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SRK Project No. 152500.05

Mr. Dan Stone
Itasca Denver, Inc.
143 Union Blvd.
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Lakewood, Colorado 80228

Subject: Response to Comments on the January 2010 Baseline Characterization Report for the Celatom Mine, Drewsey, Oregon,

Dear Dan Stone:

This correspondence has been prepared by SRK Consulting (U.S.), Inc. (SRK) on behalf of EP Minerals LLC (EPM) in response to comments made by Itasca Denver, Inc. (Itasca), a subcontractor to Enviroscientists, regarding the *Baseline Characterization Report for the Celatom Mine, Drewsey, Oregon* (January 2010). The comments were provided in a memorandum dated February 8, 2010 and are reproduced below in italics, followed by SRK's response to each comment. A technical meeting with the U.S. Department of the Interior, Bureau of Land Management (BLM), Itasca, Enviroscientists and EPM was held on January 26, 2010 to discuss preliminary comments on the baseline report.

A complete revised report that addresses the comments by Itasca and incorporates recommended modifications is enclosed to replace the January 2010 version.

General Comments

General Comment 1

The stated purpose of the report (page 1) is to "provide baseline information, and to a limited extent, analyses and interpretations related to … potential hydrologic impacts, and potential pit lake development" (emphasis added). In general, the provided baseline information appears to be complete and, pending responses to the specific comments below, adequate for this EIS. However, the assessments of potential hydrologic impacts and potential pit lake development are at a minimum unclear, and more likely incomplete with respect to the typical requirements for an EIS analysis.

For example, one of the conclusions of the report (No. 6, on page 117) states that "if the pits are backfilled above the water table there is the potential for water to move away from the pits," in which case "sulfide oxidation products within the unoxidized diatomite backfill could migrate into groundwater." It is unclear what the environmental impacts of this scenario might be because crucial questions are left unanswered, such as: Where would the pit water go? What would be the chemistry of water leaving the pit areas? How much groundwater would be impacted and for how long? The report lacks a clear and comprehensive analysis of the potential groundwater impacts under backfilled pit conditions. Furthermore, if different pit backfill scenarios (e.g., full versus partial) are being considered, then each scenario should be adequately evaluated.

Another example concerns the meteoric water that builds up in the pits during wet years (or, for that matter, even during the late winter through early summer months during "normal" years1). The report acknowledges that short-term flow of meteoric water into the wall rocks might occur, but then asserts that the "small-scale groundwater migration would be short-lived, however, and would reverse direction during the dry season" (page 81). This assertion is unsupported by any analysis and seems to contradict the description of the groundwater flow regime provided earlier in the report (page 77), which indicates that recharge to the underlying basement aquifer is partly (although admittedly only a small component) via vertical flow from the overlying diatomite. Hence, even though evaporation rates greatly exceed precipitation rates in the project area, there is still some component of the seasonally infiltrating precipitation that becomes groundwater recharge. If this is the case for the regional hydrogeologic system, why should it be different for the pit areas? If anything, the local infiltration rates could be enhanced in the pit areas due to surface-water ponding for periods of time lasting at least a few months. In any event, the report is contradictory in its descriptions of seasonally infiltrating water and it is unclear what the groundwater quantity and quality impacts (however small) of such infiltration in the pit areas might be.

To conclude this comment, the "limited extent" of potential hydrologic impacts addressed by the report appears to be incomplete for EIS purposes.

Responses to General Comment 1

SRK concurs that the analysis of pit lake development and impacts analysis completed for the Celatom project is not as extensive as would typically be required for a large-scale hard rock mining operation. However, the level of analysis that is necessary to support an EIS varies according to the project and will depend upon site-specific conditions. It is SRK's opinion that the level of analysis completed for the Celatom project is adequate for EIS purposes.

