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Department of Energy

Richland Operations Office
P.O. Box 550
Richland, Washington 99352

MAY 04 1990

MAY 1990 Received

Mr. Paul T. Day
Hanford Project Manager
U. S. Environmental Protection Agency
Region 10
P. O. Box 550, A7-70
Richland, Washington 99352

Mr. Timothy L. Nord
Hanford Project Manager
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504-8711

MAY 09 1990

JUN 1990 RECEIVED EDMC

Dear Messrs. Day and Nord:

LIQUID EFFLUENT STUDY

References: (1) Ecology letter to S. H. Wisness from T. L. Nord and P. T. Day, subject "Liquid Effluent Study Project Plan," dated April 9, 1990.

(2) EPA letter to S. H. Wisness from P. T. Day, subject "Liquid Effluent Study," dated May 2, 1990.

In response to Mr. Paul T. Day's letter dated May 2, 1990, concerning the Liquid Effluent Study, the Department of Energy (DOE) is providing the requested information answering Items 1 and 3 found in your letter dated April 9, 1990.

Item 1 of Reference 1 expresses a concern about the insufficient amount of detail provided to evaluate status in the bimonthly reports. This issue has also been a matter of concern to DOE and we are moving to remedy the problem in future reports. The February-March bimonthly report has been forwarded to you under separate correspondence.

One area of delay is the completion of the Preliminary Stream Specific Reports. During review of drafts of these reports by DOE, it became clear that additional work was necessary to ensure appropriate treatment of the issues and consistency of quality for all 33 reports. A recovery schedule is in place and we anticipate that all the reports will be delivered by May 21, 1990. Currently no other issues place the August 31, 1990, deadline in jeopardy.

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Attached are tabulations of the sample data and the analytical parameters in response to Item 3 of your April 9 letter. The sample data show dates and times samples were taken and corresponding sample numbers. The analytical parameters indicate analytes detected at least once since August 1985. Analytical results will be provided in a separate report to be issued in mid-May. As you have been previously advised, these new data will be included in the final Stream Specific Reports but not in the Preliminary Stream Specific Reports.

If you have any questions, please contact Mr. Madan Dev of the Waste Management Division on 376-3412.

Sincerely,

for

Steven H. Wisness
Hanford Project Manager

WMD:MD

Attachment
1. Sample Data Tabulations
2. Liquid Effluent Study Analytes

cc w/att:
D. A. Turner, WHC
J. L. Waite, WHC
R. R. Thompson, WHC

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
300 Area Wastewater	09-Oct-89	15:06	50665	50666	50667	50668
300 Area Wastewater	10-Oct-89	14:00	50669	50670	50671	50672
300 Area Wastewater	15-Nov-89	09:04	50768	50769	50770	50771
300 Area Wastewater	05-Mar-90	13:00	51008	51009	51010	51011
400 Area Secondary Cooling Water	20-Oct-89	08:09	50713	50714	50715	50716
400 Area Secondary Cooling Water	21-Nov-89	12:00	50784	50785	50786	50787
400 Area Secondary Cooling Water	06-Dec-89	14:00	50826	50827	50828	50829
400 Area Secondary Cooling Water	09-Jan-90	13:01	50876	50877	50878	50879
242-A Evaporator Steam Condensate	30-Oct-89	11:05	50740	50741	50742	50743
242-A Evaporator Steam Condensate	30-Jan-90	08:05	50907	50908	50909	50910
242-A Evaporator Steam Condensate	09-Feb-90	09:00	50919	50920	50921	50922
242-A Evaporator Steam Condensate	22-Mar-90	09:04	51087	51088	51089	51090
B Plant Cooling Water	22-Nov-89	09:02	50788	50789	50790	50791
B Plant Cooling Water	29-Nov-89	09:05	50812	50813		50814
B Plant Cooling Water	12-Feb-90	11:03	50931	50932	50933	50934
B Plant Cooling Water	08-Mar-90	08:05	51032	51033	51034	51035
B Plant Chemical Sewage-Routine Operation	19-Oct-89	13:00	50705	50706	50707	50708
B Plant Chemical Sewage-Routine Operation	02-Nov-89	10:09	50752	50753	50754	50755
B Plant Chemical Sewage-Routine Operation	03-Nov-89	09:01	50756	50757	50758	50759
B Plant Chemical Sewage-Routine Operation	27-Feb-90	13:04	50984	50985	50986	50987
183-D Filter Backflush Wastewater	26-Feb-90	13:06	50976	50977	50978	50979
183-D Filter Backflush Wastewater	12-Mar-90	09:02	51044	51045	51046	51047
183-D Filter Backflush Wastewater	28-Mar-90	11:07	51099	51100	51101	51102
183-D Filter Backflush Wastewater	27-Dec-89	10:03	50861	50862	50863	50864
284-E Powerhouse Wastewater-Routine Operation	24-Oct-89	10:00	50721	50722	50723	50724
284-E Powerhouse Wastewater-Routine Operation	27-Oct-89	08:08	50736	50737	50738	50739
284-E Powerhouse Wastewater-Routine Operation	14-Dec-89	10:05	50842	50843		50844
284-E Powerhouse Wastewater-Routine Operation	07-Mar-90	09:03	51024	51025	51026	51027
241-A Tank Farm Cooling Water	18-Oct-89	14:00	50701	50702	50703	50704
241-A Tank Farm Cooling Water	29-Nov-89	13:07	50815	50816		50817
241-A Tank Farm Cooling Water	21-Feb-90	08:07	50963	50964	50965	50966
241-A Tank Farm Cooling Water	08-Mar-90	13:06	51028	51029	51030	51031
2724-W Laundry Wastewater	12-Oct-89	10:07	50677	50678	50679	50680
2724-W Laundry Wastewater	16-Nov-89	09:02	50772	50773	50774	50775
2724-W Laundry Wastewater	21-Nov-89	09:01	50780	50781	50782	50783
2724-W Laundry Wastewater	21-Dec-89	12:04	50857	50858	50859	50860
N Reactor Effluent	03-Oct-89	10:00	25158			25159

