B. A. WEISS

1911 1953

ANNUAL REPORT

. . . by the . . .

PRESIDENT OF THE BOARD OF DIRECTORS

IMPERIAL IRRIGATION DISTRICT

JANUARY 1, 1954

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DIRECTORS

Evan T. Hewes, President of the Board

Charles Morrow, Martin L. McFarland

Jack Bryant, E. F. Watton

ASSESSOR-COLLECTOR

C. J. Park

SECRETARY

Mahlon I. Mathis

TREASURER

Anna T. McManus

TECHNICAL STAFF

Executive Superintendent	Evan T. Hewes
Executive Engineer	B. A. Weiss
Consulting Engineer	M. J. Dowd
Legal Counsel	Harry W. Horton
Assistant Legal Counsel	R. L. Knox, Jr.
Assistant Legal Counsel	J. H. Carter
Business Manager	Vaness Jeffries
Superintendent of Right-of-Way Department	J. E. Welch
Master Mechanic	L. V. Hess
Chief Civil Engineer	A. J. Boles
Superintendent Water Distribution and Drainage Construction	W. E. Hartzog
Superintendent All-American Canal Department	W. K. Bowker, Jr.
Chief Electrical Engineer	J. F. Hesse
Superintendent Power Sales and Service	P. G. Post
Superintendent Coachella Area	R. M. Rinderhagen
Planning Engineer—Electrical	C. H. Youngstrom

THE DISTRICT . . .

Organization and Functions:

Imperial Irrigation District is a public corporation organized in 1911, under the California Irrigation District Act, as supplemented and from time to time amended (now codified as Division 11 of the Water Code of California), and since that date it has been continuously in operation. The governing body is a Board of five Directors, each elected from a separate geographical division of the District for a term of four years by the qualified electors residing therein. The other elective positions are the Treasurer and Assessor-Collector.

The District performs three chief functions: (a) diversion and delivery of Colorado River water for irrigation and domestic purposes; (b) operation and maintenance of drainage canals and facilities; and (c) generation and distribution of electricity.

Location and Area:

The District is located entirely in Imperial County, California, approximately 100 miles east of San Diego, and includes all of the cultivated lands in Imperial Valley. In the irrigated area of the District there are 622,190 acres, of which about 450,000 acres were in crops and 508,000 on our accounts in 1953; a total of 531,000 acres are considered as irrigable. In 1942, however, the District annexed (but did not assess) approximately a quarter of a million acres of undeveloped public lands in the East, West, and Pilot Knob Mesas. These lands are to be irrigated in the future from the All-American Canal.

The District is the largest irrigation district in the United States, with a present gross area of 899,372 acres. Under full development, it is estimated that about 770,000 acres within the District will be irrigated.

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FOREWORD

At the biannual reorganization meeting of the Board of Directors on March 10, 1953, Mr. Frank Watton, Holtville city councilman and farmer, was officially seated as Director of Division No. 5, which includes the Holtville area. Mr. Watton replaced Mr. Ollie Stewart who had served the District as Director from Division No. 5 for the past 8 years. In April, James H. Carter, attorney in the law offices of Horton and Knox, became a member of the District's legal staff. All other directors, officers, and department heads remained unchanged.

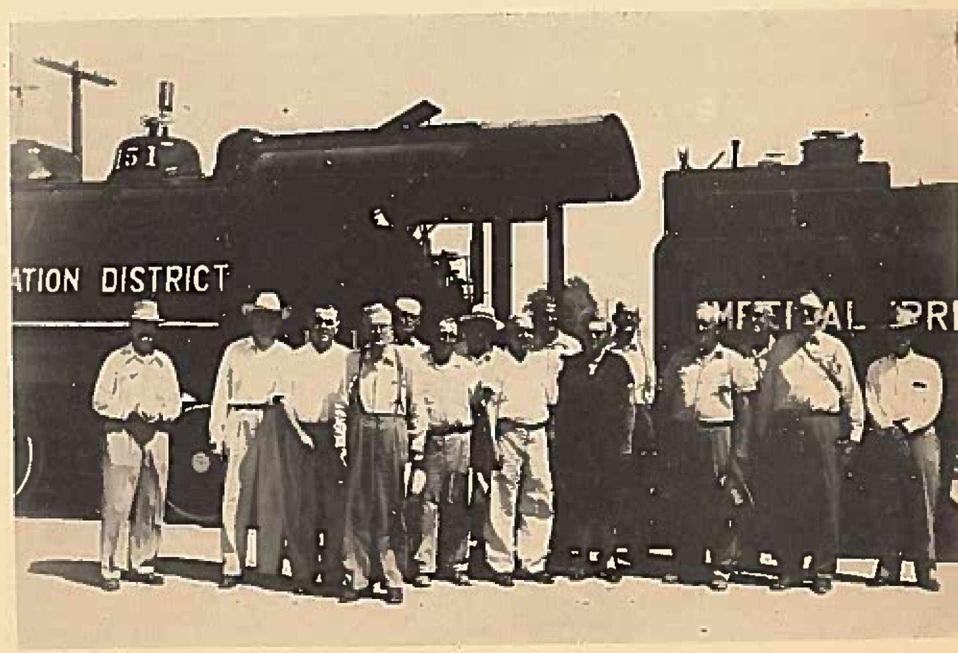
Continued confidence in the economic future of the Imperial Valley and in the favorable financial status of Imperial Irrigation District was again emphasized on December 8, 1953, when Blyth and Company, Inc., and 39 associated nationally known bonding underwriting firms bid in $10,000,000 of District electric power revenue bonds of the Eleventh Issue. The purchasing syndicate, which was the lowest of two bidders, bid the principal amount plus a premium of $791.00, plus accrued interest from date of the bonds, January 1, 1954, to date of sale. Interest rate submitted by the successful bidder was an average of 3.5308 per cent.

Ground was broken at Imperial Headquarters site September 8, 1953, for the first unit of a modern new Imperial Irrigation District administration building. The building will be T-shaped and will be built of reinforced pumice block, with a reinforced concrete foundation and reinforced concrete floor which will be covered with asphalt tile. Two additional smaller wings are planned for construction within the near future.

In May 1953, a new office building was completed at 567 Pine Street, Holtville, California. The new building is built of steel reinforced pumice blocks, is 37½ feet wide and 72 feet deep and will house offices for personnel of the Holtville Division of Imperial Irrigation District.

Early District history was reviewed on September 17, 1953, when a District-owned 35-year-old locomotive used in levee protection work in Mexico, was delivered to the Pioneers Museum at the California Mid-Winter Fair Grounds in Imperial, to be placed on exhibit there as an historical symbol of the successful fight waged to control the waters of the lower Colorado River. The locomotive has been leased to the Pioneers Association.

Evan T. Hewes, President, Board of Directors, Imperial Irrigation District, addressing Imperial Valley Pioneers Association at Southern Pacific Depot, Imperial, California, prior to moving of historic locomotive to Imperial County Fair Grounds, Imperial, California.



Members of Imperial Valley Pioneers Association and Imperial Irrigation District Directors with historic locomotive leased to Pioneers Association by Imperial Irrigation District. Locomotive was used in quarry at Andrade for switching and making up trains of rock to be used on levee system in Mexico.

FINANCIAL

A. Bonded Indebtedness:

Changes in the District's long-term indebtedness for the calendar year ended December 31, 1953, are reflected in the following tabulation prepared by Treasurer, Anna T. McManus:

	Total Indebtedness Dec. 31, 1952	Bonds Retired	Total Indebtedness Dec. 31, 1953
General Obligation Bonds	$12,212,000	$ 472,000	$11,740,000
Power Revenue	25,085,000	667,000	24,418,000
Total	$37,297,000	$1,139,000	$36,158,000

Note: $24,500.00 First Refunding Bonds, and $2,446.51 refinanced warrants not included above. These bonds and warrants were called for retirement July 1, 1943, and funds set aside for their retirement.

B. 1953 Operations at a Glance:

1. **Irrigation Division** (Not including Irrigation Division in Mexico)

The District's Irrigation Division Earned—		$5,447,082
From Assessments, Penalties and Costs	$1,362,973	
From Sales and Rentals of Land Held Under Assessment Deeds	18,576	
From Interest on Redemption of Delinquent Assessments	3,041	
From Water Deliveries, Gate and Pipe Service Charges	3,765,253	
From Interest on Reserves	50,636	
From Rental of Buildings and Equipment	55,670	
From Sales of Rock, Andrade	5,374	
From Other Sources	185,559	
This is How It Was Used or Set Aside—		
For Operating Expenses	$2,904,019	
For Depreciation of Buildings and Equipment	41,912	
For Losses on Sales and Retirements of Assets	154,296	
For Interest on Bonds	402,508	
For Amortization of Debt Discount	7,048	
For Taxes	408	
Which Accounts for Operating Expenses and Income Deductions of	$3,510,191	
Which Leaves a Net Income of	$1,936,891	
Which Was Used as Follows:		
For Bonds Retired	$ 522,000	
For Additions to Canal System	898,238	
For Additions to Drainage System	448,061	
For Additions to Buildings and Land	68,592	
	$1,936,891	
Which Accounts for		$5,447,082

2. **Power Division**

The District's Power Division Earned—		$6,010,855
From Power Sales	$5,754,235	
From Interest on Reserves	151,792	
From Rental of Electric Property	7,536	
From Other Sources	97,292	

This is How It Was Used or Set Aside—

For Operating Expenses	$2,738,178		
For Depreciation of Plant	857,711		
For Interest on Bonds	573,255		
For Amortization of Plant Costs	35,967		
For Taxes	13,269		
Which Accounts for Operation Expenses and Income Deductions of	$4,218,380		
Which Leaves a Net Income of	$1,792,475		
Which was Used as Follows:			
For Bonds Retired	$ 667,000		
For Payment into Bond Reserves	74,561		
For Additions to Plant	893,299		
For Deposit with U. S. on All-American Canal Costs	103,929		
For Additions to Materials and Supplies	53,686		
	$1,792,475		
Which Accounts for			$6,010,855

C. Consolidated Statement of Assets and Liabilities and Net Worth, December 31, 1953 (Inter-Divisional Accounts Eliminated):

ASSETS

Funds for:

Operation and Maintenance		$ 6,809,318
Payment of Bond Principal and Interest		2,630,871
New Construction		1,384,704
Other Special Funds		1,653,489
Total Funds, including $6,694,800 Invested in U. S. Bonds and Treasury Certificates		$12,478,382
Accounts Receivable		1,490,767
Materials and Supplies		1,478,623
Delinquent Assessments and Tax Deed Land		77,619
Deferred Charges		1,897,222
Properties (Irrigation and Power Systems)		53,236,997
Total Assets		$70,659,610

LESS LIABILITIES

Current Liabilities	$ 1,339,250	
Outstanding Bonds	35,943,500	
Unpaid Warrants	2,447	
Deferred Contract Installments	30,000	
Reserves	144,601	
Deferred Credits	1,879,092	39,338,890
NET WORTH—From Operations	$28,504,443	
Contributed	2,816,277	$31,320,720

The Net Worth is 44% of Total Assets.

D. Comparative Income and Expense Statement:

1. Irrigation Division (Accounts of Subsidiary Company in Mexico Not Included):

		1953	Over 1952	Under 1953
1.	Operating Revenue	$ 5,358,675	$ 607,356	
2.	Operating Deductions	3,100,635	374,019	
3.	Operating Income	$ 2,258,040	233,337	
4.	Other Income	88,407	39,387	
5.	Gross Income	$ 2,346,447	272,724	
6.	Income Deductions	409,556		$ 16,759
7.	Net Income, or Current Earned Surplus	$ 1,936,891	289,483	
1a.	Current Assets	$ 3,933,988	135,489	
2a.	Investment and Fund Accounts	1,808,865		217,278
3a.	Fixed Assets	21,286,830	1,426,778	
4a.	Other Assets and Deferred Charges	803,531	23,019	
5a.	Investment in Subsidiary Mexican Company	7,945,399		
	Total Assets	$35,778,613	1,368,008	
6a.	Current Liabilities	$ 567,312		214,162
7a.	Long-Term Liabilities	11,665,000		373,000
8a.	Deferred Credits and Reserves	1,683,185	31,352	
9a.	Surplus	21,863,116	1,923,818	
	Total Liabilities and Surplus	$35,778,613	1,368,008	

2. Power Division

		1953	Over 1952	Under 1953
1.	Operating Revenue	$ 5,767,841	449,238	
2.	Operating Deductions	3,645,125	377,115	
3.	Operating Income	$ 2,122,716	72,123	
4.	Other Income	243,014	78,009	
5.	Gross Income	$ 2,365,730	150,132	
6.	Income Deductions	573,255	74,297	
7.	Net Income, or Current Earned Surplus	$ 1,792,475	75,835	
1a.	Current Assets	$ 6,110,296	923,949	
2a.	Investment and Fund Accounts	4,105,764		1,839,367
3a.	Fixed Assets	29,589,788	2,186,367	
4a.	Other Assets and Deferred Charges	968,816	41,329	
	Total Assets	$40,774,664	1,312,278	
5a.	Current Liabilities	$ 1,410,498	26,618	
6a.	Long-Term Liabilities	23,903,000		505,000
7a.	Deferred Credits and Reserves	339,686		3,065
8a.	Surplus	15,121,480	1,793,725	
	Total Liabilities and Surplus	$40,774,664	1,312,278	