A detailed numerical groundwater-flow/solute transport model, were it feasible, would probably provide the *"clear and comprehensive analysis"* requested above. However, a numerical groundwater model has not been developed for the Celatom Mine due to the inherent difficulties in modeling flow systems of very-low hydraulic conductivity. The decision not to attempt a numerical model of this system was supported by BLM and by Itasca reviewers at a technical meeting held at the SRK office in Reno, Nevada on May 22, 2009. Absent a numerical model, questions such as "*How much groundwater would be impacted and for how long?"* must necessarily be answered in general terms. Also as a consequence, the hydrogeochemical analysis must be limited to a qualitative assessment, because numerical groundwater-flow output is required for quantitative (numerical) geochemical predictive calculations. Therefore, the geochemical effects of pit-wall exposure and fate and transport are addressed qualitatively in our analysis. This evaluation is based on the analogue field data and predicted geochemical behavior of site materials in laboratory testing.

The statement on page 81 of the report: "*During very wet years, when meteoric water could build up at the bottom of a pit, short-term flow into the wall rocks might occur. The small-scale groundwater migration would be short-lived, however, and would reverse direction during the dry season."* was from an earlier version of the hydrogeological evaluation, and pertained only to meteoric water accumulation in and temporary seepage out of a shallow pit with a pit floor well above the water table. This discussion does not belong in the analysis on page 81 of pits excavated to below the water table. SRK regrets the confusion caused by this error.

The question "*If this [seasonally infiltrating precipitation that becomes groundwater recharge] is the case for the regional hydrogeologic system, why should it be different for the pit areas?"* probably arises from the confusing statement described above. In the discussion cited, the pits would not only be excavated to below the diatomite water table but also below the potentiometric surface in the volcanics as well. Consequently, precipitation ponded on the pit floor could not flow against the gradient to recharge the volcanic aquifer.

Under the current plan, the pits that intersect groundwater will be partially backfilled to a point at which the pit would remain an evaporative sink, but would minimize the potential for a free water surface forming (i.e., backfill to a point where evaporation would equal inflow). Under this partial-backfill

scenario, evaporation would occur mostly by capillary action (i.e., soil-moisture flux) so that a free water surface is less likely to occur, but evaporation (and possibly transpiration through vegetation) would continue and a localized groundwater sink would be maintained. Because these pits will remain closed systems, a detailed hydrogeochemical analysis of the potential for sulfide oxidation products and readily leachable constituents within the backfill materials and pit walls to migrate away from the pits and degrade downgradient groundwater resources is not warranted. A description of the partial-backfill has been added to Section 7.4 and a qualitative evaluation of this scenario is provided.

General Comment 2

Throughout the document, references are made to the presence of analytical laboratory reports in appendices C, H, and M. However, there are no analytical laboratory reports present in the hard copies of these appendices. These reports should either be added to the appendices or the text should be revised to clarify that they (and the lab sheets associated with Appendix K) are only provided electronically on the attached disk. Additionally, the analytical laboratory reports should be added to Appendix L for completeness.

Response to General Comment 2

The report has been revised to indicate that the analytical laboratory reports are only provided electronically on the enclosed CD. In addition, the analytical laboratory reports from Chemex (Appendix L) have been provided on the enclosed CD for completeness.

General Comment 3

Throughout Section 8, figure numbers and their respective references in the text are inconsistent. References to figures within the text should be updated to refer to the correct figure numbers.

Response to General Comment 3

The references to figure numbers within the Section 8 text have been revised to be consistent with the figure numbers.

Specific Comments

Specific Comment 1

Sections 2.2.2.2 and 2.3 – The text indicates that the depth of the Section 25 deposit has not been determined, that preliminary mine designs have not been developed, and that no estimates of the volume of waste rock are available. If the Plan of Operations calls for mining of this pit, then the missing information should be provided and estimates of the waste rock volumes should be added to Section 2.3 of the report.

Response to Specific Comment 1

The estimated pit depths and volumes of waste rock from the Section 25 pit have been included in Sections 2.2.2.2 and 2.3.

Specific Comment 2

Section 4.2 – The text describes previous hydrogeologic investigations, but neglects to mention the EP test wells installed in 1985. Data from those test wells are subsequently used to define static water levels (page 71 and Figure 7-1) and the temporal variability of groundwater levels (Appendix J), and the 2004 groundwater sampling of those wells is discussed in Section 7.5.2. It seems that a description of those wells should be provided in this section of the report.