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
N Reactor Effluent	10-Oct-89	N/A	25160			25161
N Reactor Effluent	17-Oct-89	N/A	25162			25163
N Reactor Effluent	24-Oct-89	09:00	25167			25168
N Reactor Effluent	31-Oct-89	09:00	25169			25170
N Reactor Effluent	07-Nov-89	14:00	25171			25172
N Reactor Effluent	14-Nov-89	09:00	25173			25174
N Reactor Effluent	21-Nov-89	09:05	25175			25176
N Reactor Effluent	28-Nov-89	10:05	25177			25178
N Reactor Effluent	05-Dec-89	09:00	25179			25180
N Reactor Effluent	12-Dec-89	09:00	25181			25182
N Reactor Effluent	19-Dec-89	10:00	25183			25184
N Reactor Effluent	02-Jan-90	09:00	25185			25186
N Reactor Effluent	03-Jan-90	10:06	50873	50874		50875
N Reactor Effluent	09-Jan-90	09:05	25187			25188
N Reactor Effluent	16-Jan-90	N/A	25189			25190
N Reactor Effluent	23-Jan-90	09:05	25191			25192
N Reactor Effluent	30-Jan-90	09:00	25193			25194
N Reactor Effluent	06-Feb-90	09:05	25195			25196
N Reactor Effluent	13-Feb-90	09:00	25197			25198
N Reactor Effluent	20-Feb-90	10:00	25199			25200
N Reactor Effluent	21-Feb-90	11:06	50959	50960	50961	50962
N Reactor Effluent	27-Feb-90	08:05	25201			25202
N Reactor Effluent	05-Mar-90	10:04	51012	51013	51014	51015
N Reactor Effluent	06-Mar-90	09:00	25203			25204
N Reactor Effluent	13-Mar-90	09:00	25205			25206
N Reactor Effluent	26-Mar-90	09:08	51091	51092	51093	51094
163-N Demineralizer Plant Wastewater-Unknown	26-Feb-90	09:00	50980	50981	50982	50983
163-N Demineralizer Plant Wastewater-Bypass	03-Jan-90	13:03	50869	50870	50871	50872
163-N Demineralizer Plant Wastewater-Bypass	09-Feb-90	11:08	50923	50924	50925	50926
PUREX Cooling Water	25-Oct-89	13:01	50725	50726	50727	50728
PUREX Cooling Water	02-Nov-89	14:03	50748	50749	50750	50751
PUREX Cooling Water	14-Nov-89	09:00	50764	50765	50766	50767
PUREX Cooling Water	26-Jan-90	08:02	50903	50904	50905	50906
PUREX Cooling Water	16-Feb-90	09:02	50943	50944	50945	50946
PUREX Cooling Water	22-Feb-90	10:08	50967	50968	50969	50970
PUREX Chemical Sewage-Routine Operation	16-Oct-89	13:01	50689	50690	50691	50692
PUREX Chemical Sewage-Routine Operation	19-Oct-89	10:07	50709	50710	50711	50712

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
PUREX Chemical Sewage-Routine Operation	27-Nov-89	09:05	50796	50797	50798	50799
PUREX Chemical Sewage-Routine Operation	17-Jan-90	10:01	50891	50892	50893	50894
PUREX Chemical Sewage-Routine Operation	13-Feb-90	13:08	50939	50940	50941	50942
PUREX Chemical Sewage-Routine Operation	20-Feb-90	09:07	50955	50956	50957	50958
PUREX Process Condensate	17-Jan-90	14:07	59171	59172	59173	59174
PUREX Process Condensate	22-Jan-90	10:00	59176	59177	59178	59179
PUREX Process Condensate	23-Jan-90	10:03	50895	50896	50897	50898
PUREX Process Condensate	25-Jan-90	10:00	59181	59182	59183	
PUREX Process Condensate	13-Feb-90	10:05	50935	50936	50937	50938
PUREX Process Condensate	20-Feb-90	11:06	50951	50952	50953	50954
PUREX Process Condensate	27-Feb-90	09:03	50988	50989	50990	50991
PUREX Process Condensate	06-Mar-90	09:01	51020	51021	51022	51023
PUREX Process Condensate	16-Jan-90	09:09	50880	50881		50882
PUREX Steam Condensate	27-Nov-89	10:03	50792	50793		50795
PUREX Steam Condensate	16-Jan-90	12:00	50883	50884	50885	50886
PUREX Steam Condensate	17-Jan-90	09:06	50887	50888	50889	50890
PUREX Steam Condensate	24-Jan-90	13:00	50899	50900	50901	50902
PUREX Steam Condensate	06-Mar-90	10:05	51016	51017	51018	51019
PUREX Steam Condensate	20-Mar-90	09:02	51075	51076	51077	51078
222-S Laboratory Wastewater	21-Mar-90	09:08	51079	51080	51081	51082
222-S Laboratory Wastewater	28-Nov-89	08:00	50804	50805	50806	50807
222-S Laboratory Wastewater	09-Oct-89	13:02	50661	50662	50663	50664
222-S Laboratory Wastewater	11-Oct-89	11:02	50673	50674	50675	50676
S Plant Wastewater	31-Oct-89	07:07	50744	50745	50746	50747
S Plant Wastewater	20-Dec-89	09:01	50845	50846	50847	50848
S Plant Wastewater	31-Jan-90	10:00	50911	50912	50913	50914
S Plant Wastewater	20-Mar-90	12:00	51072	51073	51074	
242-S Evaporator Steam Condensate	26-Oct-89	13:00	50729	50730	50731	50732
242-S Evaporator Steam Condensate	30-Nov-89	09:09	50820			50821
242-S Evaporator Steam Condensate	31-Jan-90	09:09	50915	50916	50917	50918
242-S Evaporator Steam Condensate	16-Mar-90	13:05	51060	51061	51062	51063
T Plant Laboratory Wastewater-Plasma Torch	22-Feb-90	16:08	50971	50973	50974	50975
T Plant Laboratory Wastewater-Plasma Torch	22-Feb-90	16:08	50972			
T Plant Laboratory Wastewater-Standby	26-Oct-89	09:00	50733	50734		50735
T Plant Laboratory Wastewater-Standby	17-Nov-89	08:08	50776	50777		50778
T Plant Laboratory Wastewater-Standby	28-Nov-89	10:08	50800	50801	50802	50803
T Plant Laboratory Wastewater-Standby	14-Dec-89	09:08	50838	50839	50840	50841

