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APPENDIX A Atlantic Richfield Responses to Agency Comments from Comment Letter Dated April 27, 2021, Specific to General Comments for Data Management and Remedial Investigation Data Collection

Atlantic Richfield Company

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APPENDIX A

**Atlantic Richfield Responses to Agency Comments
from Comment Letter Dated April 27, 2021,
Specific to General Comments
for Data Management and Remedial Investigation Data Collection**

Appendix A.1 Atlantic Richfield Response Table to General Agency Comments

Appendix A.2 Atlantic Richfield Notes and Comments Added to the Agency's Additional
Archived Core Sampling Request Table

Appendix A.1

Atlantic Richfield Response Table to General Agency Comments

Number	Comment	Location	Atlantic Richfield Response	Complete (Y/N)
1.a	Please collect additional samples and submit for analysis specified as requested in the table. Please provide a summary of those requested locations that could not be sampled, or alternative depths used, if applicable.	Response Table provided to EPA included in Appendix A.2	Collected additional samples. Summary is located in logbook and sample sheets. Data and details on sampling event contained in the DSR and DVR accordingly. Table provided by EPA with additional requested samples and intervals to sample will be provided to EPA with comments and notes on samples collected	Y
1.b	For all borings, please create unique samples and IDs for each unique archived interval available and record at least paste pH and lithology. Unique samples should be defined, at a minimum, as changes in distinct color or mineralization that may represent changes in pH. This approach is consistent with the EPA's data collection effort, where each unique interval, with a paste pH recorded, is entered into the database with the pH and lithology description, regardless of whether lab or X-ray fluorescence (XRF) analyses were completed.	Table 3 of DSR Boring Logs App. C.4	Completed. pH is recorded on the boring logs in Appendix C.4 of DSR. Each pH and lab sample collected was given a new ID. These can be found in the logbooks, sample sheets and Table 3 of the DSR.	Y
1.c	If upon review of archived soil, the material contains secondary mineralization or color that differs from the boring log, please record/edit this information in the boring logs.	Boring logs App. C.4 Geodatabase App E Table 3 of DSR	Secondary mineralization and color differences were noted on bore logs.	Y
1.d	As noted in Pioneer's 1/9/2021 email response, Pioneer did not record the presence of secondary mineralization/staining in the geoprobe sample summary table (Table 2). This information is sometimes noted on boring logs; however, it is not in Table 2. Please add this information to Table 2 and to the revised boring logs as observed from the archives.	Table 3 of DSR Boring Logs App. C.4 Geodatabase App. E	Information that was captured on the boring logs was transferred to Table 3 of the DSR and added to the geodatabase. Lithology data was also added to the geodatabase. However, information specific to mineralization/staining was often vague and may potentially have some data gaps	Y
1.e	If other intervals are identified that are highly acidic during relogging of the borings, please consider collecting additional samples not provided in the excel spreadsheet. If it is observed that other areas of the boring are more acidic than the suggested bottom of dump sample, that interval could be exchanged for the suggested bottom of dump interval or also submitted in addition to the bottom of dump interval. This is a suggestion, please use professional judgement of the dump material to meet the DQOs	Field Logbook 5 and 6 Table 3 of DSR App A.2	Used this logic while sampling additional samples. See logbook entries and Table 3 of the DSR for samples collected and pH results. Summary also provided in responses to Table provided by EPA in Appendix A.2	Y
1.f	Please add the full sample IDs to the boring logs for all samples collected, including those with only paste pH analysis.	Boring logs App. C.4	The full sample IDs have been added to the boring logs	Y
1.g	Please add the paste pH values to the boring logs adjacent to the sample ID.	Boring logs App. C.4	pH values added to the boring logs adjacent to the sample ID.	Y
1.h	It was discussed that archived intervals from borings are stored in plastic bags. Please implement a reasonable method for homogenizing the material and collecting a representative aliquot of the material for additional analysis. Please refer to the SOPs provided in the QAPP. A fairly simple method is to mix within the bag and lay all the material out on a clean plastic sheet then quarter it to grab a representative sample, while ensuring fines are evenly distributed.	Section 2.1.3 of DSR	Samples were homogenized by hand kneading the sample in the sample container. Samples were then placed in sample bags appropriately labeled and sent to the lab for analysis. The whole sample from interval requiring analysis was sent to the lab, which was required because volume of material was generally just enough for required analysis. When a split was required (SPLP/ABA or QA sample) the sample was split consistent with guidance in SOPs for generating Field Duplicate samples.	Y
