

SHARONSTEEL • Mining DivisionAN **NVE** COMPANY

SHARON STEEL CORPORATION

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November 25, 1981

*File
ACT/007/211
Wayne has copy.*State of Utah
Department of Natural Resources
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116Re: U. S. Fuel Company
King VI Overland Belt
Diversion Ditch Dam

Attention: Ms. Sandra Pruitt, Biologist

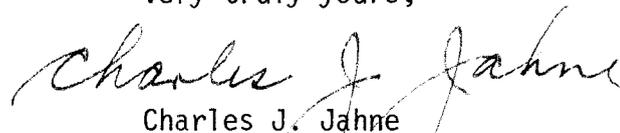
Dear Ms. Pruitt:

In our meeting of Wednesday, November 18, 1981, we discussed the need to determine the size of the subject dam. Although in its rough form, the present dam is about 4'-0" high and 8'-0" wide at its base. I have estimated the density of the dirt-rock combination fill at 100 lbs. per cubic foot. As it stands, the dam will withstand the force of the water estimated to flow against it in a 10 year - 24 hour event. However, the dam doesn't extend from side to side of the mouth of the natural run-off area. It will be completed when the 15" diameter irrigation pipe is installed. Present plans are for this 15" diameter pipe to be installed starting November 30, 1981.

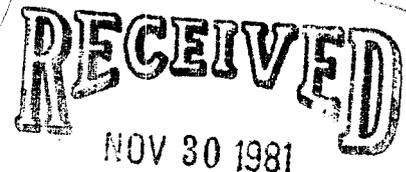
I visited the site on Monday, November 23, 1981 and the sedimentation pond was almost completely remodeled and finished. Seeding of the outslopes of the pond sides is scheduled to start during the week of November 30, 1981. Bob Eccli and Jean Semborski (at the mine) will handle the seeding work.

If you have any questions on this please call me.

Very truly yours,



Charles J. Jahne



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DIVISION OF
OIL, GAS & MINING

CALCULATION SHEET

Sharon Steel Corporation

ENGINEERING DEPT., SALT LAKE CITY, UTAH

COMPUTATION FOR

DETERMINATION OF DIVERSION DAM DAM SIZE

PLAN 11/25/81 SHEET NO. 1 OF 1
 JOB KING II Mine Plant
 COMPUTED BY J. JAHNE DATE 11-25-81
 REF. DWG. _____

$CN = 70$ $P(10 \text{ yr. 24 hr event}) = 2.25 \text{ inches}$ $L = 1500 \text{ FT.}$

$S = (1000/70) - 10 = 4.28$ $\delta = 74.16\%$

$Q = (2.25 - 0.2 \times 4.28)^2 \div (2.25 + 0.8 \times 4.28) = 0.342 \text{ inches.}$

WATERSHED AREA: 445,000 SQ. FT. = 0.016 SQ. MI.

RUN-OFF VOLUME = 445,000 x 0.342 = 154,190 CU. FT.

RUN-OFF VOLUME PER SECOND = 154,190 ÷ 24 x 60 x 60 = 0.147 CU. FT.

WEIGHT OF WATER FLOW PER SECOND = 0.147 x 62.5 = 9.2#/SEC.

ESTIMATED PERCENT OF WATERSHED

WEST OF NATURAL RUN-OFF = 45% = 0.007 SQ. MI.

NATURAL RUN-OFF = 25% = 0.004 SQ. MI.

EAST OF NATURAL RUN-OFF = 30% = 0.005 SQ. MI.

WATERSHED LAG:

$L = \left[\frac{(1500)^2 \times (4.28)^2}{11800 \sqrt{14.16}} \right] = 0.06 \text{ HRS.}$

$T_p = 1.17 \times 0.06 = 0.07 \text{ HRS} = 247 \text{ SEC.}$

AVERAGE VELOCITY OF WATER = 1500 ÷ 247 = 6 FT./SEC.

WEIGHT OF WATER FLOWING DOWNHILL

WEST OF NATURAL RUN-OFF = 0.45 x 9.2 = 4.1#/SEC.

NATURAL RUN-OFF = 0.25 x 9.2 = 2.3#/SEC.

EAST OF NATURAL RUN-OFF = 0.30 x 9.2 = 2.8#/SEC.

COMPLETE COMBINED FORCE OF WATER AT DAM:

$f = (W \div g) \div (T \div t)$

$f_{\text{WEST OF NAT. R.O.}} = (4.1 \div 32.2) \div (6 \div 247) = 5.24 \#$

$f_{\text{NAT. R.O.}} = (2.3 \div 32.2) \div (6 \div 247) = 2.9 \#$

$f_{\text{EAST OF NAT. R.O.}} = (2.8 \div 32.2) \div (6 \div 247) = 3.6 \#$

Total $f = 11.8 \# \div 12 \#$

DAM WIDTH = 20 FT. FORCE PER FT. OF DAM = 12 ÷ 20 = 0.6#

WEIGHT OF MATERIAL IN DAM = DIM. BASE 8"0" HEIGHT 3'0"

$W = 0.5 \times 8 \times 3 \times 100 = 1200 \# \text{ PER FOOT.}$

STABILITY RATIO = 1200 ÷ 0.6 = 2000 : 1

