

WEFTA SPONSORED TRIP TO CHIAPAS, MÉXICO



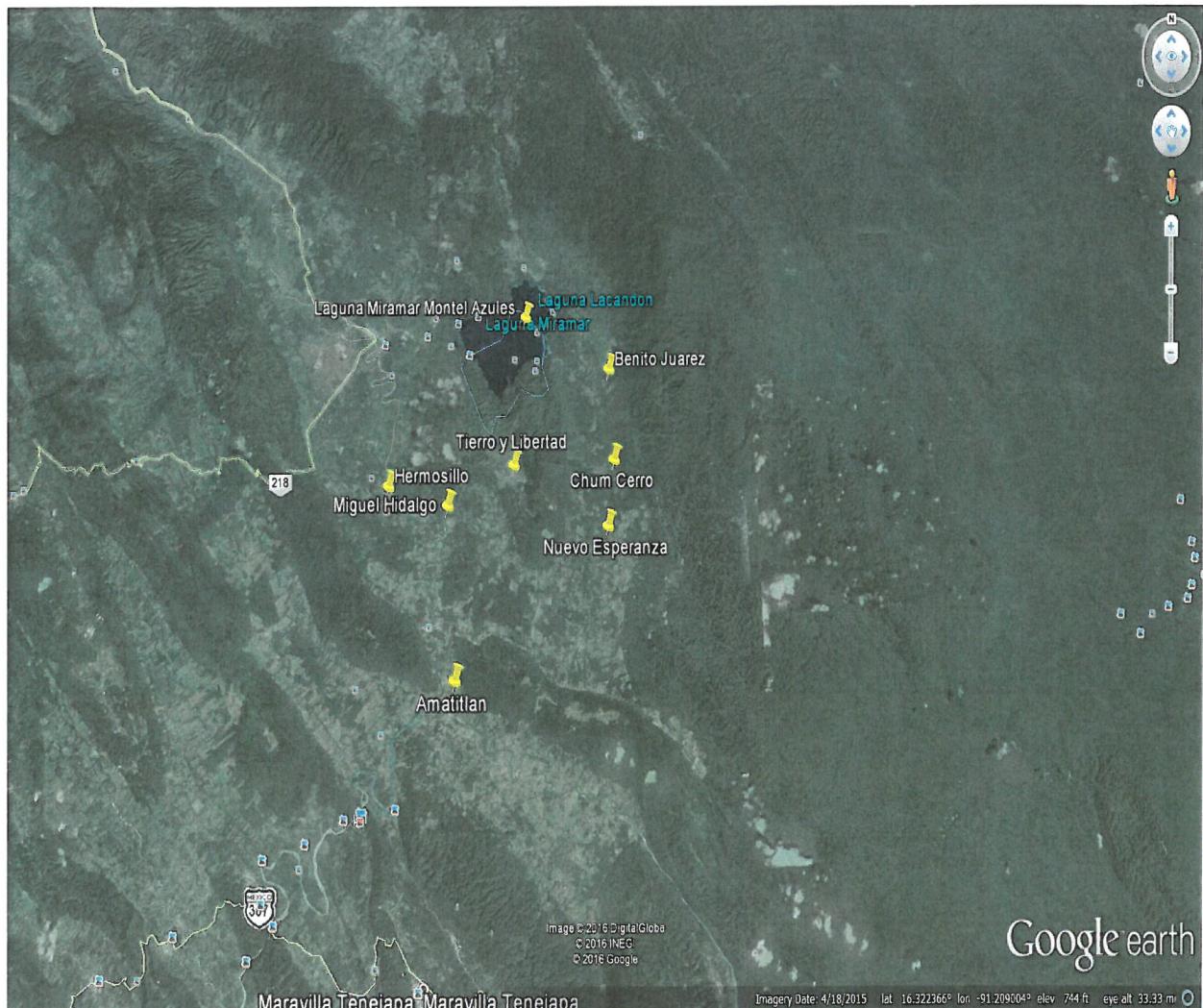
JAA – WATER – AGUA

RESERVA BIÓSFERA DE LOS MONTES AZULES CHIAPAS, MÉXICO

TRIP REPORT

Related to Site Visit made by Royce Beaudry, P.E. and Ramón Lucero, Jr.
to the State of Chiapas, Mexico
April 8 – April 16, 2017

