

Estimated Cost: Active Remediation Contingency

I. Further Evaluation						
A.) Well Installations						
TIME FRAME: One (1) Year						
Item	Description	Unit Cost	Quantity	Cost		Source
Project Management	Field Work Preparation, GIS Mapping and Review of Data per Sampling Event	\$1,900.00	1	\$1,900.00		Professional Judgement and Actual Costs
On Site Project Manager	Senior Hydrogeologist	\$150.00	8	\$1,200.00		HET
Installation of Nine (9) two (2) inch Monitor Wells	HET Time, Equipment and Materials	\$59,368.05	1	\$59,368.05		Professional Judgement and HET Cost Estimate
Solid Waste	Disposal and transportation of drill cuttings	\$1,500.00	1	\$1,500.00		Professional Judgement
Survey of Wells	Subcontracted Surveying	\$2,500.00	1	\$2,500.00		Professional Judgement and Actual Costs
Subtotal:				\$66,468.05		Subtotal
20% Contingency:				\$13,293.61		20% Contingency
Total Estimated Cost:				\$79,761.66		Total Estimated Cost
B.) Aquifer Feasibility Study						
TIME FRAME: One (1) Year to begin six (6) months after initiation of Further Evaluation activities						
Item	Description	Unit Cost	Quantity	Cost		Source
Project Management	Field Work Preparation, GIS Mapping and Review of Data per Sampling Event	\$1,900.00	1	\$1,900.00		Professional Judgement and Actual Costs
Installation of Recovery Wells	Two (2) Six (6) inch Recovery Wells	\$19,908.00	1	\$19,908.00		Walker-Hill Proposal #7379
Oversight of Installation by HET	Hydrogeologist @ 90.00 per hour for one (1) week	\$90.00	40	\$3,600.00		HET
Mileage: One (1) 1/2 ton truck	40 mile round trip @ \$1.00 per mile per truck	\$40.00	5	\$200.00		HET Personnel Rotation
On Site Project Manager Setup and Oversight	Senior Hydrogeologist	\$150.00	16	\$2,400.00		HET
24 Hour Aquifer Test: Personnel Setup and Oversight	Senior Hydrogeologist, Hydrogeologist, and Environmental Scientist	\$325.00	30	\$9,750.00		HET
24 Hour Aquifer Test: Equipment	Data loggers, Generator, Probe, etc.	\$1,500.00	3	\$4,500.00		HET
Submersible Well Pump (40 gpm)	40GS15432C - Gould's Pumps GS Submersible Well Pump	\$1,400.00	2	\$2,800.00		Locke Well & Pump Company
Mileage: Two (2) 1/2 ton trucks	40 mile round trip @ \$1.00 per mile per truck	\$40.00	2	\$80.00		HET Personnel Rotation
Water Disposal: Containment	500 Barrel Frac Tanks @ \$200 per day, estimated for 30 days	\$200.00	30	\$6,000.00		Francis Energy Services
Water Disposal: Mobilization	\$1,400 per tank	\$1,400.00	5	\$7,000.00		Francis Energy Services
Water Disposal: Wash Out Fees	\$500 per tank	\$500.00	5	\$2,500.00		Francis Energy Services
Water Disposal: Transportation via Vacuum Truck	\$500 per load	\$500.00	20	\$10,000.00		Francis Energy Services
Water Disposal: Disposal Cost	R360 @ \$5 per barrel	\$5.00	2400	\$12,000.00		Francis Energy Services
Laboratory Analytical	Laboratory Analyses of twelve (12) Effluent Samples during aquifer test	\$200.00	12	\$2,400.00		Laboratory Analytical Costs
Data acquisition and analysis	Senior Hydrogeologist	\$150.00	24	\$3,600.00		HET
Subtotal:				\$88,638.00		Subtotal
20% Contingency:				\$17,727.60		20% Contingency
Total Estimated Cost:				\$106,365.60		Total Estimated Cost

