007/011 #2

0016

UNITED STATES FUEL COMPANY

HIAWATHA, UTAH 84527

May 06, 1991

Daron Haddock, Permit Supervisor
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Plan Revisions for NOV N91-39-1-4, 1 of 4

Dear Daron:

Enclosed are revised plans for abatement of NOV N91-39-1-4, 1 of 4. These plans are in response to the Division's comments dated April 18, 1991 and faxed to me on April 19, 1991. An extension of time for abatement has been granted to May 19,1991.

Sincerely,

Robert Eccli

Robert Eccli
Senior Mining Engineer

cc: Steve Demczak
Division of Oil, Gas and Mining
451 East 400 North
Price, Ut 84501

RECEIVED
MAY 0 8 1991
DIVISION OF
OIL GAS & MINING

UTAH KING COAL

Quotations subject to immediate acceptance. Coal will be sold and invoiced at price in effect on date of shipment, at mine weights f. o. b. cars at place of shipment, unless otherwise specifically agreed in writing. Agreements are contingent upon causes of delay beyond our control, including strikes, accidents, riots, acts of God, lockouts, fire, flood, inability to secure cars or transportation.

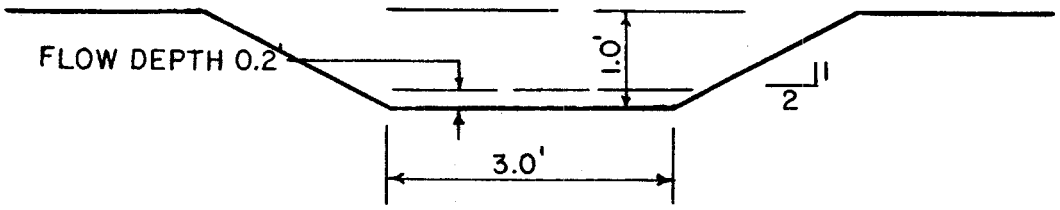
Regulation R614-301-742.223 requires sedimentation ponds to have a combination of principal and emergency spillways or a single spillway if the single spillway is an open channel of nonerodible construction.

Two of U.S. Fuel's sediment ponds (D003, at the Upper Coal Storage Yard and D008, at the Middle Fork Yard) utilize culverts as spillway structures. Since a single culvert type spillway is not acceptable, open channel emergency spillways are proposed to be constructed at both sites. The existing culverts will be left in place as primary spillways.

Table 4 of Appendix VII-1 of our Permit Application (copy attached) gives the design flows for the pond spillways for a 25-year, 6-hour precipitation event. These are 2.3 CFS in both cases.

Figures 1 and 2 show the proposed locations of the emergency spillways. These locations are chosen to allow for the shortest length of steep slopes. The spillway cross-sections will be identical for both ponds. The bottoms of the emergency spillways will be approximately one foot above the principal spillways. Sizing and riprap calculations are given on the following page.

Upon plan approval and project completion, revised sediment pond drawings showing as built configurations will be constructed for inclusion in our Permit Application. A registered professional engineer will inspect the project on a regular basis and certify the as built drawings.



SPILLWAY CROSS SECTION PONDS D003 & D008

SPILLWAY PARAMATERS FOR PONDS D003 AND D008

Design Capacity Q1 (CFS)	Channel Width W (Ft.)	Channel Slope S (Ft./Ft.)	Channel Side Slope h:1 (Ft.)	Flow Depth d (Ft.)	h X d (Ft.)	Wetted Perimeter p (Ft.)	Flow Area A (Sq.Ft.)	Hydraulic Radius R (Ft.)	Riprap Size d50(Ft.)	Manning's n	Velocity of Flow V (Ft/Sec)	Calculated Capacity Q2 (CFS)
2.30	3.00	0.05	2.00	0.20	0.40	3.89	0.68	0.17	0.20	0.030	3.41	2.32
2.30	3.00	0.50	2.00	0.13	0.26	3.58	0.42	0.12	1.32	0.041	6.08	2.58

Equations Used:

$$V = \frac{1.486}{n} R^{0.67} S^{0.5}$$

$$R = \frac{A}{p}$$

$$Q = VA$$

$$d_{50} = \left(118\ Q\ S^{2.167}\ \frac{R}{p}\right)^{0.4}$$

$$n = 0.0395\,(d_{50})^{0.167}$$

Where:

V = Flow Velocity (Ft./Sec.)

