

# Los Alamos

NATIONAL LABORATORY

Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

Date: January 22, 1999  
In Reply Refer To: ESH-18/WQ&H:99-0014  
Mail Stop: K497  
Telephone: (505) 665 - 1859



Mr. Bart Farris  
Ground Water Protection Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

**SUBJECT: ADDITIONAL INFORMATION CONCERNING THE JULY 6, 1998  
TA-9-21 HIGH EXPLOSIVES (H.E.) WASTEWATER SUMP  
OVERFLOW**

Dear Mr. Farris:

This additional information is being provided in order to update the New Mexico Environment Department (NMED) on the evaluation of the TA-9-21 High Explosives (H.E.) sump and associated piping.

As you know, the TA-9-21 sump overflowed onto the surface of the ground on July 6, 1998, due to a large flow of storm water entering the sump. Immediately after the storm event, the on-site staff noticed a rapid drop in the water level in the sump which indicated a possible leak in the sump or in the associated piping. This situation was immediately reported by the Laboratory to the NMED. The NMED requested additional information on the sump be provided as it became available.

The following corrective actions have been completed and have eliminated all discharges into the sump system:

- 1) All waste drains to the sump were closed on October 31, 1998. This action prevented any further discharge of process wastewater into the sump system. During the period from July 6, to October 31, Dynamic Experimentation (DX) Division staff evaluated the system and developed corrective actions for all potential discharge sources and problems associated with the sump system.
- 2) Manholes connected to the system were bermed in order to prevent stormwater from entering the sump. Sand bags were initially used to prevent stormwater from entering the manholes. Each manhole has been raised approximately 12 inches above grade. This work was completed on January 15, 1999.



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HswA LANL 5/15/99

TK

January 22, 1999

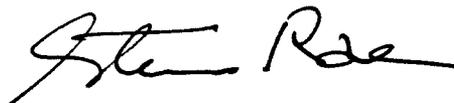
- 3) All drains at TA-9-21 have been dye tested to ensure that no previously unidentified sources were entering the sump system. Any sources identified as entering the sump system were eliminated from the system.
- 4) All remaining liquid was pumped from the sumps for treatment and disposal.
- 5) All accumulated solids in the bottom of the sump were removed for characterization and disposal.
- 6) An in-line video camera was used to survey the piping and sump. This inspection was completed on November 4, 1998. Results from this survey indicated that the piping had been broken by roots from nearby vegetation. Additionally, an area of insufficient grouting was identified at the point of entry of the piping into the sump. These defects are believed to be the reason for the water level drop in the sump on July 6, 1998.

In addition, we have enclosed "Revision 0 of the Project Management Plan for a Preliminary Design/Study and Detailed Design Phase Services concerning the TA-9-21 HE Wastewater Collection System Upgrades". This Management Plan represents the Laboratory's initial approach at developing a long-term solution for this wastewater collection system. The final engineering design for this system will be provided to the NMED upon completion.

The corrective actions listed above will remain in place, and no wastewater will be allowed to enter the sump system until final corrective actions are completed. The Laboratory will provide additional updates to the NMED as more information becomes available concerning this sump and collection system.

Please call Mike Saladen (665-6085) or Harvey Decker (665-2014) of the Laboratory's Water Quality and Hydrology Group (ESH-18) if you need any additional information.

Sincerely,



Steven Rae  
Group Leader  
Water Quality and Hydrology Group

SR:HD/mm

Enclosures: a/s

Cy: B. Hoditschek, NMED/SWQB, Santa Fe, NM, w/enc.  
J. Keiling, NMED/HRMB, Santa Fe, NM, w/enc.  
T. Gunderson, DIR, w/o enc., MS A100  
D. Erickson, ESH-DO, w/o enc., MS K491  
J. Vozella, DOE/LAAO, w/o enc., MS A316  
S. Yanicak, NMED/DOE OB, w/enc., MS J 993  
K. Uher, DX-2, w/o enc., MS C920  
J. Stine, DX-2, w/o enc., MS C920  
F. Sisneros, DX-DO, w/o enc., MS P915  
M. Saladen, ESH-18, w/o enc., MS K497  
H. Decker, ESH-18, w/o enc., MS K497  
A. Puglisi, ESH-19, w/enc., MS K 490  
WQ&H File, w/enc., MS K497  
CIC-10, w/enc., MS A150