Response to Specific Comment 2

A description of the EP Minerals test wells is provided in the initial report prepared by SRK in 2004 (*Geochemical Evaluation of the EaglePicher Diatomite Mine, Drewsey, Oregon*) that is provided in Appendix A. For completeness, Section 4.2 has been revised to include a detailed description of these wells including some information on well completion that was not previously provided.

Specific Comment 3

Table 4-11 – Dissolved Oxygen values presented in the table are as high as 80.6 mg/L at temperatures of roughly 10 to 20 °C. These values are questionable; they exceed saturation by as much as a factor of 8. The values should be corrected, the table revised to acknowledge the apparent erroneous nature of the values, or further clarification provided as a footnote.

Response to Specific Comment 3

Table 4-11 have been revised to include a footnote that indicates the dissolved oxygen concentrations for some of the wells exceed the solubility of oxygen in water at the reported temperatures and estimated pressures and are probably inaccurate. The error was, however, consistent during purging and dissolved oxygen concentrations stabilized prior to collecting the samples.

Specific Comment 4

Table 6-1 – The table associates Tub Spring with ID "SP-A01," however Appendix C (page 9) lists Tub Spring as "SE-A02." Also the indicated sampling location in the tributary to Mill Gulch (DR-C07) is not shown on Figure 6-1. These inconsistencies should be corrected.

Response to Specific Comment 4

The sample site number for Tub Spring is SE-A02. Table 6-1 and Attachment A in the Surface Water Survey Field Report has been revised to reflect this change as well as the ACZ laboratory report. Sample site DR-C07 (Tributary to Mill Gulch) has been added to Figure 6-1 as recommended.

Specific Comment 5

Section 6.2.3 – The text states that "alkalinity for all four sites exceeds the Oregon Aquatic Life Criterion of 20 mg/L for chronic exposure." However, the Oregon Aquatic Life Criterion of 20 mg/L for alkalinity is derived from the EPA Aquatic Life Criterion, which is a minimum value ("20 mg/L or more as CaCO3 freshwater aquatic life except where natural concentrations are less" [EPA, 1986]). Any references to this criterion in the text and tables should be revised accordingly.

Response to Specific Comment 5

The text and tables have been revised as recommended.

Specific Comment 6

Section 7.1.1.2 – The text states that "At both locations [PZ-4 and PZ-5D], however, water levels in the basement are lower than groundwater levels in the diatomite, resulting in a downward gradient." But it is unclear how diatomite water levels were determined in the vicinity of PZ-4. The two closest monitoring locations (TW #5, presumably monitoring diatomite, and MW-12, an unoxidized diatomite completion) both have lower elevation water levels than PZ-4, according to Figure 7-1, which would indicate an upward hydraulic gradient in that area. This apparent discrepancy should be clarified. If the data do, in fact, truly indicate an upward gradient from bedrock to diatomite in this area, then those conditions should be factored into any analysis of the potential for pit lake formation and/or groundwater throughflow (if backfilled) in the proposed southern extension of the Kelly Field pit.

Response to Specific Comment 6

The diatomite deposit near PZ-4 is thin and unsaturated; therefore, diatomite groundwater elevation data in this location are not available. MW-12 is the nearest surveyed monitoring well to PZ-4 that is installed in diatomite, but this well is 1,200 ft away and about 33 ft lower in elevation. Therefore, a direct relationship between the diatomite and basement water levels cannot be made in this area. However, estimated contours of groundwater levels in the diatomite (see revised Figure 7-1) suggest that the water level in the basement is very near to the level in the diatomite. Whether the gradient is slightly upward or slightly downward, SRK agrees that the relationship is not as definitive as suggested in the original text. The formation of a pit lake will not depend on whether the water level in the basement is a few feet higher or lower than the water level in the diatomite. It will depend on (among other factors) where the water level in the basement is relative to the floor of the pit. The relative static levels of groundwater in

the diatomite and the basement rocks would, of course, be one determinant of groundwater outflow, through-flow, or inflow to a sink. Consequently, the relationship should be closely defined beneath each of the proposed pit areas. Section 7.1.1.2 has been revised to clarify the interpretation of groundwater gradient.