Q = Discharge Rate (Cu.Ft./Sec.)

A = Cross Sectional Area of Channel (Sq.Ft.)

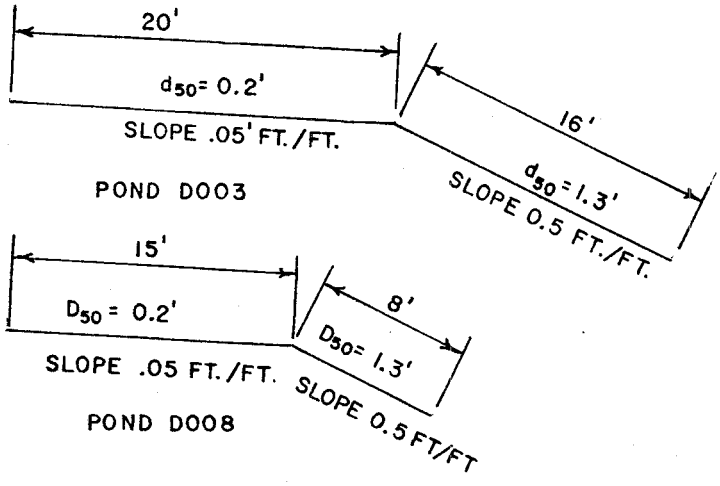
S = Channel Slope (Ft./Ft.)

R = Hydraulic Radius (Ft.)

p = Wetted Perimeter (Ft.)

d_{50} = Median Stone Diameter (Ft.)

n = Manning's Coefficient



SPILLWAY PROFILES

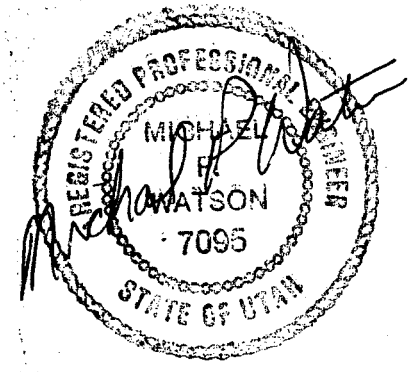


TABLE 4

Summary of Storage Requirements and Design Spillway Flows
For Sedimentary Ponds of U.S. Fuels at Hiawatha, Utah

Site	Areas		S	Storage Requirements			Design flow for spillway 25 year 6 hr Event CFS
	Total Acres	Disturbed Acres		Storm Water 10 year 24 hour Event. AF	Sediment AF	Combined AF	
1	2	3	4	5	6	7	8
Hiawatha Main Yard	70.0	30.0	2.73	3.82	3.00	6.82	11.2
Slurry Pond 3 & 4	8.3	8.3	1.11	0.91	0.83	1.74	3.6
Slurry Pond 5-South	6.8	6.8	1.11	0.74	0.68	1.42	3.0
Slurry Pond 5-North	12.1	12.1	1.11	1.32	1.21	2.53	4.9
Hiawatha Refuse Pile	4.4	4.4	1.11	0.48	0.44	0.92	2.0
Upper Coal Storage yard	14.0	6.0	2.73	0.76	0.60	1.36	2.3
Middlefork Yard	23.0	4.8	3.48	0.92	0.48	1.40	2.3
South Fork	91.0	7.6	3.95	2.99	0.76	3.75	7.3
Lower Mohrland	10.0	6.9	1.93	0.76	0.69	1.45	2.8
Upper Mohrland-Upper	5.4	1.4	3.30	0.23	0.14	0.37	0.7
Upper Mohrland-Lower	60.0	0.8	4.23	1.75	0.08	1.83	4.3
Upper Mohrland-Combined	65.0	22.0	4.15	1.96	0.22	2.18	4.8

Col 8 from Figure 1, 2 and 3 and from Tables 5 to 17.