**MERRICK**

Engineers & Architects

ATTACHMENT

Merrick & Company  
600 6th Street  
Suite 103  
Los Alamos, New Mexico 87544 - USA  
505/662-0606 • Fax 505/662-3851

January 7, 1999

Job No.: 30013425  
Letter No.: MCL-001

University of California  
Los Alamos National Laboratory  
P.O. Box 1663  
Los Alamos, NM 87545

Attention: Mike Smith, DX-DO, MS P915

SUBCONTRACT: 5210F0016-99-214 P.I. N/A

TITLE: TA-9-21 HE Wastewater Collection System Upgrades

Dear Mike:

Enclosed is Revision 0 of the Project Management Plan (PMP) for a Preliminary Design/Study and Detailed Design Phase Services on the subject project. The Scope of Work for Merrick & Company shall include only these two portions of the Execution Phase of the project. Please increase the existing ceiling from \$20,000 to \$27,484.

Should you require additional information, please contact me at 662-0606.

Sincerely,

Steve C. Diamond, P.E.  
Project Manager

SCD/ljc

cc: M. Muller, MS M995  
Project Controls  
Project File  
Records Center

**MERRICK & COMPANY**  
**SUBCONTRACT 5210F0016-CE**  
**PROJECT MANAGEMENT PLAN**

1/7/99  
 Title II HE Waste Water Sumps Replacement  
 Task 5210F0016-CE-214/P.I. #  
 Merrick Project # 30013425

**PROJECT INFORMATION**

Title: Title II HE Waste Water Sumps Replacement  
 Task No.: 5210F0016-CE-214  
 Merrick Project No.: 30013425  
 P.I. No.  
 Date: 1/7/99

ASSIGNMENTS	NAME	ORGANIZATION	MAILSTOP	PHONE
Task Leader	Mike Smith	DX-DO		667-6237
User	Jim Stine	DX-2		667-4990
User Rep.	S. Weterhold	DX-FM		667-5461
Merrick P.M.	S. Diamond	Merrick	M995	662-0606
Proj. Eng.	K. Carr	Merrick	M995	662-0606

**MILESTONE DATES**

Task Received	12/23/98
Project Start	1/6/99
Title I Subm.	2/6/99
Title II Subm.	3/15/99
Final	4/1/99

**TASK CEILING SUMMARY**

	Ceiling	Cost	Date
ORIGINAL		\$20,000	12/23/98
Rev. O		\$27,484	12/29/98

**COST SUMMARY**

	Current Manhours	Current Cost	New Manhours	New Cost	Total Manhours	Total Cost
LABOR TOTAL			416	\$25,413	416	\$25,413
TRAVEL TOTAL				\$158		\$158
MISC. TOTAL				\$341		\$341
SUBTOTAL				\$25,912		\$25,912
NM GRT	6.0675%			\$1,572		\$1,572
TOTAL PROJECT				\$27,484		\$27,484

**NOTES**

**PROJECT MANAGEMENT PLAN  
FOR PRELIMINARY DESIGN/STUDY AND DETAILED DESIGN PHASE  
TA-9-21 HE WASTEWATER COLLECTION SYSTEM UPGRADE**

**I. INTRODUCTION**

- A. This Project Management Plan is in response to Task Order 99-214 issued under Subcontract 5210F0016-CE. This Task Order is for Preliminary Design and Detailed Design portions of the Execution Phase of the project.
- B. The purpose of the project is to upgrade the existing High Explosive (HE) Wastewater Collection System at TA-9-21. The existing system is over 40 years old and stormwater may be infiltrating the collection mains. In addition, elimination of the original NPDES by plugging the outlets of the existing HE sumps (2) has created an additional stormwater infiltration/exfiltration problem that must be eliminated.

**II. SCOPE OF WORK**

**A. General Scope of Work**

The general intent of this project is to repair and/or replace various components of the existing HE Wastewater Collection System. This may include, but is not limited to:

- 1. Main collection lines on each side of Building 9-21,
- 2. New holding tank(s) to replace existing sumps,
- 3. New collection main to connect existing mains (from manholes) to the new holding tank(s),

**B. Specific Scope of Work**

**1. Site Investigation**

Perform additional site inspection work as required to determine existing conditions of the system. Review existing videos of the interior of the collection mains made by DX Division.