E. Fund Balances—Dec. 31, 1953, and Dec. 31, 1952:

	December 31 1953	December 31 1952	Increase or Decrease*
IRRIGATION OPERATING FUNDS:			
Assessments Collected for Following Year	$ 308,742	$ 285,846	$ 22,896
Other Cash Balances	1,931,893	1,891,543	40,350
Total Fund Balances	$ 2,240,635	$ 2,177,389	$ 63,246
COMPANIA OPERATING FUNDS: (1)			
Compania General Fund—Fund Balance	$ 28,471	$ 19,474	$ 8,997
IRRIGATION BOND AND WARRANT FUNDS:			
Assessments Collected for Following Year	$ 520,871	$ 527,370	$ 6,499*
Other Cash Balances	515,154	687,658	172,504*
Total Cash Balances	$ 1,036,025	$ 1,215,028	$ 179,003*
Less Unpaid Matured Principal and Interest	(55,175)	(123,386)	(*68,211)
Less Int. Maturing next January 1	(199,141)	(207,461)	(*8,320)
Less Bond Call for Redemption Next Jan. 1	(100,000)	(214,000)	(*114,000)
Total Fund Balances	$ 681,709	$ 670,181	$ 11,528
DRAINAGE FUND:			
Assessments Collected for Following Year	$ 120,362	$ 121,837	$ 1,475*
Other Cash Balances	69,064	(18,163)	87,227
Total Fund Balances	$ 189,426	$ 103,674	$ 85,752
MISCELLANEOUS IRRIGATION FUNDS:			
Total Fund Balances	$ 583,414	$ 707,441	$ 124,027*
POWER OPERATING REVENUE FUNDS:			
Fund Balances	$ 4,779,212	$ 3,763,369	$ 1,015,843
POWER BOND FUNDS:			
Cash Balances	$ 1,594,846	$ 1,718,593	$ 123,747*
Less Unpaid Matured Principal and Interest	(19,520)	(8,919)	(10,601)
Less Int. Maturing next January 1	(346,448)	(356,667)	(*10,219)
Less Bonds Maturing next January 1	(225,000)	(417,000)	(*192,000)
Fund Balances	$ 1,003,878	$ 936,007	$ 67,871
POWER CONSTRUCTION FUNDS:			
Fund Balances	$ 1,040,340	$ 3,118,171	$ 2,077,831*
MISCELLANEOUS POWER FUNDS:			
Fund Balances	$ 1,225,013	$ 1,101,321	$ 123,692
ALL FUNDS:			
Assessments Collected for Following Year	$ 949,975	$ 935,053	$ 14,922
Other Cash Funds	11,767,407	12,989,407	1,222,000*
Total Cash Balances	$12,717,382	$13,924,460	$ 1,207,078*
Less Bond Principal and Int. Matured or Due January 1	(945,284)	(1,327,433)	(*382,149)
TOTAL FUND BALANCES	$11,772,098	$12,597,027	$ 824,929*

( ) Deduction
* Decrease
(1) Funds of Subsidiary Company in Lower California, Mexico

F. Consolidated Revenue and Expense Statement—January 1 to December 31, Year 1953—Imperial Irrigation District and Compañia de Terrenos y Aguas de la Baja California, S.A.

REVENUE OPERATING REVENUES:	Consolidated	Imperial Irrig. District Power Div.	Irrig. U.S.	Compañia de T. y A. Irrig. Mex.
Realized Revenue from:				
Current Year Assessments	$ 1,327,251		$ 1,327,251	
Penalties and Costs	3,533		3,533	
Redemption of Delinquent Assessments	32,189		32,189	
Interest Collected on Redemptions	3,041		3,041	
Total Collected by Assessor-Collector	$ 1,366,014		$ 1,366,014	
Sales of Land Held under Assessment Deeds	12,263		12,263	
Equivalent of Current Assess. on Tax Deed Land	4,398		4,398	
Rental of Land Held under Assessment Deeds	1,150		1,150	
Interest on Land Sales Contracts	765		765	
Total Revenues Derived from Assessments	$ 1,384,590		$ 1,384,590	
Water Sales	3,827,852		3,666,677	$ 161,175
Gate Service Charges	63,267		63,267	
Pipe Service Charges	35,309		35,309	
Rental of Buildings	46,560	$ 7,536	39,024	
Rental of Operative Land	19,547		19,547	
Rental of Equipment	16,646		16,646	
Contributions for Oper. & Maint. of All-American Canal	125,889		125,889	
Sales of Rock from Andrade Quarry	5,374		5,374	
POWER SALES				
Residential or Domestic Sales		$ 2,020,664		
Rural Sales—Agricultural Power		495,365		
Commercial and Industrial Sales		2,419,754		
Public Street and Highway Lighting		29,522		
Other Sales to Public Authorities		61,926		
Sales to Other Electric Utilities		669,599		
Interdepartmental Sales		57,405		
Total Power Sales	5,754,235	$ 5,754,235		
Miscellaneous Revenue	8,541	6,070	2,352	119
TOTAL OPERATING REVENUES	$11,287,810	$ 5,767,841	$ 5,358,675	$ 161,294

	Consolidated	Imperial Irrig. District Power Div.	Imperial Irrig. District Irrig. U.S.	Compañia de T. y A. Irrig. Mex.
Total Operating Revenue Brought Forward	$11,287,810	$ 5,767,841	$ 5,358,675	$ 161,294
OPERATING REVENUE DEDUCTIONS:				
Operating Expenses:				
Oper. & Maint. of Irrig. System	$ 2,279,778		$ 2,153,324	$ 126,454
Oper. & Maint. of A-A Canal	684,151		684,151	
Oper. & Maint. of Imperial & laguna Dams	35,482		35,482	
Oper. & Maint. of Power System:				
Production Expenses		$ 776,188		
Power Purchased		675,796		
Transmission Expenses		119,657		
Distribution Expenses		488,976		
Accounting & Collect. Expenses		223,958		
Sales Promotion Expenses		64,548		
Administrative & Gen. Expenses		385,455		
Total Power Oper. and Maint.	2,734,578	$ 2,734,578		
Uncollectible Accounts	13,021	3,600	9,421	
Miscellaneous Expenses	23,358		21,641	1,717
Total Operating Expenses	$ 5,770,368	$ 2,738,178	$ 2,904,019	$ 128,171
Depreciation of:				
Equipment and Facilities	20,081		19,134	947
Buildings	22,778		22,778	
Power System	857,711	857,711		
Amort. of Canal System and Defense Works, Mexico	145,556			145,556
Amort. of Plant Acquisition Adjust.	35,967	35,967		
Losses on Sales & Retirements of Assets	154,296		154,296	
Taxes	15,133	13,269	408	1,456
Total Operating Revenue Deductions	$ 7,021,890	$ 3,645,125	$ 3,100,635	$ 276,130
Net Operating Revenue	$ 4,265,920	$ 2,122,716	$ 2,258,040	$ 114,836*
OTHER INCOME:				
Interest on U. S. Bonds and Treasury Notes	$ 154,791	$ 123,284	$ 31,507	
Int. on Bank Deposits & Misc. Int.	57,141	38,012	19,129	
Contributions in Aid of Construction	119,489	81,718	37,771	
Total Other Income	$ 331,421	$ 243,014	$ 88,407	
GROSS INCOME	$ 4,597,341	$ 2,365,730	$ 2,346,447	$ 114,836*
INCOME DEDUCTIONS:				
Interest on District Bonds	$ 975,763	$ 573,255	$ 402,508	
Amortization of Debt Discount	7,048		7,048	
Total Income Deductions	$ 982,811	$ 573,255	$ 409,556	
NET INCOME—EARNED SURPLUS, CURRENT YEAR	$ 3,614,530	$ 1,792,475	$ 1,936,891	$ 114,836*

*Deficit

G. 1952-53 Assessment:

The Board of Directors of Imperial Irrigation District on August 19, 1952, adopted an estimated budget of $4,925,100 for the calendar year 1953, and fixed the annual assessment levy for the 1952-53 assessment year at $3.00 per $100 of assessed valuation. The 1952-53 assessment levy is the same as the 1951-52, the 1950-51, and the 1949-50 levies. The aggregate assessed value of the land within the District, as equalized, is the sum of $45,203,102 as appears in the assessment rolls for the year 1952. The deduction from said aggregate assessed value of land in the District of 15 per cent for anticipated delinquencies, as provided by Section 25801 of the California Water Code, leaves a net equalized assessed valuation of said lands of $38,422,637.

The assessed valuation of lands within the District is approximately $1,000,000 more this year than in 1951 which represents lands being returned to the assessment rolls and some increased valuation for lands reclaimed. There is no general increase in assessed valuation.

Classification of the total amount to be raised by assessment for the 1952-53 assessment year is as follows:

Redemption Fund: 16.92 mills on the dollar to raise $650,000 to pay interest on bonds and to provide for their retirement.

Drainage Fund: 3.91 mills on the dollar to raise $150,000 for necessary improvements to and extensions of the drainage system of the District.

Operations and Maintenance: 9.17 mills on the dollar to raise $352,-335,57. This amount, together with other revenues of the District, including revenues received from water tolls, will provide funds to pay and meet other expenses of the District.

H. Assessor-Collector's Office:

The highest percentage of annual assessment collections paid, and the lowest percentage of unpaid assessment collections recorded, since Imperial Irrigation District was organized in 1911, was reported by the Assessor-Collector for the 1952-53 assessment year.

At the close of business on June 29, 1953, the delinquent date for the 1952-53 assessment year, a total of $1,316,532.09 or 96.95 per cent of the total assessment had been paid. This left uncollected as of that date only $41,440.95 or 3.05 per cent, representing the delinquent total—a reduction of .45 per cent under the previous low of 3.50 per cent established for the 1951-52 assessment year, when collections totaled 96.50 per cent.

I. Treasurer's Office:

In addition to the general office work of the Treasurer's Office the following business was handled during the year 1953:

75,646 bonds and coupons were paid, for which 997 checks were issued and involving an expenditure of......	$ 2,328,802.82
Cashier, Payroll, Compania Payroll and Expense checks amounting to 42,363 checks and involving an expenditure of	10,917,869.23
Total Expenditures..................	$13,246,672.05

INVESTMENTS

Total Securities—December 31, 1952	$ 6,799,300.00
Securities Purchased—1953	434,500.00
Total Securities	$ 7,233,800.00
Less Securities Cashed—1953	300,000.00
Total Securities—December 31, 1953	$ 6,933,800.00

INTEREST EARNED

Interest earned on U.S. Securities—Year 1953	$ 154,791.00
Interest earned on Bank Deposits and Miscellaneous Interest	57,141.00
Total Interest Earned—Year 1953	$ 211,932.00

INCINERATION CERTIFICATES

Cremated Securities: June 9, 1953
Covering Period: January 1, 1952 - December 31, 1952
Securities Destroyed: 812 Bonds and 110,757 Coupons

J. Auditor's Report—1953:

The audit report for the year 1953 was filed with the District's Board of Directors on June 15, 1954.

Consolidated gross revenues for the District's three divisions, according to the Auditor's report, amounted to $11,504,468.10. This is an increase of $1,115,958.48 in gross revenue over 1952. Gross revenue from the Irrigation Division was $5,403,125.38; from the Power Division, $5,940,168.02 and from the Compania de Terrenos y Aguas, $161,174.70.

Consolidated expenses for the year amounted to $8,004,804.10 and was distributed as follows: Irrigation Division, $3,498,081.27; Power Division, $4,230,876.39; and Compania de Terrenos y Aguas, $275,846.44.

Net revenue for the year was $3,499,664.00 which is an increase of $315,114.67 over 1952, and includes $1,905,044.11 from the Irrigation Division; $1,709,291.63 from the Power Division; and a net loss of $114,-671.74 (represents depreciation and not cash) from the Compania de Terrenos y Aguas.

Revenues from the Irrigation Division of the District were as follows: Assessment Revenues (current), $1,330,784.20; Assessment Revenues (delinquent), $47,493.64; Water Sales, $3,765,253.12; Rentals of Property and Equipment,, $69,454.27; Interests, Discounts, and Miscellaneous Sales, $190,140.15 for a grand total of $5,403,125.38.

Operation and Maintenance Costs of the Irrigation Division were: Canal System, $1,597,023.00; Drainage Costs, $452,932.00; Sundry Property Costs, $103,369.00; All-American Canal, $719,633.00, for a grand total of $2,872,957.00.

Administrative and Overhead Expenses for 1953 were: Depreciation and Amortization of Facilities, $41,912.11; Provision for Doubtful Accounts, $4,720.84; Miscellaneous Expenses, Retirements, and Losses, $168,934.67, for a total of $215,567.62.

Financial Costs were in two classifications: Interest on Obligations, $402,508.25; Amortization of Bond Discounts, $7,048.40.

The total revenue from the Power Division of the District was $5,940,-168.02 and was classified as follows: Power Sales, $5,754,234.42; Rental of Property and Equipment, $7,536.39; Interest, Discounts, and Miscellaneous Sales, $178,397.21.

Operation and Maintenance Expenses of the Power Division were $1,985,632.00 and were classified as follows: Power Generation and Purchases, $1,379,978.00; Power Transmission and Distribution, $605,654.00.

Administrative and Overhead Expenses in the Power Division are given in four classifications: Executive and Administrative Salaries and Expenses, $673,961.00; Depreciation and Amortization of Facilities, $894,-017.72; Provision for Doubtful Accounts, $3,600.00; Miscellaneous Expenses, Retirements and Losses, $100,411.16, for a total of $1,671,989.88.

Financial Costs for the Power Division consisted of Interest on Obligations, $573,254.51.

Assets and Liabilities of the District at the close of the year 1953, as shown in the audit report, are set forth in the following tabulation, which also gives, for comparison, the 1952 totals:

		Irrigation	Power	Compania
Assets	—1953	$35,779,993	$40,790,701	$2,586,431
	—1952	34,422,203	39,461,701	2,719,306
Liabilities	—1953	13,926,224	25,745,117	8,250,143
	—1952	14,493,522	26,208,590	8,268,346
Surplus	—1953	21,853,769	15,045,583	5,663,712*
	—1952	19,928,681	13,253,111	5,549,040*

*Deficit

New office building, 567 Pine Street, Holtville, California. Built of steel reinforced Pumice blocks, it is 37½ feet wide and 72 feet deep and cost approximately $32,000

Construction of new administration building at Imperial operating headquarters. Constructed of reinforced concrete, building will cost approximately $125,000. Two additional wings will be constructed within the near future.

