep	9/8/2009	<0.00050		562	0.225						<0.010		<0.00050
TM-SBB	BT-13 seep	5/31/2010	<0.00050		567	0.217		1340				<0.010		<0.00050
TM-SBB	BT-13 seep	7/5/2010	<0.00050		549	0.223						<0.010		<0.00050
TM-SBB	BT-13 seep	8/16/2010	<0.00050		543	0.233						<0.010		<0.00050
TM-SBB	BT-13 seep	9/20/2010	<0.00050		495	0.217						0.011		<0.00050
TM-SBG	GT42 seep	6/28/2009	<0.00020		197	0.131						0.01		<0.00020
TM-SBG	GT42 seep	7/7/2009												
TM-SBG	GT42 seep	9/8/2009	<0.00050		403	0.197						<0.010		<0.00050
TM-SBG	GT42 seep	5/31/2010	<0.00050		721	0.293						<0.010		<0.00050
TM-SBG	GT42 seep	7/6/2010	<0.00050		692	0.256						<0.010		<0.00050
TM-SBG	GT42 seep	8/16/2010	<0.00010			0.0915						<0.010		<0.00010
TM-SBG	GT42 seep	8/31/2010	<0.00050	<0.00050	819	0.282	0.281					<0.010	0.017	<0.00050
TM-SBG	GT42 seep	9/14/2010			823									
TM-SBG	GT42 seep	9/20/2010	<0.00050		770	0.273						0.012		<0.00050
TM-SBG	GT42 seep	4/13/2011			737									
TM-SBG	GT42 seep	4/13/2011			737									
TM-SBG	GT42 seep	4/28/2011			742									
TM-SBG	GT42 seep	5/1/2011	<0.00020	<0.00020	905	0.246	0.238					<0.010	0.015	0.000029
TM-SBG	GT42 seep	5/12/2011			844									
TM-SBG	GT42 seep	5/26/2011			1240									
TM-SBG	GT42 seep	5/31/2011			1170									
TM-SBG	GT42 seep	6/7/2011												
TM-SBG	GT42 seep	6/7/2011			1240									
TM-SBG	GT42 seep	6/14/2011			1280									
TM-SBG	GT42 seep	6/29/2011	<0.00020	<0.00020	1230	0.3	0.296					<0.010	0.02	0.00003
TM-SBG	GT42 seep	7/5/2011												
TM-SBG	GT42 seep	7/12/2011			1290									
TM-SBG	GT42 seep	7/19/2011			1480									
TM-SBG	GT42 seep	7/20/2011	<0.00050		1420	0.347						<0.010		<0.000050
TM-SBG	GT42 seep	8/3/2011			1470									
TM-SBG	GT42 seep	8/8/2011			1450									
TM-SBG	GT42 seep	8/16/2011												
TM-SBG	GT42 seep	8/23/2011												
TM-SBG	GT42 seep	8/31/2011	<0.00050		1400	0.319						<0.010		<0.000050
TM-SBG	GT42 seep	9/13/2011												
TM-SBG	GT42 seep	9/20/2011												
TM-SBG	GT42 seep	10/5/2011												
TM-SBG	GT42 seep	10/11/2011	<0.00020		797	0.379						<0.010		0.000038
TM-SBG	GT42 seep	4/16/2012			1220									

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012	<0.00020	<0.00020	882	0.228	0.23					<0.010	<0.010	0.000028
TM-SBG	GT42 seep	6/4/2012	<0.00020	<0.00020	1190	0.264	0.27					0.011	0.013	0.00003
TM-SBG	GT42 seep	6/4/2012												
TM-SBG	GT42 seep	6/19/2012												
TM-SBG	GT42 seep	6/25/2012			1190									
TM-SBG	GT42 seep	6/25/2012												
TM-SBG	GT42 seep	7/10/2012	<0.00020		1170	0.319						0.011		0.000028
TM-SBG	GT42 seep	7/17/2012			1370									
TM-SBG	GT42 seep	8/7/2012	<0.00050	<0.00050	1400	0.286						<0.010	<0.010	<0.000050
TM-SBG	GT42 seep	8/20/2012			1380									
WM-ED	SEEP-9	3/23/2010	<0.00020		258	0.891		786				<0.010		<0.00020
WM-ED	SEEP-9	4/21/2010	<0.00020		208	0.751		632				<0.010		<0.00020
WM-ED	SEEP-9	5/25/2010	<0.00020		212	0.796		703				<0.010		<0.00020
WM-ED	SEEP-9	6/29/2010	<0.00050		424	1.06		1080				<0.010		<0.00050
WM-ED	SEEP-9	7/21/2010	<0.00050		476	1.11		1280				<0.010		<0.00050
WM-ED	SEEP-9	8/25/2010	<0.00050		502	1.18		1380				0.013		<0.00050
WM-ND	SEEP-1	5/25/2010	<0.00010		201	0.291		460	0.1159204			<0.010		<0.00010
WM-ND	SEEP-1	10/26/2010	<0.00050		628	0.502		1560	0.10716561			<0.010		<0.00050
WM-ND	SEEP-1	5/2/2011	<0.00010		440	0.343		894	0.07863636			0.013		<0.00010
WM-ND	SEEP-12	5/25/2010	<0.00010		269	0.562		612	0.08327138			<0.010		<0.00010
WM-ND	SEEP-12	5/2/2011	<0.00010		196	0.341		440	0.09438776			<0.010		<0.00010
WM-ND	SEEP-2	6/13/2007	<0.00010		180	0.463			0.26055556			<0.010		<0.00010
WM-ND	SEEP-2	5/14/2008	<0.00010	0.00012	214	0.276	0.288	486	0.25514019			<0.010	0.176	<0.00010
WM-ND	SEEP-2	5/14/2008	<0.00010	<0.00010	59.5	0.204	0.218	315	0.15781513			<0.010	0.041	<0.00010
WM-ND	SEEP-2	9/16/2008	<0.00010	<0.00010	180	0.245	0.247	438	0.13055556			<0.010	0.014	<0.00010
WM-ND	SEEP-2	9/16/2008	<0.00010	<0.00010	93.6	0.0908	0.0937	183	0.08365385			<0.010	<0.010	<0.00010
WM-ND	SEEP-2	5/25/2010	<0.00020		578	0.549		1270	0.14186851			<0.010		<0.00020
WM-ND	SEEP-2	10/26/2010	<0.00020		479	0.403		1050	0.06179541			<0.010		<0.00020
WM-ND	SEEP-3	5/25/2010	<0.00010		103	0.149		269	0.2038835			<0.010		<0.00010
WM-ND	SEEP-3	10/26/2010	<0.00010		38.5	0.117		291				<0.010		<0.00010
WM-ND	SEEP-3	5/2/2011	<0.00010		406	0.293		755	0.1273399			0.011		<0.00010
WM-ND	SEEP-4	5/25/2010	<0.00020		289	0.621		702	0.16608997			<0.010		<0.00020
WM-ND	SEEP-4	10/26/2010	<0.00020		321	0.626		780	0.16292835			<0.010		<0.00020
WM-ND	SEEP-4	5/2/2011	<0.00010		604	0.794		1260	0.1468543			0.014		<0.00010
WM-ND	SEEP-5	6/13/2007	<0.00010		73.3	0.391			0.16234652			<0.010		<0.00010
WM-ND	SEEP-5	5/25/2010	<0.00010		104	0.532		362	0.08365385			<0.010		<0.00010
WM-ND	SEEP-5	5/2/2011	<0.00010		69.7	0.200		235	0.08967001			<0.010		<0.00010
WM-SD	SD1	8/2/2006	<0.00020	0.00063	78.1	0.589	0.646	625				<0.010	0.064	<0.00020
WM-SD	SD1	10/31/2007	<0.00010	0.00017	27.2	0.0801	0.0835	270				0.033	0.146	<0.00010
WM-SD	SD1	4/2/2008	<0.00020	<0.00020	171	0.844	0.87	598	0.12865497			<0.010	<0.010	<0.00020
WM-SD	SD1	5/14/2008	<0.00010	0.00013	123	0.254	0.274	422	0.17723577			0.013	0.146	<0.00010
WM-SD	SEEP-6	6/13/2007	<0.00010		151	0.513			0.20198675			<0.010		<0.00010
WM-SD	SEEP-6	5/25/2010	<0.00050		833	1.51		1780	0.08655462			<0.010		<0.00050
WM-SD	SEEP-6	10/26/2010	<0.00050	0.18035652	803	1.08		1830	0.06824408			<0.010		<0.00050
WM-SD	SEEP-6	5/2/2011	<0.00020		879	1.11		1770	0.09032992			0.015		<0.00020
WM-SD	SEEP-7	10/31/2007	<0.00050	<0.00050	380	0.764	0.761	1080	0.17421053			<0.010	0.192	<0.00050
WM-SD	SEEP-7	4/2/2008	<0.00020	<0.00020	144	0.635	0.64	594	0.10972222			<0.010	<0.010	<0.00020
WM-SD	SEEP-7	5/25/2010	<0.00050		492	1.16		1490	0.10182927			<0.010		<0.00050
WM-SD	SEEP-7	10/26/2010	<0.00050		1060	1.60		2780	0.15			<0.010		<0.00050
WM-SD	SEEP-7	5/2/2011	<0.00020		737	0.893		1560	0.13229308			0.015		<0.00020
WM-SD	SEEP-8	5/25/2010	<0.00050		544	1.40		1350	0.12665441			<0.010		<0.00050
WM-SD	SEEP-8	10/26/2010	<0.00050		511	1.17		1480	0.0776908			<0.010		<0.00050
WM-SD	SEEP-8	5/2/2011	<0.00020		732	1.03		1750	0.18169399			0.014		<0.00020
WCM-4C	SEEP A	5/8/2006	<0.00050	<0.00050	275	0.195	0.197	858				<0.010	<0.010	<0.00050

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	<0.00050	<0.00050	758	0.279	0.288	1530				<0.010	<0.010	<0.00050
WCM-7C	7C West Dump	march, 2012			1300	0.262								
WCM-7C	7C West Dump	April, 2012			1510	0.292								
WCM-7C	7C West Dump	May, 2012			1630	0.303								
WCM-7C	7C West Dump	June, 2012			1580	0.322								
