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Request for Change (RFC) to the Butte Priority Soils Operable Unit (BPSOU) 2022 Final Insufficiently Reclaimed Areas Quality Assurance Project Plan (QAPP)

Mike McAnulty

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August 31, 2022

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RE: Request for Change (RFC) to the Butte Priority Soils Operable Unit (BPSOU) 2022 Final Insufficiently Reclaimed Areas Quality Assurance Project Plan (QAPP)

Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company to submit the Request for Change (RFC) to the Butte Priority Soils Operable Unit (BPSOU) 2022 Final Insufficiently Reclaimed Areas Quality Assurance Project Plan (QAPP). The RFC and attachments may be downloaded at the following link:

<https://pioneertechnicalservices.sharepoint.com/:f/s/submitted/Ekop6reYgi1LgCX-U9pcTFEBuCWYYAiYLFo3oFK52Glr0A>.

If you have any questions or comments, please call me at (907) 355-3914.

Sincerely,

Mike McAnulty

Mike Mc Anulty
Liability Manager
Remediation Management Services Company
An affiliate of **Atlantic Richfield Company**

Atlantic Richfield Company

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BPSOU SharePoint - upload
RFC Logbook

ATLANTIC RICHFIELD COMPANY

RFC - REQUEST FOR CHANGE

DATE August 31, 2022	RFC NO. RFC-IR-2022-01	CONTRACTOR Pioneer Technical Services, Inc.	RFP NO. NA
CONTRACT DESCRIPTION: Insufficiently Reclaimed Sites Scope of Work, Appendix D, Attachment C, Section 7.0 of the BPSOU Consent Decree (EPA, 2020).		ATTENTION OF: Nikia Greene and Daryl Reed	
SUBJECT: <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> MECHANICAL <input type="checkbox"/> CIVIL <input type="checkbox"/> STRUCTURAL/ARCHITECTURAL <input type="checkbox"/> INSTRUMENTATION <input checked="" type="checkbox"/> ENVIRONMENTAL			
OPERABLE UNIT: Butte Priority Soils Operable Unit (BPSOU)		REFERENCE DWG., P.O., TAG, SPECIFICATION NO. (FOR DEVIATIONS OR DEFICIENCIES) ETC: BPSOU 2022 Final BPSOU Insufficiently Reclaimed Sites Quality Assurance Project Plan	
MAJOR WORK TASK: 2022 Insufficiently Reclaimed Sites Sampling Laboratory Analyses			
<p>PROBLEM DESCRIPTION:</p> <p>This request for change (RFC) amends errors published in Table 5 Soils Sampling Details and Table 6 Required Sample Preservation, Containers, and Holding Times in the BPSOU 2022 Final Insufficiently Reclaimed Quality Assurance Project Plan (QAPP) (Atlantic Richfield, 2022) dated July 12, 2022, and approved by Agencies on July 28, 2022.</p> <p>TABLE 5 PROPOSED MODIFICATION:</p> <p>Table 5 Soils Sampling Details contained in Section 3.2.1 of the QAPP incorrectly specified laboratory sample collected for concentrations of 1 or more analytes <i>exceeding</i> 25% of action levels listed in Table 2. The proposed modification eliminates the requirement for submittal of laboratory samples exceeding 25% of action levels listed in Table 2. The frequency of laboratory sample collection is stated correctly, within the QAPP text (Section 3.2) as follows and a revised Table 5 is provided as Attachment 1:</p> <p style="padding-left: 40px;"><i>“Laboratory confirmation samples for 0- to 6- inch interval samples will be submitted at a frequency of 1 for every 20 XRF samples (5%) with a minimum of 1 per site, whichever is greater. Samples obtained from the 6- to 18-inch interval exhibiting field COC concentrations at plus or minus 25% of the BPSOU Soil Action Levels for Human Health (Table 1) or plus or minus 25% of BPSOU Soil Screening Criteria for Storm Water COCs (Table 2) (with a minimum of 1 per 20 [5%] of samples collected) will be submitted for laboratory confirmation analyses.”</i></p> <p>TABLE 6 PROPOSED MODIFICATION:</p> <p>Table 6 Required Sample Preservation, Containers, and Holding Times contained in Section 3.2.5 of the QAPP incorrectly specified cooling to less than or equal to 6 °C (but not frozen) as a preservation requirement for United States Department of Agriculture (USDA) Soils Classification Analyses. A revised Table 6 is provided as Attachment 2.</p> <p>TABLE 7 PROPOSED MODIFICATION:</p> <p>Table 7 Data Validation Quality Control Criteria contained in Section 6.2 of the QAPP also incorrectly specified cooling to less than or equal to 6 °C as a preservation requirement for USDA Soils Classification Analyses. A revised Table 7 is provided as Attachment 3 and laboratory correspondence confirming no cooling required is provided as Attachment 4. Additionally, any specification of samples stored on ice was removed from QAPP text.</p> <p>REFERENCES:</p> <p>EPA, 2020. Consent Decree for the Butte Priority Soils Operable Unit. Partial Remedial Design/Remedial Action and Operation and Maintenance. U.S. Environmental Protection Agency. February 13, 2020. Available at https://www.co.silverbow.mt.us/2161/ButtePriority-Soils-Operable-Unit-Conse.</p> <p>Atlantic Richfield, 2022. Butte Priority Soils Operable Unit (BPSOU) 2022 Final Insufficiently Reclaimed Sites Quality Assurance Project Plan. Atlantic Richfield Company. July 12, 2022.</p> <p>ATTACHMENTS:</p> <p>Attachment 1: Revised Table 5 Attachment 2: Revised Table 6 Attachment 3: Revised Table 7 Attachment 4: Laboratory Correspondence dated August 9, 2022</p>			
		<input type="radio"/> Design Deficiency <input type="radio"/> Material Substitution <input type="radio"/> Vendor Material Deficiency	