ALL-AMERICAN CANAL

A. Operation and Maintenance:

1. GENERAL COMMENTS

Total expenditures for operation and maintenance of the headworks and desilting basins of the All-American Canal, the main All-American Canal from Imperial Dam to and including the West Side Main Check, and the Coachella Canal from Drop No. 1 to and including 6-A Check, amounted to $675,538 for the year 1953. Inasmuch as the year 1953 was the first full year during which Imperial Irrigation District operated and maintained all the works referred to herein a comparison of costs with previous years' costs cannot be made.

During the year the All-American Canal Department operated and maintained 23.45 miles of drains and 131.19 miles of main canal.

There are 14.5 miles of drains that parallel the All-American Canal in the area between Imperial Dam and Pilot Knob. These drains are at present being maintained by the District under an agreement with the Bureau of Reclamation. Heavy brush, which infested these drains, was burned early in the year and an application of chemicals was made to the new growth in the fall. Some work with a dragline was required to keep these drains operating on a free-flow basis. The flow of water in these drains is metered weekly and all data recorded and plotted.

Maintenance operations consisted of a variety of work, including mechanical maintenance of equipment, electrical maintenance, sandblasting and painting, road maintenance, sand hill control, weed and brush control, and structure maintenance.

A program for sluicing of the forebay at Imperial Dam was established in order to keep the forebay, the California Sluiceway channel, and the river channel from Imperial Dam to Laguna Dam in good operating condition. This program called for sluicing on a weekly basis; however, it was necessary to deviate slightly from this program during the summer months when the river was being operated on a basis of scheduled irrigation demands.

Hand controls, for raising and lowering gates, were installed at the East Highline Check, Highline Turnout, Allison Check, Central Main Check, Central Main Turnout, New River Siphon, Wistaria Check, and West Side Main Turnout. Installation of these controls makes it possible to operate the gates at all of these locations in case of an electrical failure.

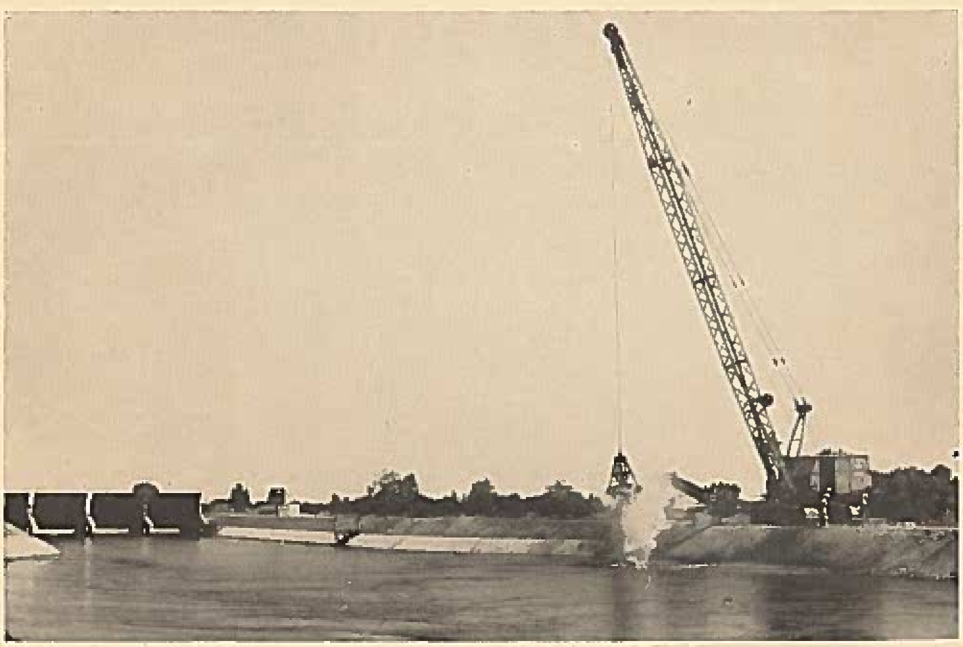
2. HEADWORKS AND DESILTING BASINS

Three basin operators and helpers and one relief basin operator and helper are required to keep the desilting basins in operation 24 hours a day. One trash rake operator and a helper operate the trash rake on an 8-hour day basis, six days a week, with the relief basin operator and helper working on the seventh day.

A new 7½-horsepower motor was installed on the mobile gantry crane for pulling trash out of the water. That part of the rake that is under water is being protected by the cathodic installation for the roller intake gates. A railroad dinky engine and two cars for hauling the trash away complete the trash rake and disposal system.

The hoisting systems of the four steel roller gates which release water from the forebay to the All-American Canal were serviced during the year and a new lubricant applied to the large gear wheels to reduce excess wear.

Use of boat on All-American Canal for weed and brush control. In this picture the south bank of the All-American Canal above Drop 1 is being sprayed with a chemical mixture to control weed and brush growth along water line.



Bucyrus 38-B dragline in use placing rock in hole in bank of All-American Canal below Alamo River Crossing to prevent further bank erosion.

Extensive maintenance was required in the desilting basins during the year. New valves were installed at the base of each of the pedestals in Basin No. 1. The pedestals on all of the Dorr clarifiers were cleaned and painted. Damage from excessive humidity to sludge lines, electrical lines, and water lines in the galleries leading to the Dorr clarifiers has been reduced to a minimum through the installation of ventilating systems in the galleries. New hatchway doors were installed at the entrance of each gallery. Some of the sludge lines have been sandblasted and painted with a protective coating to prevent further damage.

Additional anodes were placed in the cathodic protection system and a rheostat installed so that the amount of current entering the system can be further controlled.

3. BANK PROTECTION

Approximately 5,500 cubic yards of rock were placed at strategic locations to prevent further erosion. Rock riprap was placed on both sides of the sludge gallery outlets in the California Sluiceway and on both sides of the Siphon Drop Turnout. Several small sections between Drops No. 3 and No. 4 were lined with rock to prevent erosion of the banks being caused by sandbars forming in the canal.

Brush riprap was used for bank erosion control on both banks of the canal between Drop No. 2 and the East Highline Turnout.

Reconstruction of the old drain and wash which exists on the south side of the All-American Canal west from the Alamo River crossing was begun the latter part of the year. This location is above the San Andreas earthquake fault line and has been the scene of four breaks in the All-American Canal since it has been in operation. Twenty-five thousand cubic yards of material were hauled in to complete this work.

4. MAINTENANCE OF STRUCTURES

Maintenance of structures consisted mainly of sandblasting and painting of gates that had not been painted the previous year and of touching up the painting done on gates in 1952. Routine maintenance was performed on all electrical installations throughout the system. All cathodic protection was checked by maintenance crews and anodes replaced where necessary.

5. BRUSH CONTROL

A program of burning and spraying was carried on throughout the year for brush and weed control. The burning operation covered 228 miles of canal banks and 60 miles of drain banks. A power boat was utilized in the spraying of 66 miles of the canal banks while a burner truck was used to cover 161 miles of canal and 69 miles of drain banks. Approximately 102,000 gallons of weed-burning oil were used by both pieces of equipment for this operation. Both the power boat and the burner truck are designed so that they can be used for either burning or spraying chemical. In the spraying operation 183 miles of canal banks were sprayed by boat and 356 miles of canal and drain banks were sprayed by the burner truck.

6. ROAD MAINTENANCE

One road maintainer and a sprinkler truck were used throughout the year for maintenance of roads. During short intervals an additional maintainer and truck were used, and the power boat was also utilized to place water on the roads directly from the canal. "No Trespassing" signs have

Construction of Colorado River Levee across the Alamo Canal between Rockwood Heading at Andrade, California, and the International Boundary. Construction of this leveee makes it possible to discharge water through the Pilot Knob wasteway to the Colorado River in case of emergency.

Upstream face of Colorado River Levee across Alamo Canal as it appeared following completion.

been placed throughout the system and chain blockades were installed in those sections where the general public have no reason for access to the area. Approximately 1,000 cubic yards of clay were placed on the access road below Drop No. 3. The District also maintained the road from Laguna Dam to Imperial Dam which is used by the general public.

The maintenance road on the Coachella Branch was surfaced with clay from Drop No. 1 to the Coachella Drop. Prior to the time this work was completed the road was in an impassable condition. Seventy-five hundred cubic yards of clay were required to complete this work.

7. WATER GAUGING AND SILT SAMPLING

Two hydrographers and an assistant hydrographer are used in gauging the flow of the All-American Canal immediately below the desilting basins. This measurement is taken daily and is consolidated with other data from other sources. A new 16-foot by 36-inch recorder well was installed at Station 1117, and 8-foot by 36-inch recorder wells were installed at Drop No. 5, Central Main Turnout, Wistaria Check, and West Side Main Turnout. Twelve-inch recorder wells were installed at Drops No. 2, No. 3, and No. 4. Daily meterings are taken at Station 300 which is immediately below the Coachella Drop.

Silt samples are taken weekly at All-American Canal Stations No. 61 and No. 1082. In December the District took over the silt sampling program, which had been carried out by the Bureau of Reclamation, on the sludge discharge from the desilting basins.

8. PATROLLING AND TRAPPING

A patrolman was employed full time, covering an area of 5 miles east and west of the Alamo River Crossing, patrolling both the north and south banks of the All-American Canal. His duties include trapping, routine maintenance on the banks of the canal, inspection for seepage, and regular patrol of the area which is located directly above the San Andreas earthquake fault line.

9. CATHODIC PROTECTION

The cathodic protection system was inspected and routine maintenance performed as required. Additional anodes were installed at various locations at the desilting basins and a rheostat for controlling the current was installed at Desilting Basin No. 2.

10. EMERGENCY WORK

There was no emergency work in 1953.

WATER DISTRIBUTION SYSTEM

A. Operation and Maintenance:

1. MAIN CANALS

(a) General Comments:

The demand for water during 1953 exceeded all previous requirements in the history of Imperial Irrigation District. The maximum capacity of the canal system being required to meet the demand for water during the peak periods. There were 252,637 orders for water handled during the year, requiring delivery of 2,149,161 acre-feet of water. The total quantity of water delivered represented an increase of 117,794 acre-feet over 1952, when the total quantity delivered was 2,031,367 acre-feet and the number of orders processed was 243,602. Of the total orders processed in 1953, there were 218,399 orders for irrigation water and 34,238 orders for stock water, compared to 209,508 orders for irrigation water and 34,094 orders for stock water in 1952.

Operation of the system was not interrupted during the entire year and no major cutouts were required. Emergency work consisted of repairs to canal banks in the Westmorland area following the earthquake of June 13, 1953, requiring an expenditure of $7,768.

Brush and weed control work was continued throughout the year over the entire canal system. The major portion of the time, this work was directed toward elimination of growth in the channels of the canals. Various methods of control were practiced throughout the year depending upon the season of the year and the type of growth encountered. Three methods have proved to be effective and economical: (1) application of aromatic oil; (2) application of chemicals; and (3) burning.

During 1953, there were 2,668 miles of canal system patrolled by employees of the District who specialize in rodent control. In the course of this operation 119,578 gas bombs were used, which is an average of 45 bombs per mile. This type operation has proved to be effective and is reflected by the fact that in 1952 the average use per mile was 50 bombs. The cost of bombs used was approximately $23,000.

(b) East Highline Canal:

The East Highline Canal borders the eastern edge of Imperial Valley and supplies water for approximately 100,000 acres in the eastern and northern portion of Imperial Irrigation District. It is approximately 50 miles in length and there are 175 operational structures, required for delivery of water to lateral canal system, located in its banks. The maximum diversion to the East Highline Canal from the All-American Canal during 1953, was 2,552 second-feet of water, compared to 2,223 second-feet in 1952, and 2,083 second-feet in 1951. Increased acreage of cotton, particularly in the north end of the Valley, accounts for the increased demands for water. The greatest increase being in the Calipatria Division where the maximum demand was 1,132 second-feet in 1953, compared to 976 second-feet in 1952, and 786 second-feet in 1951.

There were no interruptions of service on the East Highline Canal of major importance during the year although several major structures were constructed during the year.

The total cost of operation and maintenance of the East Highline Canal was $92,806 for 1953, compared to $98,046 for 1952.

Brisco sloper working on east bank of Central Main Canal north of Keystone Road. This equipment has made possible a more economical maintenance program because of the efficient manner in which brush and weeds can be removed from canal banks.

Orchid Weir on the East Highline Canal constructed to control erosion and to stabilize service on East Highline Canal. Built of reinforced concrete the weir has an overall length of 100 feet and a main gate structure width of 16 feet. It cost approximately $91,000.

(c) East Highline No. 1 Side Main Canal:

Following construction of the new No. 1 Check on the East Highline Canal in 1952, and the construction of a new heading from the All-American Canal, the East Highline No. 1 Side Main Canal became a part of the main canal system. This canal is about 3.4 miles in length and there are 16 operational structures located in its banks. It is designed to serve approximately 3,700 acres in the southeast portion of the Imperial Unit of Imperial Irrigation District. The maximum demand for the year was 110 second-feet. The total cost of operation and maintenance of this canal was $6,222.

(d) Central Main Canal:

The Central Main Canal is about 28 miles in length and there are 74 operational structures located in its banks. The Central Main Heading in the All-American Canal is about 2 miles northeast of Calexico and the canal extends for about 9 miles in a northwesterly direction, then turns directly north going through the center of the Valley for a distance of 19 miles. During 1953, the maximum demand was 1,329 second-feet of water as compared to 1,225 second-feet in 1952. The total cost of operation and maintenance of the Central Main Canal in 1953 was $56,053, compared to $41,817 in 1952.

(e) West Side Main Canal:

The West Side Main Canal Heading is located at the west end of the All-American Canal near the southwest corner of Imperial Unit and from there extends around the west edge of the Imperial Unit of Imperial Irrigation District for a distance of 44.8 miles. There are 158 structures located throughout the length of this canal. The maximum demand in 1953, was 1,241 second-feet of water, compared to 1,205 second-feet in 1952. The water was cut out of the West Side Main for 3 days in January to allow for a general inspection of the system and for minor repairs to the various structures. The total cost of operation and maintenance of the West Side Main Canal for 1953 was $63,142, compared to $60,560 in 1952.