II. Groundwater Monitoring and Reporting						
TIME FRAME: Three (3) Years to begin after completion of Aquifer Feasibility Study						
Item	Description	Unit Cost	Quantity	Cost		Source
Project Management	Field Work Preparation, GIS Mapping and Review of Data per Sampling Event	\$1,900.00	12	\$22,800.00		Professional Judgement and Actual Costs
Water Well *	Water well to be installed to deeper portion of aquifer	\$4,400.00	1	\$4,400.00		Matthieu's Water Well Drilling, Inc.
Quarterly Groundwater Monitoring and Sampling	Monitoring and Sampling of 45 Monitor Wells	\$26,608.25	12	\$319,299.00		Professional Judgement and Actual Costs
Laboratory Analytical	Laboratory Analyses of forty-five (45) Water Samples @ \$500.00 per sample	\$22,500.00	12	\$270,000.00		Professional Judgement and Actual Costs
Annual Report Preparation	Monitoring Data, GIS Figures, Data Tables	\$7,500.00	3	\$22,500.00		Professional Judgement and Actual Costs
Subtotal:				\$638,999.00		Subtotal
20% Contingency:				\$127,799.80		20% Contingency
Total Estimated Cost:				\$766,798.80		Total Estimated Cost

*Water well to be installed to a deeper portion of the aquifer (IF NESECCARY) - \$4,400 (Matthieu's Water Well Drilling, Inc.)

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III. Salt Water Disposal (SWD) Well Permitting and Installation					
TIME FRAME: One (1) Year to begin after Aquifer Feasibility Study					
Item	Description	Unit Cost	Quantity	Cost	Source
Permitting and Installation of Injection Well		\$1,098,149.00	1	\$1,098,149.00	BP, et al, Authorization for Expenditure Drilling and Completion (04-06-2017)
Subtotal:				\$1,098,149.00	Subtotal
20% Contingency:				\$219,629.80	20% Contingency
Total Estimated Cost:				\$1,317,778.80	Total Estimated Cost

IV. Groundwater Withdrawal System Implementation					
TIME FRAME: One (1) Year to begin after SWD well installation is complete					
Item	Description	Unit Cost	Quantity	Cost	Source
Project Management	Field Work Preparation, GIS Mapping and Review of Data per Sampling Event	\$1,900.00	1	\$1,900.00	Professional Judgement and Actual Costs
On Site Project Manager	Senior Hydrogeologist	\$150.00	8	\$1,200.00	HET
Entergy - Power Supply Installation	Installation of Three Phase Service	\$21,994.08	1	\$21,994.08	Entergy Louisiana, LLC Electric Service - Large Industrial Service Rate Schedule (Page 41)
Electrician		\$10,000.00	1	\$10,000.00	Professional Judgement
Equipment Delivery		\$10,000.00	1	\$10,000.00	Professional Judgment
Surface Completion/road box installation/system connection	2 Recovery Wells	\$1,500.00	2	\$3,000.00	Professional Judgement
Installation of Piping & System	HET Installation Crew at \$250 per hour	\$250.00	24	\$6,000.00	Professional Judgement
PVC Transfer/Injection Lines, Fittings, and Wire	2 Recovery Wells	\$912.50	2	\$1,825.00	Plumbing Supply
Subtotal:				\$55,919.08	Subtotal
20% Contingency:				\$11,183.82	20% Contingency
Total Estimated Cost:				\$67,102.90	Total Estimated Cost