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|--|--|
| <input checked="" type="checkbox"/> Engineering Change Request | <input checked="" type="checkbox"/> Scope |
| <input type="checkbox"/> Agency Directive | <input type="checkbox"/> Clarification/Information |
| <input type="checkbox"/> Construction Deficiency | <input type="checkbox"/> Other Final Design Document |
| <input type="checkbox"/> Schedule | |

RESPONSE/DIRECTIVE

Project Manager  Date 08/31/2022

Atlantic Richfield Co. Representative Mike McNulty Date 08/31/2022

EPA Representative _____ Date _____

DEQ Representative _____ Date _____

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RFC Logbook



Attachment 1: Revised Table 5

Table 5. Soils Sampling Details

Sample Media	Sample Interval	Analyte	Frequency of sample collection (XRF)	Frequency of sample collection (Laboratory)
IR Soils	0-6 inch	Arsenic	All Composite Samples	1 per 20 XRF samples with a minimum of 1 per site
		Cadmium		
		Copper		
		Lead		
		Zinc		
	USDA Soil Classification Analyses	NA	All Composite Samples	
	6-18 inch	Arsenic	All Composite Samples	For field XRF concentrations of any one analyte within $\pm 25\%$ of action levels listed in Table 1 or field XRF concentrations of 1 or more analytes within $\pm 25\%$ of action levels listed in Table 2 with a minimum of 1 per 20 XRF samples
		Cadmium		
		Copper		
		Lead		
Zinc				

Attachment 2: Revised Table 6

Table 6. Required Sample Preservation, Containers, and Holding Times

Media	Analyte	Analytical Method¹	Preservation	Holding Time	Sample Size	Sample Container
Solid	Total Metals*	EPA 6010 (EPA, 2014)	None	180 days	4 ounces	Resealable plastic bag (quart)
Solid	USDA Soil Classification Analyses ²	Analyte-specific	None	Analyte-specific ³	30 ounces	Resealable plastic bag (gallon)

* Arsenic, cadmium, copper, lead, and zinc.

¹ Atlantic Richfield may choose to use a different laboratory based on project needs. Agencies will be informed of any changes in the reporting limits, methodology, or the QA/QC and data validation procedures.

² Conductivity, sat. paste, pH, sat. paste (ASA10-3), Clay, Sand, Silt, Texture (ASA15-5), Olsen Phosphorus (ASA24-5), Organic Matter (ASA29-3), Nitrate as N (ASA33-8), Percent Moisture (ASTM D2974), Sodium Adsorption Ratio (SAR) by Calculation, Sieve Analysis (25 mm and 2 mm) (SSSA 15-2), Potassium, Magnesium, Sodium, and Calcium sat. paste (EPA Method 6010 [EPA, 2014], Saturation [USDA27a]).

