

EXHIBITS

I. OPERATORS REPORT

CARL A. WHITE
WATER RECLAMATION PLANT
Ernest Mine Complex, Creekside, Indiana County, Pennsylvania

OPERATORS REPORT

MINE POOL ELEVATIONS
Plant Site
Sludge Well
Creekside
E — 4

RAW WATER PUMPS	
1	Hrs.
2	Hrs.
3	Hrs.
4	Hrs.
5	Hrs.
6	Hrs.

ANALYSES	
Plant Flow	MGD
Sludge Wasted	MGD
Sludge S.S.	ML/L
Precipitation	IN.
Raw Water	pH
Plant Eff.	pH

	1	2	3
Lime Slaker Operation			
Lime Slurry Feeder			
Blower Operation			

		E	¼	½	¾	F
Lime	Bin No. 1					
	Bin No. 2					
Lime Slurry Solids		_____ %				
L. S. Specific Gravity		_____ G/CC				

FLASH MIXERS	1	2
Liquid Flow (MGD)		
Effluent pH		
Sludge Recirculated (MGD)		

AERATORS	1	2
Air Flow (CFM)		
Dissolved Oxygen (MG/L)		
Effluent pH		
Sludge Recirculated (MGD)		

FINAL CLARIFIERS	1	2	3	4
Scraper Operation (Hrs.)				
Effluent pH				
Sludge Withdrawal Time (Hrs.)				
Sludge Withdrawn (MGD)				
Sludge Specific Gravity (G/CC)				
Sludge Solids (%)				
Sludge Blanket Level (Ft.)				
Sludge Recirculated (MGD)				

Remarks: _____

 (Operator)

II. OPERATIONS SCHEDULE

OPERATIONS SCHEDULE

OPERATION TASK DESCRIPTION

RAW WATER PUMPS

	DAILY	WEEKLY	BI-WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Operate Equipment	X						
Rotate Pump Operation & Log Hours	X						
Check Oil Drops & Oil Level	X						
Lubricate Motors							X

FLASH MIXERS

Operate Equipment	X						
Lubricate Motors							X
Lubricate Gear Units						X	

AERATION TANKS

Operate Equipment	X						
Lubricate Motors							X
Lubricate Gear Units						X	
Check for Dissolved Oxygen	X						
Check for Air Distribution & Mixing	X						

SETTLING TANKS

Intermittent Operation of Scrapers	X						
Sludge Withdrawal	X						
Sludge Recirculation Pump Operation	X						
Exercise Electric Valve thru Range		X					
Exercise "Raise" Mechanism		X					
Lubricate Motors							X
Lubricate Gear Units						X	
Measure Sludge Blanket Level	X						

OPERATIONS SCHEDULE

LIME HANDLING

	DAILY	WEEKLY	BI-WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Operate Equipment	X						
Lime Feeder Adjustment	X						
Lime Slaker Cleaning		X					
Exercise Standby Units (conveyors, slaker, pump, etc)		X					
Alternate Equipment Use		X					
Clean Lime Slurry Vats and Tanks			X				
Exercise Mixers & Pumps thru Range		X					
Empty Grit	X						
Haul Grit		X					
Clean Dust Arresters @ Slakers				X			
Flush Pumps, Lime Slurry Feeders, etc.	X						
Flush Lime Slurry Pipelines	X						

SLUDGE WASTING

Operate Equipment	X						
Exercise Pumps thru Range		X					
Flood Sludge Wells in Cold Weather *	X						

UTILITY WATER

Operate Equipment	X						
Check Oil Drops & Oil Level	X						
Lubricate Motors							X

BLOWERS

Alternate Equipment Use	X						
Check Speed vs Output Air	X						
Check Manometer	X						
Exercise Blowers thru Range		X					
Lubricate Motors							X
Lubricate Gear Units						X	
Record Temperature and Pressure		X					

* End of shift

OPERATIONS SCHEDULE

EMERGENCY GENERATOR

	DAILY	WEEKLY	BI-WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Exercise Generator no-load		X					
Exercise Generator full-load						X	
Lubrication					X		
Battery Check		X					
Oil & Gas Filter Change							X

INSTRUMENTATION

Operate Equipment	X						
Exercise Transmitter thru Range		X					
Purge Air Bubbler System	X						
Clean pH Probes		X					
Clean Purge Pipes		X					
Check Flow Distribution	X						
Calibrate Equipment						X	
Clean Bubbler Tubes			X				
Record Flows of all Instruments	X						

HOUSEKEEPING

Sweep Floors		X					
Dust Furniture		X					
Clean Toilet Fixtures		X					
Scrub Floors			X				
Cut Lawn			X				
Remove Snow (As Needed)	X						

LABORATORY

Raw Water Analysis				X			
Stream Analysis		X					
Measure Settleable Solids of Sludge	X						
Check pH of Raw Water & Plant Effluent	X						
Analyze % Solids of Sludge	X						
Analyze % Solids of Lime Slurry	X						
Determine Specific Gravity of Sludge	X						
Determine Specific Gravity of Lime Slurry	X						
Measure Dissolved Oxygen in Aeration Tank	X						

OPERATIONS SCHEDULE

LABORATORY (con't)

Measure pH of Flash Mixers &
Aeration Tank Effluent

X

UTILITIES

Record Electric Power Used
Record City Water Usage

X

X

MAINTENANCE

Dust and Wipe Equipment
Misc. Spot Painting

X

X

MISCELLANEOUS

Check Mine Level at Plant
Check Mine Level at Creekside
Check Mine Level @ Sludge Pit
Check Mine Level @ E-4
Record Motor Amperage
Record Equipment Hours of Operation
Record Weather & Precipitation
Service Vehicles

X

X

X

X

X

X

X

X

III. RAW WATER ANALYSIS

CARL A. WHITE
WATER RECLAMATION PLANT

RAW WATER ANALYSIS

Date Collected: January 2, 1980

Collected By: HML, RAW

Date (s) Analyzed: January 2, 1980

pH	<u>3.10</u>
Cold Acidity (mg/l as CaCO ₃)	<u>1273</u>
Hot Acidity (mg/l as CaCO ₃)	<u>1262</u>
Total Alkalinity (mg/l as CaCO ₃)	<u>0</u>
Sulfates (mg/l)	<u>1950</u>
Conductivity (umhos/cm)	<u>2020</u>
Total Solids (mg/l)	<u>3000</u>
Suspended Solids (mg/l)	<u>523</u>
Dissolved Solids (mg/l)	<u>2477</u>
Iron (mg/l)	<u>409</u>
Manganese (mg/l)	<u>9.3</u>
Aluminum (mg/l)	<u>125</u>

REMARKS: _____

Analyst: Carl A. White