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
T Plant Wastewater	13-Oct-89	08:05	50681	50682	50683	50684
T Plant Wastewater	17-Oct-89	10:00	50697	50698	50699	50700
T Plant Wastewater	28-Nov-89	13:00	50808	50809	50810	50811
T Plant Wastewater	09-Mar-90	09:01	51036	51037	51038	51039
UO3/U Plants Wastewater	01-Dec-89	13:09	50822	50823	50824	50825
UO3/U Plants Wastewater	02-Mar-90	09:00	51000	51001	51002	51003
UO3/U Plants Wastewater	14-Mar-90	09:02	51048	51049	51050	51051
UO3/U Plants Wastewater	22-Mar-90	10:05	51083	51084	51085	51086
244-AR Vault Cooling Water	13-Oct-89	13:09	50685	50686	50687	50688
244-AR Vault Cooling Water	17-Oct-89	13:08	50693	50694	50695	50696
244-AR Vault Cooling Water	24-Oct-89	08:02	50717	50718	50719	50720
244-AR Vault Cooling Water	16-Feb-90	12:05	50947	50948	50949	50950
284-W Powerhouse Wastewater-Routine Operation	13-Nov-89	13:05	50760	50761	50762	50763
284-W Powerhouse Wastewater-Routine Operation	02-Jan-90	11:08	50865	50866	50867	50868
284-W Powerhouse Wastewater-Routine Operation	28-Feb-90	10:08	50996	50997	50998	50999
284-W Powerhouse Wastewater-Routine Operation	16-Mar-90	09:00	51056	51057	51058	51059
Plutonium Finishing Plant Wastewater-Not PRF or RMC	30-Nov-89	11:08	50818			50819
Plutonium Finishing Plant Wastewater-Not PRF or RMC	12-Feb-90	09:08	50927	50928	50929	50930
Plutonium Finishing Plant Wastewater-Not PRF or RMC	19-Mar-90	09:03	51068	51069	51070	51071
Plutonium Finishing Plant Wastewater-Not PRF or RMC	26-Mar-90	13:01	51095	51096	51097	51098

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
N Reactor Effluent	03-Oct-89	10:00	25158			25159
222-S Laboratory Wastewater	09-Oct-89	13:02	50661	50662	50663	50664
300 Area Wastewater	09-Oct-89	15:06	50665	50666	50667	50668
N Reactor Effluent	10-Oct-89	N/A	25160			25161
300 Area Wastewater	10-Oct-89	14:00	50669	50670	50671	50672
222-S Laboratory Wastewater	11-Oct-89	11:02	50673	50674	50675	50676
2724-W Laundry Wastewater	12-Oct-89	10:07	50677	50678	50679	50680
T Plant Wastewater	13-Oct-89	08:05	50681	50682	50683	50684
244-AR Vault Cooling Water	13-Oct-89	13:09	50685	50686	50687	50688
PUREX Chemical Sewage-Routine Operation	16-Oct-89	13:01	50689	50690	50691	50692
N Reactor Effluent	17-Oct-89	N/A	25162			25163
T Plant Wastewater	17-Oct-89	10:00	50697	50698	50699	50700
244-AR Vault Cooling Water	17-Oct-89	13:08	50693	50694	50695	50696
241-A Tank Farm Cooling Water	18-Oct-89	14:00	50701	50702	50703	50704
PUREX Chemical Sewage-Routine Operation	19-Oct-89	10:07	50709	50710	50711	50712
B Plant Chemical Sewage-Routine Operation	19-Oct-89	13:00	50705	50706	50707	50708
400 Area Secondary Cooling Water	20-Oct-89	08:09	50713	50714	50715	50716
244-AR Vault Cooling Water	24-Oct-89	08:02	50717	50718	50719	50720
N Reactor Effluent	24-Oct-89	09:00	25167			25168
284-E Powerhouse Wastewater-Routine Operation	24-Oct-89	10:00	50721	50722	50723	50724
PUREX Cooling Water	25-Oct-89	13:01	50725	50726	50727	50728
T Plant Laboratory Wastewater-Standby	26-Oct-89	09:00	50733	50734		50735
242-S Evaporator Steam Condensate	26-Oct-89	13:00	50729	50730	50731	50732
284-E Powerhouse Wastewater-Routine Operation	27-Oct-89	08:08	50736	50737	50738	50739
242-A Evaporator Steam Condensate	30-Oct-89	11:05	50740	50741	50742	50743
S Plant Wastewater	31-Oct-89	07:07	50744	50745	50746	50747
N Reactor Effluent	31-Oct-89	09:00	25169			25170
B Plant Chemical Sewage-Routine Operation	02-Nov-89	10:09	50752	50753	50754	50755
PUREX Cooling Water	02-Nov-89	14:03	50748	50749	50750	50751
B Plant Chemical Sewage-Routine Operation	03-Nov-89	09:01	50756	50757	50758	50759
N Reactor Effluent	07-Nov-89	14:00	25171			25172
284-W Powerhouse Wastewater-Routine Operation	13-Nov-89	13:05	50760	50761	50762	50763
N Reactor Effluent	14-Nov-89	09:00	25173			25174
PUREX Cooling Water	14-Nov-89	09:00	50764	50765	50766	50767
300 Area Wastewater	15-Nov-89	09:04	50768	50769	50770	50771
2724-W Laundry Wastewater	16-Nov-89	09:02	50772	50773	50774	50775
T Plant Laboratory Wastewater-Standby	17-Nov-89	08:08	50776	50777		50778

