tel fax

March 25, 2016

Mr. James D. Dotchin Chief, Bureau of Industrial Site Cleanup Nevada Division of Environmental Protection 2030 East Flamingo Road, Suite 230 Las Vegas, Nevada 89119

Subject:

Amendment No. 1 to Work Plan (#2015-140) for Initial Sampling of Groundwater, Revised Labor and Subcontractor Costs – Nevada Environmental Response Trust Remedial Investigation, Downgradient Study Area, Henderson, Nevada

Dear Mr. Dotchin:

AECOM is pleased to provide this amendment to the Work Plan for performing initial groundwater sampling and analyses (Work Plan) in support of the Downgradient Study Area component of the Nevada Environmental Response Trust (NERT) Remedial Investigation in Henderson, Nevada. The Work Plan, dated December 30, 2015, was approved by Nevada Division of Environmental Protection (NDEP) on January 8, 2016. This amendment includes revised labor hours, travel cost, and equipment cost for AECOM; revised subcontractor cost, including the 7 percent mark-up inadvertently omitted from the December 30, 2015, Work Plan; and cost for the analysis of dissolved total hexavalent chromium. The analysis of hexavalent chromium was requested by the NDEP in mid-January 2016, after the initial work plan had been submitted for NERT approval.

The objective of the initial groundwater sampling, which is to assess current groundwater conditions and provide current data that will help refine the understanding of data gaps, remains unchanged. These data will be used to select locations within the investigation area (Downgradient Study Area) where additional monitoring wells may be needed.

SCOPE OF WORK

The scope of work described in the December 30, 2015, Work Plan remains unchanged with the following exceptions:

- 1. Reduction in the number of wells to be sampled and increase in time estimated to access/sample each well,
- Addition of dissolved chromium and dissolved hexavalent chromium to the analytical suite, and
- 3. Update and finalization of the Groundwater Sampling Plan (GSP).

Changes to Scope of Work

• **78 Wells to be Sampled -** After submittal of the Work Plan, detailed review of potentially available wells in the Downgradient Study Area showed that some wells that NDEP requested to be sampled have been abandoned or are no longer accessible. As such, 78 wells are included in this scope of work. The wells to be sampled are shown on **Figure 1** and well details are summarized in **Table 1**.

- Dissolved Total Chromium Analysis Costs for analysis of dissolved total chromium
 were not included in the Work Plan because this analysis was not required by NDEP as
 part of the analytical program at that time. Laboratory costs for TestAmerica have been
 revised to include analysis of 78 groundwater samples per the proposed analytical
 program and to include analysis of dissolved total chromium.
- Dissolved Hexavalent Chromium Analysis Costs for analysis of dissolved hexavalent chromium were not included in the December 2015 Work Plan because this analysis was required by NDEP as part of the analytical program at that time. Silver State Laboratories will be responsible for hexavalent chromium analysis from groundwater samples collected from the 78 wells. This laboratory was not previously included in the initial work plan but has been added because of their local presence allowing analysis of dissolved hexavalent chromium within the 24-hour hold-time.
- Groundwater Sampling Plan Incorporating additional analyses in the GSP and finalizing for final submittal.

AECOM Labor

- AECOM labor, travel, and equipment rates were revised to account for additional efforts as described below and for the difference in field days based on the reduced number of wells. The following sub-tasks of the groundwater sampling scope of work require additional level of effort:
 - <u>Task Order Management</u> –The level of effort increased because invoicing requirements and project controls implemented to manage the task are more labor intensive than originally anticipated.
 - Groundwater Sampling Plan The GSP, which was originally developed under Task 110, required additional work due to the expansion of the analytical suite and to address stakeholder comments not included in the Task 110 budget.
 - Subcontractor Management Additional time is required for subcontractor management to allow for implementation of project controls to ensure subcontractors abide by flow downs of the prime contract and access/permit agreements from well/property owners. Hours include time for the finance team to review weekly field sheets, invoices, and invoice backup (i.e., timesheets, expense reports, equipment logs).
 - <u>GW Sampling</u> Overall field hours for the groundwater sampling activities did not change significantly due to the reduced number of wells because additional time is needed for field filtering for dissolved total chromium analysis and the travel time between wells increased, as some wells are in remote locations north of the Las Vegas Wash (LVW). Additional management time is required to allow for detailed planning and execution of the sampling program.
 - <u>Data Validation</u> Additional time is required for data validation due to the expanded analytical suite. This time is partly offset by the reduction in the number of wells that are currently scheduled to be sampled.
 - Reporting Additional hours were added to the reporting budget based on time and
 resources involved in reviews and response to comments of documents submitted to
 NDEP and stakeholders. Initial cost estimate did not include time to address
 stakeholder comments. The revised reporting budget includes one round of response
 to stakeholder comments. Hours were also added for additional reporting of dissolved

chromium and hexavalent chromium and the generation of five figures depicting the wells sampled, groundwater elevations, and results of perchlorate, chromium, and total dissolved solids.

- <u>Deliverable(s)</u>: Technical Memorandum (Preliminary Draft, Final Draft, and Final).

Subcontractor Costs

- Subcontractor costs were revised based on the sampling of 78 wells, the added travel time required to access remote wells, added costs for the additional analyses, and to include the 7-percent mark-up previously not included. Following is the rationale for the estimated additional subcontractor level of effort and cost:
 - Added Travel Time The detailed review showed that travel time to some wells along the LVW will take considerably longer than originally anticipated due to their remote location and indirect routes that must be traveled to access them. This added travel time applies to wells located north of the LVW where the field crew will have to drive approximately 3 miles west of the western boundary of the Downgradient Study Area to access the dirt road that leads to the wells and then travel 6 miles on the dirt road to the well locations. Travel on dirt roads will be at low speeds (15 miles per hour) to reduce dust generated by vehicular traffic. The distance and road conditions increase the time originally estimated to conduct surveys and sampling. Moreover, additional time will be needed to access the four wells on the Chimera Golf Course as equipment will have to be loaded onto golf carts, and it will take longer to travel to the four wells due to speed limits imposed on golf carts within the golf course. Subcontractor costs have been adjusted to account for added travel time between wells.
 - 7-Percent Mark-up Subcontractor cost presented in this amendment include a
 7-percent mark-up as allowed by the approved contract. This mark-up was inadvertently excluded from the December 30, 2015, Work Plan.