WCM-7C	7C West Dump	July, 2012			1700	0.351								
WCM-7C	7C West Dump	August, 2012			1740	0.325								
WCM-7C	7C West Dump	September, 2012			1810	0.353								
WCM-7C	7C West Dump	October, 2012			1860	0.343								
WCM-7C	7C West Dump	November, 2012			1880	0.336								
WCM-7C	7C West Dump	December, 2012			1840	0.384								
WCM-7P	7P SE	November, 2012			1370	0.275								
WCM-7P	7P SE	December, 2012			1450	0.278								
BM-SED	SP2 SOUTH SEEP	6/3/2009	<0.00010		23.9	0.1490						<0.010		<0.00010
BM-SED	SP2 SOUTH SEEP	4/10/2010	<0.00020		69.7	0.1900						<0.010		<0.00020
BM-SED	SP2 SOUTH SEEP	6/10/2010	<0.00020		71.4	0.1730						<0.010		<0.00020
BM-SED	SP2 SOUTH SEEP	4/11/2011	<0.00010		342.0	0.2270						0.0100		<0.00010
BM-SED	SP2 SOUTH SEEP	5/31/2011	<0.00010		95.6	0.1810						<0.010		<0.00010
BM-SED	SP2 SOUTH SEEP	6/11/2011	<0.00020		403.0	0.3000						<0.010		0.0000
BM-SED	SP2 SOUTH SEEP	7/11/2011	<0.00020		400.0	0.2460						0.0100		0.0000
BM-SED	SP2 SOUTH SEEP	8/11/2011	<0.00020		360.0	0.2780						<0.010		0.0000
BM-SED	SP2 SOUTH SEEP	9/11/2011	<0.00020		353.0	0.2930						<0.010		0.0000
BM-SED	SP2 SOUTH SEEP	10/11/2011	<0.00020		359.0	0.3150						<0.010		0.0000
BM-SED	SP2 SOUTH SEEP	11/11/2011	<0.00010		374.0	0.3640						0.0100		0.0000
BM-SED	SP2 SOUTH SEEP	4/12/2012	<0.00020		630.0	0.3220						0.0160		0.0000
BM-SED	SP2 SOUTH SEEP	5/12/2012	<0.00020		668.0	0.3570						0.0110		0.0000
BM-SED	SP2 SOUTH SEEP	6/12/2012	<0.00020		623.0	0.3720						<0.010		0.0000
BM-SED	SP2 SOUTH SEEP	7/12/2012	<0.00020		577.0	0.365						0.012		<0.000020
BM-SED	SP2 SOUTH SEEP	8/12/2012	<0.00020		622.0	0.384						<0.010		<0.000020
BM-SED	SP2 SOUTH SEEP	9/12/2012												
BM-SED	SP2 SOUTH SEEP	10/12/2012												
BM-SED	SP2 EAST SEEP	6/3/2009	<0.00010		30.5	0.1760						<0.010		<0.00010
BM-SED	SP2 EAST SEEP	9/8/2009	<0.00020		35.9	0.2060						<0.010		<0.00020
BM-SED	SP2 EAST SEEP	4/10/2010	<0.00020		65.8	0.2330						<0.010		<0.00020
BM-SED	SP2 EAST SEEP	6/10/2010	<0.00020		112.0	0.1920						<0.010		<0.00020
BM-SED	SP2 EAST SEEP	10/1/2010	<0.00020		156.0	0.2480						<0.010		<0.00020
BM-SED	SP2 EAST SEEP	4/11/2011	<0.00010		146.0	0.1850						<0.010		<0.00010
BM-SED	SP2 EAST SEEP	5/31/2011	<0.00010		95.6	0.1810						<0.010		<0.00010
BM-SED	SP2 EAST SEEP	6/11/2011	<0.00010		119.0	0.2100						<0.010		0.0000
BM-SED	SP2 EAST SEEP	7/11/2011	<0.00010		109.0	0.1540						0.0110		0.0000
BM-SED	SP2 EAST SEEP	8/11/2011	<0.00010		234.0	0.2690						<0.010		0.0000
BM-SED	SP2 EAST SEEP	9/11/2011	<0.00010		149.0	0.2330						<0.010		0.0000
BM-SED	SP2 EAST SEEP	10/11/2011	<0.00010		150.0	0.2700						<0.010		0.0000
BM-SED	SP2 EAST SEEP	11/11/2011	<0.00010		140.0	0.2950						<0.010		0.0000
BM-SED	SP2 EAST SEEP	4/12/2012	<0.00020		401.0	0.3200						0.0140		0.0000
BM-SED	SP2 EAST SEEP	5/12/2012	<0.00020		389.0	0.3080						<0.010		0.0000
BM-SED	SP2 EAST SEEP	6/12/2012	<0.00020		418.0	0.3310						<0.010		0.0000
BM-SED	SP2 EAST SEEP	7/12/2012	<0.00020		431.0	0.343						0.011		0.000025
BM-SED	SP2 EAST SEEP	8/12/2012	<0.00020		476.0	0.336						<0.010		0.000029
EVO-F2	F2 WELL	4/8/2010	<0.00010		1580	0.551						0.015		0.00018
EVO-F2	F2 WELL	9/14/2010	<0.00010		1600	0.563						<0.010		0.00017
EVO-F2	F2 WELL	9/15/2011	<0.00050		1530	0.55						<0.010		0.000165
EVO-F2	F2 WELL	7/26/2011	<0.00050		1600	0.559						<0.010		0.000188

			Sn-D	Sn-T	SO4	Sr-D	Sr-T	TDS-L	Temp-F	Th-D	Th-T	Ti-D	Ti-T	Tl-D
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**degrees C**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011	<0.00050		1510	0.583						<0.010		<0.00025
EVO-F2	F2 WELL	03/16/2012	<0.00050		1420	0.509						<0.010		<0.00025
BM-DPB	BM-11-01-A	5/28/2012	<0.00010		116	0.309								0.000014
BM-DPB	BM-11-01-B	5/29/2012	<0.00020		718	0.282								0.000031
BM-DPB	BM-11-01-C	5/28/2012	<0.00020		726	0.266								0.000046
BM-DPB	BM-11-02-B	5/30/2012	<0.00020		889	0.385								0.000029
BM-DPB	BM-11-02-C	5/29/2012	<0.00020		740	0.323								<0.000020
GHO-BH1	GHO-BH1	4/20/2009	0.00112			0.144								<0.0005
GHO-BH1	GHO-BH1	10/28/2009	<0.0005		634	0.211								<0.0005
GHO-BH1	GHO-BH1	6/15/2010	<0.0005		1020	0.16						<0.01		<0.0005
GHO-BH1	GHO-BH1	8/9/2010	<0.0001		700	0.232						<0.01		<0.0001
GHO-BH1	GHO-BH1	9/20/2010	<0.0001		1150	0.199						<0.01		<0.0001
GHO-BH1	GHO-BH1	10/12/2010	<0.0001		876	0.21						<0.01		<0.0001
GHO-BH1	GHO-BH1	11/15/2010	<0.0001		1040	0.239						0.01		<0.0001
GHO-BH1	GHO-BH1	4/13/2011	<0.0002		1390	0.191						<0.01		<0.0002
GHO-BH1	GHO-BH1	5/11/2011	<0.0002		875	0.171						<0.01		<0.0002
GHO-BH1	GHO-BH1	6/8/2011	<0.0002		837	0.151						0.011		<0.0002
GHO-BH1	GHO-BH1	7/13/2011	<0.0005		837	0.209						<0.01		<0.00005
GHO-BH1	GHO-BH1	9/14/2011	<0.0005		1370	0.256						<0.01		<0.00005
GHO-BH1	GHO-BH1	10/5/2011	<0.0005		1760	0.25						<0.01		<0.00005
GHO-BH1	GHO-BH1	6/6/2012	<0.0001		1860	0.162						0.02		0.000046
GHO-BH1	GHO-BH1	7/5/2012	<0.0001		925	0.145						<0.01		0.000034
GHO-BH1	GHO-BH1	9/12/2012	<0.0002		678	0.22						0.021		0.000028
GHO-BH1	GHO-BH1	10/3/2012	<0.0005		1550	0.24						<0.01		<0.00005
GHO-BH1	GHO-BH1	11/7/2012	<0.0002		1710	0.162						0.022		0.000043
BM-NED	LOWER BLIND SEEP	6/3/2009	<0.00020		302	0.3040						<0.010		<0.00020
BM-NED	LOWER BLIND SEEP	9/8/2009	<0.00020		302	0.2680						<0.010		<0.00020
BM-NED	LOWER BLIND SEEP	5/10/2010	<0.00020		444	0.2820						<0.010		<0.00020
BM-NED	LOWER BLIND SEEP	6/10/2010	<0.00020		448	0.2800						<0.010		<0.00020
BM-NED	LOWER BLIND SEEP	10/1/2010	<0.00020		377	0.2870						<0.010		<0.00020
BM-NED	LOWER BLIND SEEP	5/31/2011	<0.00010		479	0.2300						0.0120		<0.00010
BM-NED	LOWER BLIND SEEP	6/11/2011	<0.00010		470	0.2400						<0.010		0.0000
BM-NED	LOWER BLIND SEEP	10/11/2011	<0.00020		514	0.3060						<0.010		<0.000020
BM-NED	North Dump Seep N	5/12/2012	<0.00010		137	0.1480						0.0130		0.0000
BM-NED	North Dump Seep S	6/12/2012	<0.00010		246	0.2270						0.0140		0.0000
BM-NED	North Dump Seep N	6/12/2012	<0.00010		378	0.273						<0.010		0.000015
BM-NED	North Dump Seep N	7/12/2012	<0.00010		402	0.301						0.010		0.000015
BM-NED	North Dump Seep N	8/12/2012	<0.00010		439	0.265						<0.010		0.000015
BM-NED	North Dump Seep S	7/12/2012	<0.00010		291	0.291						0.046		0.000028
BM-NED	North Dump Seep S	8/12/2012	<0.00010		333	0.312						<0.010		0.000026

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	6/12/2007											
EVO-BC1	EVO-BC1	6/19/2007											
EVO-BC1	EVO-BC1	7/3/2007											
EVO-BC1	EVO-BC1	8/7/2007											
EVO-BC1	EVO-BC1	9/5/2007											
EVO-BC1	EVO-BC1	10/3/2007											
EVO-BC1	EVO-BC1	11/6/2007											