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
2724-W Laundry Wastewater	21-Nov-89	09:01	50780	50781	50782	50783
N Reactor Effluent	21-Nov-89	09:05	25175			25176
400 Area Secondary Cooling Water	21-Nov-89	12:00	50784	50785	50786	50787
B Plant Cooling Water	22-Nov-89	09:02	50788	50789	50790	50791
PUREX Chemical Sewage-Routine Operation	27-Nov-89	09:05	50796	50797	50798	50799
PUREX Steam Condensate	27-Nov-89	10:03	50792	50793		50795
222-S Laboratory Wastewater	28-Nov-89	08:00	50804	50805	50806	50807
N Reactor Effluent	28-Nov-89	10:05	25177			25178
T Plant Laboratory Wastewater-Standby	28-Nov-89	10:08	50800	50801	50802	50803
T Plant Wastewater	28-Nov-89	13:00	50808	50809	50810	50811
B Plant Cooling Water	29-Nov-89	09:05	50812	50813		50814
241-A Tank Farm Cooling Water	29-Nov-89	13:07	50815	50816		50817
242-S Evaporator Steam Condensate	30-Nov-89	09:09	50820			50821
Plutonium Finishing Plant Wastewater-Not PRF or RMC	30-Nov-89	11:08	50818			50819
UO3/U Plants Wastewater	01-Dec-89	13:09	50822	50823	50824	50825
N Reactor Effluent	05-Dec-89	09:00	25179			25180
400 Area Secondary Cooling Water	06-Dec-89	14:00	50826	50827	50828	50829
N Reactor Effluent	12-Dec-89	09:00	25181			25182
T Plant Laboratory Wastewater-Standby	14-Dec-89	09:08	50838	50839	50840	50841
284-E Powerhouse Wastewater-Routine Operation	14-Dec-89	10:05	50842	50843		50844
N Reactor Effluent	19-Dec-89	10:00	25183			25184
S Plant Wastewater	20-Dec-89	09:01	50845	50846	50847	50848
2724-W Laundry Wastewater	21-Dec-89	12:04	50857	50858	50859	50860
183-D Filter Backflush Wastewater	27-Dec-89	10:03	50861	50862	50863	50864
N Reactor Effluent	02-Jan-90	09:00	25185			25186
284-W Powerhouse Wastewater-Routine Operation	02-Jan-90	11:08	50865	50866	50867	50868
N Reactor Effluent	03-Jan-90	10:06	50873	50874		50875
163-N Demineralizer Plant Wastewater-Bypass	03-Jan-90	13:03	50869	50870	50871	50872
N Reactor Effluent	09-Jan-90	09:05	25187			25188
400 Area Secondary Cooling Water	09-Jan-90	13:01	50876	50877	50878	50879
N Reactor Effluent	16-Jan-90	N/A	25189			25190
PUREX Process Condensate	16-Jan-90	09:09	50880	50881		50882
PUREX Steam Condensate	16-Jan-90	12:00	50883	50884	50885	50886
PUREX Steam Condensate	17-Jan-90	09:06	50887	50888	50889	50890
PUREX Chemical Sewage-Routine Operation	17-Jan-90	10:01	50891	50892	50893	50894
PUREX Process Condensate	17-Jan-90	14:07	59171	59172	59173	59174
PUREX Process Condensate	22-Jan-90	10:00	59176	59177	59178	59179

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
N Reactor Effluent	23-Jan-90	09:05	25191			25192
PUREX Process Condensate	23-Jan-90	10:03	50895	50896	50897	50898
PUREX Steam Condensate	24-Jan-90	13:00	50899	50900	50901	50902
PUREX Process Condensate	25-Jan-90	10:00	59181	59182	59183	
PUREX Cooling Water	26-Jan-90	08:02	50903	50904	50905	50906
242-A Evaporator Steam Condensate	30-Jan-90	08:05	50907	50908	50909	50910
N Reactor Effluent	30-Jan-90	09:00	25193			25194
242-S Evaporator Steam Condensate	31-Jan-90	09:09	50915	50916	50917	50918
S Plant Wastewater	31-Jan-90	10:00	50911	50912	50913	50914
N Reactor Effluent	06-Feb-90	09:05	25195			25196
242-A Evaporator Steam Condensate	09-Feb-90	09:00	50919	50920	50921	50922
163-N Demineralizer Plant Wastewater-Bypass	09-Feb-90	11:08	50923	50924	50925	50926
Plutonium Finishing Plant Wastewater-Not PRF or RMC	12-Feb-90	09:08	50927	50928	50929	50930
B Plant Cooling Water	12-Feb-90	11:03	50931	50932	50933	50934
N Reactor Effluent	13-Feb-90	09:00	25197			25198
PUREX Process Condensate	13-Feb-90	10:05	50935	50936	50937	50938
PUREX Chemical Sewage-Routine Operation	13-Feb-90	13:08	50939	50940	50941	50942
PUREX Cooling Water	16-Feb-90	09:02	50943	50944	50945	50946
244-AR Vault Cooling Water	16-Feb-90	12:05	50947	50948	50949	50950
PUREX Chemical Sewage-Routine Operation	20-Feb-90	09:07	50955	50956	50957	50958
N Reactor Effluent	20-Feb-90	10:00	25199			25200
PUREX Process Condensate	20-Feb-90	11:06	50951	50952	50953	50954
241-A Tank Farm Cooling Water	21-Feb-90	08:07	50963	50964	50965	50966
N Reactor Effluent	21-Feb-90	11:06	50959	50960	50961	50962
PUREX Cooling Water	22-Feb-90	10:08	50967	50968	50969	50970
T Plant Laboratory Wastewater-Plasma Torch	22-Feb-90	16:08	50971	50973	50974	50975
T Plant Laboratory Wastewater-Plasma Torch	22-Feb-90	16:08	50972			
163-N Demineralizer Plant Wastewater-Unknown	26-Feb-90	09:00	50980	50981	50982	50983
183-D Filter Backflush Wastewater	26-Feb-90	13:06	50976	50977	50978	50979
N Reactor Effluent	27-Feb-90	08:05	25201			25202
PUREX Process Condensate	27-Feb-90	09:03	50988	50989	50990	50991
B Plant Chemical Sewage-Routine Operation	27-Feb-90	13:04	50984	50985	50986	50987
284-W Powerhouse Wastewater-Routine Operation	28-Feb-90	10:08	50996	50997	50998	50999
UO3/U Plants Wastewater	02-Mar-90	09:00	51000	51001	51002	51003
N Reactor Effluent	05-Mar-90	10:04	51012	51013	51014	51015
300 Area Wastewater	05-Mar-90	13:00	51008	51009	51010	51011
N Reactor Effluent	06-Mar-90	09:00	25203			25204