This scope of work will be conducted in conformance with the Quality Assurance Project Plan (QAPP) currently in preparation and the Final GSP issued on February 29, 2016.

PRELIMINARY SCHEDULE AND ESTIMATED COST

The following summarizes the revised preliminary implementation schedule, the cost estimate from the December 2015 Work Plan, total revised cost estimate and the difference (Amendment No. 1) between the cost estimate from the December 2015 Work Plan and the total revised cost estimate. Subcontractor costs include the 7-percent AECOM mark-up allowed by the contract on all subcontractors.

Task Order and Title	Approximate Schedule	Initial Est. Cost (Dec 2015)	Amendment No. 1 (R1)	Total Revised Est. Cost (March 2016)
2015-140-01 – Initial Sampling of Groundwater (AECOM)	December 2015 – July 2016	\$120,658	\$39,575	\$160,233
2015-140-02 – Groundwater Sampling Subcontractor (GES)	March 2016 – April 2016	\$54,552	(\$10,316)	\$44,236
2015-140-03 –Laboratory Subcontractor (TestAmerica)	March 2016 – April 2016	\$10,672	(\$1,965)	\$8,707
2015-140-03 Cr – Dissolved Total Chromium Laboratory Subcontractor (TestAmerica)	March 2016 – April 2016	\$0	\$3,103	\$3,103
2015-140-04 – Laboratory Subcontractor (Silver State)	March 2016 – April 2016	\$0	\$10,970	\$10,970
2015-140-05 – Surveyor Subcontractor (Stanley)	March 2016 – April 2016	\$9,000	\$7,125	\$16,125
2015-140-06 – Drilling Subcontractor (National)	March 2016 – April 2016	\$16,205	\$1,134	\$17,339
	Work Plan Total	\$212,099	\$49,626	\$260,713

The total request for Addendum No. 1 is **\$49,626**. A detailed breakdown of the Addendum No. 1 cost is included in **Table 2**. Total cost for this Task Order, including cost requested in this amendment, is provided on **Table 3**. Scope of work and cost details for Task Order 2015-140-01 (AECOM labor) has already been approved by NDEP. The subcontractor task orders (2015-140-02, 2015-140-03, 2015-140-04, 2015-140-05 and 2015-140-06) will be uploaded once NDEP's approves this amendment. If this amendment meets with your approval, please send AECOM your authorization at your earliest convenience.

If you have any questions regarding this amendment, or if AECOM may be of further assistance, please contact Carmen Caceres-Schnell at (805) 764-4031 or either of the undersigned.

Sincerely,

Sally Bilodeau, CEM Project Manager

Sally W. Bilodoan

Harry Van Den Berg, PE Principal-in-Charge

Attachments: Table 1 – List of Wells Proposed for Sampling

Table 2 – Amendment No. 1 Groundwater Sampling Cost Estimate

 $\label{thm:cost} \mbox{Table 3-Groundwater Sampling Cost Estimate - Total Revised Cost Figure 1-Groundwater Sampling Locations}$

Table 1 List of Wells Proposed for Sampling

NERT Remedial Investigation - Downgradient Study Area Henderson, Nevada

W. II IB	Well Const	Property	Screen Interval	Water-Bearing	1215 - 1
Well ID	Well Owner	Owner	(feet, bgs)	Zone	Lithology
AA-08	LWC	CCPCS	5 - 35	Shallow	Qal
AA-20	LWC	LWC	10 - 30	Shallow	Qal
AA-22	LWC	СОН	11 - 31	Shallow	Qal
AA-23R	LWC	СОН	20 - 45	Shallow	Qal
AA-26	LWC	SBT	32 - 52	Shallow	Qal
AA-30	LWC	US BOR	11.7 - 31.7	Shallow	Qal
COH-1	SNWA	US BOR	157.9 - 167.9	Middle	UMCf
COH-1A	SNWA	US BOR	10 - 20	Shallow	Qal
COH-2A	SNWA	US BOR	40 - 50	Shallow	Qal
COH2B1	СОН	US BOR	TBD	TBD	TBD
DBMW-1	LWC	СОН	19 - 49	Shallow	Qal/UMCf
DBMW-4	LWC	СОН	10 - 20	Shallow	Qal/UMCf
DBMW-5	LWC	LWC	15 - 35	Shallow	UMCf
DBMW-6	LWC	LWC	30 - 50	Shallow	Qal/UMCf
DBMW-7	LWC	СОН	50 - 70	Shallow	UMCf
DBMW-8	LWC	СОН	47.5 - 67.5	Shallow	UMCf
DBMW-22	LWC	CCPCS	35 - 55	Shallow	UMCf
DM4	LWC	LWC	8 - 23	Shallow	Qal
DM5	LWC	LWC	7 - 22	Shallow	Qal
HM-1	LWC	СОН	TBD	TBD	TBD
HM-2	LWC	СОН	? - 36.89	Shallow	TBD
HM-3	LWC	СОН	TBD	TBD	TBD
HSW-1	LWC	СОН	? - 23.78	TBD	TBD
HSW-2	LWC	СОН	TBD	TBD	TBD
LNDMW1	SNWA	CCPCS	TBD	TBD	TBD
LNDMW2	SNWA	CCPCS	TBD	TBD	TBD
MCF-05	LWC	LWC	221 - 231	Middle	UMCf
MCF-06A-R	LWC	LWC	333 - 373	Deep	UMCf
MCF-06B	LWC	СОН	67 - 82	Shallow	UMCf
MCF-06C	LWC	СОН	44 - 59	Shallow	UMCf
MCF-08A	LWC	CCPCS	350 - 370	Deep	UMCf
MCF-08B-R	LWC	CCPCS	96.5 - 136.5	Middle	UMCf
MCF-18A	LWC	СОН	360 - 400	Deep	UMCf
MCF-19A	LWC	СОН	320 - 360	Deep	UMCf
MCF-20A	LWC	LWC	340 - 380	Deep	UMCf
MCF-31A	LWC	US BOR	361 - 381	Deep	UMCf
MCF-31B	LWC	US BOR	210 - 230	Middle	UMCf
MW-02	СОН	US BOR	? - 45	Shallow	TBD