WEFTA SPONSORED TRIP TO CHIAPAS, MÉXICO



WEFTA SPONSORED PROJECTS LOS MONTES AZULES

WEFTA SPONSORED TRIP TO CHIAPAS, MÉXICO



**MIGUEL HIDALGO
MAYAN - TZELTAL**

Village: **Miguel Hidalgo – Chiapas, México**

Miguel Hidalgo is a Zapatista community with 150 homes and approximately 1,750 people. The community is organized similar to a development in the suburbs of any major US city, although it is in the middle of the jungle, with the best mode of transportation to arrive in the community is a small motorized boat (lancha) on the Rio Jatape. Each house is on a 50-square meter piece of property, divided in blocks and separated by areas which could be classified as roads.

A new water system for the community was completed in 2011. The project included a spring catchment tank at the manantial (spring), approximately 1,600 meters of 2-inch and 2-1/2-inch PVC from the manantial through the jungle to a new water storage tank and finally PVC pipe from the water storage tank culminating with an outdoor spigot to the outside of each dwelling.

Prior to bringing the waterline into the community, the women and children gathered their water from an arroyo at the bottom of a steep bank near the community. Due to the heavy rains in the region, the water was often the color of chocolate milk and full of silt from the runoff.

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Two years later, members of the community are doing a great job maintaining the water system. After five years, people from the community are as appreciative of the water system today as they were when first installed. As a result of the project the community has seen a decline in water borne illnesses, especially to the infants and the elderly.

With the goal of efficiently operating and maintaining the system, two families are chosen annually for this purpose. Usually the families' responsibility are to conduct a visual inspection of the spring catchment tank, the waterline between the spring and the tank, the water storage tank and the outdoor spigots at each dwelling. Once the evaluation is complete, the families organize other families in the community to assist in making the necessary repairs.

Repairs usually include maintenance of the spring catchment tank to guarantee the containment of all available water, protecting the PVC pipe from the sun by planting cacao and other similar vegetation for shade, and ensuring that water for each outdoor spigot has the appropriate drainage in order to avoid pools where mosquitos can hatch and live.

