



OGMCOAL DNR <ogmcoal@utah.gov>

Crandall Canyon- Pre-treatment Mine water isotopic sampling

1 message

Steve Christensen <stevechristensen@utah.gov>

Thu, Oct 2, 2014 at 5:50 PM

To: "Odendahl, Karin" <kodendahl@coalsource.com>

Cc: Jay Marshall <jmarshall@coalsource.com>, Amanda Daniels <amandadaniels@utah.gov>, OGMCOAL DNR <ogmcoal@utah.gov>, Daron Haddock <daronhaddock@utah.gov>

Hi Karin,

O.k., I finally found some time to take a look at the isotopic sampling information for Crandall Canyon's pre-treatment mine water discharge.

The required parameters are:

- 1) Carbon-14 (Database ID for this parameter is 85)
- 2) Oxygen-18 (Database ID for this parameter is 86)
- 3) Deuterium (Database ID for this parameter is 87) and
- 4) Tritium (Database ID for this parameter is 88).

There are two sites set up for the pre-treatment mine water in the database: Pretreat 002 and Pretreat 002C. I've added those 4 parameters in the data-base for both Pretreat 002 and Pretreat 002C. We may run into trouble if the database requires those 4 parameters to be submitted every quarter for all the samples to be accepted. If that happens, you now have the parameter codes (see above) which should allow you to enter them in manually. I'd just have to remove those 4 parameters. During the period when the current sample port was being worked out, Ken Hoffman created Pretreat 002C. The water quality data was placed there for the 4th quarter of 2012. Since that time, it appears the water quality data for the pre-treatment mine water has been placed in the Pretreat 002 site in the database (i.e. not Pretreat 002C).

The isotopic sampling for the pre-treatment mine water was established on February 1, 2013 (Task ID #4206). It was a revision to the PHC for the Crandall Canyon MRP. The isotopic sampling language was added to Table 7-4(a), Mine-Water Discharge Analysis List as well as in other locations in the MRP.

As I was looking into the isotopic sampling requirements, I found a discrepancy. The isotopic language established in Table 7-4(a) in February 2013 (See attached document) was somehow removed between the approval of Task #4206 on February 01, 2013 and the recent revision we made to the MRP to allow for residual flocculent testing only when in use (Task # 4639, approved August 21st, 2014). I attached the red-line strike out language that was submitted this summer (Task #4639) relative to the residual flocculent testing only to be one when the flocculent is being used.

As you can see, the "*Isotopic Laboratory Measurements:*" section listing Tritium, Carbon-14, Deuterium and Oxygen-18 was removed as well as one sentence in the first "Note:" section at the bottom of the page (i.e. "*Isotopic laboratory measurement data will be submitted when the results become available from the laboratories.*")

I missed the deletion of the isotopic language during the review of Task #4639. I'm not sure what happened. There were numerous iterations during the PHC review (Task #4206). It may be that you were working off the wrong page during the most recent revision. The isotopic language was added during one of the final reviews of the PHC revision so that's one possibility as to what happened.

To compound the confusion further, the isotopic language is in several places. Appendix 7-15 (the PHC section) discusses how the isotopic parameters will be collected during the 2nd and 4th quarters (annually) until "*the time of the 2018 permit renewal*" (see page 35). Additionally, on page 36, the PHC states, "*At the time of the 2018 permit renewal, Genwal Resources, Inc. will consult with the Division as to the need for*

further isotopic monitoring". Isotopic sampling language is also found in Table 7-10, Water Monitoring Program on page 7-41 of Chapter 7. This is where the frequency (2nd and 4th quarter until time of permit renewal inf 2018 is located).

Long story longer, we can clean this up with a revised Table 7-4(a) with the missing isotopic language added in. I've attached a document with the missing language highlighted in green to help you. Please submit the revision by October 16th with a C1/C2 form and we can clean this discrepancy up.

I apologize for the long e-mail. I know this is confusing, so I tried to provide you with enough detail to make sense of all this. Give me a call next week with any questions you might have. I'm in all week (for the first time in a long time) so don't hesitate to call.

Regards,
Steve

P.S. I also wanted to mention that Amanda Daniels is now the hydrologist for Crandall Canyon. We're finally getting settled in with all our new hires and getting everything re-assigned.

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3 attachments

 **01072013a 4.pdf**
41K

 **Pages from 07112014.4639red-line-floc-language.pdf**
43K

 **Pages from 11212012.4206 (1)_green highlight.pdf**
877K

TABLE 7-4(A)

Mine-Water Discharge Analysis List

Field Measurements:

Ferrous iron
pH
Dissolved oxygen
Conductivity
Temperature
Flow

Laboratory Measurements:

Calcium (dissolved)
Potassium (dissolved)
Sodium (dissolved)
Magnesium (dissolved)
Silica
Chloride
Hot acidity by Standard Method 2310B4(a)
Aluminum (total and dissolved)
Iron (total and dissolved)
Manganese (total and dissolved)
Sulfate
Alkalinity (total, carbonate, and bicarbonate)
TDS
Suspended solids

Isotopic Laboratory Measurements:

Tritium
Carbon-14
Deuterium
Oxygen-18

Note: All Mine-Water Discharge monitoring data will be submitted to the Division monthly. Water chemistry and field measurements data will be submitted electronically using the Division's water monitoring database EDI system. Isotopic laboratory measurement data will be submitted when the results become available from the laboratories. Mine-water discharge rate data will be provided in a spreadsheet format.

TABLE 7-4(A)

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Sodium (dissolved)
Magnesium (dissolved)
Silica
Chloride
Hot acidity by Standard Method 2310B4(a)
Aluminum (total and dissolved)
Iron (total and dissolved)
Manganese (total and dissolved)
Sulfate
Alkalinity (total, carbonate, and bicarbonate)
TDS
Suspended solids

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Note: A test for carry over of treatment chemicals will be done if Flocculent is being used in the treatment process. If flocculent is not used a carry over of treatment test is not required.

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