³ Holding time is 180 days for USDA Soil Classification metals parameters and 28 days for USDA Soil Classification wet chemistry parameters only (EPA, 2020b).

mm: millimeter; EPA: Environmental Protection Agency; USDA: United States Department of Agriculture; ASA: American Society of Agronomy.

Attachment 3: Revised Table 7

Table 7 Data Validation Quality Control Criteria (XRF)

XRF							
Quality Control	Frequency	Acceptance Criteria	Criteria	Action			Reference
				Associated Sample Result Detected	Associated Sample Result Non-Detected	Reason Code	
System Check	Performed daily, prior to sample analysis	Performed daily, prior to sample analysis	System Check not performed	Professional Judgment J/R	Professional Judgment UJ/R	CX	SOP-SFM-02
		Resolution < 195	Resolution ≥ 195	Professional Judgment J/R	Professional Judgment UJ/R	SC	
SiO ₂ Standard	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Frequency criteria not met	J	UJ	CX	SOP-SFM-02 Niton XL3 Mining QC Sheet
		Arsenic ≤10 mg/kg Cadmium ≤50 mg/kg Calcium ≤2000 mg/kg Chromium ≤120 mg/kg Copper ≤20 mg/kg Iron ≤50 mg/kg Lead ≤10 mg/kg Manganese ≤300 mg/kg Mercury ≤10 mg/kg Silver ≤30 mg/kg Zinc ≤10 mg/kg	>10 mg/kg >50 mg/kg >2000 mg/kg >120 mg/kg >20 mg/kg >50 mg/kg >10 mg/kg >300 mg/kg >10 mg/kg >30 mg/kg >10 mg/kg	Results < 10x the SiO ₂ result J+	No Qualification	B	
Calibration Check Samples	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Frequency criteria not met	J	UJ	CX	SOP-SFM-02 Niton XL3 Mining QC Sheet
		NIST Standard Arsenic 0 - 35 mg/kg Cadmium 0 - 60 mg/kg Calcium 13,900 - 23,900 mg/kg Chromium 50 - 200 mg/kg Copper 0 - 60 mg/kg Iron 25,000 - 35,000 mg/kg Lead 0 - 35 mg/kg Manganese 0 - 700 mg/kg Mercury 0 - 12 mg/kg Silver 0 - 40 mg/kg Zinc 50 - 160 mg/kg	< Lower Control Limit	J-	UJ	CSS	
			RCRA Standard Arsenic 400 - 600 mg/kg Cadmium 400 - 600 mg/kg Chromium 400 - 600 mg/kg Lead 400 - 600 mg/kg Silver 400 - 600 mg/kg	> Upper Control Limit	J+		
XRF Duplicate	1 per 20 samples	RPD ≤ 35% for detected results	Frequency criteria not met	J	UJ	DX	SOP-SFM-02 IR QAPP
			RPD ≤ 35%	No Qualification	No Qualification	D%	
			RPD > 35%	J	UJ		
XRF Replicate	1 per 20 samples	RPD ≤ 35% for detected results	Frequency criteria not met	J	UJ	RX	SOP-SFM-02 IR QAPP
			RPD ≤ 35%	No Qualification	No Qualification	R%	
			RPD > 35%	J	UJ		
Field Duplicate	1 per 20 samples	RPD ≤ 35% for detected results	Frequency criteria not met	J	UJ	FDX	IR QAPP
			RPD ≤ 35%	No Qualification	No Qualification	FD	
			RPD > 35%	J	UJ		

Table 7 Data Validation Quality Control Criteria (Non-Metals)