(f) Vail Canal:

The Vail Canal is 7.0 miles in length and extends west from the Alamo River at North End Dam, with 51 operational checks and turnout structures on the canal for delivery of water to the lateral canals. The Vail System serves approximately 14,000 acres. The total expenditures on operation and maintenance of the Vail Canal for 1953 was $22,170, compared to $15,861 for the year 1952.

(g) Brush and Weed Control:

Brush and weed control on main canals, by burning, was limited to 37 miles in 1953, compared to 454 miles in 1952. The average cost of burning per mile, which includes labor, material, and equipment, was $30. Approximately 155 gallons of oil per mile were used in burning a strip 8 feet wide.

The use of aromatic oil for weed control increased from 615 miles in 1952, to 692 miles in 1953. The total cost for applying aromatic oil was $40,742 which includes labor, material, and equipment. The average application required 191 gallons of oil per mile for spraying a strip 12 feet wide.

The use of chemicals for weed control increased from 98 miles in 1952 to 206 miles in 1953. The average application required 40 pounds of chemicals per mile on a strip 12 feet wide. The total cost for 1953 was $9,612.

(h) Moss Control:

Control of moss on main canals in 1953 amounted to $1,280, the major portion of the moss control program being on lateral canals.

2. LATERAL CANALS

(a) General Comments:

There are 1,546 miles of lateral canals serving the Imperial Unit of Imperial Irrigation District. These canals are divided between seven operating divisions for operation and maintenance. There are 11,161 structures located in these lateral canals of which 3,941 are concrete structures, 978 are rubble structures, and 6,242 are wood structures. During the year 1,689 of these structures received minor repairs and 226 structures received major repairs.

General maintenance of lateral canals included 5.5 miles of canals which were cleaned by labor crews, 148 miles were cleaned using Bucyrus-Erie draglines, and 348 miles by the use of bucket-line dredges. There were 1,321 miles of canal banks cleaned and sloped, by use of a Brisco sloper attachment on a D-8 Caterpillar tractor, and 2,397 miles of canal banks were graded in connection with maintenance work on canals and roads adjacent to the canals. Motor graders and dozers were used for this work.

On erosion control of canal banks for protection and around structures, 4274 cubic yards of rock were used throughout the lateral canal

(b) Weed and Brush Control:

Weed and brush control on lateral canals, by burning, was limited to 335 miles in 1953, as compared to 1,174 miles in 1952. The total cost of burning operations, including labor, material, and equipment, was $8,238. The average use of oil per mile in burning a strip 8 feet wide was 92 gallons.

Aromatic oil was used in treating 2,526 miles of lateral canals at a cost of $95,570, compared to 2,556 miles in 1952. The average application of aromatic oil in spraying a strip 12 feet wide was 158 gallons per mile.

The use of chemicals for weed and brush control increased from 953 miles in 1952 to 1,552 miles in 1953. The average cost per mile was $33 and the average application for spraying a strip 12 feet wide was 31.5 pounds of chemical per mile.

(c) Moss Control:

Control of moss in lateral canals during 1953 required an expenditure of $49,732. Several methods of control were used, the moss plow apparently being the most effective. This method, which is used during the three-day period that water is out of the canal each month, required an expenditure of $20,287. Use of chemicals required an expenditure of $16,258, hand labor $9,686, and burning $3,501.

B. Construction:

1. MAIN CANALS

(a) General Comments:

Construction on main canals amounted to $423,517 during 1953. Several structures were completed on main canals which allow operation at a lower water elevation thereby diminishing the hazard of breaks in the canals.

(b) East Highline Canal:

Construction work on the East Highline Canal required an expenditure of $177,852 during 1953. One of the major items was the Orchid Weir which was begun in 1952 and completed in 1953 at a total cost of $121,-974. The weir is designed for 2,300 cubic feet per second, has an overall width of 121 feet and required 635 cubic yards of reinforced concrete and 41 tons of reinforcing steel to complete. A roadway bridge 14 feet wide crosses the structure allowing maintenance crews to cross the canal at that point. This structure replaced the old Oat Check in East Highline Canal and permits adjustment of the water level in the canal to a lower grade thereby increasing the capacity of the canal.

Eight lateral canal headings in the East Highline Canal were replaced with concrete structures and reinforced concrete-pipe conduits under the maintenance road along the canal. These structures which cost approximately $4,600 each were set at an elevation which will permit lowering of the channel of the canal to further increase capacity.

In August 1952, work was begun on widening the East Highline Canal a distance of 30 miles from No. 16 Weir to Flowing Wells. Completed early in 1953, at a total cost of $59,612, this work provides for increased capacity in the canal thereby enabling the District to meet the increased demand for water in the north end of the Valley.

(c) Central Main Canal:

Work was begun in June 1953 on a major program of construction on the Central Main Canal beginning at the Dahlia Canal Heading and extending a distance of 1.16 miles down the canal. The rearrangement of the facilities located in this section of the Central Main eliminates a hazardous operating condition which existed due to the fact that the Central Main, Evergreen, and Bay Canals were parallel to each other in this area and were operated at water levels which varied as much as 10 feet. This difference in water level caused seepage from the canals with the high water surface resulting in sloughing of the banks of the other canal thereby interfering with water service.

The three parallel channels were combined into one channel, the water surface of which is regulated by a new structure, thereby allowing diversions to all points previously served from the three separate canals. Four new reinforced concrete turnout structures provide water service to lateral canals within the 1.16 miles. A new concrete wasteway replaced the old wasteway and provides a control on the canal in cases of emergency. Cost of this project at the end of the year was $216,504, with total expenditures on the Central Main System amounting to $220,445.

(d) West Side Main Canal:

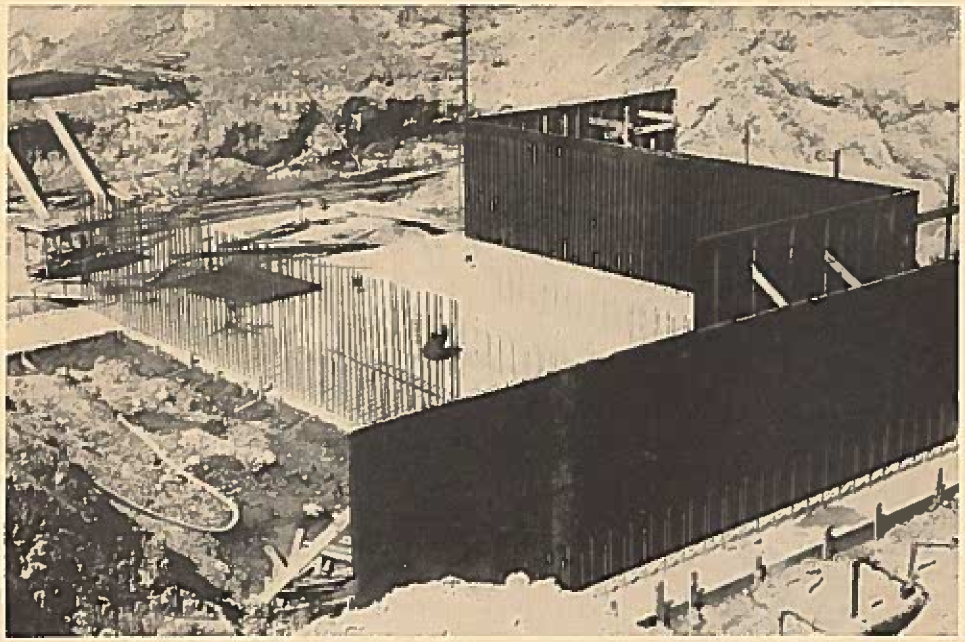
Construction on the West Side Main Canal for the year 1953 amounted to $20,657. Six new structures were installed, five of which allow direct delivery from the West Side Main. To provide additional capacity in the canal, a section 4.5 miles long was widened at a cost of $17,501.

(e) Vail Canal:

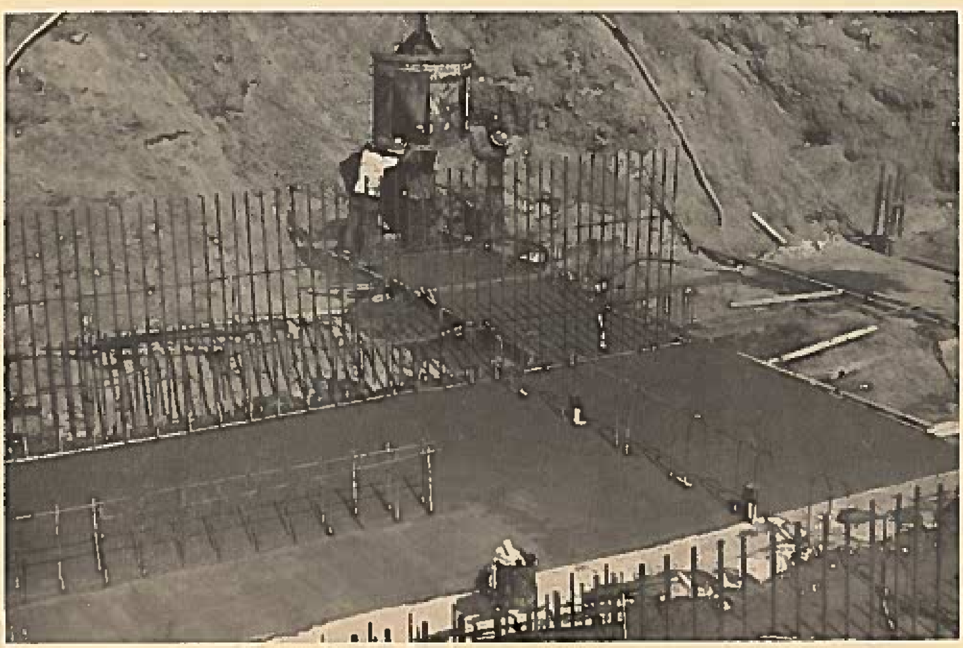
Construction work on the Vail Canal consisted of two checks in the canal and one delivery outlet for a total expenditure of $4,563.

2. LATERAL CANALS

The program of replacement of existing wooden structures with concrete structures by use of special designed steel forms was continued throughout the year. Only in a few instances were wooden structures in-



Construction of Dahlia Check on the Central Main Canal showing forms in place for sidewalls and down stream portion of main structure. Structure is 90 feet in length, 54 feet wide, 19 feet high and has three 8 feet by 8 feet radial gates that are electrically operated. This structure completed will cost approximately $80,000.



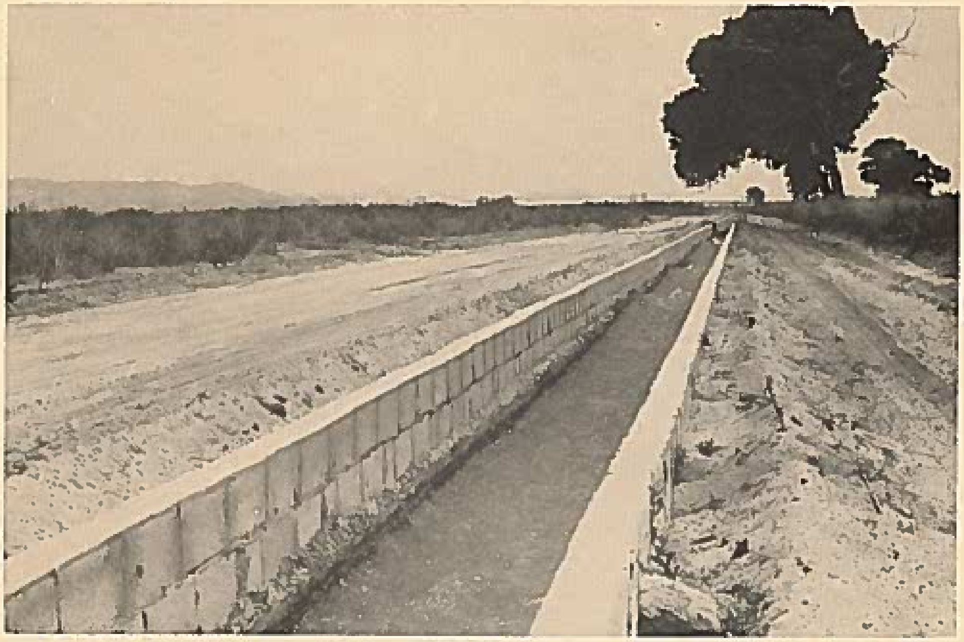
Pouring lower floor slab on main structure, New Dahlia Check, Central Main Canal.

stalled. The total number of installations by crews from the seven operating divisions and the type of construction is as follows:

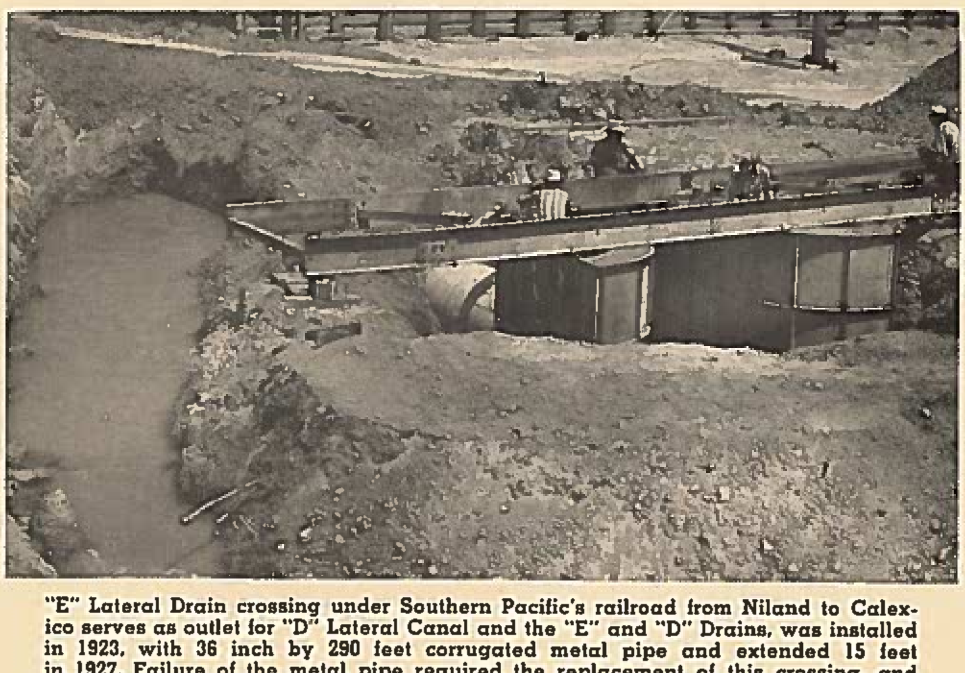
Type of Construction	Wood	Construction Material Concrete	Rubble	Total
Delivery Gates				
New	1	23	—	24
Replaced	7	281	—	288
Checks				
New	—	15	—	15
Replaced	—	208	—	208
Bridges				
New	—	—	—	—
Replaced	3	2	1	6
Siphons				
New	—	—	—	—
Replaced	—	5	—	5
Drops				
New	1	32	—	33
Replaced	—	8	—	8
Flumes				
New	—	1	—	1
Replaced	—	—	—	—
Spillways				
New	—	1	—	1
Replaced	—	2	—	2
Totals	12	578	1	591

In addition to the construction by division crews a special construction crew, which operates from Imperial Headquarters, installed 34 structures throughout the lateral canal system during the year at a cost of $96,286. Out of this total there were 14 control structures installed to allow better regulation of the water surface in the larger lateral canals.