1.i	Please send all of the requested samples to the laboratory for laboratory ICP analysis. Paired XRF analysis are not required for the suggested samples.	Table 3 of DSR	All samples collected, including alternative and additional samples, were sent to Pace Analytical for appropriate analysis.	Y
2	Please add the "SO" and "N/FD" designations to the sample ID column (NAME, column B) in Table 1.	Table 2 of DSR	This is now Table 2 of the DSR. The full sample ID for each sample has been updated	Y
3	The following specific discrepancies were identified between the boring logs and lab sample number provided in tables. If these discrepancies are correct, please revise the sample IDs accordingly in all associated databases, boring logs, and tables:	All associated databases, boring logs, and tables	Appropriate changes have been made. Mistake likely occurred when pulling in info for creating table. QA checks were made with field logbooks and COCs to ensure accuracy and consistency	Y
3.a	SO-5886 - DPT2 boring log at 5.6-10' and lab sample at 5.0-10'		addressed as noted above in number 3.	Y
3.b	SO-5913 - DPT29 boring log at 0.2-0.8' and lab sample at 0.2-0.4'		addressed as noted above in number 3.	Y
3.c	SO-5888 - DPT4 boring log at 5.6-6.0' and lab sample at 5.5-6.0'		addressed as noted above in number 3.	Y
3.d	SO-5894 - DPT9 boring log at 11.1-11.4' and lab sample at 11.1-11.7'		addressed as noted above in number 3.	Y
3.e	SO-5885 - DPT1 boring log at 5.6-6.2' and lab sample at 5.0-6.0'		addressed as noted above in number 3.	Y
3.f	SO-5891 - DPT6 boring log at 10.3-10.9' and lab sample at 10.0-11.0'		addressed as noted above in number 3.	Y
4	Please provide finalized versions of the DPT boring logs in the revised DVR based on above comments.	Appendix C.4 of DSR	Finalized versions of the DPT boring logs are included in Appendix B.4 of the DSR	Y
5	Comment for 2019 and 2020 DVRs: Please add validated XRF data to a revised 2019 and 2020 DVR or in a single revised DVR as attachment to the overall DSR. A similar comment was not included in the 2019 DVR review, understanding that validation of XRF data was a work in progress at the time of review of that document.	Appendix B.3 and B.6 of DSR	A single revised DVR for the 2019 and 2020 FPXRX is provided in Appendix B.3 of the DSR. Validation on FPXRF data collected during additional surface sampling in 2021 is contained in the DVR located in Appendix B.6	Y
6	Please update databases and associated tables with the following changes in claim names and numbers. Some of these changes were explained in an email correspondence and meeting on 4/23/2020, therefore some of these changes may already be completed but are documented here for clarity.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	All requested Claim names and CDM Claim numbers have been updated and appropriate QA checks made to ensure accuracy in all associated databases and data tables	Y
a	Claim 37 Joseph Joyce: claim to be investigated by CDM Smith and AR/Pioneer and combined as a single site. Please change claim from Secondary to Primary.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Changed from Secondary to Primary and updated Table 1 of DSR	Y
b	Tiger claim (AR/Pioneer number 1119): Please rename claim to "Tiger B" and reassign claim number as 302.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Renamed Claim and updated claim number in Table 1	Y
c	General Washington (AR/Pioneer claim number 302). Based on GIS information provided to CDM Smith, numbers through 1149 have been used, therefore please reassign claim number to 1150 and confirm change.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Updated claim number in Table 1 and updated all sample IDs with appropriate claim number in sample ID	Y
d	Spur claim (AR/Pioneer number 546) has incorrect claim number. Please reassign Spur claim as number 1072 in your records. Claim also to be investigated by CDM Smith and AR/Pioneer and combined as a single site. Please change claim from Secondary to Primary.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Updated claim number and changed from Secondary to Primary in Table 1	Y
e	There are two St. Patrick claims. Please change claim number 8 to St. Patrick A and claim number 178 to St. Patrick B.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Made appropriated changes to claim names in Table 1	Y