Non-Metals (Energy)							
Quality Control Sample	Frequency	Acceptance Criteria	Criteria	Data Validation Action			Reference
				Associated Sample Result - Detected	Associated Sample Result - Non-Detected	Reason Code	
Laboratory Quality Control Samples							
Holding Time	Every Sample	All methods	≤ 28 days	J-	Professional Judgement UJ or R	H	IR QAPP
Preservation	Every Sample	All methods	N/A	No Qualification	No Qualification	Pres	IR QAPP
Method Blank (MB)	One per batch (no specific batch size for soils)	not analyzed for saturated paste (pH, EC, SAR, Sat %) or sand/silt/clay ≤ Absolute Value of RL	≤ Absolute Value of RL	No Qualification	No Qualification	MB	CFRSSI QAPP
			> Absolute Value of RL	sample result < 5x blank detection: U	No Qualification		
Laboratory Control Sample (LCS)	One per batch of samples or every 10 samples (saturated paste) One per batch (no specific batch size for soils) (all other methods)	%R 95-102% (saturate paste-pH) %R 70-130% (saturated paste-EC) %R 50-150% (saturated paste-SAR, Sat%) %R 70-130% (organic carbon, sand/silt/clay, olsen phosphorus, nitrate as N-KCl extraction)	%R < lower limit	J-	UJ	L%	CFRSSI QAPP NFG ELI SOP
			%R within acceptance criteria	No Qualification	No Qualification		
			%R > upper limit	J+	No Qualification		
Laboratory Duplicate Sample (LDS) ³	One per batch (no specific batch size for soils) or per 10 samples.	± 0.02 s.u. (pH) All other methods: 1. If both original sample and duplicate sample results are ≥ 5x the RL, then RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil); 2. If original sample or duplicate sample result < 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)	Both original and duplicate sample results are ≥ 5x the RL and RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil).	No Qualification	No Qualification	D%	CFRSSI QAPP NFG ELI SOP
			Both original and duplicate sample results are ≥ 5x the RL and RPD is > 20% (LCSD/MSD), > 35% (soil).	J	UJ		
			RPD > 100%	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result < 5x the RL, and absolute difference between sample and duplicate ≤ 2x RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is < 5x the RL and absolute difference between the sample and duplicate > 2x RL (soil).	J	UJ		
Laboratory Matrix Spike (LMS)	One per batch (no specific batch size for soils) or per 20 samples.	%R 70-130% (olsen phosphorus and nitrate as N-KCl extraction) if sample analyte concentration < 4x spike concentration	%R < 70%	J-	UJ	S%	CFRSSI QAPP NFG
			%R 70-130%	No Qualification	No Qualification		
			%R > 130%	J+	No Qualification		
			sample analyte concentration ≥ 4x spike concentration	No Qualification	No Qualification		
Field Quality Control Samples							
Field Duplicate Sample	One per 20 samples collected.	All methods: 1. If both original sample and duplicate sample results are ≥ 5x the RL, RPD ≤ 35% (soil); 2. If original sample or duplicate sample result < 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)	Both original and duplicate sample results are ≥ 5x the RL and RPD ≤ 35% (soil).	No Qualification	No Qualification	FD	CFRSSI QAPP NFG
			Both original and duplicate sample results are ≥ 5x the RL and RPD is > 35% (soil).	J	UJ		
			RPD > 100%	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result < 5x the RL, and absolute difference between sample and duplicate ≤ RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is < 5x the RL and absolute difference between the sample and duplicate > RL (soil).	J	UJ		

Table 7 Data Validation Quality Control Criteria (Metals - Energy Laboratories)