Table 1 List of Wells Proposed for Sampling

NERT Remedial Investigation - Downgradient Study Area Henderson, Nevada

Well ID	Well Owner	Property	Screen Interval	Water-Bearing	Lithology
Well ID	well Owller	Owner	(feet, bgs)	Zone	Lithology
MW-03	СОН	СОН	? - 35	Shallow	Qal
MW-04	СОН	СОН	? - 30	Shallow	Qal
MW-05	СОН	СОН	? - 66.7	Shallow	TBD
MW-06	СОН	СОН	? - 52	Shallow	TBD
MW-08	СОН	СОН	TBD	Middle	UMCf
MW-09	СОН	СОН	TBD	NA	TBD
MW-10	СОН	СОН	? - 60	Shallow	TBD
MW-11	СОН	СОН	? - 70	Shallow	TBD
MW-12	СОН	СОН	? - 61	Shallow	TBD
MW-13	СОН	СОН	? - 48	Shallow	Qal
MW-14	СОН	CCPCS	? - 43	Shallow	TBD
MW-K8	AMPAC	LWC	? - 50	Shallow	Qal
PC-74	NERT	CCPCS	39.5 - 49.5	Shallow	Qal
PC-76	NERT	CCPCS	15 - 20	Shallow	Qal
PC-77	NERT	CCPCS	29.5 - 39.5	Shallow	Qal
PC-78	NERT	CCPCS	11.5 - 21.5	Shallow	Qal
PMW-7	AMPAC	CCPCS	20 - 40	Shallow	Qal/xMCF
PMW-8	AMPAC	CCPCS	21 - 41	Shallow	Qal/xMCF
RIT-06	AMPAC	CCPCS	32 - 42	Shallow	Qal
RIT-10	AMPAC	CCPCS	25 - 40	Shallow	Qal
UZO-17	AMPAC	CCPCS	17 - 47	Shallow	Qal/xMCf
W02	SNWA	US BOR	TBD	Middle	UMCf
WMW3.5N	SNWA	CCPCS	TBD	TBD	TBD
WMW4.9N	SNWA	CCPCS	TBD	TBD	TBD
WMW4.9S	SNWA	CCPCS	TBD	TBD	TBD
WMW5.58S	SNWA	US BOR	TBD	TBD	TBD
WMW5.5S	SNWA	US BOR	TBD	TBD	TBD
WMW5.7N	SNWA	US BOR	TBD	TBD	TBD
WMW5.85S	SNWA	US BOR	TBD	TBD	TBD
WMW6.0N	SNWA	US BOR	TBD	TBD	TBD
WMW6.0S	SNWA	US BOR	TBD	TBD	TBD
WMW6.15N	SNWA	CCPCS	TBD	TBD	TBD
WMW6.15S	SNWA	CCPCS	TBD	TBD	TBD
WMW6.2N	SNWA	CCPCS	TBD	TBD	TBD
WMW6.55S	SNWA	CCPCS	TBD	TBD	TBD
WMW7.8N	SNWA	CCPCS	TBD	TBD	TBD
MW-1	CGC	CGC	TBD	TBD	TBD
MW-2	CGC	CGC	TBD	TBD	TBD
MW-3	CGC	CGC	TBD	TBD	TBD
MW-4	CGC	CGC	TBD	TBD	TBD

Table 1 List of Wells Proposed for Sampling

NERT Remedial Investigation - Downgradient Study Area Henderson, Nevada

Well ID	Well Owner	Property	Screen Interval	Water-Bearing	Lithology
Well ID	well Owller	Owner	(feet, bgs)	Zone	Litilology

Notes:

NDEP recommended the inclusion of the following wells to be sampled in the Groundwater Sampling

AMPAC = American Pacific

bgs = below ground surface

LWC = LandWell Company

US BOR = United States Bureau of Reclamation

CCPCS = Clark County Parks and Community Services

CGC = Chimera Golf Course

COH = City of Henderson

NA = Not available

Qal = Quaternary Alluvium

SBT = School Board of Trustees

SNWA = Southern Nevada Water Authority

TBD = to be determined

UMCf = Upper Muddy Creek formation

xMCf = Transitional (or reworked) Muddy Creek formation

Table 2. Amendment No. 1 Groundwater Sampling Cost Estimate Amendment No. 1 for Task Order 2015-140-01-R1 NERT Remedial Investigation, Downgradient Study Area