f	Please change the name of the Missouri claim (claim number 321) to 'Missouri B'. Two samples were collected on this claim and the database will need to be changed, SO5530 and SO5531.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Made appropriate changes to Table 1 and appropriate samples and databases affected	Y
g	Last Chance claim, claim number 304. Please change claim name to 'Last Chance B'. There is another Last Chance claim that is a primary and being investigated by EPA.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Made appropriate changes to Table 1	Y
h	Excelsior claim, claim number 167. Please change claim name to 'Excelsior B'.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Made appropriate changes to Table 1	Y
i	Daisy claim, claim number 153. Please change claim name to 'Daisy B'. One sample was collected on this claim and the database will need to be updated for the sample, SO5751.	All associated databases and Tables. Table 1 of DSR lists AR claims and CDM Claim #	Made appropriate changes to Table 1 and appropriate samples and databases affected	Y
7	Several GIS data files have been provided for 2019 and 2020 work. These include 2019 and 2020 point location shapefiles, 2019 and 2020 polygon sample location shapefiles, and a AR Parcels/claims file. Some recommended improvements are provided to better disseminate these data and streamline the evaluations for the RI report. Ultimately, much of the data need to be incorporated into the EPA GIS databases and added to figures for the RI report. Comments on specific shapefile attributes help to allow the EPA to perform spatial analysis of data by joining with analytical data tables.	Geodatabase App. E	In General, The GIS data was a work in progress when preliminarily shared with EPA. The GIS data has since undergone extensive updates and QA checks. Every attempt has been made to incorporate comments and suggestions to make merging of data as effortless as possible. Responses to specific suggestions/comments are detailed below.	Y
a	Please provide revised GIS files as part of electronic data contained in the overall DSR (e.g., an electronic data appendix). Since GIS type data is not part of a DVR, these data should be submitted as part of a DSR.	Appendix E of DSR	All GIS files and databases will be submitted as part of an electronic Appendix in the DSR. (Appendix E)	Y
b	The shapefile "Claims_Parcels_WSS_Sampling.shp" was originally provided on 2/27/2020. The shapefile attributes do not specify whether mines are primary or secondary. These attributes need to be displayed on figures for the RI report. Since received, CDM Smith has used a modified version of this shapefile that has a join with a portion of the desktop review spreadsheet. Please update this file or other related newer geodatabase file to also contain the primary/secondary attribute.	Geodatabase App. E	All geodatabase files contain the primary/secondary attribute column	Y
c	The files "WSS_SoilSampAreas_2019.shp" (polygon layer) and WSS_SoilSamplingLocations_2019.shp (point layer) provide all the sampling locations for 2019. It was understood when provided that these files were preliminary as work was being done to update attributes, so please disregard comments if already addressed	Geodatabase App. E	All 2019 sampling locations and attributes have been adequately QA/QC and updated appropriately	Y
1	Neither file has a completed attribute column with the full sample ID for every sample (SO) location. Each location should have a complete and consistent sample ID, including the "N" designation and the "SO" designation, regardless of whether it is a lab sample, XRF and pH only sample, or pH only sample. Attributes "name_1", "Site_Name", and "Lab_Sample" all have some variations of the full sample ID. In addition, inconsistencies between the number of characters in an ID in reported tables and shapefile attributes such using preceding zeros in the study area ID or the sample date will invalidate any shapefile joins with table data. Please revise, as the sample ID will be a critical field if these GIS files are joined with analytical data, such as metals results, for display in figures in the RI report.	Geodatabase App. E	The full sample IDs have been added to the name for each point location regardless of attribute being collected (i.e., lab, XRF, pH only, physical observation). It should be noted that there are some locations in the point file that were recorded, but were not assigned an SO number. These locations received a pin and photo to document the observation and recorded in the logbook. In other instances, similar features were assigned and SO number so those observations could be tracked.	Y
2	Attribute "Analysis" and "Sample_tpy" is blank for some sample locations. Please revise.	Geodatabase App. E	These attributes have been updated in the GIS files. Analysis refers to the level of data collected (pH, lab, XRF, etc.) and SampleType refers to either grab or number of points in a composite	Y