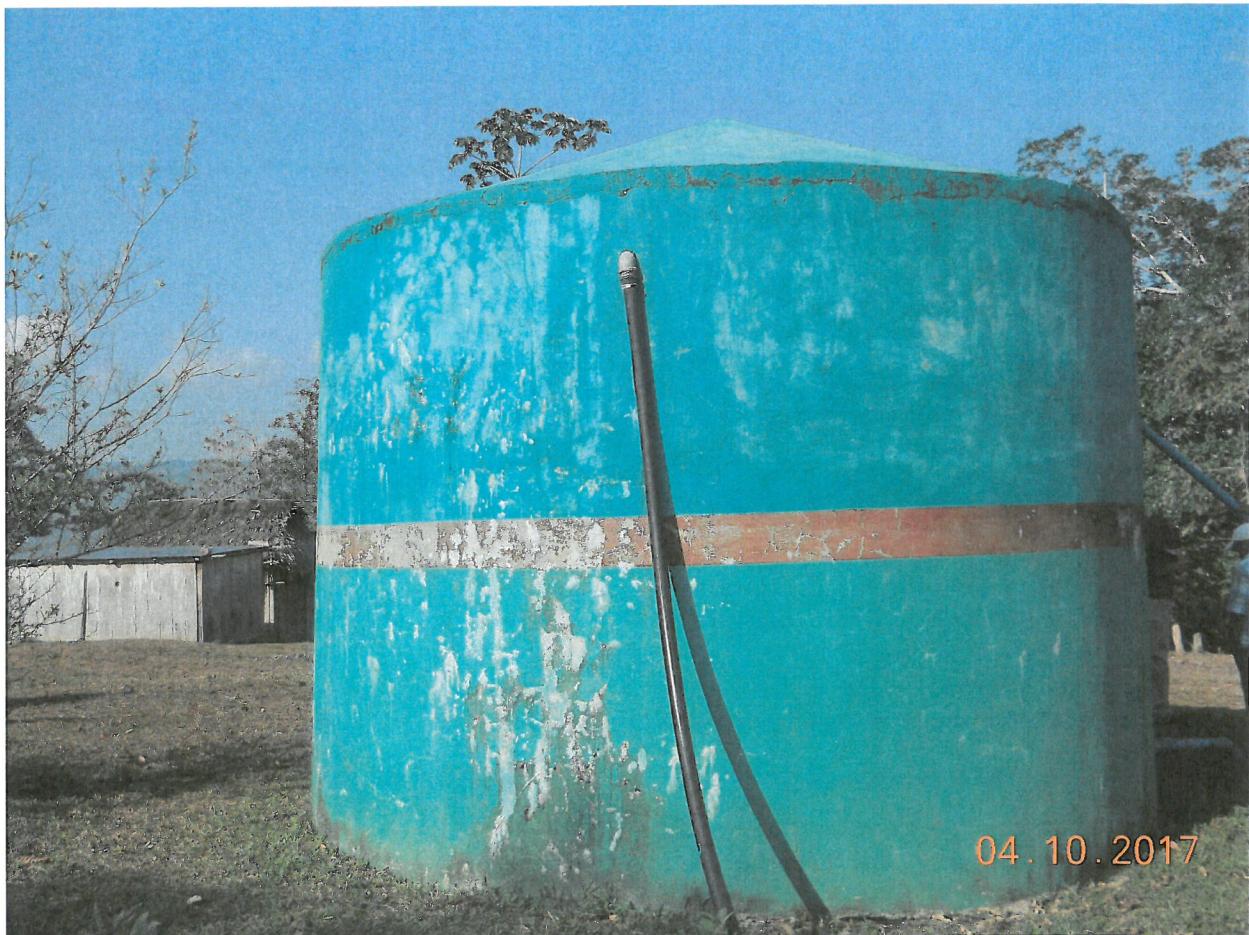
Over the past eighteen months there have been several breaks in the transmission line from the spring to the water storage tank and at the lower elevations in the community. All of the breaks are within a 100 meter section of line located at the lowest elevation of the transmission line and approximatley 200 meters at the lower elevations in the community. According to the technical specifications for the 2-inch Poliducto Hidraulico Cedula 80 it is only meant to withstand pressures of 56.89 psi. 2-inch Schedule 80 PVC pipe from the US can withstand pressures of 400 psi. According to survey completed by Mr. Alvaro Farias the elevation differences between the spring and the 100-foot section of line where the Poliducto is leaking are approximatley 145 feet, causing pressures of approximately 63 pounds per square inch.

These issues were resolved during our trip with the purchase and installation of 2-inch and 2 ½-inch PVC RD-26, which withstands pressures up to 160 psi.

Since our last visit in April 2016, water has started to seep through the walls of the ferrocement built water storage tank. Ferrocement tanks are wire-reinforced cement mortar tanks which are less expensive than tanks built entirely with concrete. Ferrocement tanks are often preferred because they rely on commonly available materials and simple, easily-transferable skills. The construction likewise requires simple equipment so local people can easily contribute labor and local materials like sand instead of money.

