CRETE Consulting Incorporated
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June 23, 2023

Kim Vik
Voluntary Cleanup Program Site Manager
Toxics Cleanup Program – Northwest Regional Office
Washington Department of Ecology
15700 Dayton Ave. N.
Shoreline WA 98133

RE: Remedial Investigation Work Plan Addendum – ROW Ditch Sediment Sampling
Maralco Property – 7730 South 202nd Street, Kent WA
Facility/Site No: 2067
Ecology Cleanup Site ID: 5055
VCP Project No.: NW3339

Ms. Vik,

CRETE Consulting Incorporated, PC (CRETE) prepared this addendum to the Remedial Investigation Work Plan (RIWP) to provide the rationale for sediment sampling in the South 202nd Right-of-Way (ROW) ditch and sediment sampling procedures. The RIWP dated March 16, 2022 was submitted to the Washington State Department of Ecology (Ecology) as part of the Voluntary Cleanup Program (VCP) application.

Ecology provided an opinion letter regarding the RIWP dated August 24, 2022. It is based on the opinion letter, that this addendum was prepared. Other comments were provided in the opinion letter that will be addressed under separate cover. The RI work described in this addendum and the indoor stockpile sampling described in the RIWP are being prioritized to allow implementation of an Interim Action in the summer and fall of 2023, primarily to remove stockpiled secondary aluminum smelter wastes from the property.

Sampling Locations

Two sediment sampling transects across the South 202nd Street ROW ditch were identified in Figure 8 of the RIWP. The Ecology opinion letter requested that specific sampling locations be identified and that the sampling plan and rationale be explained.

Since the RIWP was submitted, some vegetation was removed from the ROW ditch area and the ditch alignment is more apparent. Figure 8 of the RIWP has been updated and is included as Figure 1. The figure shows specific sample locations and additional historical sediment sample locations and site features. Relevant sediment sampling data are provided in Table 1. The sediment sample depths for the historical samples are not documented; it is assumed that these would have been surficial samples collected from the upper 6 inches.

The ROW ditch is primarily fed from the upstream portion of Christopher Ditch via a culvert beneath the South 202nd Street cul-de-sac. A second culvert that drains a ditch on the north side of South 202nd Street discharges with 5 feet of the Christopher ditch culvert. The upstream approximately 110 feet of the ditch flows west northwest and narrows. Sample SED-02 was collected in 2021 about 2 feet downstream of the culvert outfall. Downstream of this upper ditch area, the ditch flows west close to the north edge of the ROW. The primary drainage channel is about 6 feet wide and 2 feet deep. A steep slope is present from this channel up to the property to the north. The ditch steps up incrementally toward the Maralco property as shown in the inset on Figure 1. Sediment sample B1 was collected in 1987. The location of this sample is very uncertain but it has been approximated for information.

A culvert from the stormwater pond located on the Maralco property discharged to the drainage channel at about 175 feet downstream of the Christopher Ditch culvert outfall. The outfall of this culvert has not been located. Sediment sample SW-8 was collected at this culvert outfall in 1990. SED-03 was collected in 2021, about 50 feet downstream of this culvert. SW-7 was collected from the stormwater pond in 1990, prior to sediment removal during the Ecology-led interim action in 1991. SED-01 was collected from the stormwater pond in 2021.

The proposed sediment sample locations have changed slightly from the RIWP. Sediment samples will be collected about every 50 feet along the drainage channel between SED-02 and the downstream boundary between City of Kent and BNSF property. Two sampling transects will coincide with two of these sample locations. Estimated transect sample locations are provided on Figure 1 based on the general cross-section of the ditch. Specific sample locations will be determined based on field conditions. Preference will be given to low spots and apparent ditch bed locations where most sediment deposition would occur.

Sample Collection and Analysis

Samples will be collected at 13 locations as shown on Figure 1. Samples will be collected until native soil or refusal is encountered for the target depths of 0 to 0.5 feet below ground surface (ft bgs), 0.5 to 1 ft bgs, 1 to 1.5 ft bgs, 1.5 to 2 ft bgs, and for each foot below 2 ft bgs. Each sediment sample will be collected with an AMS Core Sampler with core liners and core catchers, if necessary. Other hand-held tools, such as a trowel, shovel, or hand auger may be used to collect the samples in the advent that the core sampler is insufficient. Sample nomenclature will start at SED-04 and continue sequentially to SED-08. Transection samples will add N, S1, S2, or S3 to the sample name (e.g., SED-07S1). Sample depths will also be included in each sample ID (e.g., SED-04 0-0.5).