Number	Comment	Location	Atlantic Richfield Response	Complete (Y/N)
3	For the attribute "Analysis" in both shapefiles, please confirm that quality control checks have been performed between the shapefiles and the actual database and associated tables with the field and laboratory data. For example, some entries just say SPLP but do not indicate also metals analysis, and some entries say paste pH while others do not.	All associated databases and tables	QA checks have been made to ensure accuracy and consistency. Each location received field paste pH unless otherwise noted. To ensure no blank entries in instances where no sample was collected, A description was entered (i.e. observed feature, natural feature, vegetated dump)	Y
4	All samples are assumed to have a paste pH. Please confirm, as some entries have a zero value in both shapefiles. Also, please confirm the paste pH values in the GIS files are the same as will be presented in excel DSR tables.	All associated databases and tables	QA checks have been made to ensure values across all files and databases are accurate and complete. If no pH was recorded, and NA was recorded and details are provided in the notes column explaining why (physical feature, not recorded, etc.)	Y
5	For Mn and Fe staining attributes in both shapefiles, please confirm the results in this attribute are the same as will be presented in excel DSR tables (same comment as for paste pH data). This QC check should be performed between the same set of data in two different places and comment should be provided in the DSR that a check process has been completed.	All associated databases and tables	QA check has been completed between GIS tables and DSR tables to ensure accuracy and completeness	Y
6	There should be a reason or description for what the polygon/composite sample or point grab sample represents. Was this recorded in the logbook? Can this information be added to the shapefile and/or associated tables for the DSR? The attribute "Note_1" has a few random entries with comments, but it is largely incomplete.	Geodatabase App. E	The note attribute has been updated to contain notes from field logbooks and field data sheets where available	Y
7	. Attribute "Claim_Name" is a field which indicates which samples apply to which secondary or primary mine study areas. Please confirm this attribute has been QC checked with respect to the physical location of the samples in which it represents. For example, EPA went through a QC checking process which identified that in some cases, sample IDs were incorrectly named because the wrong study area was used, even though the location may have been near the specified study area or for other reasons (e.g., transposing numbers in a study area ID that was similar to another ID). Adjustments were made based on a spatial analysis using ArcGIS and modifications were made to all associated databases and tables, including modification of the full sample ID to reflect the correct study area ID number. Please perform a similar analysis/QC check process.	all associated databases, tables, lab reports, and DVRs	A spatial analysis check was performed in regard to physical location in which a sample was located versus the claim number in the sample ID. Those samples that contained the wrong claim number in the sample ID from the claim the point physically fell in, where updated accordingly in the sample IDs and all associated data tables, databases, lab reports, and DVRs.	Y
ii	There is no location ID or several other attributes for a location polygon called "Garbage Dump" that is a large polygon at the Tzarena claim. Please revise if this is an actual sample or just a physical characteristic observed in the field? Were there other polygon characteristics observed and recorded with GPS? (e.g., bedrock outcrops that are not dumps and were not sampled)	Geodatabase App. E	This was briefly explained in comment response 7.C.1. Every location that was sampled received a sample ID and some physical features observed also received a sample ID to document and track the record. However, there were some features observed that were recorded on the GPS, photo taken, and noted in the field log book that did not receive a sample ID. Those locations should show up in the point file as a description of the feature observed such as "Garbage Dump".	Y
d	The geodatabase file "WSSOU_SoilSampling_2020.gdb" and the two Feature Classes "WSS_SoilSamplingLocations_2020" and "WSS_CompositeSampleAreas_2020" provide preliminary GIS data for the 2020 season. It was understood that at the time of receipt (December 2020), updates were being made to improve geodatabases. Please disregard if any of the following corrections have already been made.	Geodatabase App. D	Same as response above to comment 7	Y
1	The attribute titles (column headers) may be a little different from the 2019 files, but potentially all of the above comments for 2019 files apply to the 2020 files	Geodatabase App. D	all the 2019, 2020, and 2021 surface data will be shared in combined shapefiles (one file with all the sample points, including centroid locations for composites, and the associated attributes and one file with the composite sample polygons to display areas the composite samples represent). This will ensure consistency for all attribute fields. The subsurface geodata will be shared in a separate file as it contains a depth attribute	Y
2	Attribute "name_1" versus "notes" versus "lab_sample_name" have variable entries where some are a DPT number and some are portions of the sample IDs (with without the "N"). Please revise the geodatabase to use consistent entry formats for these attributes. There should be a clear attribute field representing the DPT number versus the SO number.	Geodatabase App. D	Each location will be marked by the sample ID for which it represents. Each DPT location will have several sample IDs at the same location. Each sample will contain the DPT it represents and the depth interval as well.	Y