Specific Comment 7

Figure 7-1 (and Figure 3-4) – The figure(s) show(s) water levels that presumably were measured at the various times of monitoring well drilling/installation (this should be clarified). If this is true, then the reported data may not accurately reflect current groundwater conditions, given the ranges of variability (up to 4 or 5 feet) exhibited by the EP test well hydrographs (Appendix J), and the point that moderate drought conditions have caused a more or less steady decline in water levels since 1998 (Section 7.1.1.3). In this case, we recommend that a synoptic set of water-level measurements be made and incorporated into the report to show a better understanding of current groundwater elevations and vertical gradients.

Response to Specific Comment 7

The water level measurements in Figure 7-1 are synoptic (August 2009) and were used to generate the potentiometric surface shown. The only wells for which recent water levels were not obtained include Test Well #1, #3 and #9 and PZ-1 and PZ-2. With the exception of Test Well #9, these wells are redundant to nearby wells and were not used to generate the potentiometric surface map presented in Figure 7-1. Test Well #9 is outside the potentiometric surface map area. For clarification, the date of water level measurement has been added to Figure 3-4 and the wells that were not used to generate the potentiometric surface map have been removed from Figure 7-1.

Specific Comment 8

Page 77, last paragraph, 2nd sentence – We suggest rewording as: "Groundwater in these areas lies within the volcanic basement, significantly below the base of proposed mining." Otherwise, as the sentence is currently worded, it sounds like the proposed mining is within the volcanic basement rocks.

Response to Specific Comment 8

The text has been revised as recommended.

Specific Comment 9

Section 7.3.2.2 – See General Comment No. 1.

Response to Specific Comment 9

See response to General Comment 1.

Specific Comment 10

Section 8.2.1 – The text states that "results of the MWMP testing are summarized according to material type in Table 8-1 for select parameters. A complete tabulation of results is provided in Appendix K." No description of the criteria for selection of parameters included in Table 8-1 is provided. The text throughout the document appears to exclusively address the parameters presented in Table 8-1 that exceed standards. However, evaluation of Appendix K indicates that numerous other parameters were also detected at or above the cited water-quality standards (e.g., Cu, Mg, Tl, NO3, Hg, and Cl). All parameters exceeding cited criteria should be included in Table 8-1 and discussed in the text, or justification for their exclusion should be provided.

Response to Specific Comment 10

Table 8-1 has been modified to include the calculated average concentrations by rock type for all analyzed parameters. These average MWMP results are compared to Oregon MCLs and the text in Section 8.2.1 has been revised to include a discussion of this comparison. The remainder of the report has been revised to be consistent with this discussion.

It should be noted that the initial analysis of MWMP results compared the MWMP data to reference values from the Nevada Division of Environmental Protection (NDEP) Form 0090 for Profile II constituents. Table 8-1 has been corrected to reflect the MCL values provided in the cited reference (333-061-0030) and the text and figures have been revised accordingly. In addition, the text and appendices have been reviewed to ensure that the water quality standards that are used for comparative purposes have been presented consistently throughout the document.

Specific Comment 11

Section 8.2.1 – The MCL values for some constituents provided in Table 8-1 (and in Appendix K) are incorrect and/or inconsistent with those provided elsewhere in the document (e.g., Table 6-1). For example:

a value of 0.05 mg/L for arsenic is presented in Table 8-1, whereas the Oregon MCL (and the value presented elsewhere in the document) is 0.01 mg/L;

vanadium does not have an Oregon MCL (as per 333-061-0030);

the secondary contaminant level for sulfate is 250 mg/L, as indicated in other tables in the document (there is no 500 mg/L Oregon MCL as indicated in Table 8-1); and

the secondary contaminant levels for F, Mn, and Fe should be 2.0 mg/L, 0.05 mg/L, and 0.3 mg/L, respectively, as indicated in other tables in the document.

Table 8-1 should be corrected to reflect the MCL values provided in the cited reference (333-061-0030) and the text and figures revised accordingly. Additionally, care should be taken to ensure that the standards presented are represented consistently throughout the document.

