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NAS KEY WEST
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REPORT ON DISPOSITION OF INVESTIGATION DERIVED WASTE FROM 17 TO 23 NOVEMBER 1998 AT SOLID WASTE MANAGEMENT UNIT 9 JET ENGINE TEST CELL WITH TRANSMITTAL LETTER NAS KEY WEST FL

3/2/1999

TETRA TECH NUS

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AIK-99-0059

March 2, 1999

Project Number HK 7046 *Via US Mail*

Mr. Phillip Williams
Installation Restoration Coordinator
Environmental Branch
U.S. Naval Air Station Key West
P.O. Box 9000
Key West, Florida 33040-9001

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0007

Subject: Disposition of Investigation Derived Waste (IDW) from the ER, N Field Activities 17 November 1998 to 23 November 1998.

Dear Mr. Williams:

Tetra Tech NUS prepared the enclosed report on the disposition of the Investigation Derived Waste (IDW) that were generated at a result of the activities related to the ER, N between 17 November 1998 to 23 November 1998. As you know the ER, N activities conducted during November 1998 took place at SWMU 9 on Boca Chica Key. In effort to maintain the security of IDW, four drums were stored on the concrete adjacent to the former pump and treatment system on the east side of the site.

All IDW collected during the ER, N field activities during November 1998 is aqueous in nature, consisting of development and purge water from monitoring well groundwater samples. Each drum is labeled with the SWMU 9 where the waste originated and the date of generation. TtNUS received analytical results from the SWMU 9 sampling event and has used that data to determine the disposition of the IDW. All data relating to the contents of the drums have been received from the lab, reviewed, and used to characterize the waste. The enclosure provides a discussion of the data and recommendations regarding the disposition of the IDW.

As a courtesy to you, we are sending a copy of this report to Ms. Patsy McNeil for her use in disposing the IDW. Should you have any questions after reviewing the attached report, please call me at (803) 649-7963.

Sincerely,

for...

Marty Ray
NAS Key West Field Operations Leader

Enclosures

cc: D. Patrick, NAVFACENGCOM Southern Division
P. McNeil, NAS Key West
File 7046-3.2

Disposition of Investigation Derived Waste (IDW) from the ER, N Activities at SMWU 9
17 November 1998 to 23 November 1998

Background

Investigation-derived waste (IDW) was generated during groundwater sampling at SWMU 9. The drums of IDW are labeled SWMU 9 with the dates 17 November 1998 to 23 November 1998, respectively. In addition, the labels denote TtNUS s and drum contents (i.e., purge water or development water).

Chemical analytical data were received from the laboratory the data was validated in January. The results of the analytical testing have been reviewed and the reviewed data were used to determine disposal options for the IDW. All IDW is aqueous nature, resulting from the development of the new monitoring well (MW-25) and purging of monitoring wells to acquire groundwater samples. The groundwater analytical data were used to determine if the IDW meets the RCRA hazardous waste identification criteria described in Title 40 of the Code of Federal Regulations Part 261 Subparts 31 through 35. If the data indicate that the IDW shows the characteristic of a hazardous waste (i.e., ignitable, corrosive, reactive, or toxic) as defined in 40 CFR 261.20 through 40 CFR 261.24, or is listed in 40 CFR 261.30 through 40 CFR 261.35, then the IDW must be managed as hazardous waste.

Data Analysis

Two lists of data were generated from the main data set for ease of evaluation. Table 1 (attached) lists parameter data where a volatile organic (VOC) compound was detected. The data is sorted by parameter, and result in descending order.

Table 2 (attached) presents a list of all analytical results for all groundwater samples collected during ER, N SWMU 9 field activities. The data is also sorted parameter, and result in descending order. Each analytical result is presented with its units and qualifier, as appropriate.

Table 2 also lists the corresponding drinking water maximum contamination level (MCL) for the listed compound, its toxicity characteristic leaching procedure (TCLP) value and RCRA Land Disposal Regulations (LDR) Universal Treatment Standards (UTS) and Florida Department of Environmental Protection (FDEP) Brownsfield Guidance Levels. The compounds that do not have an MCL, TCLP, UTS or FDEP Brownsfield criteria have been left blank.