LABOR				Task Orde	er Manageme	nt GW	Sampling	Subcontra	actor Mngmnt	Data Ana	alysis + Valid		g (Draft, RTC, Final)	RT	C GSP		
	Position	Units	Labor	Task 2	2015-140-01	Task	2015-140-01	Task 2	015-140-01	Task 2	2015-140-01	Task 2	2015-140-01	Task 20	15-140-01	GRA	ND TOTAL
Staff	Job Title	Units	Bill Rate	Hours	Total	Hours	Total	Hours	Total	Hours	Total	Hours	Total	Hours	Total	Hours	Total
Harry Van Den Berg	Program Director/Principal	h	\$ 203.75	14	\$ 2,852	50 0	\$ -		\$ -	5	\$ 1,018.75	10	\$ 2,037.50	3	\$ 611.25	32	\$ 6,520.00
Mike Flack	Program Director/Principal	h	\$ 203.75		\$ -		\$ -		\$ -		\$ -	-2	\$ (407.50)		\$ -	-2	\$ (407.50
Sally Bilodeau	Project Manager	h	\$ 157.13	14	\$ 2,199	32 0	\$ -		\$ -	-5	\$ (785.65)	10	\$ 1,571.30	6	\$ 942.78	25	\$ 3,928.25
Kevin Russell	Senior Scientist	h	\$ 156.66		\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -	0	\$ -
Steve Cole	Senior Scientist	h	\$ 156.66		\$ -		\$ -		\$ -	5	\$ 783.29	0	\$ -		\$ -	5	\$ 783.29
Chad Roper	Senior Scientist	h	\$ 156.66		\$ -		\$ -		\$ -	0	\$ -	11	\$ 1,723.24	2	\$ 313.32	13	\$ 2,036.56
Carmen Caceres-Schnell	Deputy Project Manager	h	\$ 125.41	14	\$ 1,755	74 16	\$ 2,006.56	22	\$ 2,759.02	4	\$ 501.64	30	\$ 3,762.30	10	\$ 1,254.10	96	\$ 12,039.36
Brian Ho	Project/Staff Scientist	h	\$ 124.73		\$ -	16	\$ 1,995.68	12	\$ 1,496.76		\$ -	-16	\$ (1,995.68)		\$ -	12	\$ 1,496.76
Sara Arav-Piper	Project/Staff Scientist	h	\$ 124.73		\$ -	8	\$ 997.84		\$ -		\$ -		\$ -		\$ -	8	\$ 997.84
Tom Shook or Zoe Diermier	Project/Staff Scientist	h	\$ 124.73		\$ -	0	\$ -		\$ -		\$ -		\$ -		\$ -	0	\$ -
Karsten Kelm	Project Drafting	h	\$ 95.24		\$ -		\$ -		\$ -	-10	\$ (952.42)	20	\$ 1,904.85	11	\$ 1,047.67	21	\$ 2,000.09
Budin/Pena/Olsen	Administrative/Clerical	h	\$ 72.83	20	\$ 1,456	65 0	\$ -	82	\$ 5,983.18		\$ -	0	\$ -	2	\$ 145.66	104	\$ 7,585.49
			TOTAL	62	\$ 8,264.	71 40	\$ 5,000.08	116	\$ 10,238.96	-1	\$ 565.61	63	\$ 8,596.01	34	\$ 4,314.78	314	\$ 36,980.14
															2% Mark-u	p on Labo	r \$ 739.60
																314	\$ 37,719.74
NON-LABOR TASKS																	
												Donoutin	g (Draft, RTC.				

TRAVEL - DAILY			Task Order Management	GW Sampling	Subcontractor Mngmnt	Data Analysis + Valid	Reporting (Draft, RTC, Final)	RTC GSP	Total
Description	Rate (per diem = GSA rates+ taxes)		Task 2015-140-01	Task 2015-140-01	Task 2015-140-01	Task 2015-140-01	Task 2015-140-01	Task 2015-140-01	Units Total
Airfare - Burbank to Las Vegas	\$ 354.00		\$ - \$ -	1 \$ 354.00 \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	1 \$ 354.00 0 \$ -
		SUBTOTAL	\$ -	\$ 354.00	\$ -	\$ -	\$ -	\$ -	1 \$ 354.0
Per Diem - Hotel	\$ 120.96	daily rate	\$ -	-6 \$ (725.76	\$ -	\$ -	\$ -	\$ -	-6 \$ (725.7)
Per Diem - Meals	\$ 64.00	daily rate	\$ -	-3 \$ (192.00	\$ -	\$ -	\$ -	\$ -	-3 \$ (192.0
Car Rental (Stand'd SUV)	\$ 53.96	daily rate	\$ -	-7 \$ (377.72	\$ -	\$ -	\$ -	\$ -	-7 \$ (377.7)
Gas (for rental vehicle)	\$ 3.25	per gallon	\$ -	50 \$ 162.50	\$ -	\$ -	\$ -		50 \$ 162.5
Parking (airport)	\$ 15.00	daily rate	\$ -	-5 \$ (75.00	\$ -	\$ -	\$ -	\$ -	-5 \$ (75.0)
		SUBTOTAL	\$ -	\$ (1,207.98	\$ -	\$ -	\$ -	\$ -	29 \$ (1,207.9)
		TOTAL	\$ -	\$ (853.98	\$ -	\$ -	\$ -	\$ -	30 \$ (853.9)

											Keporting	(Diail, KTC,					
			Task Order	Management	GW S	Sampling	Subcontra	actor Mngmnt	Data An	alysis + Valid	F	inal)	RT	C GSP			
TRAVEL - MILEAGE			Task 20	15-140-01	Task 20	015-140-01	Task 2	015-140-01	Task 2	2015-140-01	Task 20	15-140-01	Task 2	015-140-01		Total	
Description	Rate (Effective January 1, 2015)	miles/RT	Miles	Total	Miles	Total	Miles	Total	Miles	Total	Miles	Total	Hours	Total	Units	Total C	ost
Camarillo to Airport	\$ 0.540	100		\$ -	-60	\$ (45.00))	\$ -		\$ -		\$ -		\$ -	-60	\$ (4	45.00)
		TOTAL	0	\$ -	-60	\$ (45.00))	\$ -	0	\$ -	0	\$ -	0	\$ -	-60	\$ (4	45.00)