Response to Specific Comment 11

See response to Specific Comment 10. The text, tables, figures and appendices have been amended to ensure that the water quality standards that are used for comparative purposes have been presented consistently.

Specific Comment 12

Section 8.2.1, p.97, 1st sentence – The text states that "the two sediment pond samples are the same and exhibit near neutral pH values." However, the pH values (of 4.5 and 4.9 standard units) for these two samples were acidic. The text should be revised to be consistent with the data presented.

Response to Specific Comment 12

The text has been revised as recommended.

Specific Comment 13

Section 8.2.1, p.97, 3rd paragraph – The text states that "Aluminum is elevated for almost all material types, and can be attributed to the abundance of clay in the deposit." The MWMP method calls for filtration with a 0.45 µm filter prior to analysis of the extract for dissolved constituent analysis. It is not clear how the presence of clay in the deposit would affect dissolved aluminum concentrations at circumneutral pH. We recommend clarification on this point.

Response to Specific Comment 13

Aluminum is elevated above the Oregon MCLs for all material types except basalt, and can be attributed to the abundance of clay in the deposit (Figure 8-6). Even though the MWMP leachate is filtered prior to preservation and analysis, the probable source of the observed aluminum is ultra-fine grained or colloidal clay particles which are less than 0.45 microns in diameter. Colloidal sized particles are typical of diatomite deposits, which have been shown to contain particles as small as 0.05 microns in size. Based on these results, aluminum is anticipated to be generally elevated in background conditions. However, the highest concentrations of aluminum are associated with the unoxidized diatomite and the mobility of aluminum increases with decreasing pH.

Specific Comment 14

Section 8.2.1, p.97, 3rd paragraph – The text states that "Even though some of the water samples are above the respective MCL [for manganese], they are still several orders of magnitude less than the concentrations observed in the unoxidized diatomite." Inspection of Figure 8-7 suggests that this statement is inconsistent with the data; manganese in the water samples appears to generally be about one order of magnitude lower than in the unoxidized diatomite, with overlap between the low end of the concentration range for the unoxidized diatomite and the high end of the concentration range observed in groundwater. We suggest revising the text accordingly.

Response to Specific Comment 14

The text has been revised as recommended.

Specific Comment 15

Section 8.2.1, p.97, 4th paragraph – The text states "Under high pH conditions, oxyanions such as arsenic, antimony, and selenium…." The elements listed are not oxyanions. We suggest revising to "arsenate, antimonate, and selenate" or "oxyanion-forming elements such as…."

Response to Specific Comment 15

The text has been revised as recommended.

Specific Comment 16

Section 8.2.2, Table 8-2 and 1st paragraph on p.105 – The sulfate recoveries in excess of 100% reported for the waste stream and sediment pond samples in Table 1 are aberrant. This seems to suggest that total sulfur content measured from the whole rock analyses are low-biased relative to the MWMP results. We recommend adding a brief discussion or footnote acknowledging this issue and addressing its implications.

Response to Specific Comment 16

Total sulfur is typically underestimated by the Chemex ICP method due to incomplete extraction of sulfur during the 4-acid digest. Therefore, although the MWMP data should theoretically be less than the total sulfur in the sample (as measured by ICP), this is not always the case. Consequently, a direct correlation between the ICP sulfur and MWMP sulfate cannot be made and the discussion of weight percent release of sulfur has been removed from the text in Section 8.2.2.

Specific Comment 17

Section 8.2.2, p.105, 3rd paragraph – The text states "As shown in Table 8-2, the concentration and mobility of arsenic increases for the waste stream samples in comparison to the source materials (i.e., diatomite ore). However, due to the mixing of the waste stream material, this increase in mobility is not reflected in the backfill waste samples that show a similar range of results as the unoxidized and oxidized samples. The geochemistry of the backfilled waste appears to be mostly controlled by the onsite waste material." However, as indicated in Figure 8-8, 17 out of 23 backfilled waste samples exceeded the MCL for arsenic (keep in mind that the MCL on the figure is incorrect and should be 0.01 mg/L, as discussed above) and the backfilled samples generally appear to exhibit arsenic mobility intermediate between that of the waste stream samples and that of the on-site waste material. We suggest revising the text to more clearly reflect the apparent mobility of arsenic in backfilled waste.