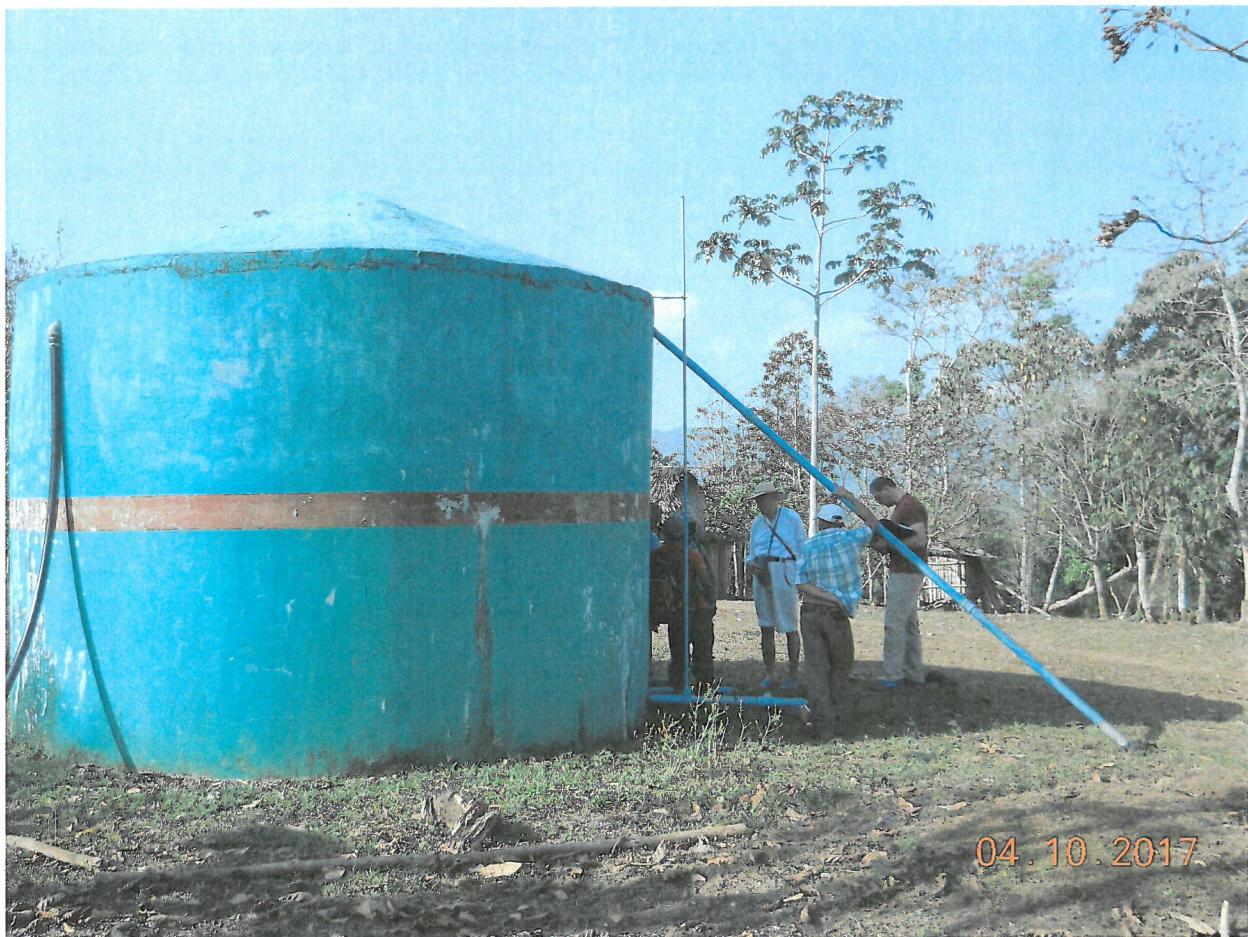
Royce Beaudry, P.E. is currently speaking with local tank manufacturers and Souder, Miller and Associates colleagues to determine the best method to stop the seeping and develop constructon recommendations to prevent seeping in tanks constructed in the future.

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Miguel Hidalgo Ferrocement Water Storage Tank

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Royce Beaudry, P.E. WEFTA Volunteer, Kees Gootenboer and Miguel Hidalgo Community Members inspecting Miguel Hidalgo Water Storage Tank

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Royce, Kees, Maestro José and Miguel Hidalgo community members resting at spring catchment tank site

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Kees and Fermin inspecting waterline between spring catchment tank
and community

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TIERRA Y LIBERTAD MAYAN – CHO'L