											Reporting	(Draft, RTC,					
			Task Orde	r Management	GW :	Sampling	Subcontra	actor Mngmnt	Data An	alysis + Valid	Fi	inal)	RTO	GSP			
EQUIPMENT - CONTRACT RATE			Task 2	015-140-01	Task 2	015-140-01	Task 2	015-140-01	Task 2	2015-140-01	Task 20	015-140-01	Task 20	15-140-01		TOTAL	_
Description	Rate	Hrs/Unit	Qty	Total	Qty	Total	Qty	Total	Hours	Total	Hours	Total	Qty	Total	Units		Total
Bladder pump w/controller	\$ 175.00	day		\$ -	7	\$ 1,225.00		\$ -		\$ -		\$ -		\$ -	7	\$	1,225.00
Compressor for bladder pump	\$ 100.00	day		\$ -	7	\$ 700.00		\$ -		\$ -		\$ -			7	\$	700.00
Level D PPE	\$ 15.00	day		\$ -	-6	\$ (90.00))	\$ -		\$ -		\$ -			-6	\$	(90.00)
		TOTAL	0	\$ -	8	\$ 1,835.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	8	\$	1,835.00

			Task Orde	r Management	GW S	Sampling	Sı	ubcontrac	tor Mnamnt	Data An	alysis + Valid		ng (Draft, Final)	RTC,	RT	C GSP			
EQUIPMENT - OTHER				015-140-01		015-140-01			15-140-01		2015-140-01		2015-140	-01	Task 2	015-140-01		TOTAL	
Description	Rate	Unit	Units	Total	Qty	Total		Qty	Total	Hours	Total	Hours	To	otal	Qty	Total	Units		Total
Tubing, bladder pump (twin bonded), LDPE	\$ 0.55	FT		\$ -	0	\$ -			\$ -		\$ -		\$			\$ -	0	\$	-
Well Plugs 2" - hang tubing	\$ 6.90	EA		\$ -	0	\$ -			\$ -		\$ -		\$	-		\$ -	0	\$	-
Well plugs 4" - hang tubing	\$ 10.15	EA		\$ -	0	\$ -			\$ -		\$ -		\$	-		\$ -	0	\$	-
Field supplies	\$ 50.00	day		\$ -	-2	\$ (100.	00)		\$ -		\$ -		\$	-		\$ -	-2	\$	(100.00)
Water level meter (500 ft)	\$ 40.00	day		\$ -	5	\$ 200.	00		\$ -		\$ -		\$	-		\$ -	5	\$	200.00
Bladders for Sample Pro	\$ 110.00	10/pack		\$ -	0	\$ -			\$ -		\$ -		\$	-		\$ -	0	\$	-
In-line water filter (0.45 micron) – 30 cm capacity	\$ 7.10	per filter		\$ -	85	\$ 603.	50		\$ -		\$ -		\$	-		\$ -	85	\$	603.50
In-line water filter (0.45 micron) – 609 cm capacity	\$ 17.95	per filter		\$ -	12	\$ 215.	40		\$ -		\$ -		\$	-		\$ -	12	\$	215.40
		TOTAL	0	\$ -	100	\$ 918.	90	0	\$ -	0	\$ -	0	\$	-	0	\$ -	100	\$	918.90
		·														GR	AND TOTA	L \$	39,574.66

Table 2. Amendment No. 1 Groundwater Sampling Cost Estimate Subcontractor Task Orders 2015-140-01 NERT Regional GW RI

				Task Orde	r Management		mpling and alysis	Subcontra	actor Mngmnt	Data Ana	lysis + Valid		(Draft, RTC, nal)	RT	C GSP					
SUBCONTRACTORS				Task 2	015-140-01	Task 2	015-140-01	Task 20	015-140-01	Task 20	15-140-01	Task 20	15-140-01	Task 2	015-140-01	SUE	BTOTAL		TOTAL	
Description	Task Order	Rate	Hrs/Unit	Qty	Total	Qty	Total	Qty	Total	Hours	Total	Hours	Total	Qty	Total	Units	Total	7% Mark Up	Total	Total Difference
GES - Field Labor	2015-140-02	\$ 41,341.90	event		\$ -	1	\$ 41,341.90		\$ -		\$ -		\$ -		\$ -	1	\$ 41,341.90	\$ 2,893.93	\$ 44,235.83	\$ (10,316.17)
TestAmerica - Lab analysis	2015-140-03	\$ 70.15	per sample		\$ -	116	\$ 8,137.40		\$ -		\$ -		\$ -		\$ -	116	\$ 8,137.40	\$ 569.62	\$ 8,707.02	\$ (1,964.98)
TestAmerica - Chromium Lab Analysis	2015-140-03 Cr	\$ 25.00	per sample		\$ -	116	\$ 2,900.00		\$ -		\$ -		\$ -		\$ -	116	\$ 2,900.00	\$ 203.00	\$ 3,103.00	\$ 3,103.00
Silver State Laboratories - Hexavalent Chromium	2015-140-04 Cr	\$ 10,252.00	per event		\$ -	1	\$ 10,252.00		\$ -		\$ -		\$ -		\$ -	1	\$ 10,252.00	\$ 717.64	\$ 10,969.64	\$ 10,969.64
Stanley Land Surveying	2015-140-05	\$ 15,070.00	event		\$ -	1	\$ 15,070.00		\$ -		\$ -		\$ -		\$ -	1	\$ 15,070.00	\$ 1,054.90	\$ 16,124.90	\$ 7,124.90
National EWP Drilling - Schmeal Rig	2015-140-06	\$ 16,205.00	event		\$ -	1	\$ 16,205.00		\$ -		\$ -		\$ -		\$ -	1	\$ 16,205.00	\$ 1,134.35	\$ 17,339.35	\$ 1,134.35
			TOTAL	0	\$ -	236	\$ 93,906.30	0	\$ -	0	\$ -	0	\$ -	0	\$ -	236	\$ 93,906.30	\$ 6,573.44	\$ 100,479.74	\$ 10,050.74
		TOTAL NO	I-LABOR COSTS		\$ -		\$ 95,761.22				\$ -		\$ -		\$ -					
		SUB-TASK TOT	AL (Include. 2%)		\$ 8,430.00		\$ 100,861.30		\$ 10,443.74		\$ 576.92		\$ 8,767.93		\$ 4,401.07	ND TOTAL	\$ 133,480.96		GRAND TOTAL	\$ 49,625.40