Response to Specific Comment 17

See response to Specific Comment 10. The text has been revised as recommended.

Specific Comment 18

Section 8.2.3, p.106, 1st paragraph – The text states "an estimate of acid generation is made by assuming complete reaction between all of the minerals with acid potential (i.e., sulfide oxidation, iron oxidation and hydrolysis, dissolution of secondary minerals that induce proton release or metal oxidation) and all of the minerals with neutralizing potential…." This statement is inconsistent with the

description of the calculation of acid potential in the following paragraph, which indicates that the acid potential is based on the sulfide content of the sample and the simplification that the sulfide mineral is pyrite (rather than monosulfides). Based on this methodology, iron oxidation and hydrolysis (other than that from pyritic iron) and dissolution of secondary minerals that induce proton release or metal oxidation (such as acid sulfate minerals like jarosite) would not be accounted for in the calculated acid potentials. Additionally (as discussed in the subsequent paragraph), deviation between the acid generation from the monosulfides and acid generation from pyrite would not be represented. The sentence should be removed or revised to reflect only the acid generating mechanisms accounted for with the methodology utilized.

Response to Specific Comment 18

Section 8.2.3 has been revised to accurately describe the methods that were used to account for acid generation.

Specific Comment 19

Section 8.2.3, p.107, 6th paragraph – The text states "The remaining material types exhibit a low potential for acid generation, with NPR values greater than 3…." The justification for this assertion is unclear. The BLM guidance (BLM, 2008) indicates that materials with an NNP<20 and/or NPR<3 are potentially acid-generating (unless otherwise indicated by kinetic testing). The cited guidance does not provide a formal classification for "low potential for acid generation," nor does it provide guidance for interpretation of the NPR exclusive of the NNP. The sediment pond samples exemplify the rationale for designation as potentially acid generating; although they had a NNP>0 and an NPR>3, these samples exhibited acid generation in the MWMP test. However, using the BLM guidance, these samples are potentially acid generating because their NNP did not exceed 20 ppt CaCO3. The text should be revised to either be consistent with the BLM guidance or provide justification for the classification system applied.

Response to Specific Comment 19

Bureau of Land Management geochemical testing criteria (USBLM, 2008) establishes that samples with NP:AP values greater than 3:1 and NNP values greater than +20 are non-acid generating. These BLM criteria conservatively assume that any sample having more AP than NP, even by a very small amount, is potentially acid generating. When both values get small, the ratio varies widely and misrepresents the potential for acid generation. Because there is a deficit of acid neutralizing minerals in the Celatom deposit, and many of the samples contain very little sulfur, the BLM criteria cannot be used to meaningfully classify this material. For this evaluation, samples that contained non-detectable sulfide sulfur and non-detectable neutralization potential were considered "inert" from a static testing perspective. The remaining samples were categorized using the BLM criteria. Therefore, samples that are considered non-acid generating in this study include those with NP:AP values greater than 3:1 and NNP values greater than +20 in addition to those samples that are considered inert. The text in Section 8.2.3 has been revised to clarify the classification system applied.

Specific Comment 20

Section 8.2.3, p.107, 7th paragraph – The text refers to the "NNP criteria in Table 8-2" when asserting that "none of the samples tested demonstrate a definitive potential for acid generation." However, Table 8-2 in the document does not present NNP criteria. Nor does there appear to be another table that presents those criteria. Apparently the cited table was omitted. This should be corrected.

Furthermore, the interpretation of moderately negative (or even moderately positive) NNP as not having "a definitive potential for acid generation" is inconsistent with the BLM guidance. That guidance asserts that materials which do not meet both the criteria of NNP>20 and NPR>3 require kinetic testing because of their potential for acid generation. Although other references may suggest that the criteria implied in the text (no criteria are actually cited or presented) indicate no definitive potential for acid generation, the fact that so many of the samples did indeed generate acid in the MWMP testing appears to indicate that those criteria are not appropriate for the materials associated with the project. In fact, even one of the eight samples (C-KF-11-17) that did meet the BLM criteria for classification as non

acid-generating (NNP>20 and NPR>3) actually generated leachate with a pH of 3 (note that the NAG testing did indicate acid-generating potential for this sample). See also Specific Comments 16, 18, and 19. In general, the discussion of the acid-base accounting in the text does not appear to be consistent with the BLM guidance, the analytical and acid-base accounting methods, or with the data obtained from other testing methods. We recommend revising this portion of the text accordingly.