3	There should be a sample start depth and end depth attribute for where there are multiple intervals for a single SO point in space. That way, there are several rows for each depth interval along with unique sample IDs for each sample row.	Geodatabase App. E	Each sample ID contains the start and stop depth for the location of the sample along with a "Depth_interval_ft_bgs" attribute on the table. It should be noted that on some of the archived core intervals, there are multiple samples across a specific interval as a result of having to combine like intervals to achieve sufficient volume for laboratory analysis collected. Example, one sample ID for pH sample collected from 0-1 foot bgs, one sample collected for pH sample collected from 1-2 foot bgs, and one sample for the lab sample collected from 0-2 feet bgs.	Y
4	Several paste pH results are <Null>. Was pH not measured or just an error in the geodatabase files?	Geodatabase App. E	Same response as comment 7.C.4 above.	Y
5	All Mn and Fe staining entries for subsurface samples are blank. Per previous comments on revising the boring logs, please update this attribute in the geodatabase files.	Geodatabase App. E	All Mn and Fe staining entries have been added as attributes to the GIS tables	Y
6	There is no similar attribute to "Analysis" as provided in 2019 shapefiles that indicates whether the sample was laboratory metals, XRF metals, SPLP, ABA, and/or paste pH only. Can this type of information be added to the geodatabase?	Geodatabase App. E	As noted in comment response 7.D.1, all data across all seasons will be combined in one file. Attribute features will be consistent and adequate.	Y
ii1	Please identify which samples are subsurface or surface samples.	Geodatabase App. E	Surface and Subsurface samples will be shared in separate shapefiles. The two can be distinguished by nature of sample ID. The shapefiles can be displayed in separate formatting styles and colors to aid in distinction between the two types	Y
2	It is possible not all surface samples are in GIS packages provided. Please perform a QC check between geodatabase files and analytical database files to confirm matching records. For example, the following records were found to not be in the GIS files: 20WS0350-SO5841-N-060420 and 20WS-0350-SO5840-N-060420.	Geodatabase App. E	QA checks have been completed to ensure GIS files contain locations for all samples collected. There were previous instances where an original sample location was reoccupied and assigned a new sample ID but not a second location. A located location was added for the additional sample collected.	Y
e	Is it possible to create only one single geodatabase and/or set of sample location point and polygon shapefiles for each year rather than four separate files? (see also next comment).	Geodatabase App. E	As described above in comment response 7.D.1, one geodatabase sample location point for surface samples across all seasons, one polygon shapefile for composite samples across all seasons, and one subsurface point file.	Y
f	For EPA evaluations in the report, figures were generated, and GIS layers created that joined laboratory and XRF metals data with the GIS point locations. To do this, a centroid point was created for each composite polygon location to create a single point feature. Then, the centroid point and all of its associated attributes for the composite sample were merged with the grab sample point location data in ArcGIS. Once all sample locations were within one file along with an attribute of grab or composite sample type, laboratory and XRF data were joined spatially with the location data using the complete sample ID. Location symbols could then be displayed using the quantity functions in the symbology properties to provide a visual evaluation of metals concentrations with respect to screening criteria. Similarly, paste pH data was joined with the one single location file, so that color coded maps of paste pH could also be created. Can Pioneer complete a similar process of creating a centroid point for the polygon data and merging grab and composite location data into one shapefile or master geodatabase?	Geodatabase App. E	Centroid point locations were created for all composite sample locations and added to the sample point file location geodatabase	Y
8	After review of the samples and sample locations collected during the 2019 and 2020 field season, potential data gaps are apparent within AR owned properties. These data gaps may affect assessment of the nature and extent of contamination of disturbances visible on aerial photographs. Disturbances listed below may be natural bedrock outcrops or rocky/gravelly soils that do not support vegetation, may be associated with the modern rock quarry (and hence may not contain elevated metals), or may be associated with historical mining activity. At a minimum, please conduct a field reconnaissance in the 8 2021 season to confirm the presence of natural outcrop or gravel areas and complete further sampling for metals, pH, and lithology as needed to characterize the extent of mine disturbances. Study areas/claims with possible naturally unvegetated areas are annotated with a footnote (*). The lack of data in some areas may impact the assumptions used in the feasibility study requiring more expansive and conservative assumptions about the extent of waste materials, which could result in increased costs for various remedial alternatives. Deferring further sampling in some areas to a later phase of work, such as pre-remedial design investigations, may be acceptable, but some areas with little or no data may need further sampling to complete the RI and potentially, the risk assessment evaluations. After review of the data gaps presented below, it may be most beneficial to schedule a meeting to discuss them and agree on a path forward. The following is an overview list of data gaps for further discussion:	DSR	Additional field characterization was completed from September 20, 2021 to September 28, 2021 as described in the DSR. All data collected is validated and presented in the DSR.	Y