DESCRIPTION AND ASSUMPTIONS

Scope: AECOM will conduct groundwater sampling activities in support of the NERT Regional Groundwater Remedial Investigation. The scope of work includes sampling of up to 90 groundwater monitoring wells within the Study Area. The objectives of the sampling are to assess current groundwater conditions and provide current data that will help refine the understanding of data gaps.

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- Check well location/access; measure DTW and TD & work w/surveying crew.
- 4 days for survey + 1 day for set up = 5 days for Well Reconnaissance
- 10 hr/day = 50 hrs
- Work days = M-F
- Travel time = 16 hrs RT; 1 mob required.
- Post- field Table with information collected total depth, depth to gw 12 hrs
- Total hours @ \$124.73 = 66 hrs
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- 78 wells
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<u>GW Field Sampling Schedule:</u>

GW sampling Team 1:

- AECOM staff #1 + GES staff #1
 - 10 days x 5 wells per day = 50 wells
- GW sampling Team 2:
 - GES staff #2 + GES staff #3
 - 4 days x 5 wells per day = 20 wells
- National EWP staff + GES staff #2
 - 5 days x 2 deep wells per day = 10 deep wells
- AECOM: 12 days of gw sampling = 12 days of gw sampling
- 11 hour field days
- 122 hours for GW sampling
- Field Prep & Post Field Equipment orders, travel arrangements, tabulate field data, label pictures, 24 hrs
- Generate Sample Labels 8 hrs
- Travel Time 16 hrs RT each mob/demob; 2 mobs required = 32 hrs @ \$124.73
- Total hours @ \$124.73 = 176 hrs
- Hotel = 12 days
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- Previously assumed that work would be done on a 10 days on and 4 days off schedule. Due to access agreements, must work M-F.

Other Staff:

- Time for Kevin to kick-off field work and occasional site visit = 20 hrs
- Harry review and oversight 20 hrs
- Sally review and oversight 20 hrs
- Carmen review and field oversight 44 hrs

Table 2. Amendment No. 1 Groundwater Sampling Cost Estimate Subcontractor Task Orders 2015-140-01 NERT Regional GW RI

Subcontractor Management

- Currently spending 15 hours per week
- High volume of work through field work and one month after (11 weeks)
- 10 hrs x 11 weeks = 110 hrs @ \$72.83
- Original budget was 68 hrs; used 40 hrs; 68 hrs 40 hrs = 28 hrs remaining.
- 110 hrs -28 hrs = 82 hrs. additional budget requested
- DPM 2 hrs per week x 11 weeks = 22 hrs @ \$124.73
- Time added for sub management during field work 1 hr/day = 12 hrs
- Subcontractor management has taken longer than expected due to flow downs from access agreements and to make sure invoicing of field supplies and labor are in a format that is easily followed by client. All subcontractor invoices and back up will be reviewed to ensure accurate billing to client. Set-up of contracts, provide guidance on billing and invoices.

Reporting

- o Carmen Caceres-Schnell, including figure prep 50 hrs (change from 30 hrs)
- o Brian Ho review 10 hrs (change from 30 hrs)
- o Sally Bilodeau provide Senior Review 25 hrs
- Steve Cole provide review of DV section 6 hrs
- o Chad Roper draft DV Section 10 hrs
- Figures:
 - Figure 1. Update of Sampling Locations
 - Figure 2. GW Elevation Contour Map
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 - Figure 6. As needed for an NDEP requested figure.
 - Figure generation and edits = 5 hrs each
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 - Chad Roper 6 hrs
 - Steve Cole 2 hrs
 - Figures 10 hrs

GSP Review

- Original estimate did not include time for stakeholder review. Comments required inputs from several members of project team. RTC took 34 hours to complete at a cost of \$4,315.
 - o CCS 10 hrs
 - o Scope 11 hrs
 - o Bilodeau 6 hrs
 - Van den Berg 3 hrs Roper 2 hr

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Table 3. Groundwater Sampling Cost Estimate - Total Revised Cost Amendment No. 1 for Task Order 2015-140-01 NERT Remedial Investigaion, Downgradient Study Area