- Community:** **Tierra y Libertad – Autonomous Zapatista Community located approximately one-hour walk (in the dry season) from the community of Miguel Hidalgo or two-hour walk from Vicente Guerrero, Chiapas, México**
- Water System Improvement Project to include spring catchment system to capture two distinct springs into a single transmission line to a water storage tank, distribution lines to individual homes culminating with a water spigot to the outside of each dwelling unit.**
- Population:** **65 homes with a population of approximately 450 people**
- Local Leader:** **Eduardo Lopez Lopez, Autoridad,**
- Proposed Cost:** **Based on a site visits by Maestro José during the week of April 23-29, 2016 and our recent site visit where we developed a detailed list of materials to complete the project and cost estimates from the hardware store in San Cristobal de las Casas, the cost to complete the project including materials and labor is approximately \$15,000 US Dollars. WEFTA has recently provided \$12,349 for the project.**

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Path to Spring Catchment Site

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Kees, Maestro José and Tierra y Libertad Community Members designing spring catchment tank
to capture water from natural spring

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Royce and Maestro José performing design calculations for spring catchment tank

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Tierra y Libertad Proposed Tank Site

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Young boys in front of church in Tierra y Libertad

Attached please find the list of materials needed to complete the project. The list was developed based on a site visit Maestro José conducted between April 23 – 29, 2016 to measure the amount of transmission line which will be needed between the spring catchment area to the proposed tank site and the distribution lines from the tank site to the individual homes. The transmission line from the spring to the tank will be 2-inch poly-ducto and the distribution line will consist of 2-inch poly-ducto along the main pathways and ½-inch line to the individual homes.

The water storage tank will be sized using the following formula:

$$450 \text{ people} \times 60 \text{ gallons per person per day} = 27,000 \text{ gallons per day} \times 3.785412 = 102,206 \text{ liters}$$

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Attachment A

Tierra y Libertad Project Cost Estimates

CHIAPAS, MEXICO
PROJECTS FOR MIGUEL HIDALGO AND TIERRA Y LIBERTAD

U.S. Dollars		Mexican Pesos
\$ 8,000.00		\$ 171,561.61
	Miguel Hidalgo	\$ 48,989.00 Invoice Received
	T y L	\$ 5,464.00 Invoice Received
	Concrete	\$ 7,560.00 Invoice Received
	Subtotal	\$ 109,548.61
\$ 4,349.65		\$ 79,817.91
	Subtotal	\$ 189,366.52
	Miguel Hidalgo Labor	\$ 3,200.00 Maestro Jose
	Transportation / Meals	\$ 1,050.00 Maestro Jose
	T y L Labor Spring Box	\$ 8,000.00 Maestro Jose
	Tranportation / Meals	\$ 1,600.00 Maestro Jose
	Transportation return	\$ 1,000.00 Maestro Jose
	Contingency	\$ 1,850.00
	Accountant Fees	\$ 3,000.00 Javier Trujillo
	Poly Pipe TyL	\$ 121,380.00 Invoice Received
	Subtotal	\$ 48,286.52
	Kees Supervision	\$ 10,160.00 Entire TyL Project
	Subtotal	\$ 38,126.52
Estimated	TyL Materials remaining proj.	\$ 57,454.00
Estimated	Maestro Jose Labor	\$ 19,600.00 Maestro Jose 7 wks
	Transportation/Meals	\$ 2,600.00 Maestro Jose
\$2,307.00	Anticipated Funding Needs:	\$ 41,527.48

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Attachment B

Benito Juarez Latrine Project Solicitation

/ Benito Juárez Miramar, municipio de Ocosingo, Chiapas; a 03 de abril del 2017.

Asunto: Solicitud de apoyo para baño

C. KEEs

Por este medio nos dirigimos a usted de la manera mas atenta y respetuosa con la finalidad de solicitar su valioso apoyo para la construcción de baños en el ejido antes mencionado, ya que algunos habitantes no cuentan con dicho beneficio. Por ello acudimos ante usted para solicitar los recursos y/o materiales para la construcción de baños, ya que somos personas de bajos recursos.

No dudando de su valioso apoyo. Se anexa la lista de los solicitantes.