EVO-BC1	EVO-BC1	12/5/2007											
EVO-BC1	EVO-BC1	1/3/2008											
EVO-BC1	EVO-BC1	2/5/2008						0.00687		<0.001		0.0853	
EVO-BC1	EVO-BC1	3/5/2008								<0.0025		0.006	
EVO-BC1	EVO-BC1	3/11/2008											
EVO-BC1	EVO-BC1	3/18/2008											
EVO-BC1	EVO-BC1	3/20/2008											
EVO-BC1	EVO-BC1	3/25/2008											
EVO-BC1	EVO-BC1	3/28/2008											
EVO-BC1	EVO-BC1	4/1/2008											
EVO-BC1	EVO-BC1	4/3/2008											
EVO-BC1	EVO-BC1	4/8/2008											
EVO-BC1	EVO-BC1	4/15/2008											
EVO-BC1	EVO-BC1	4/22/2008											
EVO-BC1	EVO-BC1	4/29/2008											
EVO-BC1	EVO-BC1	5/6/2008											
EVO-BC1	EVO-BC1	5/13/2008											
EVO-BC1	EVO-BC1	5/20/2008											
EVO-BC1	EVO-BC1	5/21/2008											
EVO-BC1	EVO-BC1	5/28/2008											
EVO-BC1	EVO-BC1	6/3/2008											
EVO-BC1	EVO-BC1	6/11/2008											
EVO-BC1	EVO-BC1	6/17/2008											
EVO-BC1	EVO-BC1	6/26/2008											
EVO-BC1	EVO-BC1	7/2/2008											
EVO-BC1	EVO-BC1	7/6/2008											
EVO-BC1	EVO-BC1	7/29/2008											
EVO-BC1	EVO-BC1	8/5/2008											
EVO-BC1	EVO-BC1	9/2/2008											
EVO-BC1	EVO-BC1	9/12/2008											
EVO-BC1	EVO-BC1	10/7/2008											
EVO-BC1	EVO-BC1	11/4/2008										0.0119	
EVO-BC1	EVO-BC1	12/3/2008										0.0051	
EVO-BC1	EVO-BC1	1/7/2009										<0.0025	
EVO-BC1	EVO-BC1	2/4/2009										0.0081	
EVO-BC1	EVO-BC1	3/3/2009										0.0069	
EVO-BC1	EVO-BC1	3/10/2009											
EVO-BC1	EVO-BC1	3/17/2009											
EVO-BC1	EVO-BC1	3/24/2009											
EVO-BC1	EVO-BC1	3/31/2009											
EVO-BC1	EVO-BC1	4/7/2009										0.02	
EVO-BC1	EVO-BC1	4/15/2009											
EVO-BC1	EVO-BC1	4/21/2009											
EVO-BC1	EVO-BC1	4/28/2009											
EVO-BC1	EVO-BC1	5/6/2009											
EVO-BC1	EVO-BC1	5/12/2009											
EVO-BC1	EVO-BC1	5/20/2009											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-BC1	EVO-BC1	5/26/2009											
EVO-BC1	EVO-BC1	6/2/2009										0.0236	
EVO-BC1	EVO-BC1	6/9/2009											
EVO-BC1	EVO-BC1	6/16/2009											
EVO-BC1	EVO-BC1	6/23/2009											
EVO-BC1	EVO-BC1	6/30/2009											
EVO-BC1	EVO-BC1	7/8/2009											
EVO-BC1	EVO-BC1	8/5/2009										0.0252	
EVO-BC1	EVO-BC1	9/1/2009										0.0252	
EVO-BC1	EVO-BC1	10/7/2009										0.0109	
EVO-BC1	EVO-BC1	11/5/2009										0.0282	
EVO-BC1	EVO-BC1	11/6/2009											
EVO-BC1	EVO-BC1	12/2/2009											
EVO-BC1	EVO-BC1	12/3/2009											
EVO-DC1	EVO-DC1	9/5/2007											
EVO-DC1	EVO-DC1	11/4/2008										<0.0025	
EVO-DC1	EVO-DC1	5/25/2009										<0.0025	
EVO-DC1	EVO-DC1	6/2/2009											
EVO-DC1	EVO-DC1	6/10/2009											
EVO-DC1	EVO-DC1	6/23/2009											
EVO-DC1	EVO-DC1	6/30/2009											
EVO-DC1	EVO-DC1	7/7/2009						0.00741		<0.001		0.0032	
EVO-DC1	EVO-DC1	7/31/2009						0.000281		<0.0005		0.0157	
EVO-DC1	EVO-DC1	8/5/2009										<0.0025	
EVO-DC1	EVO-DC1	8/31/2009						0.000286		<0.0005		0.118	
EVO-DC1	EVO-DC1	9/1/2009										<0.0025	
EVO-DC1	EVO-DC1	10/6/2009										0.0095	
EVO-DC1	EVO-DC1	10/20/2009						0.000349		<0.0005		0.0673	
EVO-DC1	EVO-DC1	11/3/2009										<0.0025	
EVO-GC2	EVO-GC2	7/3/2007											
EVO-GC2	EVO-GC2	8/7/2007											
EVO-GC2	EVO-GC2	9/5/2007											
EVO-GC2	EVO-GC2	10/3/2007											
EVO-GC2	EVO-GC2	11/6/2007											
EVO-GC2	EVO-GC2	12/4/2007											
EVO-GC2	EVO-GC2	1/3/2008											
EVO-GC2	EVO-GC2	2/5/2008						0.00124		0.0011		0.0392	
EVO-GC2	EVO-GC2	3/5/2008										0.05	
EVO-GC2	EVO-GC2	4/1/2008											
EVO-GC2	EVO-GC2	4/3/2008											
EVO-GC2	EVO-GC2	5/6/2008											
EVO-GC2	EVO-GC2	6/3/2008											
EVO-GC2	EVO-GC2	7/2/2008											
EVO-GC2	EVO-GC2	7/29/2008											
EVO-GC2	EVO-GC2	8/6/2008											
EVO-GC2	EVO-GC2	9/2/2008											
EVO-GC2	EVO-GC2	9/3/2008											
EVO-GC2	EVO-GC2	10/7/2008											
EVO-GC2	EVO-GC2	11/4/2008										<0.0025	
EVO-GC2	EVO-GC2	12/3/2008										<0.0025	
EVO-GC2	EVO-GC2	1/7/2009										0.0057	
EVO-GC2	EVO-GC2	2/4/2009										0.009	
EVO-GC2	EVO-GC2	3/3/2009										0.0151	

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-GC2	EVO-GC2	3/10/2009											
EVO-GC2	EVO-GC2	3/17/2009											
EVO-GC2	EVO-GC2	3/24/2009											
EVO-GC2	EVO-GC2	3/31/2009											
EVO-GC2	EVO-GC2	4/7/2009										0.0098	
EVO-GC2	EVO-GC2	4/14/2009											
EVO-GC2	EVO-GC2	4/21/2009											
EVO-GC2	EVO-GC2	4/29/2009											
EVO-GC2	EVO-GC2	5/7/2009						0.00102		0.0018		0.0046	
EVO-GC2	EVO-GC2	5/12/2009						0.00111		0.0013		0.0046	
EVO-GC2	EVO-GC2	5/20/2009											
EVO-GC2	EVO-GC2	5/26/2009											
EVO-GC2	EVO-GC2	6/2/2009						0.00108		<0.0005		0.0015	
EVO-GC2	EVO-GC2	6/6/2009											
EVO-GC2	EVO-GC2	6/8/2009											
EVO-GC2	EVO-GC2	6/10/2009											
EVO-GC2	EVO-GC2	6/16/2009											
EVO-GC2	EVO-GC2	6/23/2009											
EVO-GC2	EVO-GC2	7/2/2009											
EVO-GC2	EVO-GC2	7/7/2009						0.0014		0.0033		<0.004	
EVO-GC2	EVO-GC2	7/14/2009											
EVO-GC2	EVO-GC2	7/16/2009											
EVO-GC2	EVO-GC2	7/21/2009											
EVO-GC2	EVO-GC2	7/29/2009											
EVO-GC2	EVO-GC2	8/5/2009						0.00172		0.0046		<0.0035	
EVO-GC2	EVO-GC2	8/11/2009											
EVO-GC2	EVO-GC2	8/18/2009											
EVO-GC2	EVO-GC2	8/25/2009											
EVO-GC2	EVO-GC2	9/1/2009										<0.0025	
EVO-GC2	EVO-GC2	9/8/2009						0.0012		<0.0005		0.0024	
EVO-GC2	EVO-GC2	9/16/2009											
EVO-GC2	EVO-GC2	9/22/2009											
EVO-GC2	EVO-GC2	9/29/2009											
EVO-GC2	EVO-GC2	10/6/2009						0.00125		<0.0005		0.0036	
EVO-GC2	EVO-GC2	11/3/2009										<0.0025	
EVO-GC2	EVO-GC2	12/1/2009						0.00115		<0.001		0.0095	
FRO-CC1	FRO-CC1	7/3/2007											
FRO-CC1	FRO-CC1	8/7/2007											
FRO-CC1	FRO-CC1	9/4/2007											
FRO-CC1	FRO-CC1	10/1/2007											
FRO-CC1	FRO-CC1	11/5/2007											
FRO-CC1	FRO-CC1	12/3/2007											
FRO-CC1	FRO-CC1	1/8/2008											
FRO-CC1	FRO-CC1	2/4/2008											
FRO-CC1	FRO-CC1	3/17/2008											
FRO-CC1	FRO-CC1	4/7/2008											
FRO-CC1	FRO-CC1	5/5/2008											
FRO-CC1	FRO-CC1	6/4/2008											
FRO-CC1	FRO-CC1	7/7/2008											
FRO-CC1	FRO-CC1	8/6/2008											
FRO-CC1	FRO-CC1	9/9/2008											
FRO-CC1	FRO-CC1	10/7/2008											
FRO-CC1	FRO-CC1	11/3/2008											
FRO-CC1	FRO-CC1	12/1/2008											

			TI-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
FRO-CC1	FRO-CC1	1/5/2009						0.00212		<0.0025		<0.0025	
FRO-CC1	FRO-CC1	2/2/2009											
FRO-CC1	FRO-CC1	2/3/2009											
FRO-CC1	FRO-CC1	3/17/2009						0.00257		<0.0025		<0.0025	
FRO-CC1	FRO-CC1	4/6/2009						0.00319		<0.0025		<0.003	
FRO-CC1	FRO-CC1	5/4/2009										0.0089	
FRO-CC1	FRO-CC1	6/1/2009						0.00309		<0.0005		0.0083	