In co-operation with the Division of Highways on reconstruction of State Highway 187-E between Calipatria and Niland, Imperial Irrigation District installed 15 canal crossings, 6 checks, 7 deliveries, and 38 borrow-pit pipes along the reconstruction route. Under the terms of the agreement the State paid for all materials required and the District paid for the installation.



The "E" Lateral Canal extending west one mile from the East Highline Canal is a small concrete lined section which was installed by the Water Company No. 3 prior to 1922. The development of the area supplied by this section of lined ditch increased the demand for water from 38 to 58 second feet. The sidewalls of the existing concrete section were raised by the placement of 8 inch by 8 inch by 16 inch pumice bricks, two bricks high along this section, and requiring an expenditure of $14,174.



"E" Lateral Drain crossing under Southern Pacific's railroad from Niland to Calexico serves as outlet for "D" Lateral Canal and the "E" and "D" Drains, was installed in 1923, with 36 inch by 290 feet corrugated metal pipe and extended 15 feet in 1927. Failure of the metal pipe required the replacement of this crossing, and to serve the increased farming activities, with the area served it was replaced with 328 feet of 48 inch concrete pipe in June, 1953. Forty feet of the pipe was concrete jacking pipe installed under the railroad tracks, and the remainder of the crossing installed by open cut method.

DRAINAGE SYSTEM

A. Operation and Maintenance:

1. MAIN DRAINS

(a) General Comments:

In order to provide a drainage system which will allow facilities for one drainage outlet for each 160 acres of land, the District has undertaken development of a deep drainage system. These deep drains will not only furnish outlets for lateral drains but will provide facilities for outlets for landowners within the area in which they are constructed. At the present time, this deep drainage system consists of 555.6 miles of deep drains and the necessary control structures located therein.

The total cost of operation and maintenance of main drains for 1953 was $283,824, compared to $242,571 in 1952. Of this total, $181,225 was for maintenance of drains, $44,120 for maintenance of main drain structures, $26,512 for maintenance of drain pumps, and $12,492 for maintenance of the Alamo River and New River which serve as drain outlets. The largest single item of maintenance was $38,437 for dredging of drains with Bucyrus-Erie draglines. Work on New River and Alamo River consisted of realignment of the river channels and bank protection work.

(b) Brush and Weed Control:

Brush and weed control on main drains in 1953, by use of aromatic oil, cost $8,959. There were 222 miles of drains sprayed using 33,800 gallons of oil to cover a strip 12 feet wide. This is an increase of 60 miles over the area covered in 1952.

Chemicals were used for weed control on 213 miles of main drains, the total cost of which was $7,970. This compares to 229 miles treated in 1952.

(c) Moss Control:

Moss control work on main drains in 1953 required an expenditure of $37,759, as compared to $25,549 in 1952. Use of chemicals increased materially in 1953, requiring an expenditure of $37,037, as compared to $24,864 in 1952. Hand labor amounted to $722.

2. LATERAL DRAINS

(a) General Comments:

The District's lateral drain system is designed to provide outlets for open or tile drains for each 160 acres and consists of 809 miles of lateral drains. There are 476 structures located throughout the lateral drain system, 268 of which are concrete, 55 are rubble, 113 are wood, and 40 are a combination of wood and other materials.

General maintenance of lateral drains included cleaning of 42 miles of drains with labor crews, 101 miles with draglines, and 64 miles with bucket-line dredges. There were 154 miles of drain banks cleaned by use of a Brisco sloper attachment on a D-8 Caterpillar tractor. Operational roads along the drain bank allow access to the drain for maintenance and 479 miles of such roads were maintained by use of motor grader and bulldozer equipment during the year.

(b) Weed and Brush Control:

There were 497 miles of lateral drains covered by burner equipment in 1953, as compared to 633 miles in 1952. The total cost, including labor, material, and equipment, was $11,030; the average cost per mile was $22.

The average use of oil per mile for burning a strip 8 feet wide was 88 gallons.

Aromatic oil was used in treating 300 miles of lateral drains, as compared to 281 miles in 1952. The total cost of this phase of the weed control program was $13,682, the average cost per mile being $45. The average application of aromatic oil for spraying a strip 12 feet wide was 172 gallons per mile.

The use of chemicals for weed and brush control incrased from 737 miles in 1952 to 963 miles in 1953. The total cost, including labor, material, and equipment, was $28,883; the average cost per mile for spraying a strip 12 feet wide was $30.

(c) Moss Control

The moss control program on lateral drains required an expenditure of $5,562 during the year. Three methods of control were used, the expenditure on each being as follows: Chemicals, $1,938; hand labor, $1,689; and moss plow, $1,935.

B. Construction:

1. MAIN AND LATERAL DRAINS

Total expenditures for main and lateral drains were $448,061 for 1953, as compared to $451,718 for 1952. There were 3.38 miles of main drains and 14.53 miles of lateral drains constructed during the year. To meet changing conditions 5.85 miles of lateral drains were reconstructed and 17.68 miles deepened and 10 miles of main drains were deepened.

In those instances where it was not practical to extend existing drains to provide for gravity field outlets, the District has installed sump pumps. Seventeen such installations, costing $35,474 were made in 1953; the total number of sump pump installations is now 55.

Acquisition of right of way for drains in 1953 required an expenditure of $11,934, while engineering, including field surveys and special test well work, amounted to $66,087. Deepening of existing drains cost $21,691. Other construction costs were: Railroad crossings, $18,477; State Highway crossings, $17,345; County road crossings, $18,699, and construction of new drains, $47,455.

During 1953, there were 512.19 miles of farm tile drains installed by private contractors for landowners. In co-operation with the landowners the District participated in this work by handling the engineering and inspection of the tile installations.

The total mileage of drains constructed during 1953 is as follows:

Miles of open drains constructed by Imperial Irrigation District	17.91
Miles of open drains reconstructed by Imperial Irrigation District	5.85
Miles of private drains constructed by contractors	1.00
Miles of private drains cleaned by contractors	23.50
Miles of farm tile drains constructed by contractors	512.19

The total mileage of drains as of December 31, 1953, is as follows:

Miles of District main drains	555.57
Miles of District lateral drains	809.36
Miles of farm tile drains	4,241.58

Installation of reinforced concrete pipe wasteway from Central Main Canal to New River. Purpose of wasteway is to maintain control of water in Central Main Canal in case of a break below this point.

Niland Lateral Drain No. 1. The development of farmed area north of Niland required the construction of three miles of new drain on the Niland Lateral Drain No. 1, the landowners contributing right of way and $800.00 per mile toward construction cost, plus material for field outlet pipes into the drain, the District bearing all remaining costs on the construction of the drain and installation of field outlets.

POWER DIVISION

A. General Comments:

The growth in load and demand on the District's power system continued in 1953, with total kilowatt-hour sales and revenue from sales of electric energy reaching a new all time high. In order to be able to meet these requirements the Power Department continued its program of expansion throughout the year extending and revising its transmission and distribution system to handle new and heavier load conditions and providing additional generation facilities to meet the increased load and demand. Operating costs increased slightly over last year. No serious power interruptions occurred during the year. The service area of the District including the Salton Sea is 6,614 square miles of which there are 1,259 square miles now being served or lying within one-half mile of the District's distribution lines.

B. Operation and Maintenance:

Operation and maintenance costs of the District's electrical system increased $222,726 over the 1952 costs. The largest single item in the total of $2,734,578 was operating expenses at the El Centro Steam Station. The total cost of power purchased decreased due to the fact that Unit No. 2 of the El Centro Steam Station was in use for the entire year having been put into operation on September 16, 1952. Distribution and transmission expense and customers' accounting and collecting all increased slightly over 1952 costs. These increases were due mainly to increased wage rates resulting from the general wage increase granted on January 1, 1953. Operating expenses at the Brawley Diesel Plant decreased by $5,182 as compared to 1952 costs while cost of operation of the Hydro Plants increased by $4,147.

During the year District personnel in the Meter Shop conducted a routine test on 6,182 electric meters. In the transformer shop 1,026 transformers were tested, painted, and reconditioned; and 49 transformers, totaling 1,430 KVA were rewound and returned to service.

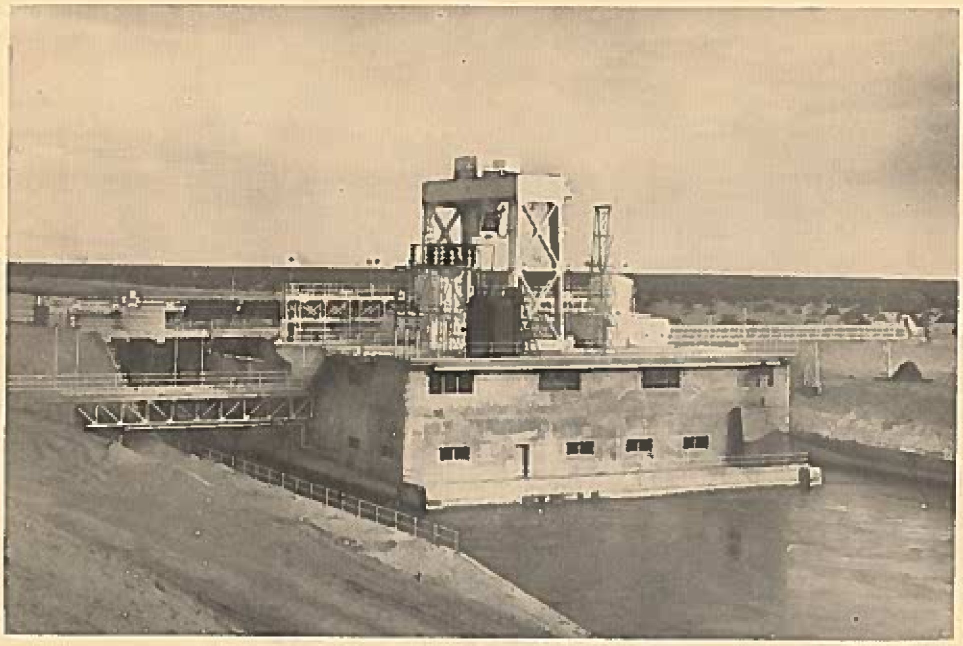
C. Construction and Improvements:

1. 1949 Power Development Project

The 1949 Power Development Project was designed to provide for the construction of additional generation, transmission, and distribution facilities and was approved by the voters of the District on June 15, 1949. Several phases of the project were completed in 1952 with all others scheduled for completion in 1953. All phases of the project scheduled for completion in 1953 were completed and put into service; however, in April 1953 the California District Securities Commission approved a revised schedule of expenditures to be made from the proceeds of the sale of bonds including in the scope of work to be done the conversion of the Niland-Blythe transmission line from 92-kv to 161-kv. Actual construction on this phase of the project did not get under way until the latter part of 1953 and was scheduled for completion in 1954.

2. 1953 Power Development Project

The 1953 Power Development Project provides for construction of a hydroelectric plant on the All-American Canal at a point on the canal known as Pilot Knob, the necessary transformation and transmission facilities to transmit the power to El Centro where the District's main switch yard is located, to provide some monies for poles, transformers, and meters, for the distribution of power (all distribution construction to be



Drop No. 2 Hydro Electric Plant as it appears from the north bank of the All-American Canal. The plant has an installed capacity of 10,000 kilowatts and was constructed as a part of the District's 1949 Power Development Project.

Aerial view of Drop No. 2 Hydro Plant showing the All-American Canal as it extends eastward from the plant.

done by District forces from revenue funds), and for interest during construction. The expenditure of funds as approved by the California District Securities Commission is as follows:

Preliminary Expenses	$ 70,000
Pilot Knob Hydro Plant	6,440,890
Pilot Knob Substation	680,090
Transmission Line—Pilot Knob to Drop No. 4	352,000
Transmission Line—Pilot Knob to Knob	88,270
Drop No. 4 Substation Additions	30,000
Distribution Facilities	1,510,750
Interest During Construction	828,000
Total	$10,000,000

On October 28, 1953, the voters of Imperial Irrigation District gave their overwhelming endorsement to this program by a majority of 89 per cent affirmative vote. On December 8, 1953, the bonds were sold to Blythe and Company, Inc., and 39 associated nationally known bonding underwriting firms. The purchasing syndicate, which was the lowest of two bidders, bid the principal amount plus a premium of $781.00 plus accrued interest from date of bonds, January 1, 1954, to date of sale. Interest rate submitted by the successful bidder was an average of 3.5308 per cent.