Notes: Transfer blanks (TripB), Characteristics (Char)

Liquid Effluent Study - Sample Data

Wastestream-Operating Configuration	Sample Collected Date	Time	Sample Numbers Basic	Blank	TripB	Char
PUREX Process Condensate	06-Mar-90	09:01	51020	51021	51022	51023
PUREX Steam Condensate	06-Mar-90	10:05	51016	51017	51018	51019
284-E Powerhouse Wastewater-Routine Operation	07-Mar-90	09:03	51024	51025	51026	51027
B Plant Cooling Water	08-Mar-90	08:05	51032	51033	51034	51035
241-A Tank Farm Cooling Water	08-Mar-90	13:06	51028	51029	51030	51031
T Plant Wastewater	09-Mar-90	09:01	51036	51037	51038	51039
183-D Filter Backflush Wastewater	12-Mar-90	09:02	51044	51045	51046	51047
N Reactor Effluent	13-Mar-90	09:00	25205			25206
U03/U Plants Wastewater	14-Mar-90	09:02	51048	51049	51050	51051
284-W Powerhouse Wastewater-Routine Operation	16-Mar-90	09:00	51056	51057	51058	51059
242-S Evaporator Steam Condensate	16-Mar-90	13:05	51060	51061	51062	51063
Plutonium Finishing Plant Wastewater-Not PRF or RMC	19-Mar-90	09:03	51068	51069	51070	51071
PUREX Steam Condensate	20-Mar-90	09:02	51075	51076	51077	51078
S Plant Wastewater	20-Mar-90	12:00	51072	51073	51074	
222-S Laboratory Wastewater	21-Mar-90	09:08	51079	51080	51081	51082
242-A Evaporator Steam Condensate	22-Mar-90	09:04	51087	51088	51089	51090
U03/U Plants Wastewater	22-Mar-90	10:05	51083	51084	51085	51086
N Reactor Effluent	26-Mar-90	09:08	51091	51092	51093	51094
Plutonium Finishing Plant Wastewater-Not PRF or RMC	26-Mar-90	13:01	51095	51096	51097	51098
183-D Filter Backflush Wastewater	28-Mar-90	11:07	51099	51100	51101	51102