FRO-CC1	FRO-CC1	7/6/2009						0.00322		<0.0005		<0.0045	
FRO-CC1	FRO-CC1	8/3/2009						0.00276		<0.0005		0.0067	
FRO-CC1	FRO-CC1	9/1/2009						0.00401		<0.0005		0.0081	
FRO-CC1	FRO-CC1	10/7/2009						0.00453		<0.0005		0.0079	
FRO-CC1	FRO-CC1	11/2/2009						0.00383		<0.0005		0.0077	
FRO-CC1	FRO-CC1	12/7/2009						0.00308		<0.0005		0.0067	
FRO-EC1	FRO-EC1	7/3/2007											
FRO-EC1	FRO-EC1	8/7/2007											
FRO-EC1	FRO-EC1	9/4/2007											
FRO-EC1	FRO-EC1	10/1/2007											
FRO-EC1	FRO-EC1	11/5/2007											
FRO-EC1	FRO-EC1	12/3/2007											
FRO-EC1	FRO-EC1	1/8/2008											
FRO-EC1	FRO-EC1	2/4/2008											
FRO-EC1	FRO-EC1	3/17/2008											
FRO-EC1	FRO-EC1	4/7/2008											
FRO-EC1	FRO-EC1	6/4/2008											
FRO-EC1	FRO-EC1	7/7/2008											
FRO-EC1	FRO-EC1	8/6/2008											
FRO-EC1	FRO-EC1	9/9/2008						0.0262		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	10/7/2008											
FRO-EC1	FRO-EC1	11/3/2008											
FRO-EC1	FRO-EC1	12/1/2008											
FRO-EC1	FRO-EC1	1/5/2009						0.0329					
FRO-EC1	FRO-EC1	2/2/2009											
FRO-EC1	FRO-EC1	2/3/2009											
FRO-EC1	FRO-EC1	3/17/2009						0.0278					
FRO-EC1	FRO-EC1	4/6/2009						0.0228					
FRO-EC1	FRO-EC1	5/4/2009										<0.0025	
FRO-EC1	FRO-EC1	5/13/2009						0.0204		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	5/19/2009						0.0213		<0.0025		0.0084	
FRO-EC1	FRO-EC1	5/26/2009						0.0233		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	6/1/2009						0.0244		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	6/8/2009						0.0243		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	7/6/2009						0.0225		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	8/3/2009						0.0236		<0.0025		0.0052	
FRO-EC1	FRO-EC1	9/1/2009						0.024		<0.0025		<0.0025	
FRO-EC1	FRO-EC1	10/7/2009						0.0289		<0.0025		0.0051	
FRO-EC1	FRO-EC1	11/2/2009						0.0301		<0.0025		0.0113	
FRO-EC1	FRO-EC1	12/7/2009						0.0315		<0.0025		<0.0025	
FRO-KC1	FRO-KC1	7/3/2007											
FRO-KC1	FRO-KC1	8/7/2007											
FRO-KC1	FRO-KC1	9/4/2007											
FRO-KC1	FRO-KC1	10/1/2007											
FRO-KC1	FRO-KC1	11/5/2007											
FRO-KC1	FRO-KC1	12/3/2007											
FRO-KC1	FRO-KC1	1/7/2008											
FRO-KC1	FRO-KC1	2/4/2008											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	NTU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FRO-KC1	FRO-KC1	3/17/2008											
FRO-KC1	FRO-KC1	4/7/2008											
FRO-KC1	FRO-KC1	5/5/2008											
FRO-KC1	FRO-KC1	6/4/2008											
FRO-KC1	FRO-KC1	7/7/2008											
FRO-KC1	FRO-KC1	8/6/2008											
FRO-KC1	FRO-KC1	9/9/2008						0.00423		<0.001		0.0082	
FRO-KC1	FRO-KC1	10/7/2008											
FRO-KC1	FRO-KC1	11/3/2008											
FRO-KC1	FRO-KC1	12/1/2008											
FRO-KC1	FRO-KC1	1/5/2009						0.0071					
FRO-KC1	FRO-KC1	2/2/2009											
FRO-KC1	FRO-KC1	2/3/2009											
FRO-KC1	FRO-KC1	3/17/2009						0.00778					
FRO-KC1	FRO-KC1	4/6/2009						0.00821					
FRO-KC1	FRO-KC1	5/4/2009										0.0123	
FRO-KC1	FRO-KC1	6/1/2009						0.00447		<0.001		0.0212	
FRO-KC1	FRO-KC1	7/6/2009						0.00309		<0.001		0.0095	
FRO-KC1	FRO-KC1	8/3/2009						0.00365		<0.001		0.0081	
FRO-KC1	FRO-KC1	9/1/2009											
FRO-KC1	FRO-KC1	9/2/2009						0.00376		<0.001		0.007	
FRO-KC1	FRO-KC1	10/7/2009						0.00565		<0.001		0.0075	
FRO-KC1	FRO-KC1	11/2/2009						0.00543		<0.001		0.0069	
FRO-KC1	FRO-KC1	12/7/2009						0.00625		<0.001		0.0045	
GHO-CC1	GHO-CC1	1/4/2007											
GHO-CC1	GHO-CC1	2/7/2007											
GHO-CC1	GHO-CC1	3/1/2007											
GHO-CC1	GHO-CC1	4/2/2007											
GHO-CC1	GHO-CC1	4/9/2007											
GHO-CC1	GHO-CC1	4/16/2007											
GHO-CC1	GHO-CC1	4/23/2007											
GHO-CC1	GHO-CC1	5/1/2007											
GHO-CC1	GHO-CC1	5/7/2007											
GHO-CC1	GHO-CC1	5/14/2007											
GHO-CC1	GHO-CC1	5/22/2007											
GHO-CC1	GHO-CC1	5/28/2007											
GHO-CC1	GHO-CC1	6/4/2007											
GHO-CC1	GHO-CC1	6/11/2007											
GHO-CC1	GHO-CC1	7/3/2007											
GHO-CC1	GHO-CC1	8/7/2007											
GHO-CC1	GHO-CC1	9/4/2007											
GHO-CC1	GHO-CC1	10/1/2007											
GHO-CC1	GHO-CC1	11/5/2007											
GHO-CC1	GHO-CC1	12/4/2007										0.0282	
GHO-CC1	GHO-CC1	1/7/2008											
GHO-CC1	GHO-CC1	2/4/2008										0.0149	
GHO-CC1	GHO-CC1	3/3/2008											
GHO-CC1	GHO-CC1	4/1/2008										0.0221	
GHO-CC1	GHO-CC1	5/5/2008											
GHO-CC1	GHO-CC1	6/2/2008										0.0248	
GHO-CC1	GHO-CC1	7/2/2008											
GHO-CC1	GHO-CC1	8/5/2008										0.021	
GHO-CC1	GHO-CC1	8/13/2008											
GHO-CC1	GHO-CC1	8/18/2008										0.0196	

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-CC1	GHO-CC1	9/2/2008											
GHO-CC1	GHO-CC1	9/29/2008										0.0247	
GHO-CC1	GHO-CC1	11/3/2008											
GHO-CC1	GHO-CC1	12/1/2008										0.0294	
GHO-CC1	GHO-CC1	12/3/2008											
GHO-CC1	GHO-CC1	1/5/2009										0.0311	
GHO-CC1	GHO-CC1	1/6/2009											
GHO-CC1	GHO-CC1	2/3/2009										0.0354	
GHO-CC1	GHO-CC1	2/4/2009											
GHO-CC1	GHO-CC1	3/2/2009										0.0287	
GHO-CC1	GHO-CC1	3/3/2009											
GHO-CC1	GHO-CC1	4/1/2009										0.0227	
GHO-CC1	GHO-CC1	4/2/2009											
GHO-CC1	GHO-CC1	5/4/2009										0.0177	
GHO-CC1	GHO-CC1	5/5/2009											
GHO-CC1	GHO-CC1	6/1/2009										0.0164	
GHO-CC1	GHO-CC1	6/2/2009										1570	
GHO-CC1	GHO-CC1	7/6/2009											
GHO-CC1	GHO-CC1	7/7/2009											
GHO-CC1	GHO-CC1	8/4/2009											
GHO-CC1	GHO-CC1	8/5/2009											
GHO-CC1	GHO-CC1	9/1/2009											
GHO-CC1	GHO-CC1	9/2/2009											
GHO-CC1	GHO-CC1	10/5/2009											
GHO-CC1	GHO-CC1	10/6/2009											
GHO-CC1	GHO-CC1	11/2/2009											
GHO-CC1	GHO-CC1	11/3/2009											
GHO-CC1	GHO-CC1	12/1/2009											
GHO-CC1	GHO-CC1	12/2/2009											
GHO-CC1	GHO-CC1	1/4/2010											
GHO-CC1	GHO-CC1	1/5/2010											
GHO-GCS	GHO-GCSPD	2/7/1996											
GHO-GCS	GHO-GCSPD	4/16/1996											
GHO-GCS	GHO-GCSPD	5/21/1996											
GHO-GCS	GHO-GCSPD	8/13/1996											
GHO-GCS	GHO-GCSPD	12/3/1996											
GHO-GCS	GHO-GCSPD	4/4/2002											
GHO-GCS	GHO-GCSPD	11/2/2002											
GHO-GCS	GHO-GCSPD	3/30/2003											
GHO-GCS	GHO-GCSPD	6/29/2003											
GHO-GCS	GHO-GCSPD	12/27/2003											
GHO-GCS	GHO-GCSPD	4/4/2004											
GHO-GCS	GHO-GCSPD	5/2/2004											
GHO-GCS	GHO-GCSPD	6/6/2004											
GHO-GCS	GHO-GCSPD	7/4/2004											
GHO-GCS	GHO-GCSPD	8/1/2004											
GHO-GCS	GHO-GCSPD	9/2/2004											
GHO-GCS	GHO-GCSPD	10/3/2004											
GHO-GCS	GHO-GCSPD	11/2/2004											
GHO-GCS	GHO-GCSPD	12/5/2004											
GHO-GCS	GHO-GCSPD	1/2/2005											