Planning for the Pilot Knob Plant was well under way at the end of the year and it was expected that plans and specifications for the turbines, generators, and other major items of equipment would be issued early in 1954.

3. Additions and Betterments from Revenue Funds

During the year 1953, the District paid from Power Revenue Funds $893,299 for additions and betterments to the Power System. The largest single item of expenditure was on the distribution system which amounted to $620,019. Generation facilities amounted to $110,885; transmission, $83,759; general plant, $11,094; electric plant held for future use, $9,519; and engineering and superintendence on all items, $58,023.

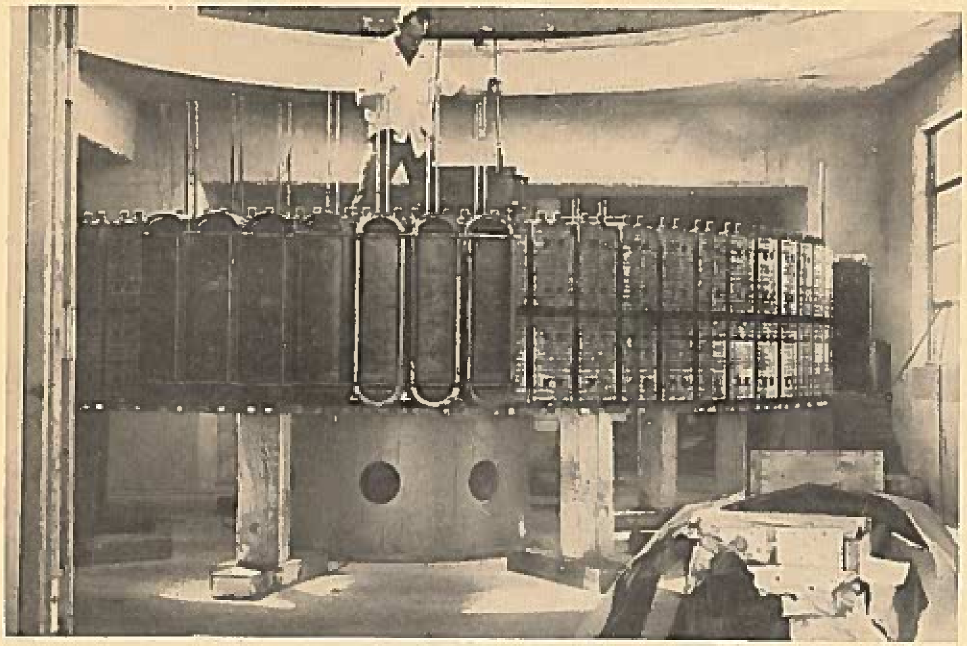
Total retirements from Electric Plant in 1953 was $121,143. Material returned to stock for reissue amounted to $42,995, and material sold as salvage was $11,770.

At the end of the year, the District had 11,165 distribution transformers totaling 169,788½ kva in service which represented an increase of 1,038 transformers and 18,098½ kva over the previous year. Electric meters in service at the end of the year totaled 26,958 for an increase of 2,277 over the previous year. District forces added 47.3 miles of distribution lines to the electric system during the year. One distribution substation was added bringing the total number of substations to 47 in which there were 157 transformers having a total capacity of 426,216 kva.

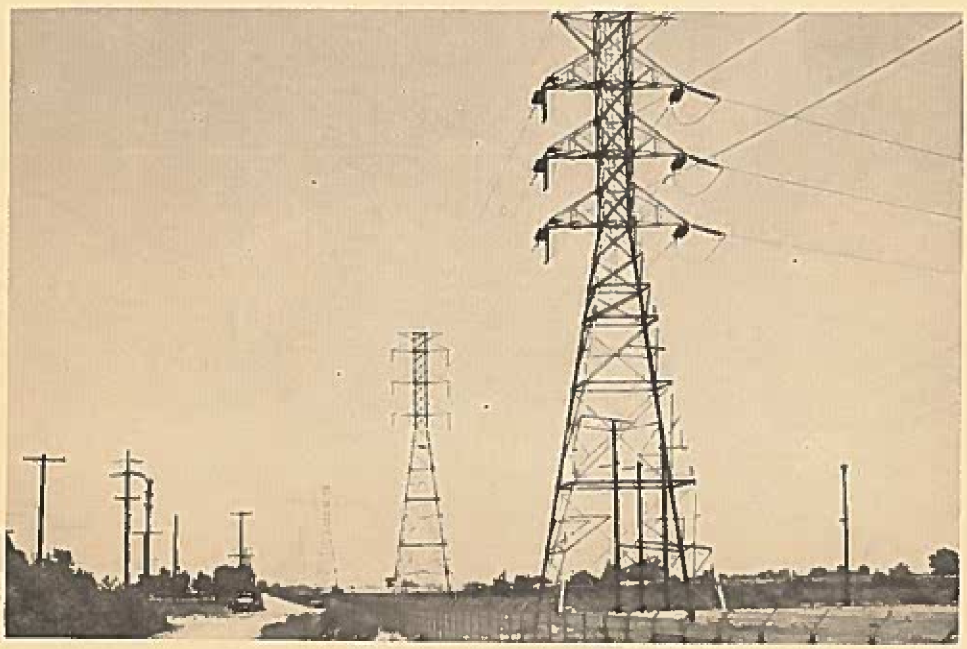
D. Power Sales:

The District's power system continued to show a healthy growth during 1953, with an increase of 1,060 users over the average number served during 1952. Of this total, there was an increase of 752 customers in Imperial Valley, 277 in the Coachella area, and 31 in the Bard and Winterhaven areas.

Revenue from sales of electric energy reached an all time high amounting to $5,754,235 as compared to $5,306,988 the previous year. Sales to residential consumers accounted for 35.1 per cent of the total or



Installing pole pieces for rotor of generator of Unit No. 1 at Drop No. 2 Hydro Plant.



Double circuit transmission line between El Centro Steam Station and Drop No. 4, All-American Canal. One circuit is 161 kv the other is 92 kv. This construction is a part of the District's 1949 Power Development Project.

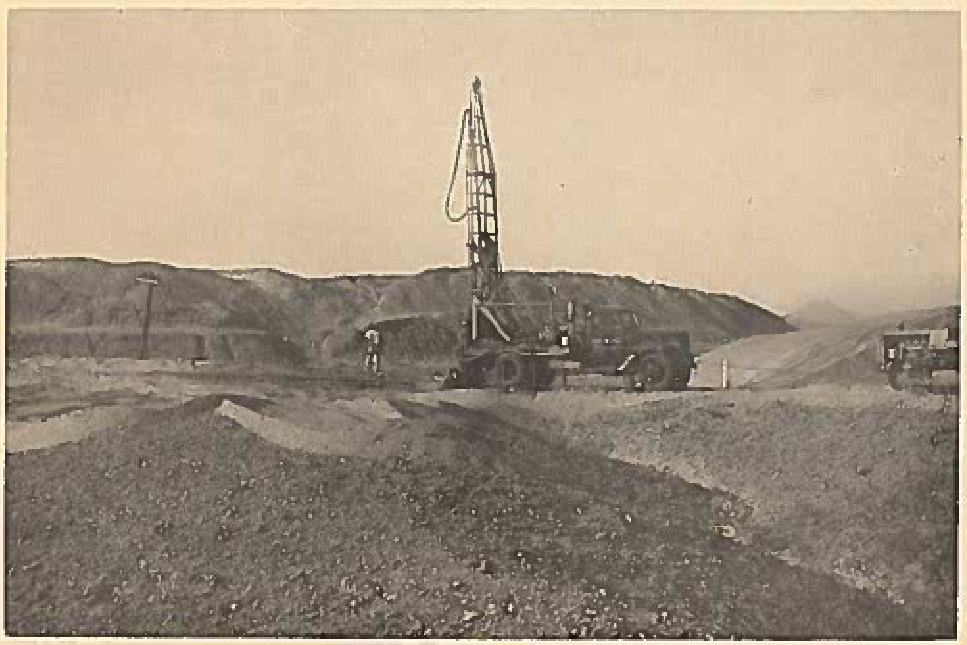
$2,020,664, with commercial accounts next in line with 24.2 per cent of the total or $1,391,565. Sales to industrial accounts amounted to $1,028,-189 or 17.9 per cent; sales to other utilities $669,599 or 11.6 per cent; agricultural accounts $495,365 or 8.6 per cent; public authorities $61,926 or 1.1 per cent; interdepartmental sales $57,405 or 1 per cent; and street and highway lighting $29,522 or 0.5 per cent.

Refrigerated air conditioning, both for domestic and commercial use, was installed in large numbers during 1953 and is increasingly becoming an important section of the District's power load. From reports furnished the District by dealers, it is estimated that in Imperial Valley alone there were over 1,500 of the window-type room coolers installed during 1953, and well over 400 of the larger central system units. The air-conditioning load undoubtedly is reflected in the District's average annual usage per domestic consumer, which reached the impressive total of 4,500 kilowatt-hours in 1953.

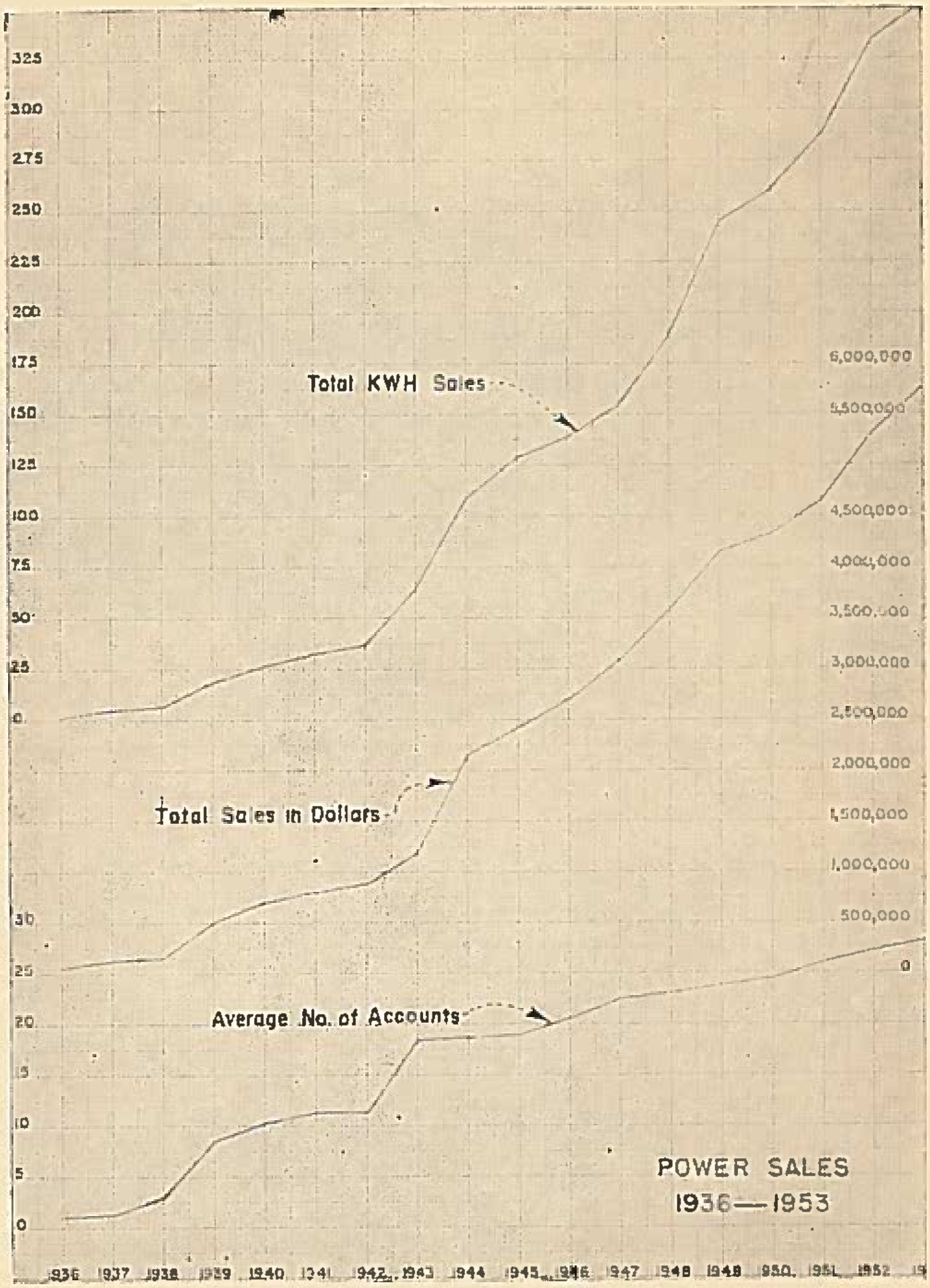
The Sales and Service Department of the District was active throughout the year co-operating with appliance dealers to promote the sale and use of electric ranges, water heaters, and other major electric appliances.

Through its wiring reimbursement program on ranges and water heaters, the series of all-electric cooking schools in all major towns, home demonstrations and school programs by the home economist, and advertising schedule, the District carried out a continuous program designed to acquaint its consumers with the many benefits which may be derived from the use of modern home electric appliances.