Core liners for the core sampler are dedicated per core push and will not be re-used at subsequent locations. Any non-dedicated sampling equipment used, such as stainless-steel bowl, trowel, shovel, and hand auger used will be decontaminated prior to each use (and between samples). Gloves will be changed between samples. Sample containers will be clearly labeled with sample ID, collection date and time, and project name, and then placed in an iced cooler for delivery to the laboratory within 24 hours of sample collection and maintained with the chain of custody. A cross-section or profile sketch of each transect and map of the sample location will be recorded in the field notes.

Samples will be assigned for analysis based on sample depth. Since SED-02 was clean and the samples are located upstream of the stormwater pond culvert, the SED-04, SED-05 (main channel and transect), and SED-06 samples for the 0 to 0.5 ft bgs sample depths will be assigned for laboratory analysis, and deeper samples will be held pending the results. Since SED-03 was contaminated from 0 to 0.5 ft bgs and 0.5 to 1 ft bgs and the sample locations are downstream of the stormwater pond culvert, the 1 to 1.5 ft bgs samples from the main channel at SED-07 and SED-08 will be assigned for laboratory analysis along with the 0 to 0.5 ft bgs SED-07 transect samples, and the other samples will be held pending results. Samples will continue to be analyzed until there is a clean result. Sediment samples will be analyzed for metals (arsenic, cadmium, chromium, copper, mercury, nickel, silver). Mercury and silver have been added since the RIWP based on the data from sample SW-8 that was not previously included. Per the RIWP Quality Assurance Project Plan (QAPP), equipment blank samples will be collected for any non-dedicated equipment used during sample collection.

Please let me know if you have any comments or questions on this addendum. We would like to proceed with sampling immediately after property acquisition, likely the week of July 10th to 14th. We are also in the process of obtaining permission from the City of Kent to sample in the ROW.

Sincerely,

CRETE CONSULTING INCORPORATED, PC

Grant Hainsworth, P.E.
Principal
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cc: Kyle Sietawitch – 7730 202nd Street, LLC

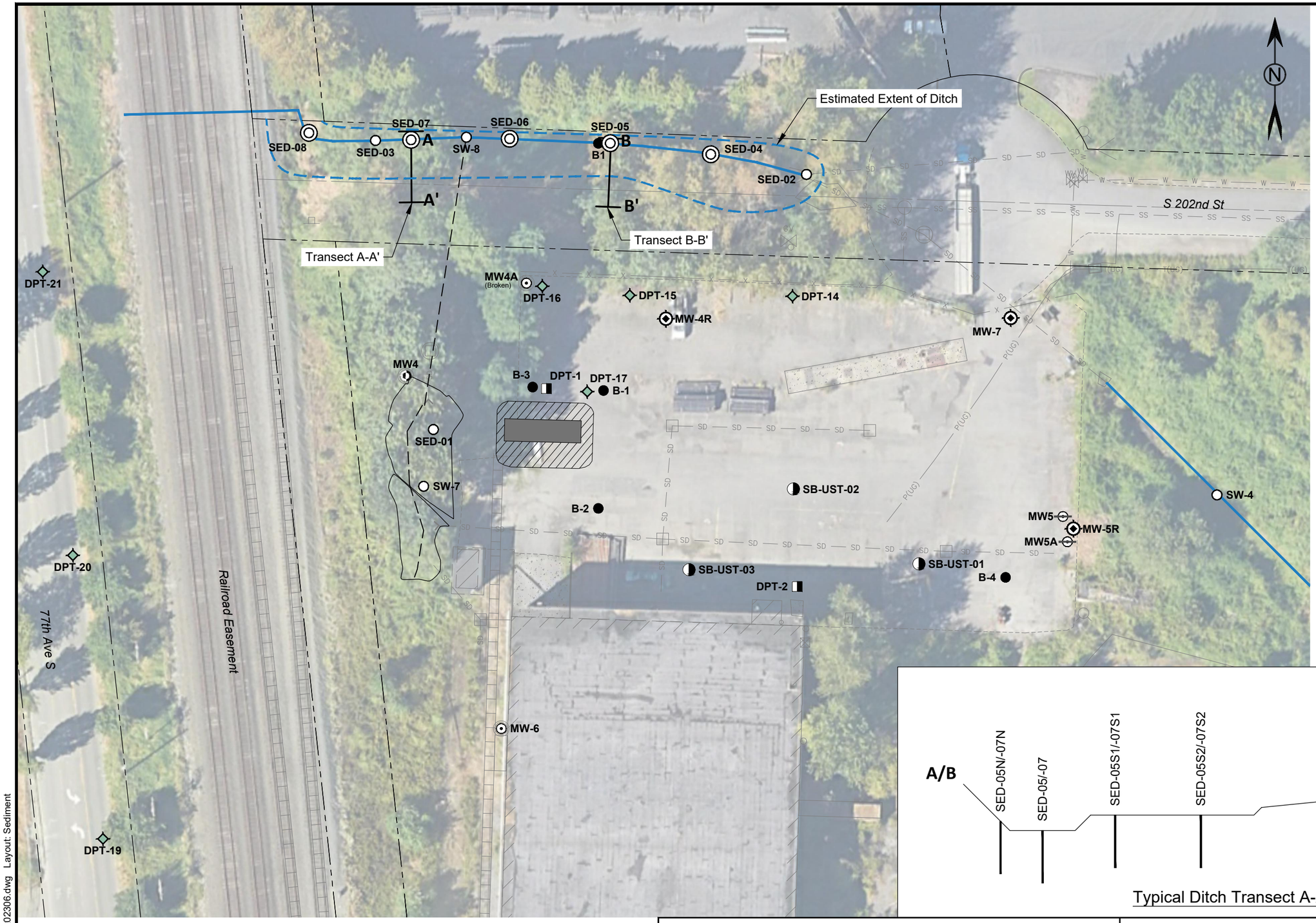
Attachments:

Table 1 Sediment Data Summary
Figure 1 Proposed Ditch Sediment Sample Locations

Table 1 - Sediment Data Summary
Maralco Property - Kent, WA

	Fresh Water Sediment		On-Property Ditches								Stormwater Pond		S. 202nd ROW						KCDD#1 Wetland	
Sample ID	Screening Level		SW-1	SW-2	SW-3	SW-4	SW-6	SS-1	SS-2	SS-900 (SS-2 Dup)	SW-7 (Removed)	SED-01	B-1	SW-8	SED-02	SED-02	SED-03	SED-03	KCDD-S	KCDD-N
Sample depth (ft bgs)			---	---	---	---	---	---	---	---	---	---	---	---	0-0.5	0.5-1	0-0.5	0.5-1	0.5-1	0.5-1
Dated Collected	SCO	CSL	5/10/90	5/9/90	5/10/90	5/10/90	5/10/90	10/28/16	10/28/16	10/28/16	5/10/90	6/3/21	6/25/87	5/9/90	6/9/21	6/9/21	6/9/21	6/9/21	8/24/21	8/24/21
Aluminum	NC	NC	**39400**	**9970**	**25600**	**17,200**	**77,900**	**55,500**	**22,200**	**81,100**	**132,000**	**46,900**	NA	**93,700**	**12,000**	**12,100**	**23,200**	**115,000**	**18,400**	**23,600**
Iron	NC	NC	**10600**	**18700**	**19500**	**43,300**	**17,700**	NA	NA	NA	**21,000**	**12,200**	NA	**40600**	**19,000**	**16,500**	**81,800**	**29,000**	NA	NA
Antimony	NC	NC	**4.1**	**0.2**	**0.83**	**4.09**	**1.5**	NA	NA	NA	**7.4**	**8.79**	**1.2**	6.6	2 U	2 U	8 U	**55.4**	**2.89**	**2.95**
Arsenic	14	120	**3.1**	**2.2**	**3.9**	**53.4**	**4.4**	**6.78**	**4.3 J**	**9.47**	**4.4**	**4.32**	**19**	**6.8**	**3.79**	**2.18**	**19.2**	**7.21**	**18.9**	**10.8**
Cadmium	2.1	5.4	**1.4**	**1**	**0.9**	**6.9**	**1**	**0.619 J**	**2.74**	**5.56**	**6**	**5.37**	2.0 U	**7.4**	1 U	1 U	2 U	**11.8**	2 U	**2.01**
Chromium	72	88	**54.7**	**15.7**	**27.7**	**58.5**	**87.5**	**36.3**	**54.4**	**112**	**150**	**68.4**	**36**	**127**	**11.6**	**10.1**	**31.4**	**208**	**38.7**	**23.1**
Cobalt	NC	NC	**5.8**	**4.8**	**5.6**	**11.2**	**5.6**	NA	NA	NA	**7.4**	**6.1**	NA	**5.4**	**4.21**	**2.85**	10 U	10 U	**6.81**	**5.27**
Copper	400	1,200	**562**	**59**	**231**	**183**	**883**	NA	NA	NA	**1330**	**627**	**262**	**1050**	**41.2**	**20.2**	**159**	**1,410**	**64.6**	**98.6**
Lead	360	>1,300	**61**	**22**	**24**	**89**	**61**	**42**	**53.7**	**113**	**246**	**158**	**64**	**261**	**10.4**	**8.24**	**40.2**	**189**	**60.6**	**54.7**
Mercury	0.66	0.8	**0.1**	**0.03**	0.1 U	0.27 U	0.06 U	**0.0564**	**0.116**	**0.158**	**0.49**	NA	**0.26**	**0.73**	NA	NA	NA	NA	NA	NA
Manganese	NC	NC	**285**	**201**	**286**	**396**	**608**	NA	NA	NA	**539**	**193**	NA	**305**	**222**	**80.3**	**321**	**346**	**295**	**201**
Nickel (see Note 1)	26	110	**22**	**13**	**15**	**31**	**33**	NA	NA	NA	**65**	**35.1**	**31**	**46**	**10.7**	**7.54**	**25.5**	**64.2**	**20.8**	**14.7**
Selenium	11	>20	1.2 U	0.6 U	0.7 U	3.3 U	0.7 U	NA	NA	NA	0.8 U	NA	**0.35**	2.2 U	NA	NA	NA	NA	NA	NA
Silver	0.57	1.7	**0.9**	0.3 U	0.3 U	1.5 U	**0.5**	1.57 U	**0.776 J**	**3.14**	**1.3**	NA	3.0 U	**1.2**	NA	NA	NA	NA	2 U	1 U
Zinc	3,200	>4,200	**528**	**135**	**203**	**1200**	**678**	NA	NA	NA	**1150**	**957**	**365**	**957**	**109**	**58.1**	**325**	**2,190**	NA	NA
Chloride	NC	NC	NA	NA	NA	NA	NA	**82.3**	**26,800**	**29,900**	NA	**49.4**	NA	NA	**17.0**	**24.6**	**45.7**	**40.6**	**9.72**	**155**
Fluoride	NC	NC	NA	NA	NA	NA	NA	**226**	**383**	**579**	NA	**45.1**	NA	NA	**6.28**	**4.73**	**6.99**	**31.8**	**6.08**	**22.8**
Nitrate	NC	NC	NA	NA	NA	NA	NA	**3.62**	**13.8**	**8.21**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia-Nitrogen	230	300	NA	NA	NA	NA	NA	**4.26 J**	**6.65 J**	15.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
1. The SCO for nickel is below the Puget Soud natural background soil concentration 38.2 mg/kg
Bold - analyte detected
Reported concentration exceeds the SCO
Reported concentration exceeds the CSL
mg/kg - milligrams per kilogram dry weight
SCO - fresh water sediment cleanup objective
CSL - fresh water sediment cleanup screening level
NC - no criterion
NA - not analyzed or not available
J - Reported value is an estimate.
U - not detected at reporting limit
ROW - right of way
Data not shown in table that is below cleanup standard or for which there is no cleanup standard - for B-1 (beryllium and thallium) and all