GHO-GCS	GHO-GCSPD	2/4/2005											
GHO-GCS	GHO-GCSPD	3/1/2005											
GHO-GCS	GHO-GCSPD	4/3/2005											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	5/1/2005											
GHO-GCS	GHO-GCSPD	6/12/2005											
GHO-GCS	GHO-GCSPD	7/3/2005											
GHO-GCS	GHO-GCSPD	8/1/2005											
GHO-GCS	GHO-GCSPD	9/4/2005											
GHO-GCS	GHO-GCSPD	10/2/2005											
GHO-GCS	GHO-GCSPD	11/2/2005											
GHO-GCS	GHO-GCSPD	12/8/2005											
GHO-GCS	GHO-GCSPD	1/4/2006											
GHO-GCS	GHO-GCSPD	2/1/2006											
GHO-GCS	GHO-GCSPD	3/10/2006											
GHO-GCS	GHO-GCSPD	4/3/2006											
GHO-GCS	GHO-GCSPD	5/1/2006											
GHO-GCS	GHO-GCSPD	6/5/2006											
GHO-GCS	GHO-GCSPD	7/4/2006											
GHO-GCS	GHO-GCSPD	8/1/2006											
GHO-GCS	GHO-GCSPD	9/1/2006											
GHO-GCS	GHO-GCSPD	10/2/2006											
GHO-GCS	GHO-GCSPD	11/1/2006											
GHO-GCS	GHO-GCSPD	12/1/2006											
GHO-GCS	GHO-GCSPD	1/4/2007											
GHO-GCS	GHO-GCSPD	2/6/2007											
GHO-GCS	GHO-GCSPD	3/1/2007											
GHO-GCS	GHO-GCSPD	4/2/2007											
GHO-GCS	GHO-GCSPD	5/1/2007											
GHO-GCS	GHO-GCSPD	6/4/2007											
GHO-GCS	GHO-GCSPD	7/3/2007											
GHO-GCS	GHO-GCSPD	8/7/2007											
GHO-GCS	GHO-GCSPD	9/4/2007											
GHO-GCS	GHO-GCSPD	10/1/2007											
GHO-GCS	GHO-GCSPD	11/5/2007											
GHO-GCS	GHO-GCSPD	12/4/2007											
GHO-GCS	GHO-GCSPD	1/7/2008											
GHO-GCS	GHO-GCSPD	3/3/2008											
GHO-GCS	GHO-GCSPD	4/1/2008											
GHO-GCS	GHO-GCSPD	5/5/2008											
GHO-GCS	GHO-GCSPD	6/2/2008											
GHO-GCS	GHO-GCSPD	7/2/2008											
GHO-GCS	GHO-GCSPD	8/5/2008											
GHO-GCS	GHO-GCSPD	9/2/2008											
GHO-GCS	GHO-GCSPD	9/29/2008											
GHO-GCS	GHO-GCSPD	11/3/2008											
GHO-GCS	GHO-GCSPD	12/1/2008											
GHO-GCS	GHO-GCSPD	1/5/2009											
GHO-GCS	GHO-GCSPD	2/3/2009											
GHO-GCS	GHO-GCSPD	3/2/2009											
GHO-GCS	GHO-GCSPD	4/1/2009											
GHO-GCS	GHO-GCSPD	5/4/2009											
GHO-GCS	GHO-GCSPD	6/1/2009											
GHO-GCS	GHO-GCSPD	7/6/2009											
GHO-GCS	GHO-GCSPD	8/4/2009											
GHO-GCS	GHO-GCSPD	9/1/2009											
GHO-GCS	GHO-GCSPD	10/5/2009											
GHO-GCS	GHO-GCSPD	11/2/2009											
GHO-GCS	GHO-GCSPD	12/1/2009											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-GCS	GHO-GCSPD	1/4/2010											
GHO-GCS	GHO-GCSPD	2/1/2010											
GHO-GCS	GHO-GCSPD	3/2/2010											
GHO-GCS	GHO-GCSPD	3/15/2010											
GHO-GCS	GHO-GCSPD	3/22/2010											
GHO-GCS	GHO-GCSPD	3/29/2010											
GHO-GCS	GHO-GCSPD	4/5/2010											
GHO-GCS	GHO-GCSPD	4/12/2010											
GHO-GCS	GHO-GCSPD	4/19/2010											
GHO-GCS	GHO-GCSPD	4/26/2010											
GHO-GCS	GHO-GCSPD	5/3/2010											
GHO-GCS	GHO-GCSPD	5/10/2010											
GHO-GCS	GHO-GCSPD	5/17/2010											
GHO-GCS	GHO-GCSPD	5/25/2010											
GHO-GCS	GHO-GCSPD	5/31/2010											
GHO-GCS	GHO-GCSPD	6/7/2010											
GHO-GCS	GHO-GCSPD	6/14/2010											
GHO-GCS	GHO-GCSPD	6/21/2010											
GHO-GCS	GHO-GCSPD	6/28/2010											
GHO-GCS	GHO-GCSPD	7/5/2010											
GHO-GCS	GHO-GCSPD	7/12/2010											
GHO-GCS	GHO-GCSPD	7/19/2010											
GHO-GCS	GHO-GCSPD	7/26/2010											
GHO-GCS	GHO-GCSPD	8/3/2010											
GHO-GCS	GHO-GCSPD	9/7/2010											
GHO-GCS	GHO-GCSPD	10/4/2010											
GHO-GCS	GHO-GCSPD	11/1/2010											
GHO-GCS	GHO-GCSPD	12/6/2010											
GHO-GCS	GHO-GCSPD	1/4/2011											
GHO-LTC	GHO-LTCSPD	2/7/1996											
GHO-LTC	GHO-LTCSPD	5/21/1996											
GHO-LTC	GHO-LTCSPD	8/13/1996											
GHO-LTC	GHO-LTCSPD	12/3/1996											
GHO-LTC	GHO-LTCSPD	4/6/1997											
GHO-LTC	GHO-LTCSPD	6/15/1997											
GHO-LTC	GHO-LTCSPD	10/1/1997											
GHO-LTC	GHO-LTCSPD	5/26/1998											
GHO-LTC	GHO-LTCSPD	9/8/1998											
GHO-LTC	GHO-LTCSPD	12/5/1998											
GHO-LTC	GHO-LTCSPD	3/8/1999											
GHO-LTC	GHO-LTCSPD	6/9/1999											
GHO-LTC	GHO-LTCSPD	9/9/1999											
GHO-LTC	GHO-LTCSPD	12/4/1999											
GHO-LTC	GHO-LTCSPD	3/5/2000											
GHO-LTC	GHO-LTCSPD	6/4/2000											
GHO-LTC	GHO-LTCSPD	11/5/2000											
GHO-LTC	GHO-LTCSPD	6/8/2002											
GHO-LTC	GHO-LTCSPD	11/2/2002											
GHO-LTC	GHO-LTCSPD	3/30/2003											
GHO-LTC	GHO-LTCSPD	6/29/2003											
GHO-LTC	GHO-LTCSPD	12/27/2003											
GHO-LTC	GHO-LTCSPD	1/2/2004											
GHO-LTC	GHO-LTCSPD	3/4/2004											
GHO-LTC	GHO-LTCSPD	4/4/2004											

			Tl-T	**TOC**	**TSS**	**Turb-F**	**Turb-L**	**U-D**	**U-T**	**V-D**	**V-T**	**Zn-D**	**Zn-T**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-LTC	GHO-LTCSPD	5/2/2004											
GHO-LTC	GHO-LTCSPD	6/6/2004											
GHO-LTC	GHO-LTCSPD	7/4/2004											
GHO-LTC	GHO-LTCSPD	8/1/2004											
GHO-LTC	GHO-LTCSPD	9/2/2004											
GHO-LTC	GHO-LTCSPD	10/3/2004											
GHO-LTC	GHO-LTCSPD	11/2/2004											
GHO-LTC	GHO-LTCSPD	12/5/2004											
GHO-LTC	GHO-LTCSPD	1/2/2005											
GHO-LTC	GHO-LTCSPD	2/4/2005											
GHO-LTC	GHO-LTCSPD	3/1/2005											
GHO-LTC	GHO-LTCSPD	4/3/2005											
GHO-LTC	GHO-LTCSPD	5/1/2005											
GHO-LTC	GHO-LTCSPD	6/12/2005											
GHO-LTC	GHO-LTCSPD	7/3/2005											
GHO-LTC	GHO-LTCSPD	8/1/2005											
GHO-LTC	GHO-LTCSPD	9/4/2005											
GHO-LTC	GHO-LTCSPD	10/2/2005											
GHO-LTC	GHO-LTCSPD	11/2/2005											
GHO-LTC	GHO-LTCSPD	12/8/2005											
GHO-LTC	GHO-LTCSPD	1/4/2006											
GHO-LTC	GHO-LTCSPD	2/1/2006											
GHO-LTC	GHO-LTCSPD	4/3/2006											
GHO-LTC	GHO-LTCSPD	7/4/2006											
GHO-LTC	GHO-LTCSPD	8/1/2006											
GHO-LTC	GHO-LTCSPD	9/1/2006											
GHO-LTC	GHO-LTCSPD	10/2/2006											
GHO-LTC	GHO-LTCSPD	11/1/2006											
GHO-LTC	GHO-LTCSPD	12/1/2006											
GHO-LTC	GHO-LTCSPD	5/1/2007											
GHO-LTC	GHO-LTCSPD	6/4/2007											
GHO-LTC	GHO-LTCSPD	7/3/2007											
GHO-LTC	GHO-LTCSPD	8/7/2007											
GHO-LTC	GHO-LTCSPD	9/4/2007											
GHO-LTC	GHO-LTCSPD	10/1/2007											
GHO-LTC	GHO-LTCSPD	11/5/2007											
GHO-LTC	GHO-LTCSPD	12/4/2007											
GHO-LTC	GHO-LTCSPD	5/5/2008											
GHO-LTC	GHO-LTCSPD	6/2/2008											
GHO-LTC	GHO-LTCSPD	7/2/2008											
GHO-LTC	GHO-LTCSPD	7/14/2008											
GHO-LTC	GHO-LTCSPD	8/5/2008											
GHO-LTC	GHO-LTCSPD	8/14/2008											
GHO-LTC	GHO-LTCSPD	9/2/2008											
GHO-LTC	GHO-LTCSPD	9/29/2008											
GHO-LTC	GHO-LTCSPD	11/3/2008											
GHO-LTC	GHO-LTCSPD	12/1/2008											
GHO-LTC	GHO-LTCSPD	1/5/2009											
GHO-LTC	GHO-LTCSPD	2/3/2009											
GHO-LTC	GHO-LTCSPD	3/2/2009											
GHO-LTC	GHO-LTCSPD	4/1/2009											