Response to Specific Comment 20

See response to Comment 19.

Specific Comment 21

Section 8.2.4, p.111, 2nd paragraph – The text states that "The remaining material types (i.e., oxidized diatomite, backfilled waste, waste stream, ash/tuff, andesite, and basalt) are predicted to be non-acid forming with pH values greater than 4 s.u., indicating that these material types will not generate acidity in excess of available alkalinity." This statement is misleading and is inconsistent with data presented elsewhere in the document. Specifically, that:

1 out of 12 samples of oxidized diatomite generated pH<4 and NAG≥ 1 in the NAG test,

5 out of 23 samples of backfilled waste generated pH<4 and NAG≥ 1 in the NAG test,

1 out of 7 samples of ash/tuff generated pH<4 in the NAG test2,

1 out of 4 samples of basalt generated pH<4 in the NAG test2,

1 out of 12 samples of oxidized diatomite generated acidic leachate in the MWMP tests,

9 out of 23 samples of backfilled waste generated acidic leachate in the MWMP tests,

1 out of 7 samples of ash/tuff generated acidic leachate in the MWMP tests, and

1 out of 4 samples of basalt generated acidic leachate in the MWMP tests.

The stated conclusion should be revised to be consistent with the data presented.

Response to Specific Comment 21

Some of the material types demonstrate a range of results ABA and NAG results; however, the predictions for geochemical behavior of each material type are defined by the majority of the samples. Single samples showing a different result to the majority of the samples for each material type are considered outliers. By definition, an outlier is an observation that does not conform to the pattern established by other observations in the data set (Gilbert, 1987). For example the one sample of oxidized diatomite that showed some potential for acid generation is an outlier and is not considered representative of the oxidized diatomite material. The backfilled waste shows a bi-modal distribution because this material consists of a mixture of oxidized and unoxidized diatomite. Therefore, the backfill material is predicted to be both potentially acid generating and non-acid generating depending upon the amount of unoxidized diatomite present. Section 8.2.3 and 8.2.4 has been revised to clarify the prediction of acid generation for each material type.

Specific Comment 22

Section 8.3.1, item 4 – The summary statement provided in this bullet appears to be incomplete. From Table 8-1, other constituents that leached above Oregon MCLs include As, Sb, F, Pb, Se, and SO4. See also Specific Comments 10 and 11. The statement should be revised to be consistent with the data presented.

Response to Specific Comment 22

See response to Specific Comment 10. The text, tables, figures and appendices have been amended as recommended.

Specific Comment 23

Section 8.3.1, item 5 – The text states that "The MWMP results for oxidized diatomite…show a low potential to release metals and sulfate." The data presented in Table 8-1 appear to conflict with this statement. We suggest qualifying this statement, as appropriate, to be consistent with the summary provided in Table 8-1.

Response to Specific Comment 23

The only constituents that are above the Oregon MCLs in the average MWMP leachate for oxidized diatomite are arsenic and aluminum. Aluminum concentrations are an artefact of the high clay content of the sample as discussed in Response to Specific Comment 13. The average arsenic concentrations for oxidized diatomite are slightly above the Oregon MCL for arsenic of 0.01 mg/L. The average TDS concentration for oxidized diatomite is also slightly elevated above the Oregon MCL; however, this is due to a single oxidized diatomite sample with a TDS concentration that is an order of magnitude greater than all other oxidized diatomite samples (i.e., an outlier and not considered representative of oxidized diatomite). By omitting this outlier in the average calculation, the average MWMP values for oxidized diatomite are lower than the Oregon MCLs. Therefore, based on the MWMP results, the oxidized diatomite shows a low potential to release metals and sulfate. Furthermore, the average MWMP pH value for oxidized diatomite is above 7 s.u.