V. Maintenance and Operations of SWD and Recover Wells and Utilities					
TIME FRAME: One (1) Year to begin after Groundwater Withdrawal System Implementation					
Item	Description	Unit Cost	Quantity	Cost	Source
Operation of Injection Well		\$25,000.00	1	\$25,000.00	Professional Judgement Petroleum Engineer
Maintenance of Injection Well		\$25,000.00	1	\$25,000.00	Professional Judgement Petroleum Engineer
Recovery Well Maintenance - HET		\$11,050.00	1	\$11,050.00	HET - Professional Judgement and Actual Costs
Entergy - Electrical Service	\$13.39 per month plus \$0.05587 per KW/Hr, Cost per Month (24/7) (6-8 KW)	\$335.20	12	\$4,022.41	Entergy Louisiana, LLC Electric Service - Small General Service (Page 9)
Subtotal:				\$65,072.41	Subtotal
20% Contingency:				\$13,014.48	20% Contingency
Total Estimated Cost:				\$78,086.90	Total Estimated Cost

VI. Post Remediation Groundwater Monitoring and Reporting					
TIME FRAME: One (1) year Post Remediation Monitoring					
Item	Description	Unit Cost	Quantity	Cost	Source
Project Management	Field Work Preparation, GIS Mapping and Review of Data per Sampling Event	\$1,900.00	4	\$7,600.00	Professional Judgement and Actual Costs
Quarterly Groundwater Monitoring and Sampling	Monitoring and Sampling of 45 Monitor Wells	\$26,608.25	4	\$106,433.00	Professional Judgement and Actual Costs
Laboratory Analytical	Laboratory Analyses of forty-five (45) Water Samples @ \$500.00 per sample	\$22,500.00	4	\$90,000.00	Professional Judgement and Actual Costs
Annual Report Preparation	Monitoring Data, GIS Figures	\$7,500.00	1	\$7,500.00	Professional Judgement and Actual Costs
Subtotal:				\$211,533.00	Subtotal
20% Contingency:				\$42,306.60	20% Contingency
Total Estimated Cost:				\$253,839.60	Total Estimated Cost

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VII. Closure and P&A of Wells					
TIME FRAME: Six (6) Months to begin after Post Remediation Monitoring					
Item	Description	Unit Cost	Quantity	Cost	Source
Closure Report	Post Remediation Monitoring Data and Closure Report	\$10,000.00	1	\$10,000.00	Professional Judgement and Actual Costs
P&A SWD Well	Plug and Abandon SWD well	\$127,885.00	1	\$127,885.00	Authorization for Expenditure - Guidry SWD P&A
P&A of Recovery Wells: two (2) six (6) inch wells	HET Time, Equipment, and Materials	\$15,857.50	1	\$15,857.50	HET/Walker Hill - Professional Judgement and Actual Costs
P&A of HET Monitor Wells: twenty (20) two (2) inch wells	HET Time, Equipment, and Materials	\$61,192.40	1	\$61,192.40	HET/Walker Hill - Professional Judgement and Actual Costs
P&A of ICON Monitor Wells: twenty-seven (27) 0.75 inch wells	HET Time, Equipment, and Materials	\$60,172.70	1	\$60,172.70	HET/Walker Hill - Professional Judgement and Actual Costs
Subtotal:				\$275,107.60	Subtotal
20% Contingency:				\$55,021.52	20% Contingency
Total Estimated Cost:				\$330,129.12	Total Estimated Cost

TOTAL ESTIMATED COSTS SUMMARY					
Item	Description	Unit Cost	Quantity	Cost	Source
I. Further Investigation A.) Well Installations				\$79,761.66	
I. Further Investigation B.) Aquifer Feasibility Study				\$106,365.60	
II. Groundwater Monitoring and Reporting				\$766,798.80	
III. SWD Well Permitting and Installation				\$1,317,778.80	
IV. Groundwater Withdrawal System Implementation				\$67,102.90	
V. Maintenance and Operations of SWD and Recover Wells and Utilities				\$78,086.90	
VI. Post Remediation Groundwater Monitoring and Reporting				\$253,839.60	
VII. Closure and P&A of Wells				\$330,129.12	
TOTAL ESTIMATED COSTS				\$2,999,863.37	TOTAL ESTIMATED COSTS