LABOR						k Order agement	GW	Sampling	Subcontra	ctor Mngmnt	Data Ana	ılysis + Valid	_	g (Dı Final	raft, RTC,	RT	C GSP		
	Position	Units		Labor	Task 20	15-140B-01	Task 2	015-140B-01	Task 201	5-140B-01	Task 20	15-140B-01	Task 20	015-1	40B-01	Task 20	15-140B-01	GRAN	ND TOTAL
Staff	Job Title	Units	E	Bill Rate	Hours	Total	Hours	Total	Hours	Total	Hours	Total	Hours		Total	Hours	Total	Hours	Total
Harry Van Den Berg	Program Director/Principal	h	\$	203.75	37	\$ 7,538.75	10	\$ 2,037.50		\$ -	5	\$ 1,018.75	12	\$	2,445.00	3	\$ 611.25	67	\$ 13,651.25
Mike Flack	Program Director/Principal	h	\$	203.75	0	\$ -		\$ -		\$ -		\$ -		\$	-		\$ -	0	\$ -
Sally Bilodeau	Project Manager	h	\$	157.13	14	\$ 2,199.82	10	\$ 1,571.30		\$ -	10	\$ 1,571.30	35	\$	5,499.55	6	\$ 942.78	75	\$ 11,784.75
Kevin Russell	Senior Scientist	h	\$	156.66	0	\$ -	20	\$ 3,133.20		\$ -		\$ -		\$	-		\$ -	20	\$ 3,133.20
Steve Cole	Senior Scientist	h	\$	156.66	0	\$ -		\$ -		\$ -	15	\$ 2,349.87	10	\$	1,566.58		\$ -	25	\$ 3,916.46
Chad Roper	Senior Scientist	h	\$	156.66	0	\$ -		\$ -		\$ -	80	\$ 12,532.66	16	\$	2,506.53	2	\$ 313.32	98	\$ 15,352.51
Carmen Caceres-Schnell	Deputy Project Manager	h	\$	125.41	44	\$ 5,518.04	60	\$ 7,524.60	22	\$ 2,759.02	6	\$ 752.46	60	\$	7,524.60	10	\$ 1,254.10	202	\$ 25,332.82
Brian Ho	Project/Staff Scientist	h	\$	124.73	0	\$ -	274	\$ 34,176.02	12	\$ 1,496.76		\$ -	14	\$	1,746.22		\$ -	300	\$ 37,419.00
Sara Piper or Zoe Diermier	Project/Staff Scientist	h	\$	124.73	0	\$ -	8	\$ 997.84		\$ -		\$ -		\$	-		\$ -	8	\$ 997.84
Karsten Kelm	Project Drafting	h	\$	95.24	0	\$ -		\$ -		\$ -		\$ -	30	\$	2,857.27	11	\$ 1,047.67	41	\$ 3,904.93
Budin/Pena/Olsen	Administrative/Clerical	h	\$	72.83	96	\$ 6,991.90	68	\$ 4,963.52	82	\$ 5,972.25		\$ -	20	\$	1,456.65	2	\$ 145.66	268	\$ 19,529.99
				TOTAL	191	\$22,248.51	450	\$ 54,403.98	116	\$ 10,228.03	116	\$ 18,225.05	197	\$	25,602.40	34	\$ 4,314.78	1,104	\$ 135,022.76
				-		•	•	•	•	-						-	2% Mark-	up on Laboi	r \$ 2,700.46
																		1,104	\$ 137,723.21

NON-LABOR TASKS

TRAVEL - DAILY			Task Order Management	GW Sampling	Subcontractor Mngmnt	Data Analysis + Valid	Reporting (Draft, RTC, Final)	RTC GSP	Total
Description	Rate (per diem = GSA rate taxes)	S+	Task 2015-140B-01	Task 2015-140B-01	Task 2015-140B-01	Task 2015-140B-01	Task 2015-140B-01	Task 2015-140B-01	Units Total
Airfare - Brian Ho (Burbank)	\$ 354.	00	\$ -	3 \$ 1,062.00	\$ -	\$ -	\$ -	\$ -	3 \$ 1,062.0
	\$ 354.	00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0 \$ -
		SUBTOTA	L \$ -	\$ 1,062.00	\$ -	\$ -	\$ -	\$ -	3 \$ 1,062.0
									•
Per Diem - Hotel	\$ 120.	96 daily rate	\$ -	18 \$ 2,177.28	0 \$ -	\$ -	\$ -	\$ -	18 \$ 2,177.2
Per Diem - Meals	\$ 64.	00 daily rate	\$ -	21 \$ 1,344.00	0 \$ -	\$ -	\$ -	\$ -	21 \$ 1,344.0
Car Rental (Stand'd SUV)	\$ 53.	96 daily rate	\$ -	21 \$ 1,133.16	0 \$ -	\$ -	\$ -	\$ -	21 \$ 1,133.1
Gas (for rental vehicle)	\$ 3.	per gallon	\$ -	300 \$ 975.00	0 \$ -	\$ -	\$ -		300 \$ 975.0
Parking (airport)	\$ 15.	00 daily rate	\$ -	21 \$ 315.00	0 \$ -	\$ -	\$ -	\$ -	21 \$ 315.0
	·	SUBTOTA	L \$ -	\$ 5,944.44	\$ -	\$ -	\$ -	\$ -	381 \$ 5,944.4
		TOTAL	. \$ -	\$ 7,006.44	\$ -	\$ -	\$ -	\$ -	384 \$ 7,006.4

		Task Order	Management	GW	Sampling	Subcontractor Mngmnt		Data Analysis + Valid		Reporting (Draft, RTC, Fina		I) RTC GSP		1			
	TRAVEL - MILEAGE	Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Total			
	Description	Rate (Effective January 1, 2015)	miles/RT	Miles	Total	Miles	Total	Miles	Total	Miles	Total	Miles	Total	Hours	Total	Units	Total Cost
	Camarillo to Airport	\$ 0.540	100		\$ -	300	\$ 162.00		\$ -		\$ -		\$ -		\$ -	300	\$ 162.00
,			TOTAL	0	\$ -	300	\$ 162.00		\$ -	0	\$ -	0	\$ -	0	\$ -	300	\$ 162.00