**2. Preliminary Design/Study**

Merrick will prepare a Preliminary Design/Study for the project. This Design/Study will include the following:

- Preliminary design level drawings (schematic) for the existing system, known demolition work, collection line replacement (manhole-to-manhole), proposed location of new holding tank(s) and the proposed routing of the new connection main (manholes to new tank).
- Proposed options for the new holding tank(s). This may include double-wall underground, single-wall in vault or other options.
- Initial investigation of possible permit (State of New Mexico) issues with a new below grade tank.
- A conceptual engineering cost estimate for construction (with options).

### 3. Preliminary Design/Study Review

Merrick will submit ten (10) sets of the Preliminary Design/Study documents to DX Division for review. Any drawings included will be 11" x 17" size.

A formal review meeting will be held two (2) business days after submission of the Design/Study package.

### 4. Detailed Design

Based upon comments received and/or decisions made (i.e. options on holding tanks) during the Preliminary Design/Study formal review, Merrick will proceed with a Detailed Design for the project.

Complete, scaled drawings will be prepared for all elements of the project including, but not limited to, the following:

- Demolition,
- Replacement of existing collection mains,
- New connecting mains,
- New holding tanks and/or vaults,
- Modification of existing sump alarm to serve the new holding tank(s).

5. Detailed Design Review (90%)

Merrick will submit ten (10) sets of the Detailed Design Package to DX Division at the 90% design level. Drawings will be 11" x 17" size.

A formal design review meeting will be held two (2) business days after submission of the 90% Detailed Design package.

A final, detailed cost estimate will be prepared (Government Estimate) at this time.

6. Final Construction Documents

The 90% design package will be finalized (100%) based upon the incorporation of comments received during the Detailed Design review meeting. Once all received comments are either resolved or incorporated into the design a final, 100%, full size set (24" x 36") of stamped original design drawings will be issued. Specifications will be included as either a separate document or on the drawings.

7. Work Not Included

The following items are specifically NOT included in the Scope of Work:

- Site surveying,
- Destructive inspection,
- Modifications to storm water and/or sanitary sewer system,
- HE wastewater piping modifications inside the building,
- Actual permitting (permit preparation) for new holding tank(s) (if required),
- Construction phase inspection work.

8. Provided by Client

The Client (DX Division, DX-FM and/or DX-2) shall provide the following:

- Project ID number and drawing "C" number.

- Ground Penetrating Radar (GPR) sweep of the area, prior to the construction phase, to determine location(s) of underground utilities, if requested by Merrick.
- Obtain excavation and/or other work permits that may be required.
- Provide cost code to allow Merrick to obtain archive drawing copies at FE-7.

### III. QUALITY ASSURANCE

Work performed under this proposal will conform to the requirements of the FSS Management Program Manual, Criteria 1. A Management Level was not assigned to this project. This proposal is based on the assumption that the Management Level is ML-3 and that the Performance Category is PC-2 or lower.

### IV. SCHEDULE

A.	Task Order Received	12/22/98
B.	PMP submitted	1/6/99
C.	Notice to Proceed (estimated)	1/8/99
D.	Site Investigation/Video Review/Archives	1/13 to 1/19/99
E.	Preliminary Design/Study Submittal	2/12/99
F.	Preliminary Design/Study Review Meeting	2/16/99
G.	Detailed Design (90%) Submittal	3/9/99
H.	Detailed Design (90%) Review Meeting	3/12/99
I.	Construction Documents (100%) Submittal	3/19/99

### V. COST OF SERVICES

- A. The estimated cost for services described in this proposal is \$27,484. A detailed breakdown of cost follows.

MERRICK & COMPANY  
 SUBCONTRACT 5210F0016-CE  
 PROJECT MANAGEMENT PLAN

Title II HE Waste Water Sumps Replacement  
 Task 5210F0016-CE-214/P.I. #  
 Merrick Project # 30013425