Atentamente

Las autoridades del ejido



Antonio Pérez Méndez
Agente Auxiliar municipal



EJIDO BENITO JUÁREZ MIRAMAR
MUNICIPIO DE OCOSINGO CHIAPAS



Fidelino Jiménez García
Comisario Ejidal



COMISARIO EJIDAL DEL
EJIDO BENITO JUÁREZ
MIRAMAR
MUNICIPIO DE OCOSINGO CHIAPAS

Nombres de los solicitantes.

1. José Angel Hernández Hernández
2. Elias Sánchez Hernández
3. Quirino Hernández Clara
4. Nicolas Hernández Ruiz
5. Eusebio Hernández Jiménez
6. José Angel Hernández Ruiz
7. Celestino García Clara
8. Francisco Hernández Hernández
9. Romeo Jiménez García
10. Fidelino Jiménez García
11. Nicolas Mendoza Pérez
12. Roberto Antonio Hernández Clara
13. José Francisco Hernández Clara
14. Alejandro Hernández López
15. Juan Hernandez López
16. Nicolas Hernández López
17. Manuel Clara Hernández s.
18. Luis Hernández López
19. Lazaro Clara Hernández
20. Filemón Garcia Mendoza
21. Nicolás Clara Hernández
22. Fredi Alberto Clara Hernández
23. Juan Jiménez Clara
24. Sebastan Clara Jiménez
25. Manuel Clara Jimenez (primero)
26. Horacio Hernández Hernández
27. José Alfredo Hernández Hernandez
28. Manuel Clara Aguilar
29. Eusebio Hernández Clara
30. German Hernández Jiménez

31. Gilberto Clara Hernández
32. Filemon García Clara
33. Manuel de Jesus Hernández Jiménez
34. José Guadalupe Hernández Jiménez
35. Regina Sánchez Cruz
36. Manuel García clara
37. Luz del Angel Hernández Clara
38. Miguel Clara Jiménez
39. Hermenejildo Gordillo Pérez
40. Jesus Méndez Jiménez
41. Manuel clara Jiménez (Teruro)
42. Feliciano Perez Mendez

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Attachment C

Nueva Argentina Water Project Solicitation

Ejido Nueva Argentina, Municipio Maravilla Tenejapa
Chiapas. Con fecha 12 de Abril del año 2017.

C. Kees

Asunto: Solicitud.

Presente.

Poreste medio nos dirigimos Con usted
Con la finalidad de solicitarle de agua potable
ya que carecemos de este tipo de servicio
en el tiempo de Verano no tenemos agua en
nuestros domicilio, y tambien les rogamos
Si han esa posibilidad de un motor o, regenerador
Para un almacenamiento asi podamos facilitar
y tener suficiente agua.

Sin mas por el momento esperamos la
respuesta, de su apoyo y su amabilidad.

Firman y sellan las autoridades del ejido antes
Mencionado.

Comisariado ejidal



EJIDO NUEVA ARGENTINA
COMISARIADO EJIDAL
MARAVILLA TENJAPA, CHIAPAS.

Samuel Pérez Pérez.

Consejo de vigilancia.



Eulogio Gómez Pérez..

Ejido Nueva Argentina
Municipio de Maravilla
Tenejapa Chiapas

TEL: 555 151 13 98.

Relacion de nombres del ejido Nueva Argentina
 Municipio de Maravilla Tenejapa chiapas a 10 de Abril
 Del año 2017 Somos 73 personas

1	Esau	Hernandez Jimenez
2	Manuel	Gomez Juarez
3	Miguel Angel	perez Lopez
4	Micaela	Lopez Gomez
5	Ramiro	perez Lopez
6	Abelardo	perez Jimenez
7	patrocinio	Jimenez Jimenez
8	Silberio	Jimenez Roman
9	Artemio	Lopez Trujillo
10	Fidelia	perez Jimenez
11	Arturo	Gomez Mencler
12	Fidelio	Gomez Mencler
13	Abimael	Sanchez Rodriguez
14	Gabriel	Sanchez Garcia
15	Aramundo	Jimenez Lopez
16	Filomeno	Vazquez Vazquez
17	German	Lopez Lopez
18	cresencio	Sanchez Garcia
19	Victor	Jimenez perez
20	Jose Luis	Jimenez Rodriguez
21	Guillermo	Hernandez Aguilar
22	Jose	Jimenez Rodriguez
23	Melquiades	Jimenez Roman
24	Roberto	perez Jimenez
25	Genaro	Jimenez Vazquez
26	Guadalupe	perez Jimenez
27	Fernando	perez Jimenez