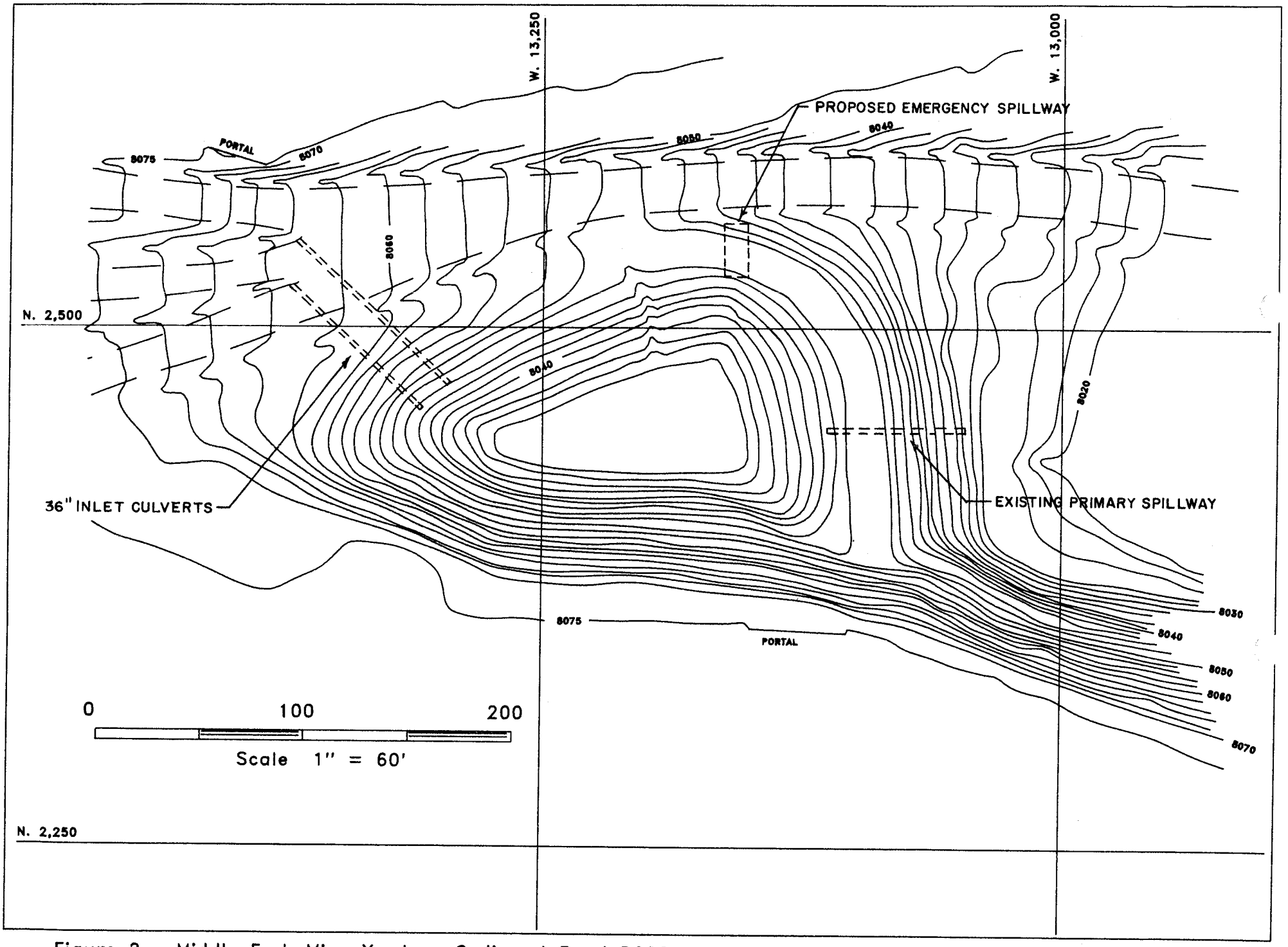


Figure 2 Middle Fork Mine Yard Sediment Pond D008