Liquid Effluent Study - Analytes

Code	Analyte	Finding
A16	Aluminum	Detected
A15	Antimony	Detected
A20	Arsenic	Detected
H72	Arsenic (EP Toxic)	Detected
A06	Barium	Detected
H73	Barium (EP Toxic)	Detected
A01	Beryllium	Detected
P01	Boron	Detected
H66	Bromide	Detected
A07	Cadmium	Detected
H74	Cadmium (EP Toxic)	Detected
A05	Calcium	Detected
C75	Chloride	Detected
A08	Chromium	Detected
H75	Chromium (EP Toxic)	Reported
P02	Cobalt	Detected
A13	Copper	Detected
C70	Cyanide	Detected
C74	Fluoride	Detected
H63	Fluoride	Detected
A19	Iron	Detected
A09	Lead	Detected
A51	Lead	Detected
H76	Lead (EP Toxic)	Detected
P03	Lithium	Detected
A50	Magnesium	Detected
A17	Manganese	Detected
A21	Mercury	Detected
H79	Mercury (EP Toxic)	Detected
P04	Molybdenum	Detected
A12	Nickel	Detected
C72	Nitrate	Detected
H67	Nitrite	Detected
C76	Phosphate	Detected
A18	Potassium	Detected
A22	Selenium	Reported
H77	Selenium (EP Toxic)	Reported
P05	Silicon	Detected
A10	Silver	Detected
H78	Silver (EP Toxic)	Reported
A11	Sodium	Detected
A03	Strontium	Detected
C73	Sulfate	Detected
C78	Sulfide	Detected
A23	Thallium	Detected
P06	Tin	Detected
P07	Titanium	Detected
124	Uranium	Detected
A14	Vanadium	Detected
A04	Zinc	Detected
P08	Zirconium	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
K58	Acenaphthalene	Reported
I29	Acenaphthene	Reported
I01	Acetone	Detected
L62	Acetone	Reported
B19	Acetonitrile	Detected
A75	Acetonyl bromide	Reported
B20	Acetophenone	Detected
J48	2-Acetothiophene	Detected
B22	2-Acetylaminofluorene	Reported
A72	Acrolein	Reported
C94	Acrylamide	Reported
A73	Acrylonitrile	Reported
C06	Aldicarb	Reported
A47	Aldrin	Reported
C95	Allyl alcohol	Reported
L45	Allyl chloride	Reported
B23	4-Aminobiphenyl	Reported
B86	Aminoethylene	Reported
B24	5-Aminoethyl-3-isoxazolol	Reported
C09	1-Aminonapthalene	Reported
C10	2-Aminonapthalene	Reported
B25	Amitrole	Reported
C80	Ammonia	Detected
B26	Aniline	Reported
I31	Anthracene	Reported
K88	9,10-Anthracenedione	Detected
B27	Aramite	Reported
B28	Auramine	Reported
B29	Benz[c]acridine	Reported
I24	Benzaldehyde	Detected
B30	Benz[a]anthracene	Reported
A62	Benzene	Detected
C30	1,4-Benzenediamine	Reported
B33	Benzidine	Reported
B34	Benzo[b]fluoranthene	Reported
B35	Benzo[j]fluoranthene	Reported
J71	Benzo[k]fluoranthene	Reported
J78	Benzoic acid	Detected
B59	Benzo[rst]pentaphene	Reported
J83	Benzo[ghi]perylene	Reported
C49	Benzo[a]pyrene	Reported
B36	4-Benzoquinone	Reported
J43	Benzyl alcohol	Detected
B37	Benzyl chloride	Reported
B38	Bis(2-chloroethoxy)methane	Reported
B39	Bis(2-chloroethyl) ether	Reported
C51	Bis(chloroisopropyl) ether	Reported
A74	Bis(chloromethyl) ether	Reported
L50	Bischloromethylethyl ether	Reported
L86	Bisethanolethanedithiol	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
B40	Bis(2-ethylhexyl) phthalate	Detected
I42	Bromodichloromethane	Detected
A76	Bromomethane	Reported
B41	4-Bromophenylphenyl ether	Reported
I07	Butanal	Detected
I09	1-Butanol	Detected
M18	1-Butanol	Detected
A64	2-Butanone	Detected
I08	3-Buten-2-one	Detected
I25	Butoxydiglycol	Detected
I23	2-Butoxyethanol	Detected
M12	1-Butoxy-2-propanol	Detected
K40	Butoxyglycol	Detected
L26	Butoxytriethyleneglycol	Detected
I63	Butylated hydroxy toluene	Detected
B42	Butylbenzyl phthalate	Detected
J39	Butyl nitrate	Detected
L60	1-Butynol	Reported
L70	Caffeine	Detected
A77	Carbon disulfide	Detected
C63	Carbophenothion	Reported
C96	Chloral	Reported
C97	Chloroacetaldehyde	Reported
B44	Chloroalkyl ethers	Reported
B45	4-Chloroaniline	Reported
A78	Chlorobenzene	Detected
L64	Chlorobenzene	Reported
C62	Chlorobenzilate	Reported
B46	4-Chloro-3-cresol	Reported
K04	Trans-4-chlorocyclohexanol	Detected
A48	Chlorodane	Reported
L89	Chlorodifluoromethane	Detected
L46	Chloroethane	Detected
B13	Chloroethene	Reported
A79	2-Chloroethylvinyl ether	Reported
A81	Chloromethane	Detected
A82	Chloromethylmethyl ether	Reported
J74	2-Chloro-6-methylphenol	Detected
C50	Chloronaphazine	Reported
B48	2-Chloronapthalene	Detected
L32	Chlorophene	Detected
B49	2-Chlorophenol	Reported
C98	3-Chloropropionitrile	Reported
B50	Chrysene	Reported
B51	Cresol	Detected
A83	Crotonaldehyde	Reported
C99	Cyanogen	Reported
C88	Cyanogen bromide	Reported
C89	Cyanogen chloride	Reported
J76	Cyclododecane	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
I13	Cyclohexane	Detected
I14	Cyclohexane	Detected
L72	Cyclohexanone	Detected
H13	2,4-D	Reported
B65	2,4-DCP	Reported
A40	DDD	Reported
A41	DDE	Reported
A42	DDT	Reported
I86	Decane	Detected
K13	Diacetone alcohol	Detected
J91	Diallate	Reported
B53	Dibenz[a,h]acridine	Reported
B54	Dibenz[a,j]acridine	Reported
B55	Dibenz[a,h]anthracene	Reported
B56	7H-Dibenzo[c,g]carbazole	Reported
K56	Dibenzofuran	Reported
B57	Dibenzo[a,e]pyrene	Reported
B58	Dibenzo[a,h]pyrene	Reported
I43	Dibromochloromethane	Reported
A84	1,2-Dibromo-3-chloropropane	Reported
A85	1,2-Dibromoethane	Reported
A86	Dibromomethane	Reported
L21	Dibutylphosphate	Detected
B60	Di-n-butyl phthalate	Detected
B61	1,2-Dichlorobenzene	Reported
B62	1,3-Dichlorobenzene	Reported
B63	1,4-Dichlorobenzene	Reported
L63	1,4-Dichlorobenzene	Reported
B64	3,3′-Dichlorobenzidine	Reported
A87	1,4-Dichloro-2-butene	Reported
A88	Dichlorodifluoromethane	Detected
A89	1,1-Dichloroethane	Detected
A90	1,2-Dichloroethane	Reported
A91	1,2-Dichloroethene	Detected
A92	1,1-Dichloroethene	Reported
A93	Dichloromethane	Detected
B31	Dichloromethylbenzene	Reported
B66	2,6-Dichlorophenol	Reported
A94	1,2-Dichloropropane	Reported
A95	1,3-Dichloropropane	Reported
H01	Dichloropropanol	Reported
A46	Dieldrin	Reported
J84	Diethoxytetrahydrofuran	Detected
B15	Diethylarsine	Reported
A96	N,N-Diethylhydrazine	Reported
B67	Diethyl phthalate	Detected
B68	Dihydrosafrole	Reported
C65	Dimethoate	Reported
B69	3,3′-Dimethoxybenzidine	Reported
B70	4-Dimethylaminoazobenzene	Reported
B71	Dimethylbenz[a]anthracene	Reported

Liquid Effluent Study - Analytes

Code	Analyte	Finding
B72	3,3′-Dimethylbenzidine	Reported
K43	2,3-Dimethylbutane	Detected
J42	2,4-Dimethyl-1-decene	Detected
A97	N,N-Dimethylhydrazine	Reported
A98	N,N′-Dimethylhydrazine	Reported
B75	2,4-Dimethylphenol	Reported
B76	Dimethyl phthalate	Detected
K53	3,5-Dimethylpyridine	Detected
B77	Dinitrobenzene	Reported
B78	Dinitrocresol and salts	Reported
B52	Dinitro-2-cyclohexylphenol	Reported
B79	2,4-Dinitrophenol	Reported
B80	2,4-Dinitrotoluene	Reported
B81	2,6-Dinitrotoluene	Reported
B43	Dinoseb	Reported
J89	Dinoseb	Reported
B82	Di-n-octyl phthalate	Detected
A63	1,4-Dioxane	Reported
H02	1,4-Dioxane	Reported
C86	Dioxin	Reported
B83	Diphenylamine	Reported
B84	N,N′-Diphenylhydrazine	Reported
C64	Disulfoton	Reported
I95	Dodecane	Detected
J46	Dodecanoic acid	Detected
J85	1-Dodecene	Detected
A49	Endosulfan	Reported
A33	Endrin	Reported
B47	Epichlorohydrin	Reported
I67	Ethanol	Detected
L49	Ethenyl acetate	Reported
J68	Ethoxytriethylene glycol	Detected
I33	Ethylbenzene	Detected
H04	Ethyl cyanide	Reported
L48	Ethyl cyanide	Reported
L57	Ethylene glycol	Reported
H05	Ethylene oxide	Reported
I71	2-Ethyl-1-hexanol	Detected
H06	Ethylmethacrylate	Reported
B87	Ethylmethanesulfonate	Reported
I12	Ethylmethylcyclohexane	Detected
B88	Fluoranthene	Reported
I30	Fluorene	Reported
H07	Fluoroacetic acid	Reported
C71	Formaldehyde	Reported
H08	Glycidylaldehyde	Reported
H97	Halogenated hydrocarbons	Detected
J57	Heneicosane	Detected
A43	Heptachlor	Reported
A44	Heptachlor epoxide	Reported