28	Isaias	Hernandez	Jimenez
29	Mario	Luna	Perez
30	Javier	Jimenez	Rodriguez
31	Justo	Jimenez	Jimenez
32	Armando	Jimenez	Gonzalez
33	Rodrigo	Gomez	Guzman
34	Caralampio	Vazquez	Jimenez
35	Arnulfo	Gomez	Mendez
36	Mateo	Alvarez	Alvarez
37	Domingo	Perez	Jimenez
38	Eulogio	Lopez	Lopez
39	Samuel	Perez	Perez
40	Eliazar	Jimenez	Perez
41	Fidencio	Lopez	Perez
42	Abel	Luna	Hernandez
43	Joel	Jimenez	Jimenez
44	Francisco	Gomez	Cruz
45	Hilario	Perez	Jimenez
46	Jacob	Jimenez	Alvarez
47	Delmar	Gomez	Jimenez
48	Octavio	Gomez	Jimenez
49	Oscar	Jimenez	Perez
50	Moises	Jimenez	Perez
51	Edray	Jimenez	Luna
52	Eliseo	Jimenez	Luna
53	Humberto	Gomez	Mendez
54	Romeo	Perez	Perez

- | | | | |
|----|--------------|-----------|-----------|
| 55 | Jesus | Lopez | cardenas |
| 56 | Rigoberto | Jimenez | Rodriguez |
| 57 | Noe | Jimenez | Perez |
| 58 | Frederico | perez | perez |
| 59 | Antonio | Sanchez | Rodriguez |
| 60 | Adolfo | Santiz | Garcia |
| 61 | Hector | perez | Santiz |
| 62 | Betuel | Jimenez | perez |
| 63 | Juan | perez | Jimenez |
| 64 | Jose Roselin | Perez | Perez |
| 65 | Benjamin | Gomez | Guzman |
| 66 | Elihu | perez | Perez |
| 67 | Heriberto | Perez | Lopez |
| 68 | Obed | Perez | Vazquez |
| 69 | Arbey | Perez | Vazquez |
| 70 | Benjamin | Hernandez | Perez |
| 71 | Herbert | Lopez | Jimenez |
| 72 | Ihoni | Perez | Santiz |
| 73 | Enoc | Sanchez | Jimenez |

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Attachment D

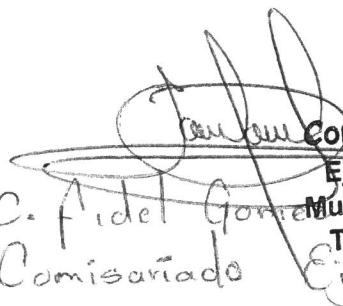
Plan del Río Azul Latrine Project Solicitation

Con fecha 13 de abril del 2017

A Quien Corresponda

Las autoridades del ejido plan del río azul
Así como todos los padres de familia
Solicitamos sean tan amables de apoyarnos
con letrinas ya que somos personas de
escasos recursos económicos para poder acerlo
y es de suma importancia para nuestras
familias no dudando de su amable atención
les agradecemos nos tome en cuenta nuestra
petición aprovechamos enviar un cordial saludo . . .

Respetuosamente


C. Fidel Gómez Quintan
Comisariado Ejidal
Ejido Plan Río Azul
Municipio de Maravilla
Tenejapa, Chiapas.
Comisariado Ejidal