Conclusions

Based on analysis of detected parameter results, TtNUS recommends that the IDW drums be handled as hazardous waste under RCRA. This determination is based on the fact that organic compounds such as benzene, ethylbenzene, cis-1,2 dichloroethene and trans-1,2 dichloroethene are at levels in excess of the RCRA UTS and/or FDEP Brownsfield levels.

Table 2. IDW Report - NAS Keywest SWMU 9 Groundwater Data Set

November 1998

PARAMETER	RESULT	QUAL
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	U
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	1	U
cis-1,3-dichloropropene	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U
trans-1,2-dichloroethene	1	U
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U

S9-MW-14-1198 **11/21/98**

Volatile Organic Compounds (µg/L)

PARAMETER	RESULT	QUAL
1,1,1,2-tetrachloroethane	1	U
1,1,1-trichloroethane	1	U
1,1,2,2-tetrachloroethane	1	U
1,1,2-trichloroethane	1	U
1,1-dichloroethane	1	U
1,1-dichloroethene	1	U
1,2,3-trichloropropane	1	U
1,2-dibromo-3-chloropropane	1	U
1,2-dibromoethane	1	U
1,2-dichloroethane	1	U
1,2-dichloropropane	1	U
2-butanone	10	U
2-hexanone	10	U
4-methyl-2-pentanone	10	U
Acetonitrile	200	U
Acrylonitrile	20	U
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	U
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	3	
cis-1,3-dichloropropene	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U
trans-1,2-dichloroethene	5.2	
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U

S9-MW-15-1198 **11/22/98**

Volatile Organic Compounds (µg/L)

PARAMETER	RESULT	QUAL
1,1,1,2-tetrachloroethane	25	U
1,1,1-trichloroethane	25	U
1,1,2,2-tetrachloroethane	25	U
1,1,2-trichloroethane	25	U
1,1-dichloroethane	25	U
1,1-dichloroethene	25	U
1,2,3-trichloropropane	25	U
1,2-dibromo-3-chloropropane	25	U
1,2-dibromoethane	25	U
1,2-dichloroethane	25	U
1,2-dichloropropane	25	U
2-butanone	250	U
2-hexanone	250	U
4-methyl-2-pentanone	250	U
Acetonitrile	5000	U
Acrylonitrile	500	U
Allyl chloride	25	U
Benzene	25	U
Bromodichloromethane	25	U
Bromoform	25	U
Bromomethane	25	UJ
Carbon disulfide	25	U
Carbon tetrachloride	25	U
Chlorobenzene	25	U
Chloroethane	25	U
Chloroform	25	U
Chloromethane	25	U
Chloroprene	25	U
cis-1,2-dichloroethene	280	
cis-1,3-dichloropropene	25	U
Dibromochloromethane	25	U
Dichlorodifluoromethane	25	UJ
Ethyl methacrylate	25	U
Ethylbenzene	25	U
Isobutyl alcohol	5000	U
Methacrylonitrile	500	U
Methyl iodide	25	U
Methyl methacrylate	25	U
Methylene bromide	25	U
Methylene chloride	120	U
Pentachloroethane	120	U
Styrene	25	U
Tetrachloroethene	25	U
Toluene	25	U
trans-1,2-dichloroethene	820	
trans-1,3-dichloropropene	25	U
Trans-1,4-dichloro-2-butene	25	U
Trichloroethene	25	U
Trichlorofluoromethane	25	U
Vinyl acetate	50	UJ
Vinyl chloride	25	U
Xylenes, total	50	U

S9-MW-21-1198 **11/21/98**

Volatile Organic Compounds (µg/L)