Line #	Empl. #	Class	Description	Assigned	Proj. Mgmt.	Proj. Admin.	Proj. Controls	Environmental	Site Investigation	Title I Study	Title II Design	Specifications	Design REviews	Const. Cost Estimate	Q/A	Rate	Current Manhours	Current Cost	New Manhours	New Cost	Total Manhours	Total Cost
1	1043	Z	ASST. P.M.	Diamond, Steve	24			8	2	4	4	2	6	4	2	\$92.95			56	\$5,205	56	\$5,205
2	58	E	LEAD ENGR	Carr, Keith					8	32	40	12	4	12	4	\$70.92			112	7943	112	7943
3	997	J	ENGR	Lemke, Terrill				8		2	2			6		\$40.84			18	\$735	18	\$735
4	1251	J	ENGR	Foote, Jennifer						2	2	2		6		\$40.84			12	\$490	12	\$490
5	1045	B	SR. ENGR	Veenis, Steve				12					4			\$92.95			16	\$1,487	16	\$1,487
6	1055	K	DSNGR	Gonzales, Herman						32	48	4		12	4	\$42.39			100	\$4,239	100	\$4,239
7	132	C	SR. DSGNR	Christen, Margrit											8	\$60.81			8	\$486	8	\$486
8	163	V	ADMIN ASST	Cunningham, Leslie	16											\$34.20			16	\$547	16	\$547
9	718	C	SR. DSGNR	Ellard, Joan										18		\$60.81			18	\$1,095	18	\$1,095
10	1103	W	CLERICAL	Mollett, Sarah				8								\$25.48			8	\$204	8	\$204
11	190	P	P.C. ANALYST	Trout, Carol K.				8								\$39.84			8	\$319	8	\$319
12	445	E	LEAD ENGR	Cheung, Victor					2	6	8			4	1	\$70.92			21	\$1,489	21	\$1,489
13	152	F	LEAD DSGNR	Burditt, Randy					2	2	14			4	1	\$51.06			23	\$1,174	23	\$1,174
14			n/a																			
15			n/a																			
16			n/a																			
17			n/a																			
18			n/a																			
19			n/a																			
20			n/a																			
21			n/a																			
22			n/a																			
23			n/a																			
24			n/a																			
25			n/a																			

CODES

A	ARCHITECTURAL	K	ENVIRONMENTAL
B	PROJECT CONTROL	M	MECHANICAL
C	CIVIL/MINING	N	NUCLEAR
D	PHOTOGRAMMETRY	P	PROCESS
E	ELECTRICAL	Q	QA/QC
F	SURVEYING	S	STRUCTURAL
G	CHEMICAL	T	CLERICAL
H	HVAC	W	SPECIFICATIONS
I	CONSTRUCTION	Z	ESTIMATING

SUMMARY

LABOR TOTAL		416	\$25,413	416	\$25,413
TRAVEL TOTAL			\$158		\$158
MISC. TOTAL			\$341		\$341
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SUBTOTAL			\$25,912		\$25,912
NM GRT	6.0675%		\$1,572		\$1,572
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TOTAL PROJECT COST			\$27,484		\$27,484

**MERRICK & COMPANY**  
**SUBCONTRACT 5210F0016-CE**  
**PROJECT MANAGEMENT PLAN**

Title II HE Waste Water Sumps Replacement  
 Task 5210F0016-CE-214/P.I. #  
 Merrick Project # 30013425

**TRAVEL EXPENSE BREAKDOWN**

Item #	Description of Travel Expense	Units	Quantity	Unit Cost	Total Cost
1	Mileage	miles	500	\$0.31	\$155
2	Per Diem	days			
3	Auto Rental	days			
4	Airfare	trips			
5	Parking	days			
6					
7					
8					
9					
10					
Travel Expense Subtotal					\$155
Administrative Handling Charge					2.0% \$3
Travel Expense Total					\$158

**MISCELLANEOUS EXPENSE BREAKDOWN**

Item #	Description of Miscellaneous Expense	Units	Quantity	Unit Cost	Total Cost
1	Facsimile (Incoming/Outgoing)	sht.	30	\$0.56	\$17
2	Reproduction	sht.	750	\$0.05	\$38
3	Blueline Reproduction	sht.		\$0.33	
4	Plotter Transparencies	lin ft		\$0.33	
5	Diazo Mylar Reproduction	lin ft		\$2.61	
6	Computer Usage	Hr	48	\$5.81	\$279
11					
12					
13					
14					
15					
Miscellaneous Expense Subtotal					\$334
Administrative Handling Charge					2.0% \$7
Miscellaneous Expense Total					\$341

These estimated travel and miscellaneous expenses reflect reasonable costs based on our historical records and engineering judgement in relation to the scope of work required for this project.