GHO-LTC	GHO-LTCSPD	5/4/2009											
GHO-LTC	GHO-LTCSPD	6/1/2009											
GHO-LTC	GHO-LTCSPD	7/6/2009											
GHO-LTC	GHO-LTCSPD	8/4/2009											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	NTU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
GHO-LTC	GHO-LTCSPD	9/1/2009											
GHO-LTC	GHO-LTCSPD	10/5/2009											
GHO-LTC	GHO-LTCSPD	11/2/2009											
GHO-LTC	GHO-LTCSPD	12/1/2009											
GHO-LTC	GHO-LTCSPD	1/4/2010											
GHO-LTC	GHO-LTCSPD	2/2/2010											
GHO-LTC	GHO-LTCSPD	3/1/2010											
GHO-LTC	GHO-LTCSPD	3/15/2010											
GHO-LTC	GHO-LTCSPD	3/22/2010											
GHO-LTC	GHO-LTCSPD	3/29/2010											
GHO-LTC	GHO-LTCSPD	4/6/2010											
GHO-LTC	GHO-LTCSPD	4/12/2010											
GHO-LTC	GHO-LTCSPD	4/19/2010											
GHO-LTC	GHO-LTCSPD	4/27/2010											
GHO-LTC	GHO-LTCSPD	5/4/2010											
GHO-LTC	GHO-LTCSPD	5/11/2010											
GHO-LTC	GHO-LTCSPD	5/18/2010											
GHO-LTC	GHO-LTCSPD	5/26/2010											
GHO-LTC	GHO-LTCSPD	6/1/2010											
GHO-LTC	GHO-LTCSPD	6/8/2010											
GHO-LTC	GHO-LTCSPD	6/16/2010											
GHO-LTC	GHO-LTCSPD	6/22/2010											
GHO-LTC	GHO-LTCSPD	6/29/2010											
GHO-LTC	GHO-LTCSPD	7/6/2010											
GHO-LTC	GHO-LTCSPD	7/13/2010											
GHO-LTC	GHO-LTCSPD	7/20/2010											
GHO-LTC	GHO-LTCSPD	7/27/2010											
GHO-LTC	GHO-LTCSPD	8/4/2010											
GHO-LTC	GHO-LTCSPD	9/8/2010											
GHO-LTC	GHO-LTCSPD	10/5/2010											
GHO-LTC	GHO-LTCSPD	11/2/2010											
GHO-LTC	GHO-LTCSPD	12/7/2010											
GHO-LTC	GHO-LTCSPD	1/4/2011											
GHO-PC1	GHO-PC1	1/4/2007											
GHO-PC1	GHO-PC1	2/7/2007											
GHO-PC1	GHO-PC1	3/1/2007											
GHO-PC1	GHO-PC1	4/2/2007											
GHO-PC1	GHO-PC1	5/1/2007											
GHO-PC1	GHO-PC1	6/4/2007											
GHO-PC1	GHO-PC1	7/3/2007											
GHO-PC1	GHO-PC1	8/7/2007											
GHO-PC1	GHO-PC1	9/4/2007											
GHO-PC1	GHO-PC1	10/1/2007										<0.0025	
GHO-PC1	GHO-PC1	11/5/2007											
GHO-PC1	GHO-PC1	12/4/2007										<0.0025	
GHO-PC1	GHO-PC1	1/7/2008											
GHO-PC1	GHO-PC1	2/4/2008										<0.0025	
GHO-PC1	GHO-PC1	3/3/2008											
GHO-PC1	GHO-PC1	4/1/2008										<0.0025	
GHO-PC1	GHO-PC1	5/5/2008											
GHO-PC1	GHO-PC1	6/2/2008										0.0057	
GHO-PC1	GHO-PC1	7/2/2008											
GHO-PC1	GHO-PC1	8/5/2008										<0.0025	
GHO-PC1	GHO-PC1	9/2/2008											
GHO-PC1	GHO-PC1	9/29/2008										<0.0025	

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
GHO-PC1	GHO-PC1	11/3/2008											
GHO-PC1	GHO-PC1	12/1/2008										<0.0025	
GHO-PC1	GHO-PC1	12/3/2008											
GHO-PC1	GHO-PC1	1/5/2009										<0.0025	
GHO-PC1	GHO-PC1	1/6/2009											
GHO-PC1	GHO-PC1	2/3/2009										<0.0025	
GHO-PC1	GHO-PC1	2/4/2009											
GHO-PC1	GHO-PC1	3/2/2009										<0.0025	
GHO-PC1	GHO-PC1	3/3/2009											
GHO-PC1	GHO-PC1	4/1/2009										<0.0025	
GHO-PC1	GHO-PC1	4/2/2009											
GHO-PC1	GHO-PC1	5/4/2009										<0.0025	
GHO-PC1	GHO-PC1	5/5/2009											
GHO-PC1	GHO-PC1	6/1/2009										<0.0025	
GHO-PC1	GHO-PC1	6/2/2009											
GHO-PC1	GHO-PC1	7/6/2009											
GHO-PC1	GHO-PC1	7/7/2009											
GHO-PC1	GHO-PC1	8/4/2009											
GHO-PC1	GHO-PC1	8/5/2009											
GHO-PC1	GHO-PC1	9/1/2009											
GHO-PC1	GHO-PC1	9/2/2009											
GHO-PC1	GHO-PC1	10/5/2009											
GHO-PC1	GHO-PC1	10/6/2009											
GHO-PC1	GHO-PC1	11/2/2009											
GHO-PC1	GHO-PC1	11/3/2009											
GHO-PC1	GHO-PC1	12/1/2009											
GHO-PC1	GHO-PC1	12/2/2009											
GHO-PC1	GHO-PC1	1/4/2010											
GHO-PC1	GHO-PC1	1/5/2010											
GHO-WCP	GHO-WCPI	5/1/2005											
GHO-WCP	GHO-WCPI	7/3/2005											
GHO-WCP	GHO-WCPI	11/2/2005											
GHO-WCP	GHO-WCPI	1/4/2006											
GHO-WCP	GHO-WCPI	3/10/2006											
GHO-WCP	GHO-WCPI	4/3/2006											
GHO-WCP	GHO-WCPI	6/5/2006											
GHO-WCP	GHO-WCPI	7/4/2006											
GHO-WCP	GHO-WCPI	8/1/2006											
GHO-WCP	GHO-WCPI	9/1/2006											
GHO-WCP	GHO-WCPI	10/2/2006											
GHO-WCP	GHO-WCPI	11/1/2006											
GHO-WCP	GHO-WCPI	12/1/2006											
GHO-WCP	GHO-WCPI	1/4/2007											
GHO-WCP	GHO-WCPI	4/2/2007											
GHO-WCP	GHO-WCPI	5/1/2007											
GHO-WCP	GHO-WCPI	6/4/2007											
GHO-WCP	GHO-WCPI	7/3/2007											
GHO-WCP	GHO-WCPI	8/7/2007											
GHO-WCP	GHO-WCPI	9/4/2007											
GHO-WCP	GHO-WCPI	10/1/2007											
GHO-WCP	GHO-WCPI	11/5/2007											
GHO-WCP	GHO-WCPI	4/1/2008											
GHO-WCP	GHO-WCPI	5/5/2008											
GHO-WCP	GHO-WCPI	6/2/2008											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	Station Name	Collect Date/Time	mg/L	mg/L	mg/L	NTU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
GHO-WCP	GHO-WCPI	7/2/2008											
GHO-WCP	GHO-WCPI	7/14/2008											
GHO-WCP	GHO-WCPI	8/5/2008											
GHO-WCP	GHO-WCPI	8/7/2008											
GHO-WCP	GHO-WCPI	8/18/2008											
GHO-WCP	GHO-WCPI	9/2/2008											
GHO-WCP	GHO-WCPI	9/29/2008											
GHO-WCP	GHO-WCPI	11/3/2008											
GHO-WCP	GHO-WCPI	12/1/2008											
GHO-WCP	GHO-WCPI	1/5/2009											
GHO-WCP	GHO-WCPI	4/1/2009											
GHO-WCP	GHO-WCPI	5/4/2009											
GHO-WCP	GHO-WCPI	6/1/2009											
GHO-WCP	GHO-WCPI	7/6/2009											
GHO-WCP	GHO-WCPI	8/4/2009											
GHO-WCP	GHO-WCPI	9/1/2009											
GHO-WCP	GHO-WCPI	10/5/2009											
GHO-WCP	GHO-WCPI	11/2/2009											
GHO-WCP	GHO-WCPI	12/1/2009											
GHO-WCP	GHO-WCPI	3/1/2010											
GHO-WCP	GHO-WCPI	4/6/2010											
GHO-WCP	GHO-WCPI	5/4/2010											
GHO-WCP	GHO-WCPI	6/8/2010											
GHO-WCP	GHO-WCPI	7/6/2010											
GHO-WCP	GHO-WCPI	8/4/2010											
GHO-WCP	GHO-WCPI	9/8/2010											
GHO-WCP	GHO-WCPI	10/5/2010											
GHO-WCP	GHO-WCPI	11/2/2010											
LCO-WLC	LCO-WLC	4/15/2009						0.0174		<0.005		0.009	
LCO-WLC	LCO-WLC	9/23/2009						0.015		<0.005		0.143	
LCO-WLC	LCO-WLC	11/4/2009						0.0186		<0.005		0.0322	
LCO-WLC	LCO-WLC	11/16/2009						0.0181		<0.005		0.0279	
LCO-WLC	LCO-WLC	1/18/2010						0.0184		<0.005		0.0161	
LCO-WLC	LCO-WLC	2/17/2010						0.0184		<0.005		0.0126	
LCO-WLC	LCO-WLC	3/15/2010						0.0185		<0.005		0.0095	
LCO-WLC	LCO-WLC	4/29/2010						0.0176		<0.005		0.0054	
LCO-WLC	LCO-WLC	6/1/2010						0.00827		<0.002		0.0283	
LCO-WLC	LCO-WLC	7/6/2010						0.00715		<0.002		0.0732	
LCO-WLC	LCO-WLC	8/3/2010						0.0103		<0.001		0.112	
LCO-WLC	LCO-WLC	9/7/2010						0.0151		<0.001		0.111	
LCO-WLC	LCO-WLC	10/8/2010						0.0146		<0.001		0.114	
LCO-WLC	LCO-WLC	11/2/2010						0.0176		<0.002		0.0562	
LCO-WLC	LCO-WLC	12/7/2010						0.0183		<0.002		0.0222	
LCO-WLC	LCO-WLC	1/4/2011						0.0223		<0.001		0.014	