PARAMETER	RESULT	QUAL
1,1,1,2-tetrachloroethane	2	U
1,1,1-trichloroethane	2	U
1,1,2,2-tetrachloroethane	2	U
1,1,2-trichloroethane	2	U
1,1-dichloroethane	2	U
1,1-dichloroethene	2	U
1,2,3-trichloropropane	2	U
1,2-dibromo-3-chloropropane	2	U
1,2-dibromoethane	2	U
1,2-dichloroethane	2	U
1,2-dichloropropane	2	U
2-butanone	20	U
2-hexanone	20	U
4-methyl-2-pentanone	20	U
Acetonitrile	400	U
Acrylonitrile	40	U
Allyl chloride	2	U
Benzene	2	U
Bromodichloromethane	2	U
Bromoform	2	U
Bromomethane	2	UJ
Carbon disulfide	2	U
Carbon tetrachloride	2	U
Chlorobenzene	2	U
Chloroethane	2	U
Chloroform	2	U
Chloromethane	2	U
Chloroprene	2	U
cis-1,2-dichloroethene	60	
cis-1,3-dichloropropene	2	U
Dibromochloromethane	2	U
Dichlorodifluoromethane	2	UJ
Ethyl methacrylate	2	U
Ethylbenzene	2	U
Isobutyl alcohol	400	U
Methacrylonitrile	40	U
Methyl iodide	2	U
Methyl methacrylate	2	U

Table 2. IDW Report - NAS Keywest SWMU 9 Groundwater Data Set

November 1998

PARAMETER	RESULT	QUAL
Methylene bromide	2	U
Methylene chloride	10	U
Pentachloroethane	10	U
Styrene	2	U
Tetrachloroethene	2	U
Toluene	2	U
trans-1,2-dichloroethene	51	
trans-1,3-dichloropropene	2	U
Trans-1,4-dichloro-2-butene	2	U
Trichloroethene	2	U
Trichlorofluoromethane	2	U
Vinyl acetate	4	UJ
Vinyl chloride	2	U
Xylenes, total	4	U
S9-MW-22-1198	**11/21/98**	
Volatile Organic Compounds (µg/L)		
1,1,1,2-tetrachloroethane	1	U
1,1,1-trichloroethane	1	U
1,1,2,2-tetrachloroethane	1	U
1,1,2-trichloroethane	1	U
1,1-dichloroethane	1	U
1,1-dichloroethene	1	U
1,2,3-trichloropropane	1	U
1,2-dibromo-3-chloropropane	1	U
1,2-dibromoethane	1	U
1,2-dichloroethane	1	U
1,2-dichloropropane	1	U
2-butanone	10	U
2-hexanone	10	U
4-methyl-2-pentanone	10	U
Acetonitrile	200	U
Acrylonitrile	20	U
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	UJ
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	1	U
cis-1,3-dichloropropene	1	U

PARAMETER	RESULT	QUAL
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U
trans-1,2-dichloroethene	1	U
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U
S9-MW-23-1198	**11/22/98**	
Volatile Organic Compounds (µg/L)		
1,1,1,2-tetrachloroethane	1	U
1,1,1-trichloroethane	1	U
1,1,2,2-tetrachloroethane	1	U
1,1,2-trichloroethane	1	U
1,1-dichloroethane	1	U
1,1-dichloroethene	1	U
1,2,3-trichloropropane	1	U
1,2-dibromo-3-chloropropane	1	U
1,2-dibromoethane	1	U
1,2-dichloroethane	1	U
1,2-dichloropropane	1	U
2-butanone	10	U
2-hexanone	10	U
4-methyl-2-pentanone	10	U
Acetonitrile	200	U
Acrylonitrile	20	U
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	UJ
Carbon disulfide	1	U

PARAMETER	RESULT	QUAL
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	4.6	
cis-1,3-dichloropropene	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U
trans-1,2-dichloroethene	13	
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U
S9-MW-24-1198	**11/22/98**	
Volatile Organic Compounds (µg/L)		
1,1,1,2-tetrachloroethane	3	U
1,1,1-trichloroethane	3	U
1,1,2,2-tetrachloroethane	3	U
1,1,2-trichloroethane	3	U
1,1-dichloroethane	3	U
1,1-dichloroethene	3	U
1,2,3-trichloropropane	3	U
1,2-dibromo-3-chloropropane	3	U
1,2-dibromoethane	3	U
1,2-dichloroethane	3	U
1,2-dichloropropane	3	U
2-butanone	30	U
2-hexanone	30	U
4-methyl-2-pentanone	30	U