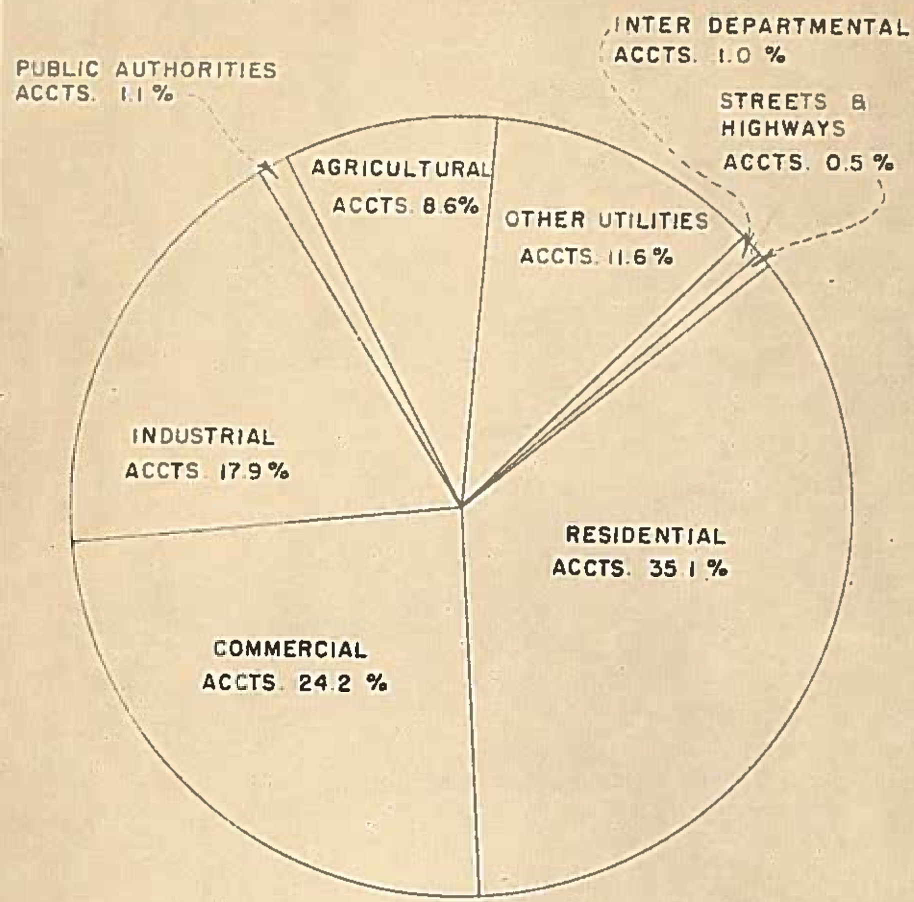
Pilot Knob site showing All-American Canal in left background. In right of picture is spillway to Colorado River from All-American Canal where water can be diverted to Mexico, under Mexican Water Treaty, or diverted through Pilot Knob power plant, which will be located in right background after plant is constructed. Water in foreground is shown in All-American Canal, on its way to Imperial Valley.



Conducting foundation investigation at site for Pilot Knob Power Plant on All-American Canal.

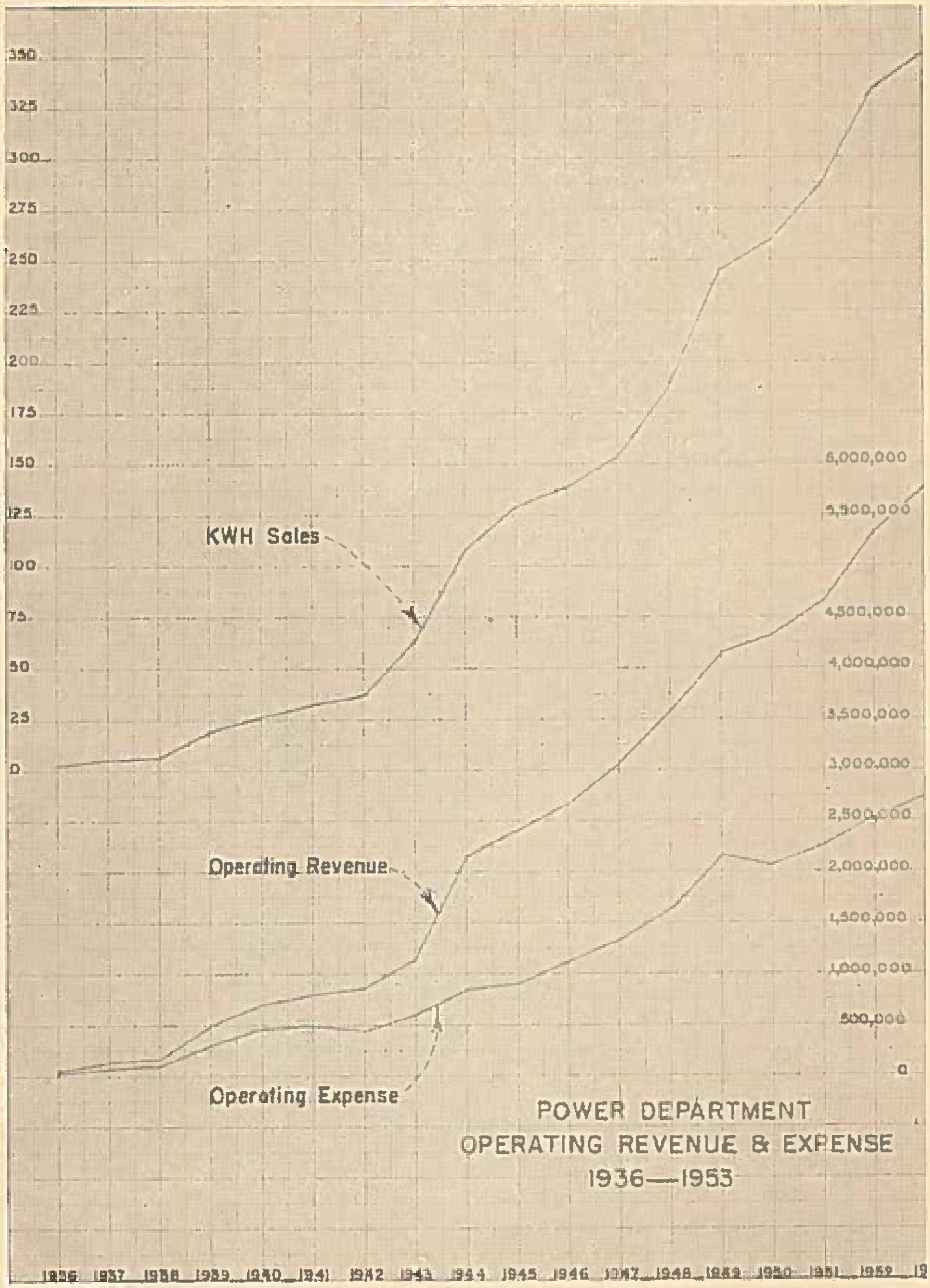


325
300
275
250
225
200
175
150
125
100
75
50
25
0
6,000,000
5,500,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Total KWH Sales
Total Sales in Dollars
Average No. of Accounts
30
25
20
15
10
5
0
POWER SALES
1936—1953
1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952



SALES OF ELECTRIC ENERGY 1953

RESIDENTIAL ACCTS.	2,020,664	35.1 %
COMMERCIAL ACCTS.	1,391,565	24.2 %
INDUSTRIAL ACCTS.	1,028,189	17.9 %
AGRICULTURAL ACCTS.	495,365	8.6 %
OTHER UTILITIES ACCTS.	669,599	11.6 %
INTER DEPARTMENTAL ACCTS.	57,405	1.0 %
PUBLIC AUTHORITIES ACCTS.	61,926	1.1 %
STREETS & HIGHWAYS ACCTS.	29,522	0.5 %
TOTAL	5,754,235	100.0 %


KWH Sales
Operating Revenue
Operating Expense
POWER DEPARTMENT
OPERATING REVENUE & EXPENSE
1936—1953

LEGAL DEPARTMENT

A. General Comments:

During 1953, 20 quiet title actions were pending, and in various stages of completion. Seven such quiet title actions were completed during the year, thus resulting in the restoration of tax deeded land to the tax rolls.

Necessary right-of-woy acquisition required the institution of three proceedings in eminent domain. Within the past two years, although it has been necessary to file 5 proceedings in eminent domain, satisfactory compromise settlements have been worked out with the landowners involved, and no court proceedings have actually been required.

A total of 40 separate legal proceedings were instituted in connection with the collection of delinquent power accounts in Imperial and Riverside Counties. Twenty-six of such proceedings were completed during the year, with 14 yet pending at the end of the year.

Proceedings involving miscellaneous damage claims arising from crop and property damage totaled 10. A total of 5 other legal proceedings were handled during the year, involving actions on contracts and involving other governmental agencies.

B. Arizona vs. California:

The year 1953 was marked by continued developments in the case of Arizona vs. California pending in the Supreme Court of the United States, involving the rights to the use of the waters of the Colorado River System.

Counsel for Imperial Irrigation District, working in conjunction with the Attorney General of the State of California, and Counsel for other State agencies interested in the Colorado River have prepared and filed with the Supreme Court comprehensive answers to the Arizona complaint. The California agencies, including Imperial Irrigation District, assert rights to the use of 5,362,000 acre-feet of water per annum as contrasted to Arizona's contentions which, if sustained, would limit the California agencies to less than 4,000,000 acre-feet per annum.

The United States, acting through the Department of Justice, has intervened in the controversy between Arizona and California, and has set up claims of rights to the use of the water from the Colorado River System on behalf of Indians, fish and wildlife, forest preserves, national parks, and treaty obligations of the United States, including those under the Mexican Treaty.

The State of Nevada likewise has requested leave to intervene, setting up its claims to the use of water in the amount of $539,100 acre-feet per annum, and claims for future uses totaling 900,000 acre-feet per annum.

Indications are that the other states in the Colorado River Basin will seek to intervene in the action, and it appears that eventually the suit will involve all states and agencies who assert the right to use water from the Colorado River System.

In all probability, due to the complexities of the issues and the necessity of determining complicated factual matters, the Supreme Court will appoint a Special Master to hear the evidence and report the claims of the various parties.

C. Salton Sea Damage Claims:

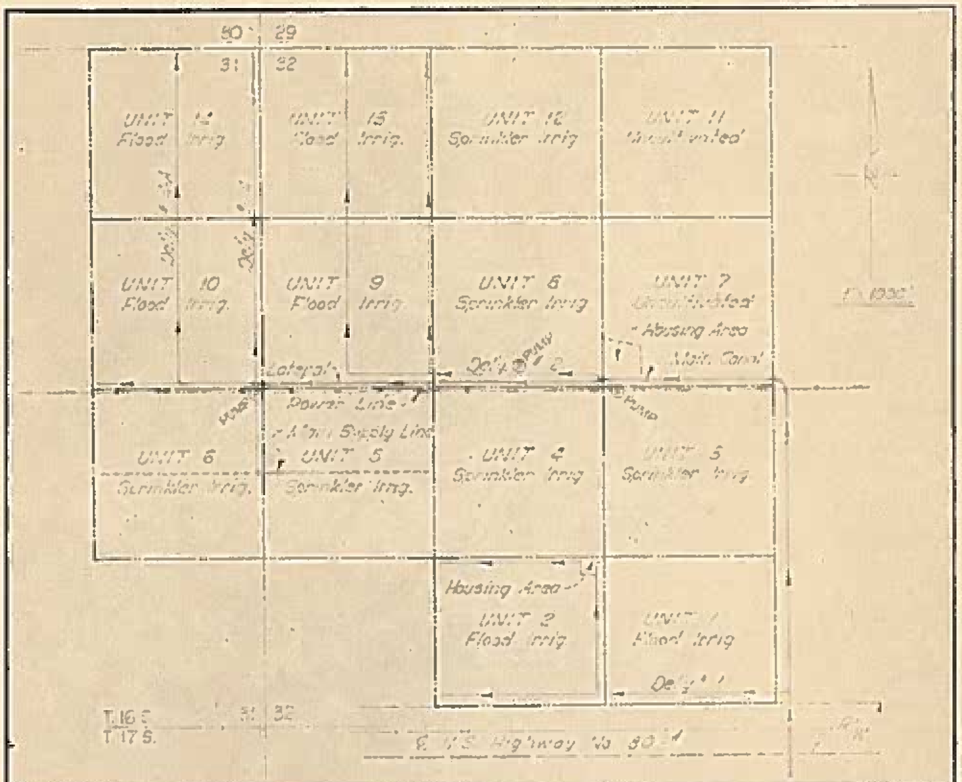
Three separate legal proceedings are now pending in connection with claims made against Imperial Irrigation District and others by landowners owning land which has been affected by the rise in the level of the Salton Sea. Separate suits have been filed in Imperial County Superior Court, Riverside County Superior Court, and the United States District Court at Los Angeles. The total damages alleged in these three suits exceed $1,000,000, and it is anticipated that other suits will be filed by landowners, both without and within the boundaries of Imperial Irrigation District, in the event the sea continues to rise.

In all probability the first of these cases will not come to trial until 1955.

D. Central Valley Project Litigation:

The extensive litigation pending since 1950 in connection with the validation of contracts between the United States Department of Interior, Bureau of Reclamation, and various irrigation districts in the San Joaquin Valley has now been referred to the Supreme Court of the State of California for final decision. The Legal Department has continued to take an active part in this litigation in view of the fact that the legal issues involved are of importance to landowners within Imperial Irrigation District. It has been our purpose in these proceedings to declare invalid the attempts of the Bureau of Reclamation to limit land ownerships to tracts of 160 acres or less, and to uphold the right of the State of California to control the use of water as against the attempt by the Bureau of Reclamation to impose Federal control over the use of water within the State of California.