Metals (Energy)							
Quality Control Sample	Frequency	Acceptance Criteria	Criteria	Data Validation Action			Reference
				Associated Sample Result - Detected	Associated Sample Result - Non-Detected	Reason Code	
Laboratory Quality Control Samples							
Holding Time	Every Sample	EPA 6010D (metals/metalloids)	≤ 28 days	J-	Professional Judgement UJ or R	H	IR QAPP
Preservation	Every Sample	EPA 6010D (metals/metalloids)	N/A	No Qualification	No Qualification	Pres	IR QAPP
Method Blank (MB)	One per batch of up to 20 samples.	≤ RL	≤ RL	No Qualification	No Qualification	MB	CFRSSI QAPP
			> RL	sample result < 5x blank detection: U	No Qualification		
Laboratory Control Sample (LCS)	One per batch of up to 20 samples.	%R 80-120%	%R < 40%	J-	R	L%	CFRSSI QAPP NFG ELI SOP
			%R 40-79%	J-	UJ		
			%R 80-120%	No Qualification	No Qualification		
			%R > 120%	J+	No Qualification		
			%R > 150%	R	No Qualification		
Laboratory Duplicate Sample (LDS) ³	One per batch of up to 20 samples.	All methods: 1. If both original sample and duplicate sample results are ≥ 5x the RL, then RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil); 2. If original sample or duplicate sample result < 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)	Both original and duplicate sample results are ≥ 5x the RL and RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil).	No Qualification	No Qualification	D%	CFRSSI QAPP NFG ELI SOP
			Both original and duplicate sample results are ≥ 5x the RL and RPD is > 20% (LCSD/MSD), > 35% (soil).	J	UJ		
			RPD > 100%	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result < 5x the RL, and absolute difference between sample and duplicate ≤ 2x RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is < 5x the RL and absolute difference between the sample and duplicate > 2x RL (soil).	J	UJ		
Laboratory Matrix Spike (LMS)	One per batch of up to 20 samples.	6010D - %R 75-125% if sample analyte concentration < 4x spike concentration	%R < 30%	J-	R	S%	CFRSSI QAPP NFG ELI SOP
			%R 30-74% (6010D)	J-	UJ		
			%R 75-125% (6010D)	No Qualification	No Qualification		
			%R > 125% (6010D)	J+	No Qualification		
			sample analyte concentration ≥ 4x spike concentration	No Qualification	No Qualification		
Field Quality Control Samples							
Field Duplicate Sample	One per 20 samples collected.	All methods: 1. If both original sample and duplicate sample results are ≥ 5x the RL, RPD ≤ 35% (soil); 2. If original sample or duplicate sample result < 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)	Both original and duplicate sample results are ≥ 5x the RL and RPD ≤ 35% (soil).	No Qualification	No Qualification	FD	CFRSSI QAPP NFG
			Both original and duplicate sample results are ≥ 5x the RL and RPD is > 35% (soil).	J	UJ		
			RPD > 100%	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result < 5x the RL, and absolute difference between sample and duplicate ≤ RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is < 5x the RL and absolute difference between the sample and duplicate > RL (soil).	J	UJ		

Table 7 Data Validation Quality Control Criteria (Metals - Pace Analytical Services)

Metals (Pace)							
Quality Control Sample	Frequency	Acceptance Criteria	Criteria	Data Validation Action			Reference
				Associated Sample Result -Detected	Associated Sample Result - Non-Detected	Reason Code	
Laboratory Quality Control Samples							
Holding Time	Every Sample	EPA 6010D (metals/metalloids)	≤ 6 months	J-	Professional Judgement UJ or R	H	NFG
Preservation	Every Sample	EPA 6010D (metals/metalloids)	N/A (solids)	No Qualification	No Qualification	Pres	NFG
Method Blank (MB)	One per batch of up to 20 samples.	≤ 1/2 RL (6010D)	≤ 1/2 RL (6010D)	No Qualification	No Qualification	MB	CFRSSI QAPP Pace SOP
			> 1/2 RL (6010D)	sample result < 10x blank detection: U	No Qualification		
Laboratory Control Sample (LCS)	One per batch of up to 20 samples.	%R 80-120% (all methods)	%R < 40%	J-	R	L%	CFRSSI QAPP NFG Pace SOP
			%R 40-79%	J-	UJ		
			%R 80-120%	No Qualification	No Qualification		
			%R > 120%	J+	No Qualification		
			%R > 150%	R	No Qualification		
Laboratory Duplicate Sample (LDS) ³	One per batch of up to 20 samples.	All methods: 1. If both original sample and duplicate sample results are ≥ 5x the RL, then RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil); 2. If original sample or duplicate sample result < 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)	Both original and duplicate sample results are ≥ 5x the RL and RPD ≤ 20% (LCSD/MSD), RPD ≤ 35% (soil).	No Qualification	No Qualification	D%	CFRSSI QAPP NFG Pace SOP
			Both original and duplicate sample results are ≥ 5x the RL and RPD is > 20% (LCSD/MSD), > 35% (soil).	J	UJ		
			RPD > 100%	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result < 5x the RL, and absolute difference between sample and duplicate ≤ 2x RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is < 5x the RL and absolute difference between the sample and duplicate > 2x RL (soil).	J	UJ		
Laboratory Matrix Spike (LMS)	One per batch of up to 20 samples.	6010D - %R 75-125% if sample analyte concentration < 4x spike concentration	%R < 30%	J-	R	S%	CFRSSI QAPP NFG Pace SOP
			%R 30-74% (6010D)	J-	UJ		
			%R 75-125% (6010D)	No Qualification	No Qualification		
			%R > 125% (6010D)	J+	No Qualification		
			sample analyte concentration ≥ 4x spike concentration	No Qualification	No Qualification		