LCO-WLC	LCO-WLC	2/1/2011						0.0184		<0.001		0.0125	
LCO-WLC	LCO-WLC	3/1/2011						0.0188		<0.001		0.0081	
LCO-WLC	LCO-WLC	4/4/2011						0.018		<0.002		0.008	
LCO-WLC	LCO-WLC	5/3/2011						0.0158		<0.002		0.008	
LCO-WLC	LCO-WLC	6/7/2011						0.00616		<0.001		0.0498	
LCO-WLC	LCO-WLC	7/5/2011						0.00622		<0.001		0.0725	
LCO-WLC	LCO-WLC	7/12/2011						0.00766		<0.001		0.092	
LCO-WLC	LCO-WLC	8/2/2011						0.0103		<0.002		0.115	
LCO-WLC	LCO-WLC	9/6/2011						0.0149		<0.002		0.121	
LCO-WLC	LCO-WLC	10/4/2011						0.018		<0.002		0.125	

			Tl-T	**TOC**	**TSS**	**Turb-F**	**Turb-L**	**U-D**	**U-T**	**V-D**	**V-T**	**Zn-D**	**Zn-T**
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
LCO-WLC	LCO-WLC	11/1/2011						0.0196		<0.002		0.0407	
LCO-WLC	LCO-WLC	12/6/2011						0.0208		<0.002		0.0226	
TM-SBB	BT-11 seep	6/27/2007			9.7		15.2	0.00281		<0.0010		0.0145	
TM-SBB	BT-11 seep	9/27/2007			30.7		21.6	0.00633		<0.0020		0.0100	
TM-SBB	BT-11 seep	5/30/2008			582		601	0.00263		<0.0010		0.0046	
TM-SBB	BT-11 seep	6/28/2009			4.3		7.84	0.00610		<0.0050		0.0094	
TM-SBB	BT-11 seep	9/8/2009			61.0		185	0.00677		<0.0050		0.0095	
TM-SBB	BT-11 seep	5/31/2010			10.0		8.93	0.0102		<0.0050		0.0236	
TM-SBB	BT-11 seep	7/5/2010			<3.0		5.80	0.00715		<0.0050		0.0058	
TM-SBB	BT-11 seep	8/18/2010			4.7		2.06	0.00754		<0.0050		<0.0050	
TM-SBB	BT-11 seep	9/20/2010			4.0		4.28	0.00990		<0.0050		<0.0050	
TM-SBB	BT-13 seep	6/27/2007			4.7		9.37	0.00364		<0.0020		0.0152	
TM-SBB	BT-13 seep	9/27/2007			95.0		126	0.00436		<0.0020		0.0047	
TM-SBB	BT-13 seep	5/30/2008			95.9		50.1	0.0051		<0.0020		0.0122	
TM-SBB	BT-13 seep	6/28/2009			22.3		13.1	0.00723		<0.0050		0.0103	
TM-SBB	BT-13 seep	9/8/2009			5.0		4.02	0.00740		<0.0050		0.0120	
TM-SBB	BT-13 seep	5/31/2010			4.0		2.08	0.00857		<0.0050		0.0166	
TM-SBB	BT-13 seep	7/5/2010			<3.0		2.14	0.00705		<0.0050		<0.0050	
TM-SBB	BT-13 seep	8/16/2010			<3.0		0.98	0.00694		<0.0050		0.0070	
TM-SBB	BT-13 seep	9/20/2010			3.3		3.10	0.00701		<0.0050		0.0064	
TM-SBG	GT42 seep	6/28/2009			19.7			0.00487		<0.0020		0.0182	
TM-SBG	GT42 seep	7/7/2009			1210								
TM-SBG	GT42 seep	9/8/2009			3.1			0.00695		<0.0050		0.0364	
TM-SBG	GT42 seep	5/31/2010			<5.0			0.017		<0.0050		0.0624	
TM-SBG	GT42 seep	7/6/2010			8.9			0.0106		<0.0050		0.0345	
TM-SBG	GT42 seep	8/16/2010			3.3			0.000444		<0.0010			
TM-SBG	GT42 seep	8/31/2010	<0.00050		18.5			0.021	0.0203	<0.0050	<0.0050	0.0449	0.044
TM-SBG	GT42 seep	9/14/2010											
TM-SBG	GT42 seep	9/20/2010			<3.0			0.0225		<0.0050		0.0445	
TM-SBG	GT42 seep	4/13/2011											
TM-SBG	GT42 seep	4/13/2011											
TM-SBG	GT42 seep	4/28/2011											
TM-SBG	GT42 seep	5/1/2011	0.000036	4.12	22.3			0.022	0.0212	<0.0020	<0.0020	0.0840	0.0906
TM-SBG	GT42 seep	5/12/2011											
TM-SBG	GT42 seep	5/26/2011											
TM-SBG	GT42 seep	5/31/2011			115								
TM-SBG	GT42 seep	6/7/2011											
TM-SBG	GT42 seep	6/7/2011											
TM-SBG	GT42 seep	6/14/2011			12.2								
TM-SBG	GT42 seep	6/29/2011	0.000034	3.78	13.1			0.0309	0.0307	<0.0020	<0.0020	0.141	0.144
TM-SBG	GT42 seep	7/5/2011											
TM-SBG	GT42 seep	7/12/2011			17.5								
TM-SBG	GT42 seep	7/19/2011			11.1								
TM-SBG	GT42 seep	7/20/2011			125			0.0342		<0.0050		0.156	
TM-SBG	GT42 seep	8/3/2011			6.7								
TM-SBG	GT42 seep	8/8/2011			8.2								
TM-SBG	GT42 seep	8/16/2011											
TM-SBG	GT42 seep	8/23/2011			156								
TM-SBG	GT42 seep	8/31/2011			<3.0			0.0318		<0.0050		0.197	
TM-SBG	GT42 seep	9/13/2011											
TM-SBG	GT42 seep	9/20/2011											
TM-SBG	GT42 seep	10/5/2011											
TM-SBG	GT42 seep	10/11/2011			156			0.0222		<0.0020		0.0430	
TM-SBG	GT42 seep	4/16/2012											

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TM-SBG	GT42 seep	5/15/2012	0.000033	3.15	11.7			0.0229	0.023	<0.0020	<0.0020	0.0669	0.0724
TM-SBG	GT42 seep	6/4/2012	0.00003	2.76	<3.0			0.0331	0.033	<0.0020	<0.0020	0.0976	0.102
TM-SBG	GT42 seep	6/4/2012											
TM-SBG	GT42 seep	6/19/2012											
TM-SBG	GT42 seep	6/25/2012			11.8								
TM-SBG	GT42 seep	6/25/2012											
TM-SBG	GT42 seep	7/10/2012			<3.0			0.0223		<0.0020		0.0606	
TM-SBG	GT42 seep	7/17/2012			8								
TM-SBG	GT42 seep	8/7/2012	<0.000050	3.9	<3.0			0.0287	0.0291	<0.0050	<0.0050	0.098	0.1
TM-SBG	GT42 seep	8/20/2012			3.2								
WM-ED	SEEP-9	3/23/2010						0.00830		<0.0020		0.0031	
WM-ED	SEEP-9	4/21/2010						0.00618		<0.0020		0.0027	
WM-ED	SEEP-9	5/25/2010				5.90		0.00580		<0.0020		0.0034	
WM-ED	SEEP-9	6/29/2010						0.0113		<0.0050		0.0057	
WM-ED	SEEP-9	7/21/2010			<3.0	1.09		0.0129		<0.0050		<0.0050	
WM-ED	SEEP-9	8/25/2010			12.9	2.16		0.0121		<0.0050		<0.0050	
WM-ND	SEEP-1	5/25/2010				4.90		0.000910		<0.0010		0.0155	
WM-ND	SEEP-1	10/26/2010			<5.0	1.16		0.000868		<0.0050		<0.015	
WM-ND	SEEP-1	5/2/2011			12.7	15.3		0.00418		<0.0010		0.0120	
WM-ND	SEEP-12	5/25/2010				16.4		0.00217		<0.0010		<0.0010	
WM-ND	SEEP-12	5/2/2011			149	86.7		0.00223		<0.0010		<0.0030	
WM-ND	SEEP-2	6/13/2007						0.00568		<0.0010		<0.0010	
WM-ND	SEEP-2	5/14/2008	0.00014	37.5	83.2	119		0.00179	0.00291	<0.0010	0.0168	0.0041	0.0269
WM-ND	SEEP-2	5/14/2008	<0.00010	29.5	77.7	169		0.00267	0.00355	<0.0010	0.0083	0.0019	0.013
WM-ND	SEEP-2	9/16/2008	<0.00010	10.6	4.8	15.2		0.00191	0.00189	<0.0010	0.0011	<0.0060	0.0083
WM-ND	SEEP-2	9/16/2008	<0.00010	6.19	<3.0	10.0		0.000018	0.000026	<0.0010	<0.0010	<0.0070	0.0075
WM-ND	SEEP-2	5/25/2010				4.80		0.00156		<0.0020		0.0094	
WM-ND	SEEP-2	10/26/2010			3.1	1.81		0.00148		<0.0020		<0.0060	
WM-ND	SEEP-3	5/25/2010				46.3		0.000664		<0.0010		0.0052	
WM-ND	SEEP-3	10/26/2010			4.3	10.9		0.000511		0.0019		0.0193	
WM-ND	SEEP-3	5/2/2011			7.5	13.3		0.00663		<0.0010		0.0091	
WM-ND	SEEP-4	5/25/2010				3.25		0.00744		<0.0020		0.0107	
WM-ND	SEEP-4	10/26/2010			4.3	2.66		0.00735		<0.0020		<0.0060	
WM-ND	SEEP-4	5/2/2011			7.3	8.36		0.00989		<0.0010		0.0257	
WM-ND	SEEP-5	6/13/2007						0.00549		<0.0010		0.0015	
WM-ND	SEEP-5	5/25/2010				11.9		0.00101		<0.0010		0.0015	
WM-ND	SEEP-5	5/2/2011			51.5	41.1		0.000650		<0.0010		<0.0030	
WM-SD	SD1	8/2/2006	0.00050	5.14	644	1340		0.00302	0.00434	<0.0020	0.0895	<0.0020	0.0986
WM-SD	SD1	10/31/2007	0.00013	27.9	4.5	159		0.000981	0.00122	0.0029	0.0236	0.0054	0.0223
WM-SD	SD1	4/2/2008	<0.00020	2.94	3	1.47		0.00969	0.01	<0.0020	<0.0020	0.0187	0.0206
WM-SD	SD1	5/14/2008	0.00015	21.5	30.7	176		0.00333	0.00398	<0.0010	0.0214	0.0022	0.0233
WM-SD	SEEP-6	6/13/2007						0.00316		<0.0010		<0.0010	
WM-SD	SEEP-6	5/25/2010				30.5		0.0175		<0.0050		<0.0050	
WM-SD	SEEP-6	10/26/2010			<5.0	1.09		0.0146		<0.0050		<0.015	