EAST MESA



ACREAGE TABULATION

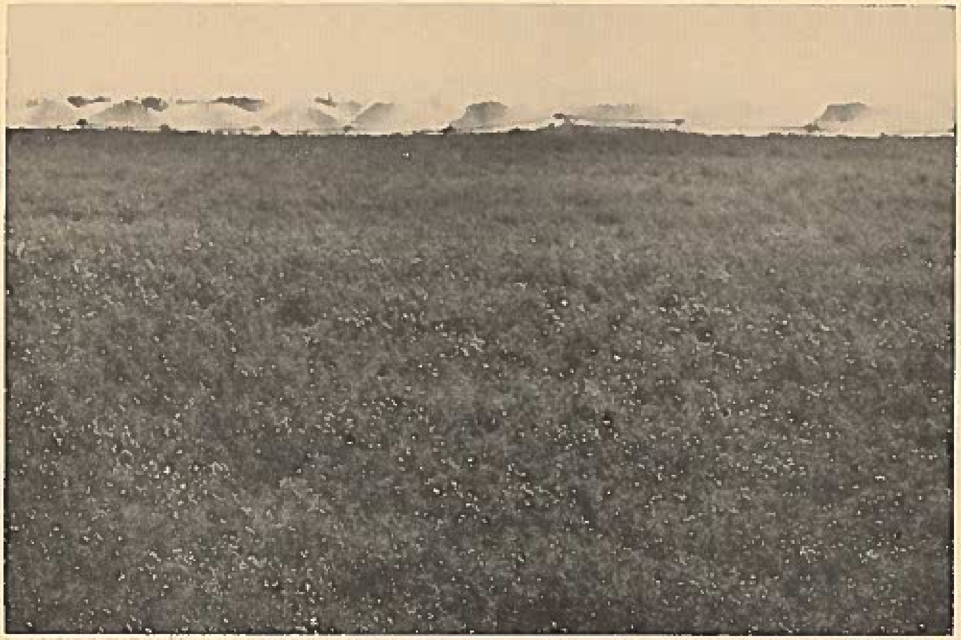
UNIT NO.	GROSS AREA	HD. DITCH AREA	CANAL AREA	HOUSING AREA	ROADWAY AREA	UNCULT. AREA	CULT. AREA	REMARKS
1	[illegible]	3.3			0.9	1.6	23.0*	* [illegible] ac. transferred to Unit 3
2	35.1	2.0	1.2	0.5	0.9	2.1	28.1*	* 0.[illegible] " " " Unit 4
3	40.0				1.0	0.6	33.6*	* Incl. 1.2 acres from Unit 1
4	40.0				1.6		38.0*	* [illegible]
5	40.0						31.7*	* " [illegible] Unit 9 & 15 " [illegible]
6	40.0						40.0*	* " 1.2 " Unit 10 & 23 " " "
7	40.0		3.2	1.4		35.4		
8	40.0	1.3	2.5			0.2	35.5*	* 0.3 ac. transferred to Unit 4
9	40.0	3.0	2.7		0.2		33.8*	* 0.[illegible] " " " 4
10	40.0	1.5			0.7	0.5	35.5*	* [illegible] " " " 6
11	40.0					40.0		
12	40.0	0.1				0.4	39.5	
13	40.0	2.1			0.2	0.3	37.4	
14	[illegible]	2.5			0.8	0.2	35.9	

IMPERIAL IRRIGATION DISTRICT
ENGINEERING DEPARTMENT
IMPERIAL, CALIF.

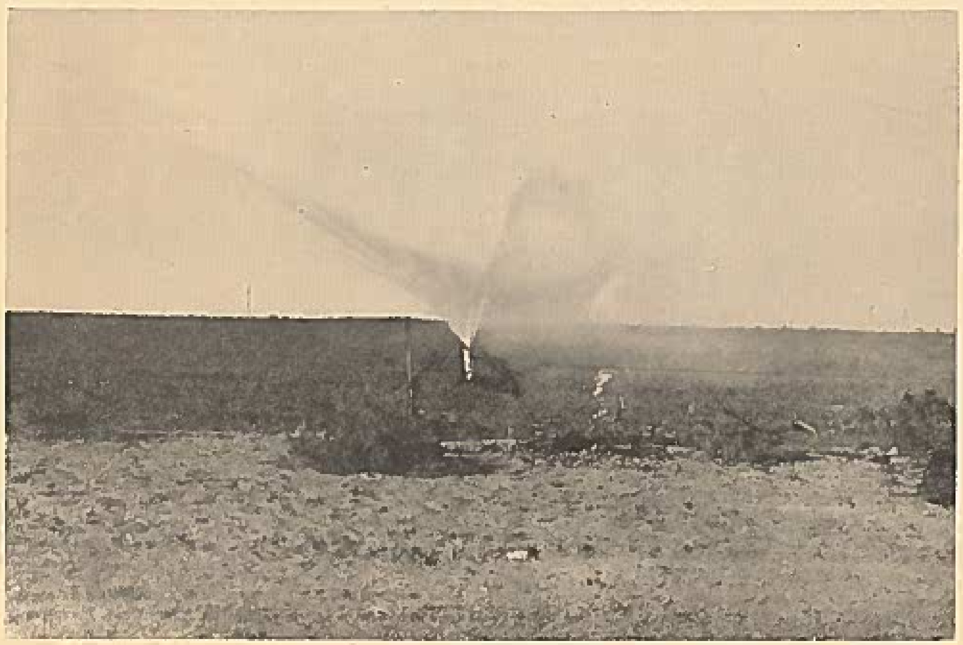
EAST MESA EXPERIMENTAL FARM [illegible]
PLOT OF FARM UNITS
[illegible]
[illegible]

DATE [illegible]
DRAWN [illegible]
CHECKED [illegible]

DRAWING NO. [illegible]



Use of mobile sprinkler system for irrigation of red oats and alfalfa on Unit No. 5, Experimental Farm No. 2.



Mobile sprinkler system in operation on Unit No. 5, Experimental Farm No. 2, showing desert in foreground.

A. Experimental Farm No. 1:

Experimental Farm No. 1 is being operated by Field and Trout of San Luis Obsipo, California, under the terms of their agreement with the District. They have continued keeping the entire farm in alfalfa with the exception of 160 acres. In June 1951, they entered into a sublease with Joe Maggio whereby Maggio will farm 160 acres of Experimental Farm No. 1 for a period of three years. Water duty for the year 1953 averaged 12 acre-feet per acre as compared to 13 acre-feet per acre in 1952.

The 160 acres being farmed by Maggio is now in barley. Prior to the time when the barley was planted the entire 160 acres had been in watermelons for the second time. A previous experiment with watermelons on a portion of the tract had proved so successful that the entire tract was planted to melons again in the fall of 1952. High winds during the early spring of 1953 caused considerable damage to the vines and production was far short of what had been expected. Water duty on the 160 acres was 13 acre-feet per acre in 1953, as compared to 12 acre-feet per acre in 1952.

B. Experimental Farm No. 2:

During the latter part of 1952, experiments were begun on small plots to determine the reaction of alfalfa to various applications of barnyard manure. These plots received applications of from 5 to 30 tons per acre and at the same time applications of commercial fertilizer ranging from 500 to 8,000 pounds per acre.

The plots receiving heavy applications of barnyard manure soon became heavily infested with Bermuda grass and had to be plowed up. Those plots receiving commercial fertilizer produced alfalfa that was much in demand due to its high protein content, testing from 25 to 32 per cent protein.

That portion that was plowed up due to the Bermuda grass was planted to Fava beans in the fall and from all indications a good crop was expected with harvesting to take place early in 1954. Present plans are to increase the planting of Fava beans to 40 acres in 1954.

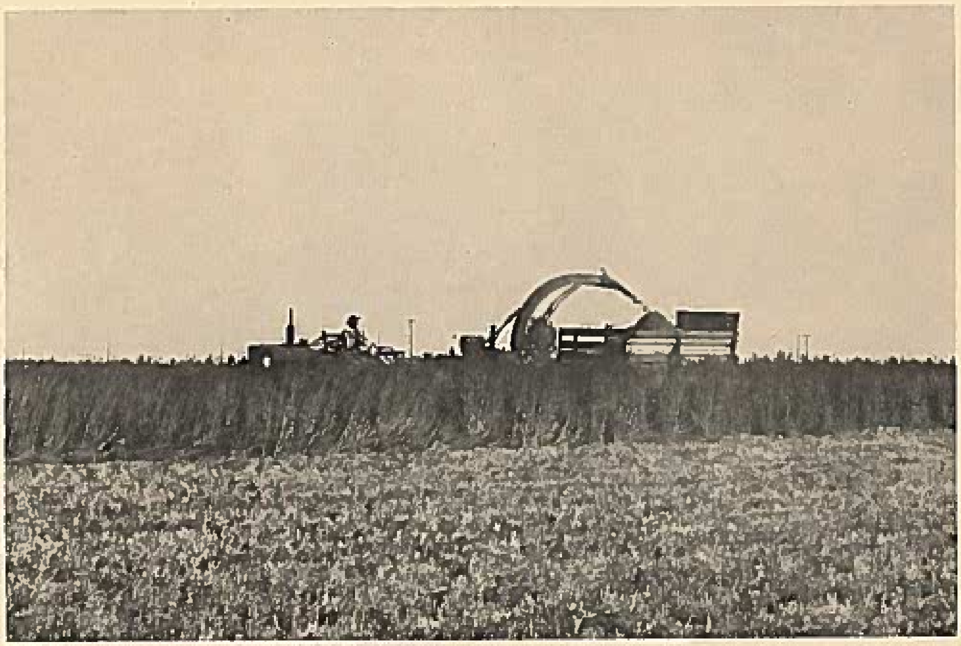
Yields of alfalfa from other parts of the farm were above average and of top quality. Most of this hay was being harvested with a forage chopper and fed to beef cattle as it was harvested.

Barley seeded in the fall of the year germinated well and a good harvest was expected in 1954.

Use of water both on plots flood irrigated and plots irrigated by sprinkler units was approximately the same as for 1952.

Experimental Farm No. 2, Units 10 and 14 being sprayed for wind erosion control. Both units were seeded to barley just prior to spraying.

Spraying desert along west side of Units No. 10 and 14, Experimental Farm No. 2, for wind erosion control.



Forage chopper cutting Texas red oats and alfalfa on Unit No. 2, Experimental Farm No. 2.

Texas red oats and alfalfa on Unit No. 1, Experimental Farm No. 2.

NORTH END IMPROVEMENT PLAN

A. General Comments:

Two major items of construction which were begun in 1952 were completed during 1953. In order to provide additional capacity for the Calipatria Division in 1953, work was begun in August 1952 at No. 16 Weir to widen the East Highline Canal a distance of 30 miles. This work was completed in 1953 at a total cost of $59,612.

Work was also completed on the Orchid Weir in 1953. This weir replaces the Oat Check in the East Highline Canal and permits adjustment of the canal to a lower grade, thereby increasing the capacity. Total cost of the project, including 1952 expenditures, was $121,974.

During 1953, the headings of eight lateral canals were replaced, using concrete intake structures and reinforced concrete pipe conduits. The elevations of these structures were set to allow for future lowering of the channel of the East Highline Canal to further increase the capacity. Total cost of these headings was $36,833.

IRRIGATION DIVISION
FEDERAL CONTRACTS

A. Public Law 750—81 Congress:

Final approval of the credit due Imperial Irrigation District under Public Law 750 was not received during 1953 although work by the American Commissioner of the International Boundary and Water Commission had progressed to the extent that approval had been expected before the end of the year. This credit is for costs incurred by Imperial Irrigation District for construction, operation, and maintenance of flood protective works along or adjacent to the Colorado River in Arizona, California, and Lower California.

When finally approved the credit allowed will be applied against the next succeeding annual payments on the All-American Canal as they become due and payable from Imperial Irrigation District to the United States.

B. All-American Canal Contract:

Several conferences were held during 1953 with personnel from the staff of the Commissioner of the Bureau of Reclamation; however, an agreement had not been reached at the end of the year on the question of All-American Canal cost allocations. A question of vital importance which the District feels should be settled at the time the final cost allocations are made is that of the Gila Project bearing a capacity cost of Laguna Dam, and a capacity in the All-American Canal and desilting works. This matter was discussed at the various conferences held during the year and has been the subject of much correspondence, with Imperial Irrigation District contending that the Gila Project should share in the cost of Imperial Dam and the cost of substitute facilities provided for the Yuma Project.

Arrangements were being made at the end of the year for a meeting to be held early in 1954 at which time a final settlement of the problems relative to the allocation of costs was expected.

COLORADO RIVER BOARD

COLORADO RIVER BOARD

During 1953, the activities of the Colorado River Board increased in volume and responsibility to the greatest degree since the Mexican Water Treaty times of 1944 and 1945.

The Board suffered the greatest loss of its existence during the year when The Creator called Mr. Arvin B. Shaw, Jr., to his last reward. Mr. Shaw had held the position of Assistant Attorney General and Chief Counsel to the Colorado River Board from its creation by the State Legislature in 1937 until his death. Deputy Attorney General Gilbert Nelson, who had been assisting Mr. Shaw with the Board's legal work, was appointed Counsel for the Board.

Attorney General Brown appointed Mr. Northcutt Ely to the position of Special Counsel in charge of litigation in the U. S. Supreme Court, in the case of Arizona vs. California.

The Board held twelve regular meetings and one special meeting during 1953, and was represented by either Board members or members of the staff at 19 conferences or conventions on problems related to California's claims for water from the Colorado River.

The State Legislature authorized an emergency appropriation of $100,000 for the cost of California's defense in the Arizona vs. California lawsuit. This lawsuit progressed through the various stages of Answers and Replies not only to Arizona's petition in the suit, but also to the petition of intervention filed by the U. S. Attorney General for the United States, and the petition filed by the State of Nevada.

Arizona introduced a new Central Arizona Project Bill, H. R. 2971, but did not actively pursue passage of the bill.

New legislation was introduced for the purpose of authorizing Bridge Canyon Dam, power plant, transmission lines, and appurtenant dams for desilting water. This bill received a great amount of study by staff members; however, it did not get out of Committee.

The proposed Colorado River Storage Bill had not been introduced at the close of the year. Our information indicates a bill will be introduced when Congress convenes in 1954. The staff spent much time studying available information on the proposed bill, and interviewed high government officials concerning it.

CONCLUSION

In this report I have covered briefly the accomplishments and the problems during this the forty-second year of operation of Imperial Irrigation District. There have been many changes and we have witnessed a remarkable growth throughout our valley over this period of years. A combination of long range planning by your Board of Directors, hard work and conscientious devotion to duty by the officers and employees of the District, and the continued co-operation and support of the people of the Valley has made it possible for the District to provide service wherever needed without delay. This same combination of planning, hard work, and co-operation assures us of a successful operation during the years to come.

To each and everyone who helped make 1953 a most successful year, my sincere thanks.

Evan T. Hewes

EVAN T. HEWES, President
Board of Directors