Appendix A.2

Atlantic Richfield Notes and Comments Added to the Agency's Additional
Archived Core Sampling Request Table

Appendix A.2
Atlantic Richfield Comments/Notes to Specific Requested Analysis for Archived Core Samples

WSSOU AR DPT Additional Sample Requests					Requested Analysis			Atlantic Richfield Responses/notes from Sampling Event
Claim Number	Claim Name	DPT Number	Sample Number	New Sample Interval*	Total Metals	SPLP	ABA	
3	Humbolt	DPT-12	20WS-0003-SO5897-7.3-7.7-N-061920	6.5-7.3	X	X	X	6.5-7.3 archived material quantity is 182 grams. Not enough for all requested samples. Prioritized total metals and SPLP.
3	Humbolt	DPT-14	20WS-0003-SO5899-16.0-16.3-N-061920	10.0-15.0	X			completed as requested
3	Humbolt	DPT-18	20WS-0003-SO5903-4.6-4.9-N-062320	4-4.6	X	X	X	4-4.6' did not have the quantity for 3 samples. A decision was made to sample 0.0-4.0' for ABA and 4-4.6' for total metals and SPLP. 0.0-4.0 SO6036 pH=4.30
3	Humbolt	DPT-19	20WS-0003-SO5904-12.6-13.0-N-062320	12-12.6	X	X		completed as requested
10	Minnie Jane	DPT-21	20WS-0010-SO5906-13.0-13.5-N-062320	12-13	X	X		completed as requested
10	Minnie Jane	DPT-25	20WS-0010-SO5910-9.2-9.6-N-062420	8-9.2	X	X	X	completed as requested
297	Key West	DPT-26	20WS-0297-SO5911-12.7-13.0-N-062420	12-12.7	X	X	X	12-12.7' did not have the quantity for 3 samples. A decision was made to sample for total metals and SPLP only. 8-12' interval was mislabeled and determined to be with DPT-26 based off of process of elimination. Did not combine with the 8-12' interval due to uncertainty.
297	Key West	DPT-27B	No Original Sample	11-13.7	X	X	X	Not enough material from 11-13.7 8-11 interval is logged as the same material. After a second inspection of material it was determined to combine 8-11 and 11-13.7 to obtain all three requested samples.
297	Key West	DPT-28	20WS-0297-SO5912-4.5-4.8-N-062420	4-4.5	X	X	X	Not enough material from 4-4.5 for 3 samples. Decided to use 0.0-4.0 for ABA sample. 4.0-4.5 for total metals and SPLP.
297	Key West	DPT-31	20WS-0297-SO5915-4.6-5.0-N-062420	4.0-4.6	X	X		completed as requested
285	Burlington	DPT-33	20WS-0285-SO5917-8.4-8.7-N-062520	8-8.4	X	X	X	Not enough archived material so combined 4.0 to 8.4 to complete all analysis
285	Burlington	DPT-35	20WS-0285-SO5919-1.2-1.5-N-062520	0-1.2			X	ABA. This is an added sample due to unknown DPT-32 below. Decided to add this as an ABA sample.
285	Burlington	DPT-35	20WS-0285-SO5916-4.4-4.5-N-062520	4-4.4	X	X	X	This is believed to be DPT-32 based off sample number and new sample interval. NEW SAMPLE taken from DPT-32-0.0-4.0 for total metals and SPLP due to quantity of archived material. Interval 4.0-4.4 was very coarse and there was not enough archived material. Did not use this interval.
285	Burlington	DPT-36b	20WS-0285-SO5920-1.3-1.5-N-062520	0-1.3	X	X	X	Not enough archived material. Only sampled for Total metals and SPLP.
246	Independent	DPT-37	20WS-0246-SO5921-12.2-12.6-N-062520	8-12	X	X		completed as requested
246	Independent	DPT-39	20WS-0246-SO5923-4.8-5.1-N-062520	4-4.8	X	X	X	Not enough material from 4-4.8. Combined DPT-39-0.4 and DPT-39-4-4.8. Took all 3 requested samples from combined intervals.