	Task Order Management		GW Sampling		Subcontractor Mngmnt		Data Analysis + Valid		Reporting (Draft, RTC, Final		RTC GSP					
EQUIPMENT - CONTRACT RATE	Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		TO	OTAL		
Description	Rate	Hrs/Unit	Qty	Total	Qty	Total	Qty	Total	Hours	Total	Hours	Total	Qty	Total	Units	Total
Bladder pump w/controller	\$ 175.00	day		\$ -	22	\$ 3,850.00		\$ -		\$ -		\$ -		\$ -	22	\$ 3,850.00
Compressor for bladder pump	\$ 100.00	day		\$ -	22	\$ 2,200.00		\$ -		\$ -		\$ -			22	\$ 2,200.00
Level D PPE	\$ 15.00	day		\$ -	12	\$ 180.00		\$ -		\$ -		\$ -			12	\$ 180.00
		TOTAL	0	\$ -	56	\$ 6,230.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	56	\$ 6,230.00

			Task Order	Managemen	t GW	Sampling	Subcontra	ctor Mngmnt	Data Ana	lysis + Valid	Reporting (Draft, RTC, Final	RTC GSP			
EQUIPMENT - OTHER	Task 2015-140B-01		Task	Task 2015-140B-01		Task 2015-140B-01		15-140B-01	Task 2015-140B-01		Task 2015-140B-01	T	OTAL			
Description	Rate	Unit	Units	Total	Qty	Total	Qty	Total	Hours	Total	Hours	Total	Qty Total	Units		Total
Tubing, bladder pump (twin bonded), LDPE	\$ 0.55	FT		\$ -	8000	\$ 4,400.00)	\$ -		\$ -		\$ -	\$ -	8000	\$	4,400.00
Well Plugs 2" - hang tubing	\$ 6.90	EA		\$ -	20	\$ 138.00)	\$ -		\$ -		\$ -	\$ -	20	\$	138.00
Well plugs 4" - hang tubing	\$ 10.15	EA		\$ -	65	\$ 659.75	i	\$ -		\$ -		\$ -	\$ -	65	\$	659.75
Field supplies	\$ 50.00	DAY		\$ -	19	\$ 950.00)	\$ -		\$ -		\$ -	\$ -	19	\$	950.00
Water level meter (500 ft)	\$ 40.00	day		\$ -	12	\$ 480.00)	\$ -		\$ -		\$ -	\$ -	12	\$	480.00
Bladders for Sample Pro	\$ 110.00	10/pack		\$ -	9	\$ 990.00)	\$ -		\$ -		\$ -	\$ -	9	\$	990.00
QED Sample Pro Grab Plate	\$ 75.00	10/kit		\$ -	9	\$ 675.00)	\$ -		\$ -		\$ -	\$ -	9	\$	675.00
In-line water filter (0.45 micron) – 30 cm capacity	\$ 7.10	per filter		\$ -	85	\$ 603.50)	\$ -		\$ -		\$ -	\$ -	85	\$	603.50
In-line water filter (0.45 micron) – 609 cm capacity	\$ 17.95	per filter		\$ -	12	\$ 215.40)	\$ -		\$ -		\$ -	\$ -	12	\$	215.40
		TOTAL	0	\$ -	8231	\$ 9,111.65	5	\$ -	0	\$ -	0	\$ -	0 \$ -	8231	\$	9,111.65
			•		•			•				•	G	RAND TOTAL	\$ 1	60 233 30

Table 3. Groundwater Sampling Cost Estimate Subcontractor Task Orders 2015-140-01 NERT Remedial Investigation, Downgradient Study Area

					Task Order	Management	GW Samp	ling and Analysi	s Subcontra	actor Mngmn	t Data Aı	nalysis + Valid	Reporting	Draft, RTC, Final) R1	TC GSP				
SUBCONTRACTORS		•			Task 2015-140B-01 Tas		Task	Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		Task 2015-140B-01		015-140B-01	SUBTOTAL		TOTAL	_
Description	Task Order		Rate	Hrs/Unit	Qty	Total	Qty	Total	Qty	Total	Hours	Total	Hours	Total	Qty	Total	Units	Total	7% Mark Up	Total
GES - Field Labor	2015-140-02	\$	41,341.90	event		\$ -	1	\$ 41,341.90		\$ -		\$ -		\$ -		\$ -	1	\$ 41,341.90	\$ 2,893.93 \$	44,235.83
TestAmerica - Lab Analysis	2015-140-03	\$	70.15	per sample		\$ -	116	\$ 8,137.40		\$ -		\$ -		\$ -		\$ -	116	\$ 8,137.40	\$ 569.62 \$	8,707.02
TestAmerica - Chromium Lab Analysis	2015-140-03 Cr	\$	25.00	per sample		\$ -	116	\$ 2,900.00		\$ -		\$ -		\$ -		\$ -	116	\$ 2,900.00	\$ 203.00 \$	3,103.00
Silver State Laboratories	2015-140-04	\$	10,252.00	78 wells		\$ -	1	\$ 10,252.00		\$ -		\$ -		\$ -		\$ -	1	\$ 10,252.00	\$ 717.64 \$	10,969.64
Stanley Land Surveying	2015-140-05	\$	15,070.00	event		\$ -	1	\$ 15,070.00		\$ -		\$ -		\$ -		\$ -	1	\$ 15,070.00	\$ 1,054.90 \$	16,124.90
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				TOTAL	0	\$ -	236	\$ 93,906.30	0	\$ -	0	\$ -	0	\$ -	0	\$ -	236	\$ 93,906.30	\$ 6,573.44 \$	100,479.74
			TOTAL NON	-LABOR COSTS		\$ -		\$ 116,416.39				\$ -		\$ -						
	SUB-TASK TOTAL (Include. 2%)					\$22,693.48		\$ 171,908.45		\$ -		\$ 18,589.5	5	\$ 26,114.45		G	RAND TOTAL	\$ 254,139.60	GRAND TOTAL \$	260,713.04

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