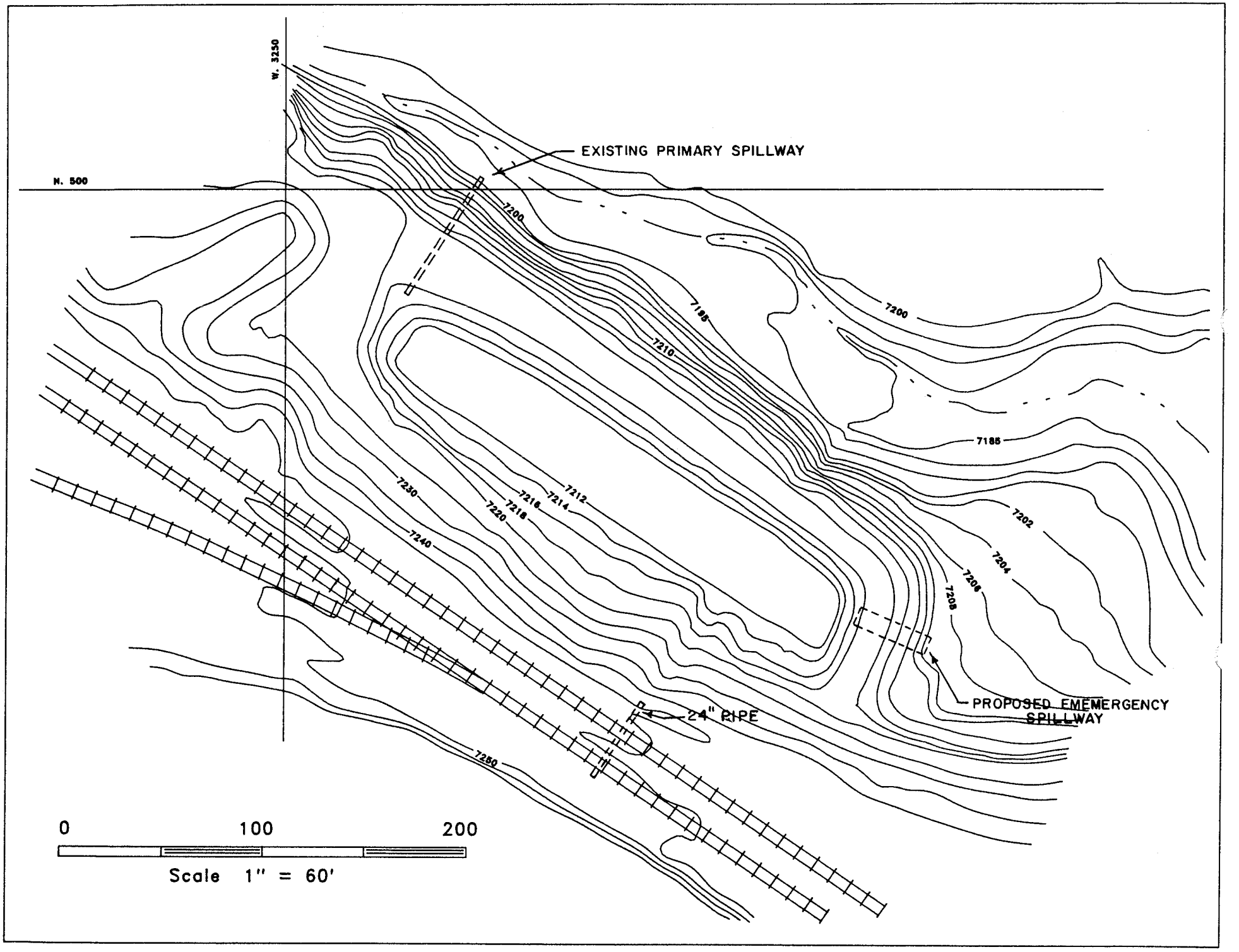


Figure 1 Upper Coal Storage Yard Sediment Pond D003