Liquid Effluent Study - Analytes

Code	Analyte	Finding
J53	Heptadecane	Detected
B89	Hexachlorobenzene	Reported
B90	Hexachlorobutadiene	Reported
B91	Hexachlorocyclopentadiene	Reported
B92	Hexachloroethane	Reported
C54	Hexachlorophene	Reported
C52	Hexachloropropene	Reported
J52	Hexadecane	Detected
J47	Hexadecanoic acid	Detected
L31	Hexamethylcyclotrisiloxane	Detected
I22	Hexanoic acid	Detected
J69	2-Hexanone	Detected
C53	Hydrazine	Reported
H62	Hydrazine	Detected
A99	Hydrogen sulfide	Reported
B93	Indeno(1,2,3-cd)pyrene	Reported
B01	Iodomethane	Reported
L53	Isodrin	Reported
I06	Isophorone	Detected
B94	Isosafrole	Reported
A45	Kepone	Reported
C79	Kerosene	Reported
A38	Lindane	Reported
A36	Lindane, alpha	Reported
A37	Lindane, beta	Reported
A39	Lindane, delta	Reported
C92	Maleichydrazide	Reported
B95	Malononitrile	Reported
B96	Melphalan	Reported
B02	Methacrylonitrile	Reported
B97	Methapyrilene	Reported
B98	Methomyl	Reported
A34	Methoxychlor	Reported
J65	Methoxydiglycol	Detected
I18	N-Methoxymethanamine	Detected
J66	Methoxytriglycol	Detected
B99	2-Methylaziridine	Reported
C01	3-Methylcholanthrene	Reported
I03	Methylcyclopentane	Detected
C02	Methylenebischloroaniline	Reported
H10	Methylhydrazine	Reported
C03	2-Methyllactonitrile	Reported
B03	Methyl mercaptan	Reported
C04	Methylmethacrylate	Reported
C05	Methylmethanesulfonate	Reported
I75	2-Methylnaphthalene	Reported
I20	Methyl nitrate	Detected
C19	Methylnitrosourethane	Reported
L27	2-Methylnonane	Detected
I15	5-Methyl-4-nonene	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
C66	Methyl parathion	Reported
H09	2-Methylpropan-1-ol	Reported
J45	2-Methyl-5-propylnonane	Detected
C32	2-Methylpyridine	Reported
L58	N-Methylpyrrolidinone	Detected
C07	Methylthiouracil	Reported
H68	MIBK (Hexone)	Detected
J73	MIBK (Hexone)	Detected
L20	Monobutylphosphate	Reported
K96	Morpholine	Detected
C55	Naphthalene	Reported
C08	1,4-Naphthalenedione	Reported
C93	Nicotinic acid	Reported
C11	4-Nitroaniline	Reported
L54	2-Nitroaniline	Reported
L55	3-Nitroaniline	Reported
C12	Nitrobenzene	Reported
K26	Nitroethane	Detected
I05	Nitromethane	Detected
I64	2-Nitrophenol	Reported
C13	4-Nitrophenol	Reported
L56	4-Nitroquinoline-1-oxide	Reported
C14	N-Nitroso-n-butylamine	Reported
C15	N-Nitrosodiethanolamine	Reported
C16	N-Nitrosodiethylamine	Reported
C17	N-Nitrosodimethylamine	Detected
K52	N-Nitrosodiphenylamine	Detected
C18	N-Nitrosomethylethylamine	Reported
C20	N-Nitrosomethylvinylamine	Reported
C21	N-Nitrosomorpholine	Reported
C22	N-Nitrosonornicotine	Reported
C23	Nitrosopiperidine	Reported
B85	N-Nitroso-n-propylamine	Reported
C24	Nitrosopyrrolidine	Reported
C25	5-Nitro-2-toluidine	Reported
J44	Nonanoic acid	Detected
J86	Octacosane	Detected
J54	Octadecane	Detected
I17	1,7-Octadiene	Detected
I11	Octahydroindene	Detected
C90	Paraldehyde	Reported
C67	Parathion	Reported
C26	Pentachlorobenzene	Reported
B04	Pentachloroethane	Detected
C27	Pentachloronitrobenzene	Reported
C28	Pentachlorophenol	Detected
I78	Pentadecane	Detected
I60	Pentane	Detected
K07	2-Pentanone	Detected
C29	Phenacetin	Reported
I82	Phenanthrene	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
C57	Phenol	Detected
B74	2-Phenyl-tert-butylamine	Reported
C31	Phthalic acid esters	Reported
M15	Phthalic anhydride	Detected
C33	Pronamide	Reported
H11	1-Propanamine	Reported
I10	2-Propanol	Detected
L59	1-Propanol	Reported
H12	2-Propyn-1-ol	Reported
I32	Pyrene	Reported
A65	Pyridine	Detected
C34	Reserpine	Reported
C35	Resorcinol	Reported
C36	Safrol	Reported
C91	Strychnine	Reported
I34	Styrene	Reported
J49	Sulfur (S8)	Detected
H15	2,4,5-T	Reported
C37	1,2,4,5-Tetrachlorobenzene	Reported
C59	1,2,3,4-Tetrachlorobenzene	Reported
C60	1,2,3,5-Tetrachlorobenzene	Reported
B05	1,1,1,2-Tetrachloroethane	Detected
B06	1,1,2,2-Tetrachloroethane	Reported
A70	Tetrachloroethene	Detected
B07	Tetrachloroethene	Detected
A61	Tetrachloromethane	Detected
C39	2,3,4,6-Tetrachlorophenol	Reported
L74	1,2,3,3-Tetrachloropropene	Detected
J41	Tetradecane	Detected
C61	Tetraethylpyrophosphate	Reported
I28	Tetrahydrofuran	Detected
I80	Tetramethylheptadecane	Detected
B73	Thiofanox	Reported
L52	Thionazin	Reported
B32	Thiophenol	Reported
C40	Thiuram	Reported
A66	Toluene	Detected
C41	Toluenediamine	Reported
C42	2-Toluidine hydrochloride	Reported
A35	Toxaphene	Reported
H14	2,4,5-TP (Silvex)	Reported
B08	Tribromomethane	Reported
I21	Tributylphosphate	Detected
C43	1,2,4-Trichlorobenzene	Reported
C56	1,2,3-Trichlorobenzene	Reported
C58	1,3,5-Trichlorobenzene	Reported
A67	1,1,1-Trichloroethane	Detected
A68	1,1,2-Trichloroethane	Reported
A69	Trichloroethene	Detected
B10	Trichlorofluoromethane	Detected
A80	Trichloromethane	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
B09	Trichloromethanethiol	Reported
C44	2,4,5-Trichlorophenol	Reported
C45	2,4,6-Trichlorophenol	Reported
B11	Trichloropropane	Reported
B12	1,2,3-Trichloropropane	Reported
I77	Tridecane	Detected
C46	Triethylphosphorothioate	Reported
J67	Triglyme	Detected
I16	Trimethylheptatriene	Detected
J75	Trimethyl-1,3-pentanediol	Detected
C47	1,3,5-Trinitrobenzene	Reported
C48	TRIS	Reported
I91	Undecane	Detected
I99	Unknown	Detected
M02	Unknown acid	Detected
L19	Unknown aliphatic alcohol	Detected
I98	Unknown aliphatic HC	Detected
L73	Unknown aliphatic ketone	Detected
L69	Unknown alkyl benzene	Detected
L88	Unknown amide	Detected
L85	Unknown amine	Detected
I97	Unknown aromatic HC	Detected
L97	Unknown chlorinated HC	Detected
M05	Unknown compound	Detected
M09	Unknown ester	Detected
M17	Unknown ester	Detected
L05	Unknown fatty acid	Detected
L80	Unknown fatty acid ester	Detected
M11	Unknown glycol	Detected
M13	Unknown hydrocarbon	Detected
M03	Unknown oxygenated PAH	Detected
L68	Unknown PAH	Detected
L16	Unknown phthalate	Detected
M06	Unknown polycyclic HC	Detected
M14	Unknown sulfur compound	Detected
H03	Urethane	Reported
B21	Warfarin	Reported
A71	1,4-Xylene & 1,2-Xylene	Detected
B14	1,3-Xylene	Detected
H58	Alkalinity (Method B)	Detected
112	Alpha Activity (pCi/L)	Detected
212	Alpha Activity (pCi/L)	Detected
111	Beta Activity (pCi/L)	Detected
109	Coliform (coliforms/100mL)	Detected
P19	Coliform (coliforms/100mL)	Detected
088	Conductivity (uS)	Detected
191	Conductivity (uS)	Detected
H70	Ingitability (degrees F)	Detected
H59	Oil and Grease	Reported
199	pH (dimensionless)	Detected
207	pH (dimensionless)	Detected