Specific Comment 24

Section 8.3.1, item 6 – This bullet asserts that the transitional diatomite "does not demonstrate a significant potential to release metals and sulfate." Is "significant" intended to imply statistical significance? The data presented in Table 8-1 appear to conflict with this statement. The statement on page 96, that "transitional and opalized diatomite fall somewhere between these two end points [the unoxidized and oxidized diatomite]," also appears to conflict with this bullet. We suggest qualifying the text to clarify in a manner consistent with the summary provided in Table 8-1, the text on page 96, and other results and discussion provided in the document.

Response to Specific Comment 24

Section 8.3.1, item 6 has been revised to be consistent with other observations in the report that indicate the transitional diatomite demonstrates a low to moderate potential to release metals and sulfate.

Specific Comment 25

Section 8.3.3, item 3 – The list of constituents with potential to leach from the backfill waste appears to be incomplete (e.g., Al, SO4, F, Fe, and NO3 should also be included). See also Specific Comments 10 and 11. We suggest revising the text to be consistent with the data and discussions presented elsewhere in the text and tables.

Response to Specific Comment 25

See response to Specific Comment 10. The text, tables, figures and appendices have been amended as recommended.

Specific Comment 26

Section 8.3.4, item 1 – An NPR>3 is not sufficient (based on BLM guidance) to classify sediment pond samples as net acid neutralizing because they do not also have NNP>20. See also Specific Comments 18, 19, and 20. We suggest revising the text to be consistent with the guidance and data presented elsewhere in the document.

Response to Specific Comment 26

Both pond berm samples have a NPR value greater than 3 but an NNP value less than 20 eq. kg CaCO3. Therefore, based on the BLM criteria, the sediment pond samples have an uncertain potential to be acid generating. However, both of these samples contain low to non-detect sulfide sulfur concentrations. Because these samples were not submitted for NAG testing, the acid generation potential of this material

unfortunately cannot be confirmed with NAG pH and NAG values. Section 8.3.4 has been revised accordingly.

Specific Comment 27

Section 9.2, item 4 – The text states that "Any water that may collect in the sediment ponds will be limited to seasonal runoff and will be of good quality since unoxidized ore was not exposed in this area." What about the MWMP tests (such as those on the backfill from Beede Desert) that indicate the potential for a variety of constituents to exceed water-quality standards?

Response to Specific Comment 27

The sediment ponds in the Beede Desert area were constructed in alluvium and shallow oxidized diatomite. The backfilled waste samples from the Beede Desert consist of a mixture of materials (i.e., onsite waste and process waste) that are not representative of the material exposed within the sediment ponds. Section 9.2, item 4 has been revised to read *"Any water that may collect in the sediment ponds will be limited to seasonal runoff and is anticipated to be of good quality since the sediment ponds were constructed in alluvium and shallow oxidized diatomite deposits".*

Specific Comment 28

Section 9.3, item 6 – See Specific Comment 5 regarding the Oregon Aquatic Life Water Quality Criterion for alkalinity.

Response to Specific Comment 28

See response to Specific Comment 5

Specific Comment 29

Section 9.4, item 3, 3rd sentence – The text should clearly state what "minimum floor thickness" means.

Response to Specific Comment 29

The "minimum floor thickness" refers to the thickness of the diatomite above the basement rocks in the floor of the pit required to prevent pit floor failure. This is referred to as the "minimum floor barrier" in the hydrogeologic discussion in Section 7.3 and will be different for each pit depending upon the depth of the excavation below the basement water table. The terminology in Section 10.4 (previously Section 9.4), item 3 has been revised to be consistent with the discussion in Section 7.3.

If you have any questions or comments regarding the information presented herein, please contact me at (775) 828-6800.

Yours truly,

SRK Consulting (U.S.), Inc.

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Attachments: Baseline Characterization Report – Celatom Mine (March 2010 revision)

cc: Tom Olsen, BLM Nevada State Office
Richard Roy, BLM Burns District Office
Rich DeLong, Enviroscientists
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