C. Isidoro Pérez Pérez
Comisariado Ejidal
Ejido Plan Río Azul
Municipio de Maravilla
Tenejapa, Chiapas.

C. Eliazar López Rodríguez
Agente Auxiliar Municipal

DAY / MONTH / YEAR

Víctor Nuñez Gómez
Ismael Pérez Nuñez
Ramon Calbo López
Cupertino Pérez Pérez
Salvador Martínez Pérez
José Alfredo Pérez Pérez
Isidoro Pérez Pérez
Eduardo López Rodríguez
Abelardo Rodríguez Aguilar
Edmundo Rodríguez Zantib
Efraín Jiménez Alvarado
Mario Jiménez Morales
Roberto López Ruiz
Fidelio López Ruiz
José Jesús López López
Israel López Pérez
Francisco Hernández Pérez
José Aguilar López
Matías Pérez Pérez
Homero Pérez Pérez
Agilio López Jiménez
Mario Rolando López Ido
Laurencio López Rodríguez
Raúl Pérez Nuñez
Humberto Villagrán Arguello
Fidel Gómez Gusman
Elizardo López Rodríguez
Marcuantónio Pérez Aguilar

DIA / MES / AÑO

Luis Enrique Velazquez Perez
Pablo Gomez Gomez
Eduardo Lopez Ruiz
Eliazar Perez Munoz
Sebastian Jimenez ALFARO
Maria Gonzalez Perez
Antonio Rodriguez Zantiz
Fabian Munoz Cruz
Clara Luz Perez Perez
Jose Angel Rodriguez Zantiz
Jose Baltazar Lopez Jimenez
Erasan Lopez Gomez
Easoc Lopez Lopez
Ubaldo Aguilar Lopez
Raymundo Rodriguez Zantiz
Romeo Lopez Gomez
david Jimenez Alvares
Abenamar Lopez Lopez
Manuel Perez Perez
Miguel Jasinto Pascual
Erminio ALFARO Lopez
Tedi Gonsales Perez
Alonso Lopez Lopez
Marcos Lopez Lopez
Armando Lopez Gomez
Aymando Lopez AgUILAR
Saul Jimenez Alvares
Pedro Munoz Cruz

DIA / MES / AÑO

Arsenio Perez Nuñez
Cristobal Alvar
Marcuantonio Perez Rodriguez
Marina Gomez Morales
Adolfo Perez Perez
delmar Lopez Gomez
Uber Nuñez Lopez
Martin Gomez Perez
Adan Lopez Gomez
Saul Lopez Zantiz
Sofia Alvares Cruz
Abel Calbo Alvares
Gregorio Jimener Alfaro
Eugenio Aguilar Perez
Enemias Hernandez Alvares
Elias ALFARO Mejilla
Rosember Hernandez Alvares
~~Diego~~ Diego Velazquez Diego
Angel Lopez Lopez
Elias Nuñez Cruz
la SARY Velazquez Diego
Jose Velazquez
Antelmo Perez Zantiz
Alver Aguilar Lopez
Isai Jimenez Alvarez
Alegandri Perez Perez
Margarita Perez Nuñez
Flavio Nuñez Cruz

DAY / MONTH / YEAR

Santiago Nuñez Lopez
Baldeon Rodriguez Zantiz
Diego Gonsales
Jaime Perez Perez
Uriel Gomez Perez
Francisco Velazquez Cano
Omar Bravo Castillo
Juan Perez Nuñez
Jacobo Gomez Vazquez
Samuel Perez Hernandez
Versain Gonsales Perez
Miguel Perez Nuñez
Gerardo Lopez Lopez
Adolfo Perez Vazquez
Abraam Jimenez Alfaro
Oracio Lopez Morales
Agenor Lopez Perez
Ovidio Lopez Aguilar
Amilcar Lopez Perez
Abelardo Rodriguez Zantiz
Oscar Lopez Perez
Pablo Villagran Aguilar
Edmundo Perez Rodriguez
Jose Rene Hernandez Huarez
Gustavo Perez Nuñez
Sergio Lopez Perez
Armando Lopez Perez
Alvar Lopez Gomez

DIA / MES / AÑO

Margarito Pérez Jiménez

Rojelio Pérez Jiménez

Eli Nuñez Cruz

Mauricio López Jiménez

Darinel López Zautiz

Elder Nuñez Gómez

Eber Rodríguez López

Tsai Rodríguez Zautiz

Leyver Gómez Pérez

Daniel Jiménez Alvarés

Javier Pérez Nuñez

Julian Rodríguez Zautiz