Table 7 Data Validation Quality Control Criteria (Metals - Pace Analytical Services) cont.

Field Quality Control Samples							
Field Duplicate Sample	One per 20 samples collected.	All methods: 1. If both original sample and duplicate sample results are $\geq 5x$ the RL, RPD $\leq 35\%$ (soil); 2. If original sample or duplicate sample result $< 5x$ the RL, then absolute difference between sample and duplicate $\leq 2x$ RL (soils)	Both original and duplicate sample results are $\geq 5x$ the RL and RPD $\leq 35\%$ (soil).	No Qualification	No Qualification	FD	CFRSSI QAPP NFG
			Both original and duplicate sample results are $\geq 5x$ the RL and RPD is $> 35\%$ (soil).	J	UJ		
			RPD $> 100\%$	Professional Judgement	Professional Judgement		
			Original sample or duplicate sample result $< 5x$ the RL, and absolute difference between sample and duplicate \leq RL (soils)	No Qualification	No Qualification		
			Original sample or duplicate sample result is $< 5x$ the RL and absolute difference between the sample and duplicate $> RL$ (soil).	J	UJ		

Notes:

- Associated sample results:
 - For Field Blank results that do not meet technical criteria, apply action to all samples in the SDG.
 - For Field Duplicate results that do not meet technical criteria, apply action to field duplicate pair and any samples from the same sample location in the SDG.
 - For MB and LCS results that do not meet technical criteria, apply action to all samples in the analytical batch.
 - For LDS or LMS/MSD results that do not meet technical criteria, apply action to the parent sample and, per the NFG, "apply the action to all samples of the same matrix if the samples are considered sufficiently similar."
 - For holding time and preservation that do not meet technical criteria, apply action to sample.
- For consistency in validations between validators, if a sample result is reported as non-detect, the MDL is used for the duplicate absolute difference calculations.
- An LCS, an LMS, or an original sample may all be used to perform a laboratory duplicate. If a LCS Duplicate or LMS Duplicate is used, the QC sample must also meet the applicable %R technical criteria.

Qualifications:

- U - Non-detect
- UJ - Estimated non-detect
- J - Estimated

- J+ - Estimated high
- J- - Estimated low
- R - Rejected

Abbreviations:

- MDL - method detection limit
- RL - reporting limit
- %R - percent recovery
- RPD - relative percent difference

References:

- CFRSSI QAPP - ARCO, 1992. Clark Fork River Superfund Site Investigations (CFRSSI) Quality Assurance Project Plan (QAPP). Prepared for ARCO by PTI Environmental Services, Bellevue, Washington. May 1992.
- NFG - EPA, 2020. National Functional Guidelines for Inorganic Superfund Methods Data Review. November 2020.
 - Available at EPA's Superfund Analytical Services and Contract Laboratory Program website: <https://www.epa.gov/clp/contract-laboratory-program-national-functional-guidelines-data-review>
- SOP-SFM-02 - Operating XL3-X-Ray Fluorescence Analyzer General. Pioneer Technical Services, Inc. January 2018.
- IR QAPP - Silver Bow Creek/Butte Area NPL Site Butte Priority Soils Operable Unit 2021 Final Reclaimed Areas Maintenance and Monitoring Quality Assurance Project Plan (QAPP). Prepared for Atlantic Richfield Company by Pioneer Technical Services, Inc, Butte, Montana. June 2021.
- Niton XL3 Soil QC Sheet - Niton XL3 Soil QC Certificate of Calibration. Thermo Fisher Scientific. June 2014.
- Pace SOPs:
 - EPA 6010D ENV-SOP-MIN4-0052: Metals Analysis by ICP - Method 6010 and 200.7
- Energy SOPs:
 - EPA 6010D 50-052-10: Standard Operating Procedure Determination of metals and trace elements in water and wastes by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP) EPA Method 200.7/6010B.
 - Walkley-Black 50-107-04: Standard Operating Procedure Determination of Soil Organic Carbon by Walkley-Black Procedure.
 - Saturated Paste 50-078-06: Standard Operating Procedure Saturated Paste (pH, electrical conductivity, sodium absorption ratio, saturation percentage).