PARAMETER	RESULT	QUAL
Acetonitrile	1000	U
Acrylonitrile	100	U
Allyl chloride	5	U
Benzene	3	U
Bromodichloromethane	3	U
Bromoform	3	U
Bromomethane	3	UJ
Carbon disulfide	3	U
Carbon tetrachloride	3	U
Chlorobenzene	3	U
Chloroethane	3	U
Chloroform	3	U
Chloromethane	3	U
Chloroprene	5	U
cis-1,2-dichloroethene	60.25	
cis-1,3-dichloropropene	3	U
Dibromochloromethane	3	U
Dichlorodifluoromethane	3	UJ
Ethyl methacrylate	5	U
Ethylbenzene	3	U
Isobutyl alcohol	1000	U
Methacrylonitrile	100	U
Methyl iodide	5	U
Methyl methacrylate	5	U
Methylene bromide	3	U
Methylene chloride	15	U
Pentachloroethane	25	U
Styrene	3	U
Tetrachloroethene	3	U
Toluene	3	U
trans-1,2-dichloroethene	105.25	
trans-1,3-dichloropropene	3	U
Trans-1,4-dichloro-2-butene	5	U
Trichloroethene	3	U
Trichlorofluoromethane	5	U
Vinyl acetate	6	UJ
Vinyl chloride	3	U
Xylenes, total	6	U
S9-MW-25-1198	**11/21/98**	
Volatile Organic Compounds (µg/L)		
1,1,1,2-tetrachloroethane	1	U
1,1,1-trichloroethane	1	U
1,1,2,2-tetrachloroethane	1	U
1,1,2-trichloroethane	1	U
1,1-dichloroethane	1	U
1,1-dichloroethene	1	U

Table 2. IDW Report - NAS Keywest SWMU 9 Groundwater Data Set

November 1998

PARAMETER	RESULT	QUAL
1,2,3-trichloropropane	1	U
1,2-dibromo-3-chloropropane	1	U
1,2-dibromoethane	1	U
1,2-dichloroethane	1	U
1,2-dichloropropane	1	U
2-butanone	10	U
2-hexanone	10	U
4-methyl-2-pentanone	10	U
Acetonitrile	200	U
Acrylonitrile	20	U
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	U
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	1	U
cis-1,3-dichloropropene	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U
trans-1,2-dichloroethene	1	U
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U

PARAMETER	RESULT	QUAL
S9-RW-02-1198	**11/22/98**	
Volatile Organic Compounds (µg/L)		
1,1,1,2-tetrachloroethane	1	U
1,1,1-trichloroethane	1	U
1,1,2,2-tetrachloroethane	1	U
1,1,2-trichloroethane	1	U
1,1-dichloroethane	1	U
1,1-dichloroethene	1	U
1,2,3-trichloropropane	1	U
1,2-dibromo-3-chloropropane	1	U
1,2-dibromoethane	1	U
1,2-dichloroethane	1	U
1,2-dichloropropane	1	U
2-butanone	10	U
2-hexanone	10	U
4-methyl-2-pentanone	10	U
Acetonitrile	200	U
Acrylonitrile	20	U
Allyl chloride	1	U
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	1	UJ
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	1	U
Chloroform	1	U
Chloromethane	1	U
Chloroprene	1	U
cis-1,2-dichloroethene	1	U
cis-1,3-dichloropropene	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	1	UJ
Ethyl methacrylate	1	U
Ethylbenzene	1	U
Isobutyl alcohol	200	U
Methacrylonitrile	20	U
Methyl iodide	1	U
Methyl methacrylate	1	U
Methylene bromide	1	U
Methylene chloride	5	U
Pentachloroethane	5	U
Styrene	1	U
Tetrachloroethene	1	U
Toluene	1	U

PARAMETER	RESULT	QUAL
trans-1,2-dichloroethene	1	U
trans-1,3-dichloropropene	1	U
Trans-1,4-dichloro-2-butene	1	U
Trichloroethene	1	U
Trichlorofluoromethane	1	U
Vinyl acetate	2	UJ
Vinyl chloride	1	U
Xylenes, total	2	U

PARAMETER	RESULT	QUAL