246	Independent	DPT-40	20WS-0246-SO5924-8.7-9.0-N-062520	8-8.7	X	X		completed as requested
1150	General Washington	DPT-42	20WS-1150-SO5926-20.5-20.8-N-062520	20-20.5	X	X		ABA chosen by Pioneer due to low pH value. Combine DPT-42B-16-20 and DPT-42B-20-20.5 due to low quantity of archived material for DPT-42B-20-20.5. Completed all three analysis
16	Orphan Boy	DPT-48	20WS-0016-SO5933-12.7-13.0-N-070120	12-12.7	X	X	X	Requested sample interval was low on quantity. Decision was made to collect DPT-48-12.0-12.7 for total metals and SPLP and DPT-48 8.0-12.0 for ABA. Did not combine due to different pH levels.
16	Orphan Boy	DPT-49	20WS-0016-SO5934-12.7-13.2-N-070120	8.0-12.0	X			completed as requested
16	Orphan Boy	DPT-50	20WS-0016-SO5935-4.0-5.0-N-070120	0-4	X	X		completed as requested
1150	General Washington	DPT-53	20WS-1150-SO5938-24.4-24.9-N-070120	20.0-24.0	X	X		completed as requested
288	Nettie	DPT-54	20WS-0288-SO5939-4.0-4.4-N-070220	4.0-4.4	X	X	X	Interval 4.0-4.4 was previously sent to the lab. Decided to send 0.0-4.0 for total metals and SPLP only due to quantity.
288	Nettie	DPT-56	20WS-0288-SO5941-4.0-4.5-N-070220	1.1-1.6	X	X	X	Combined DPT56-0-1.1 and DPT56-1.1-1.6 due to low quantity of requested interval. Sample is DPT-56-0.0-1.6
288	Nettie	DPT-57	20WS-0288-SO5942-0.9-1.3-N-070220	0-0.7	X	X		completed as requested
43	Germania	DPT-6	20WS-0043-SO5891-10.3-10.9-N-061820	10-10.3	X	X		Sample interval for this is 5.0-10.3 due to archived material being combined due to not enough volume from 10-10.3 interval. Had enough material for a duplicate on this one as a result of combining the intervals
289	Hibernia	DPT-60	20WS-0289-SO5945-12.8-13.3-N-070220	12-12.8	X	X		completed as requested
162	Marget Ann	DPT-62	20WS-0162-SO5946-16.0-16.4-N-070620	12-16	X	X		Requested interval is not archived. Very poor recovery for every interval and very coarse. Decided to combine all waste material (0-12') to have the quantity for analysis requested.
162	Marget Ann	DPT-63	20WS-0162-SO5947-20.0-20.4-N-070620	8-12	X			completed as requested
138	Glengary	DPT-64	20WS-0138-SO5948-12.8-13.3-N-070620	12-12.8	X			completed as requested
138	Glengary	DPT-66	20WS-0138-SO5950-9.5-9.8-N-070620	8-9.5	X	X	X	completed as requested
179	Eagle	DPT-69	20WS-0179-SO5953-5.4-5.7-N-070820	4-5.4	X	X	X	completed as requested
6	Mountain Boy	DPT-7	20WS-0006-SO5892-5.7-6.0-N-061820	5-5.7	X	X	X	completed as requested
179	Eagle	DPT-70	20WS-0179-SO5954-4.3-4.9-N-070820	4-4.3	X	X		completed as requested
315	Garibaldi	DPT-75	20WS-0315-SO5959-8.8-9-N-070920	4-8	X	X		completed as requested
315	Garibaldi	DPT-77	20WS-0315-SO5961-4.3-4.6-N-070920	4-4.3	X	X		Requested sample interval was low on quantity. Decision was made to combine intervals 0-4 and 4-4.3 to complete analysis requested.
6	Mountain Boy	DPT-9	20WS-0006-SO5894-11.1-11.4-N-061920	10-11.1	X	X		completed as requested

*Approx interval based on information provided on boring logs. Please modify as appropriate based on how borings are archived.

Sample was collected as requested or modified and completed as noted
Pioneer Technical added this sample based on field judgement
Believed to be error in initial request. See notes