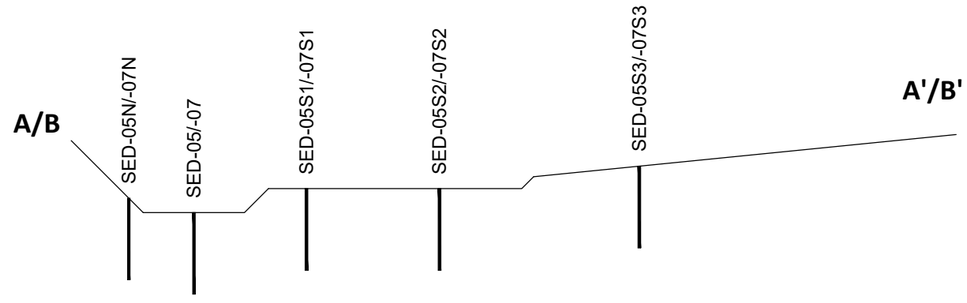


LEGEND

- Transect Line
- Approximate Ditch Location
- Proposed Sediment Sample
- RI Monitoring Well
- RI Direct Push Boring
- RI Groundwater Grab Boring
- Sediment Sample
- DPT Location (Crete, 2021 & 2022)
- Test Pits (Aerotech, 2017)
- Monitoring Well (Aerotech, 2017)
- Monitoring Well (M-K, 1990)
- Former Monitoring Well
- Historical Boring and Sediment Sample Location
- Former UST
- Former Excavation Location
- Parcel Boundary

NOTE

RI monitoring wells and direct push borings installed August-September 2022. Locations approximate.



Typical Ditch Transect A-A'/B-B'

CRETE CONSULTING, INC.

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SCALE IN FEET

Maralco Property
7730 South 202nd Street, Kent, Washington
June 2023

Figure 1
Proposed Ditch Sediment Sample Locations

File: Maralco Fig 1_202306.dwg Layout: Sediment