Liquid Effluent Study - Analytes

Code	Analyte	Finding
H95	Reactivity Cyanide (mg/kg)	Reported
H94	Reactivity Sulfide (mg/kg)	Reported
063	Suspended Solids (mg/L)	Detected
H17	TDS (mg/L)	Detected
TTT	Temperature (degrees C)	Detected
C69	TOC (ug/g)	Detected
H16	Total Carbon (ug/g)	Detected
C68	TOX (ug (Cl)/L)	Detected
H42	TOX (ug (Cl)/L)	Detected
105	Am-241 (pCi/L)	Detected
131	Cm-242 (pCi/L)	Detected
213	Cm-244 (pCi/L)	Detected
010	Co-60 (pCi/L)	Detected
027	Cs-134 (pCi/L)	Detected
024	Cs-137 (pCi/L)	Detected
193	C-14 (pCi/L)	Detected
108	H-3 (pCi/L)	Detected
281	I-129 (pCi/L)	Detected
009	K-40 (pCi/L)	Reported
018	Mn-54 (pCi/L)	Detected
068	Na-22 (pCi/L)	Detected
148	Pb-210 (pCi/L)	Detected
102	Pu-238 (pCi/L)	Detected
100	Pu-239/240 (pCi/L)	Detected
181	Radium Total (pCi/L)	Detected
080	Ra-228 (pCi/L)	Detected
034	Ru-106 (pCi/L)	Detected
121	Sr-90 (pCi/L)	Detected
183	U-234 (pCi/L)	Detected
184	U-235 (pCi/L)	Detected
185	U-238 (pCi/L)	Detected

252 Analytes with only reported results.
247 Analytes with detected results.
All analytes in the Combined (NBS, EPA, NIH) Mass Spectral Library are evaluated.

CORRESPONDENCE DISTRIBUTION COVERSHEET

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Subject: LIQUID EFFLUENT STUDY

INTERNAL DISTRIBUTION

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		H. E. McGuire (Assignee)	B2-35	X
		K. Parnell	H4-18	X
		L. L. Powers	B2-35	X
		R. R. Thompson	R1-10	
		D. A. Turner	R1-10	X
		D. E. Simpson	B3-51	X
		J. L. Waite	B2-35	X
		S. A. Wiegman	B2-19	X
		R. D. Wojtasek	B2-15	X
		EDMC	H4-22	X
		TPAI&C File	B2-35	

MAY 09 1990