WM-SD	SEEP-6	5/2/2011			4.0	2.94		0.0140		<0.0020		<0.0060	
WM-SD	SEEP-7	10/31/2007	<0.00050	10.3	173	209		0.0127	0.0129	<0.0050	0.0191	0.005	0.0281
WM-SD	SEEP-7	4/2/2008	<0.00020	3.91	<3.0	3.25		0.00829	0.00826	<0.0020	<0.0020	0.005	0.0054
WM-SD	SEEP-7	5/25/2010				3.33		0.0139		<0.0050		<0.0050	
WM-SD	SEEP-7	10/26/2010			8.7	1.77		0.0216		<0.0050		<0.015	
WM-SD	SEEP-7	5/2/2011			56.7	29.4		0.0187		<0.0020		0.0427	
WM-SD	SEEP-8	5/25/2010				8.60		0.00651		<0.0050		<0.0050	
WM-SD	SEEP-8	10/26/2010			<5.0	6.31		0.00367		<0.0050		<0.015	
WM-SD	SEEP-8	5/2/2011			4.0	1.50		0.00716		<0.0020		<0.0060	
WCM-4C	SEEP A	5/8/2006	<0.00050	4.94	5.6	1.20		0.00529	0.00531	<0.0050	<0.0050	<0.0050	<0.0050

			Tl-T	TOC	TSS	Turb-F	Turb-L	U-D	U-T	V-D	V-T	Zn-D	Zn-T
Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
WCM-4C	SEEP A	5/8/2007	<0.00050	4.77	<3.0	0.63		0.0141	0.0143	<0.0050	<0.0050	0.0182	0.0186
WCM-7C	7C West Dump	march, 2012						0.00922				<0.015	
WCM-7C	7C West Dump	April, 2012						0.0118				0.0139	
WCM-7C	7C West Dump	May, 2012						0.01350				0.0163	
WCM-7C	7C West Dump	June, 2012						0.01370				0.0240	
WCM-7C	7C West Dump	July, 2012						0.01430				0.0204	
WCM-7C	7C West Dump	August, 2012						0.01260				0.0250	
WCM-7C	7C West Dump	September, 2012						0.01280				<0.015	
WCM-7C	7C West Dump	October, 2012						0.01180				<0.015	
WCM-7C	7C West Dump	November, 2012						0.01040				<0.015	
WCM-7C	7C West Dump	December, 2012						0.01050				<0.015	
WCM-7P	7P SE	November, 2012						0.0139				<0.015	
WCM-7P	7P SE	December, 2012						0.0135				<0.015	
BM-SED	SP2 SOUTH SEEP	6/3/2009						0.00349		<0.0010		0.01000	
BM-SED	SP2 SOUTH SEEP	4/10/2010						0.00394		<0.0020		0.02220	
BM-SED	SP2 SOUTH SEEP	6/10/2010						0.00462		<0.0020		0.02820	
BM-SED	SP2 SOUTH SEEP	4/11/2011						0.00409		<0.0010		0.03290	
BM-SED	SP2 SOUTH SEEP	5/31/2011						0.00710		<0.0010		0.00960	
BM-SED	SP2 SOUTH SEEP	6/11/2011						0.00812		<0.0020		0.02810	
BM-SED	SP2 SOUTH SEEP	7/11/2011						0.00957		<0.0020		0.03910	
BM-SED	SP2 SOUTH SEEP	8/11/2011						0.00919		<0.0020		0.03540	
BM-SED	SP2 SOUTH SEEP	9/11/2011						0.01100		<0.0020		0.03620	
BM-SED	SP2 SOUTH SEEP	10/11/2011						0.01210		<0.0020		0.03420	
BM-SED	SP2 SOUTH SEEP	11/11/2011						0.01270		<0.0010		0.01340	
BM-SED	SP2 SOUTH SEEP	4/12/2012						0.01110		<0.0020		0.04050	
BM-SED	SP2 SOUTH SEEP	5/12/2012						0.01550		<0.0020		0.05770	
BM-SED	SP2 SOUTH SEEP	6/12/2012						0.01620		<0.0020		0.06700	
BM-SED	SP2 SOUTH SEEP	7/12/2012						0.0179		<0.0020		<0.0060	
BM-SED	SP2 SOUTH SEEP	8/12/2012						0.0183		<0.0020		0.0200	
BM-SED	SP2 SOUTH SEEP	9/12/2012											
BM-SED	SP2 SOUTH SEEP	10/12/2012											
BM-SED	SP2 EAST SEEP	6/3/2009						0.00152		<0.0010		0.00590	
BM-SED	SP2 EAST SEEP	9/8/2009						0.00277		<0.0020		0.00510	
BM-SED	SP2 EAST SEEP	4/10/2010						0.00255		<0.0020		0.00600	
BM-SED	SP2 EAST SEEP	6/10/2010						0.00406		<0.0020		0.00600	
BM-SED	SP2 EAST SEEP	10/1/2010						0.00543		<0.0020		0.00760	
BM-SED	SP2 EAST SEEP	4/11/2011						0.00751		<0.0010		0.02810	
BM-SED	SP2 EAST SEEP	5/31/2011						0.00710		<0.0010		0.00960	
BM-SED	SP2 EAST SEEP	6/11/2011						0.00750		<0.0010		0.01190	
BM-SED	SP2 EAST SEEP	7/11/2011						0.00579		<0.0010		<0.0030	
BM-SED	SP2 EAST SEEP	8/11/2011						0.00949		<0.0010		0.02400	
BM-SED	SP2 EAST SEEP	9/11/2011						0.00830		<0.0010		0.01870	
BM-SED	SP2 EAST SEEP	10/11/2011						0.00831		<0.0010		0.02600	
BM-SED	SP2 EAST SEEP	11/11/2011						0.00845		<0.0010		0.01410	
BM-SED	SP2 EAST SEEP	4/12/2012						0.01470		<0.0020		0.04200	
BM-SED	SP2 EAST SEEP	5/12/2012						0.01570		<0.0020		0.06330	
BM-SED	SP2 EAST SEEP	6/12/2012						0.01730		<0.0020		0.04730	
BM-SED	SP2 EAST SEEP	7/12/2012						0.0172		<0.0020		0.0504	
BM-SED	SP2 EAST SEEP	8/12/2012						0.0175		<0.0020		0.0500	
EVO-F2	F2 WELL	4/8/2010						0.0359		<0.0010		0.136	
EVO-F2	F2 WELL	9/14/2010						0.0357		<0.0010		0.133	
EVO-F2	F2 WELL	9/15/2011						0.0365		<0.0050		0.129	
EVO-F2	F2 WELL	7/26/2011						0.0379		<0.0050		0.153	

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Mine/Facility ID	**Station Name**	**Collect Date/Time**	**mg/L**	**mg/L**	**mg/L**	**NTU**	**NTU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
EVO-F2	F2 WELL	12/15/2011						0.0229		<0.00025		0.048	
EVO-F2	F2 WELL	03/16/2012						0.0116		<0.00025		<0.015	
BM-DPB	BM-11-01-A	5/28/2012						0.00471				0.0032	
BM-DPB	BM-11-01-B	5/29/2012						0.0104				0.0037	
BM-DPB	BM-11-01-C	5/28/2012						0.0171				0.0037	
BM-DPB	BM-11-02-B	5/30/2012						0.0189				0.0022	
BM-DPB	BM-11-02-C	5/29/2012						0.0131				0.0076	
GHO-BH1	GHO-BH1	4/20/2009						0.00305		<0.005		<0.005	
GHO-BH1	GHO-BH1	10/28/2009						0.00531		<0.005		0.0076	
GHO-BH1	GHO-BH1	6/15/2010						0.00296		<0.005		0.0086	
GHO-BH1	GHO-BH1	8/9/2010						0.00519		<0.001		0.0078	
GHO-BH1	GHO-BH1	9/20/2010						0.00327		<0.001		0.0085	
GHO-BH1	GHO-BH1	10/12/2010						0.00437		<0.001		0.008	
GHO-BH1	GHO-BH1	11/15/2010						0.00574		<0.001		0.0094	
GHO-BH1	GHO-BH1	4/13/2011						0.00376		<0.002		0.01	
GHO-BH1	GHO-BH1	5/11/2011						0.0044		<0.002		<0.006	
GHO-BH1	GHO-BH1	6/8/2011						0.00236		<0.002		0.0184	
GHO-BH1	GHO-BH1	7/13/2011						0.00569		<0.005		<0.015	
GHO-BH1	GHO-BH1	9/14/2011						0.00812		<0.005		<0.015	
GHO-BH1	GHO-BH1	10/5/2011						0.0077		<0.005		<0.015	
GHO-BH1	GHO-BH1	6/6/2012						0.00446		<0.001		0.0167	
GHO-BH1	GHO-BH1	7/5/2012						0.00271		<0.001		0.0122	
GHO-BH1	GHO-BH1	9/12/2012						0.00759		<0.002		0.0074	
GHO-BH1	GHO-BH1	10/3/2012						0.00827		<0.005		<0.015	
GHO-BH1	GHO-BH1	11/7/2012						0.00295		<0.002		0.0134	
BM-NED	LOWER BLIND SEEP	6/3/2009						0.01060		<0.0020		0.01500	
BM-NED	LOWER BLIND SEEP	9/8/2009						0.00935		<0.0020		0.00970	
BM-NED	LOWER BLIND SEEP	5/10/2010						0.01010		<0.0020		0.01400	
BM-NED	LOWER BLIND SEEP	6/10/2010						0.01010		<0.0020		0.01500	
BM-NED	LOWER BLIND SEEP	10/1/2010						0.00852		<0.0020		0.01000	
BM-NED	LOWER BLIND SEEP	5/31/2011						0.00883		<0.0010		0.01940	
BM-NED	LOWER BLIND SEEP	6/11/2011						0.00914		<0.0010		0.01660	
BM-NED	LOWER BLIND SEEP	10/11/2011						0.00980		<0.0020		0.01450	
BM-NED	North Dump Seep N	5/12/2012						0.00251		<0.0010		0.00610	
BM-NED	North Dump Seep S	6/12/2012						0.00561		0.00220		0.00570	
BM-NED	North Dump Seep N	6/12/2012						0.00743		<0.0010		0.0099	
BM-NED	North Dump Seep N	7/12/2012						0.00790		<0.0010		0.0102	
BM-NED	North Dump Seep N	8/12/2012						0.00761		<0.0010		0.0118	
BM-NED	North Dump Seep S	7/12/2012						0.00679		0.0034		0.0097	
BM-NED	North Dump Seep S	8/12/2012						0.00703		0.0010		0.0080	