Attachment 4: Laboratory Correspondence dated Tuesday, August 9

From: [Jesse Sims](#)
To: [Jackie Janosko](#); [Scott Sampson](#)
Subject: FW: Insufficiently Reclaimed Sites Sampling ICE requirement
Date: Tuesday, August 9, 2022 6:05:35 PM

FYI for IR QAPP RFC.

From: Shari Endy <sendy@energylab.com>
Sent: Tuesday, August 9, 2022 1:37 PM
To: Jesse Sims <jsims@pioneer-technical.com>
Subject: RE: Insufficiently Reclaimed Sites Sampling

Caution! This message was sent from outside your organization.

[Allow sender](#) | [Block sender](#)

Thank you for your email Jesse. None of the tests in your below email require cooling. If you have additional questions, don't hesitate to contact me.

Energy Laboratories, Inc.

Trust our People. Trust our Data.

Shari Endy | Sr. Project Manager | Billings, MT
O: 406-869-6253 | sendy@energylab.com | www.energylab.com

***We want to help you ship successfully!** Please plan ahead and allow extra time to receive supplies from the lab and for the lab to receive your samples. All carriers are in full-swing holiday peak season operating with double the volume and limited capacity. We appreciate your business so please contact your local branch or Project Manager to discuss adjustments to your shipping schedule or to ask questions.*

This transmission may contain confidential information and is for the use of the intended recipient(s). If you received this in error, please contact the sender and delete this email and all copies.

From: Jesse Sims <jsims@pioneer-technical.com>
Sent: Tuesday, August 9, 2022 10:02 AM
To: Shari Endy <sendy@energylab.com>
Subject: Re: Insufficiently Reclaimed Sites Sampling

Please confirm the following analysis don't need ice.

Texture class, particle size, pH, saturation percent, electrical conductivity, organic, nitrogen, phosphorus, potassium. Using USDA classification, test methods described in ASA/SSSA monograph no 9 methods of soil analysis parts 1 and 2. ASA 1986 and ASA 1983.

Metals analysis As, Cd, Cu, Pb, and Zn.

Thank you.

Jesse Sims
Butte Staff Engineer

From: Shari Endy <sendy@energylab.com>
Sent: Tuesday, August 9, 2022 8:52:03 AM
To: Jesse Sims <jsims@pioneer-technical.com>
Subject: RE: Insufficiently Reclaimed Sites Sampling

Hi Jesse –

I don't need anything from you ahead of time. Do you have all the proper containers and a cooler? Without knowing the list of analytes I cannot tell you holding times. If you need additional information, don't hesitate to contact me.

Energy Laboratories, Inc.
Trust our People. Trust our Data.

Shari Endy | Sr. Project Manager | Billings, MT
O: 406-869-6253 | sendy@energylab.com | www.energylab.com

***We want to help you ship successfully!** Please plan ahead and allow extra time to receive supplies from the lab and for the lab to receive your samples. All carriers are in full-swing holiday peak season operating with double the volume and limited capacity. We appreciate your business so please contact your local branch or Project Manager to discuss adjustments to your shipping schedule or to ask questions.*

This transmission may contain confidential information and is for the use of the intended recipient(s). If you received this in error, please contact the sender and delete this email and all copies.

From: Jesse Sims <jsims@pioneer-technical.com>
Sent: Tuesday, August 9, 2022 6:48 AM
To: Shari Endy <sendy@energylab.com>
Subject: Insufficiently Reclaimed Sites Sampling

Hello Shari,

We've got some samples we would like to send your way this week for the Insufficiently reclaimed sites project. Is there anything you need from me before we ship those out?

Jesse Sims
Butte Staff Engineer

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